GEOTECHNICAL EVALUATION
FOR
PROPOSED RESIDENTIAL DEVELOPMENT
ASSESSOR PARCEL NUMBERS (APNS) 432-130-006 AND -007
NEC OF COTTONWOOD AVENUE & CAWSTON AVENUE
CITY OF SAN JACINTO, RIVERSIDE COUNTY, CALIFORNIA

PREPARED FOR

WEST COAST INLAND PARTNERS IV, LLC
43980 MAHLON VAIL ROAD, SUITE 104
TEMECULA, CALIFORNIA 92592

PREPARED BY

GEOTEK, INC.
1548 NORTH MAPLE STREET
CORONA, CALIFORNIA 92880

PROJECT NO. 2298-CR **FEBRUARY 10, 2020**

GEOTEK

GeoTek, Inc.
1548 North Maple Street, Corona, California 92880
(951) 710-1160 Office (951) 710-1167 Fax www.geotekusa.com

February 10, 2020
Project No. 2298-CR

West Coast Inland Partners IV, LLC
43980 Mahlon Vail Road, Suite 104
Temecula, California 92592

Attention: Mr. Loren Huweiler

Subject: Geotechnical Evaluation
Proposed Residential Development
Assessor's Parcel Numbers (APNs) 432-130-006 and -007
NEC of Cottonwood Avenue & Cawston Avenue
City of San Jacinto, Riverside County, California

Dear Mr. Huweiler:

We are pleased to provide our geotechnical evaluation for the subject property located in the city of San Jacinto, Riverside County, California. This report presents a discussion of our evaluation and provides preliminary geotechnical recommendations for earthwork, foundation design, and construction.

In our opinion, site development appears feasible from a geotechnical viewpoint provided that the recommendations presented in this report are incorporated into the design and construction phases of the project.

The opportunity to be of service is sincerely appreciated. If you have any questions, please do not hesitate to call our office.

Respectfully submitted,
GeoTek, Inc.

Robert R. Russell
GE 2042, Exp. 12/31/20
Project Engineer

Edward H. LaMont
CEG 1892, Exp. 07/31/20
Principal Geologist

Anna M. Scott
Project Geologist

Distribution: (1) Addressee via email (one PDF file)

G:\Projects\2251 to 2300\2298CR West Coast Inland Partners IV, LLC APNs 432-130-006 and -007 San Jacinto\Geotechnical Evaluation\2298CR Geotechnical Evaluation APNs 432-130-006 and -007.doc

TABLE OF CONTENTS

TABLE OF CONTENTS

ENCLOSURES

1. PURPOSE AND SCOPE OF SERVICES

The purpose of this study was to evaluate the geotechnical conditions with respect to the currently proposed improvements. Services provided for this study included the following:

- Research and review of available geologic data and general information pertinent to the site,
- A site reconnaissance,
- Excavation and logging of ten exploratory borings and three CPT soundings,
- Collection and laboratory testing of representative soil samples,
- Evaluation of the geologic hazards potentially impacting the site,
- Review and evaluation of site seismicity, and;
- Compilation of this geotechnical report which presents our preliminary recommendations for site development.

The intent of this report is to aid in the evaluation of the site for future proposed development from a geotechnical perspective. The professional opinions and geotechnical information contained in this report will likely need to be updated based upon our review of the final site development plans. These plans should be provided to GeoTek, Inc. (GeoTek) for review when available.

2. SITE DESCRIPTION AND PROPOSED DEVELOPMENT

2.1 SITE DESCRIPTION

The subject project is located adjacent to the northeast corner of Cottonwood Avenue and Cawston Avenue in the city of San Jacinto, Riverside County, California. A site location map is presented on Figure 1. The rectangular shaped site is comprised of two (2) parcels of land [Assessor Parcel Numbers (APNs) 432-130-006 and -007] and encompasses a total of approximately 37 acres. The site can generally be accessed from Cottonwood Avenue. The site is generally vacant land. Based on a review of Google Earth, the site slopes gently downward to the northwest with about 8 feet of elevation differential.

The site is in an area largely characterized by agricultural use. The site is bounded by vacant agricultural land to the north, west and east with residential development to the southwest.

Based on review of historical documents for the site, the site appears to have been vacant land from at least 1938 to 1985 and used as farming from about 1989 to 2018. A small structure was noted in the southwest quadrant of the property in the 2009 and 2012 photographs reviewed.

2.2 PROPOSED DEVELOPMENT

It is our understanding the currently proposed improvements include a residential development and associated roadways. Site development plans were not available at the time this report was prepared. Final site development plans should be reviewed by GeoTek when they become available. Recommendations provided in this report may be subject to further review and evaluation by GeoTek upon receipt and review of final site development plans.

Although specific structural loading was not provided, this report has been prepared based on the assumption that the proposed residential structures will be of wood-frame construction, two-stories and less and incorporate a concrete slab-on-grade floor. We have assumed maximum column and wall loads on the order of 30 kips and 3 kips per foot, respectively.

Due to the relatively flat terrain of the site, maximum cuts and fills of up to about five (5) feet are estimated to bring the site to design grades. Significant retaining walls and fill slopes are not anticipated due to the relatively flat terrain.

If site development differs from the information presented in this report, the recommendations should be subject to further review and evaluation by GeoTek.

3. FIELD EXPLORATION AND LABORATORY TESTING

3.1 FIELD EXPLORATION

Our field exploration was conducted on January 3, 2020 and consisted of ten (10) exploratory borings drilled with a conventional hollow stem auger drill rig. The borings were extended to depths ranging from about 19 to 51-½ feet below existing grade. The borings were logged by an engineer from our firm. Logs of the borings are presented in Appendix A.

Three Cone Penetrometer Test (CPT) soundings were recently extended at the site observed by GeoTek on February 5, 2020 to depths of about 60 feet below grade using a 30-ton CPT rig and were observed by a geologist from our firm to supplement the existing information for the site. The approximate locations of the CPT borings are indicated on the attached Figure 2. The CPT logs are provided in Appendix B.

3.2 LABORATORY TESTING

Laboratory testing was performed on selected soil samples collected during the field exploration. The purpose of the laboratory testing was to help confirm the field classification of the soil materials encountered and to evaluate their physical and chemical properties for use in engineering design and analysis. Results of the laboratory testing program are included in Appendix C.

4. GEOLOGIC AND SOILS CONDITIONS

4.1 REGIONAL SETTING

The property is situated in the Peninsular Ranges geomorphic province. The Peninsular Ranges province is one of the largest geomorphic units in western North America. Basically, it extends from the point of contact with the Transverse Ranges geomorphic province, southerly to the tip of Baja California. This province varies in width from about 30 to 100 miles. It is bounded on the west by the Pacific Ocean, on the south by the Gulf of California and on the east by the Colorado Desert Province.

The Peninsular Ranges are essentially a series of northwest-southeast oriented fault blocks. Several major fault zones are found in this province. The Elsinore Fault zone and the San Jacinto Fault zone trend northwest-southeast and are found near the middle of the province. The San Andreas Fault zone borders the northeasterly margin of the province.

More specific to the subject property, the site is located in an area geologically mapped to be underlain by alluvium (Dibblee, T.W. and Minch, J.A., 2003). The reviewed map indicates that the Casa Loma Fault is located to the northeast of the site.

4.2 GENERAL SOIL/GEOLOGIC CONDITIONS

A brief description of the earth materials encountered during the subsurface exploration is presented in the following section. Based on the exploratory excavations, review of available geotechnical reports and published geologic maps, the site is locally underlain by alluvium.

4.2.1 Undocumented Fill

Approximately six inches of undocumented fill or disturbed native soil was encountered at the ground surface of all borings. Thicker zones may be encountered in areas not explored. The undocumented fill was observed to consist of a silty sand with roots and some vegetation.

4.2.2 Alluvium

Alluvial soils were encountered beneath the undocumented fill and extended to the maximum depth explored of 51-½ feet below existing grade. The alluvium was noted to generally consist of a silty sand, sand and sandy silt. The granular soils possess a loose to dense relative density and the silt soils possess a stiff to very stiff comparative consistency.

4.3 SURFACE AND GROUNDWATER

4.3.1 Surface Water

Surface water was not observed on the site during our site reconnaissance. If encountered during the earthwork construction, surface water on this site is the result of precipitation. Overall site area drainage is generally to the northwest. Provisions for surface drainage will need to be accounted for by the project civil engineer.

4.3.2 Groundwater

Groundwater was not encountered in any of the exploratory excavations. According to the State Water Resources Control Board database (http://www.water.ca.gov/waterdatalibrary/) groundwater is estimated to be greater than 100 feet below ground surface.

Based on the results of the field explorations, review of site area geomorphology and geology, groundwater is not anticipated to adversely affect the proposed improvements.

4.4 FAULTING AND SEISMICITY

The geologic structure of the entire southern California area is dominated mainly by northwest-trending faults associated with the San Andreas system. The site is in a seismically active region. Based on a review of the Special Studies Zone Map for the Lakeview quadrangle

(CGS, 1988), the site is not situated within a State of California designated *"Alquist-Priolo"* Earthquake Fault Zone. The site is also not located within a County of Riverside designed fault zone as indicated on the Riverside County - Map My County website. The closest known active fault to the site is the Casa Loma fault located about 850 feet to the northeast.

4.4.1 Seismic Design Parameters

The site is located at approximately 33.7889° Latitude and -117.0136° Longitude. Site spectral accelerations (Ss and S1), for 0.2 and 1.0 second periods for a Class "D" site, was determined from the SEAOC/OSHPD web interface that utilizes the USGS web services and retrieves the seismic design data and presents that information in a report format. As noted using the ASCE 7-16 option on the SEAOC/OSHPD website, the values for S_{M1} and S_{D1} are reported as "null-See Section 11.4.8 (of ASCE 7-16). As noted in ASCE 7-16, Section 11.4.8, a site-specific ground motion procedure is recommended for Site Class D when the value S_1 exceeds 0.2. The value S_1 for the subject site exceeds 0.2.

For a site Class D, an exception to performing a site-specific ground motion analysis is allowed in ASCE 7-16 where S_1 exceeds 0.2 provided the value of the seismic response coefficient, Cs, is conservatively calculated by Eq 12.8-2 of ASCE 7-16 for values of $T \leq 1.5Ts$ and taken as equal to 1.5 times the value computed in accordance with either Eq. 12.8-3 for $T_L \geq T > 1.5Ts$ or Eq. 12.8-4 for $T > T_L$.

Assuming that the Cs value calculated by and used by the structural engineer allows for the exclusion per ASCE 7-16, noted above, then a site-specific ground motion analysis is not required. For this assumption and condition, the following seismic design parameters, based on the 2015 National Earthquake Hazards Reduction Program (NEHRP), are presented on the following table:

SITE SEISMIC PARAMETERS	
Mapped 0.2 sec Period Spectral Acceleration, S_S	2.082g
Mapped 1.0 sec Period Spectral Acceleration, S_1	0.839g
Site Coefficient for Site Class "D," F_a	1.0
Site Coefficient for Site Class "D," F_v	1.7
Maximum Considered Earthquake Spectral Response Acceleration for 0.2 Second, S_{MS}	2.082g
Maximum Considered Earthquake Spectral Response Acceleration for 1.0 Second, S_{M1}	1.426
5% Damped Design Spectral Response Acceleration Parameter at 0.2 Second, S_{DS}	1.388g
5% Damped Design Spectral Response Acceleration Parameter at 1 second, S_{D1}	0.951g
PGA_M	0.993g
Seismic Design Category	E

Final selection of the appropriate seismic design coefficients should be made by the project structural engineer based upon the local practices and ordinances, expected building response and desired level of conservatism.

4.5 LIQUEFACTION AND SEISMICALLY-INDUCED SETTLEMENT

Liquefaction describes a phenomenon in which cyclic stresses, produced by earthquake-induced ground motion, create excess pore pressures in relatively cohesionless and some low-plastic soils. These soils may thereby acquire a high degree of mobility, which can lead to lateral movement, sliding and settlement of loose sediments, sand boils and other damaging deformations. This phenomenon occurs only below the water table, but, after liquefaction has developed, the effects can propagate upward into overlying non-saturated soil as excess pore water dissipates.

The factors known to influence liquefaction potential include soil type and grain size, relative density, groundwater level, confining pressures, and both intensity and duration of ground shaking. In general, materials that are most susceptible to liquefaction are loose, saturated granular soils having low fines content under low confining pressures.

The site is mapped by Riverside County as possessing a "moderate" potential. Based on the lack of groundwater within the prior borings and a review of groundwater data on the State Water Data Library website, we estimate that the historic high groundwater depth at the site is deeper than 100 feet below grade. Based on the depth to groundwater, the site is not considered to be susceptible to liquefaction during a seismic event.

The computer software program Cliq Version 2.0 (Geologismiki, 2006) was used to assess the potential for dynamic densification (i.e. dry settlement) at the site as a result of ground shaking in response to the design level earthquake event. For this analysis we used a site acceleration (PGA_M) of 0.993g, a mean (for all sources) earthquake event (Mw) of 7.44 and the soil profiles for each of three CPT borings. The PGA_M and the Mw values were obtained from the USGS websites. A factor of safety of 1.3 was applied to the Cyclic Stress Ratio, in accordance with *Guidelines for Evaluating and Mitigating Seismic Hazards in California Special Publication 117A* (California Geological Survey, 2008).

The results of the analyses indicate the presence of various layers of loose to medium dense sands, silty sands, and silts that would be prone to dynamic densification (seismic settlement) during the design-level earthquake. The following table summarizes the amount of seismic settlement estimated at each CPT location for the site soils:

SUMMARY OF LIQUEFACTION CALCULATIONS	
Sounding	Estimated Total Seismic Settlement* (inches)
CPT-1	0.9
CPT-2	2.9
CPT-3	1.3

*Estimated ground settlement using Zhang et al. (2002).

As noted in the table above, the seismically induced total settlements of the site soils could range from about 0.9 to 2.9 inches across the proposed site. Based on the seismic settlement values obtained from the three CPT sounds, we estimate the maximum seismic differential settlement to be about 1 inch over a 40-foot span which should be considered for design.

A copy of the seismic settlement analysis is presented within Appendix D.

4.6 OTHER SEISMIC HAZARDS

Evidence of ancient landslides or slope instabilities at this site was not observed during our investigation. Thus, the potential for landslides is considered negligible for design purposes.

The potential for secondary seismic hazards such as a seiche or tsunami is considered negligible due to site elevation and distance to an open body of water.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 GENERAL

The anticipated site development appears feasible from a geotechnical viewpoint provided that the following recommendations, and those provided by this firm at a later date, are properly incorporated into the design and construction phases of development. Site development and grading plans should be reviewed by GeoTek when they become available.

5.2 EARTHWORK CONSIDERATIONS

Earthwork and grading should be performed in accordance with the applicable grading ordinances of the City of San Jacinto/County of Riverside, the 2019 California Building Code (CBC) and recommendations contained in this report. The Grading Guidelines included in Appendix E outline general procedures and do not anticipate all site-specific situations. In the event of conflict, the recommendations presented in the text of this report should supersede those contained in Appendix E.

5.2.1 Site Clearing and Demolition

In areas of planned grading and improvements, the site should be cleared of vegetation, roots, and debris. These materials should be properly disposed of off-site. Voids resulting from site clearing should be replaced with engineered fill materials with expansion characteristics similar to the on-site soils.

5.2.2 Removals

We recommend that all undocumented fill and the upper four feet of alluvium should be removed below existing or finished grade, whichever is deeper, beneath all proposed buildings. A representative of this firm should observe the bottom of all excavations.

A minimum of two (2) feet of engineered fill should be provided below the bottom of the proposed footings. The horizontal extent of removals and engineered fill should extend at least five (5) feet outside the perimeter footings, floor-slab and adjacent patios, or a distance equal to the depth of over-excavation below the bottom of the structural elements, whichever is greater.

5.2.2.1 Pavement and Hardscape Areas

A minimum of 12 inches of engineered fill should be provided below asphaltic concrete pavement and Portland cement concrete hardscape areas. The horizontal extent of removals should extend at least two (2) feet beyond the edge.

5.2.2.2 Preparation of Areas to Receive Engineered Fill

A representative of this firm should observe the bottom of all excavations. In areas where loose or soft soil is present in the bottom of the excavations, the removals should continue until suitable bearing natural materials are encountered, as determined by GeoTek. Upon approval, the exposed soils and all soils in areas to receive engineered fill should be scarified to a depth of approximately twelve (12) inches, moistened to slightly above the optimum moisture content and compacted to a minimum relative compaction of 90 percent (ASTM D 1557).

5.2.3 Engineered Fills

The on-site soils are generally considered suitable for reuse as engineered fill provided they are free from vegetation, debris and other deleterious material. The undercut areas should be brought to the final subgrade elevations with fill materials that are placed in eight (8) inch or less loose lifts, moisture conditioned to at least the optimum moisture content and compacted to a minimum relative compaction of 90 percent as determined by ASTM Test Method D 1557. The upper one (1) foot of pavement subgrade should be compacted to 95 percent.

5.2.4 Excavation Characteristics

Excavation in the on-site soils is generally expected to be feasible utilizing heavy-duty grading equipment in good operating condition. All temporary excavations for grading purposes and installation of underground utilities should be constructed in accordance with local and Cal-OSHA guidelines. Temporary excavations within the on-site materials should be stable at 1:1 (horizontal:vertical) inclinations for cuts less than ten (10) feet in height.

5.2.5 Shrinkage and Subsidence

Several factors will impact earthwork balancing on the site, including shrinkage, bulking, subsidence, trench spoil from utilities and footing excavations, as well as the accuracy of topography.

Shrinkage, bulking, and subsidence are primarily dependent upon the degree of compactive effort achieved during construction. For planning purposes, a shrinkage factor of 5 to 15 percent for both the existing fill and upper alluvium may be considered. Site balance areas

should be available in order to adjust project grades, depending on actual field conditions at the conclusion of site earthwork construction. Bulking is not considered to be a significant factor with the underlying materials within the vicinity of the anticipated construction. Subsidence on the order of 0.1-foot could occur.

5.3 DESIGN RECOMMENDATIONS

5.3.1 Foundation Design Criteria

Conventional Shallow Foundation Option

Foundation design criteria for a conventional foundation system, in general conformance with the 2019 CBC, are considered suitable and are presented below. Based on the laboratory test results and subsequent to earthwork operations it is anticipated that the near-surface soils may have a "very low" to "medium" expansion potential.

Additional expansion index and soluble sulfate testing of the soils should be performed during site grading to evaluate the as-graded conditions. Final recommendations should be based upon the as-graded soils conditions.

A summary of our foundation design recommendations is presented in the following table:

Design Parameter	"Very Low" Expansion Potential	"Low" Expansion Potential	"Medium" Expansive Potential
Foundation Depth or Minimum Perimeter Beam Depth (inches below lowest adjacent grade)	One-Story – 12 Two-Stories – 12	One-Story – 12 Two-Stories – 18	One-Story – 18 Two-Story – 18
Minimum Foundation Width (Inches)*	One-Story – 12 Two-Stories – 15	One-Story – 12 Two-Stories – 15	One-Story-12 Two-Story – 15
Minimum Slab Thickness (actual)[1]	4 – Actual	4 – Actual	4 - Actual
Sand Blanket and Moisture Retardant Membrane Below On-Grade Building Slabs	2 inches of sand** overlying moisture vapor retardant membrane overlying 2 inches of sand**	2 inches of sand** overlying moisture vapor retardant membrane overlying 2 inches of sand**	2 inches of sand** overlying moisture vapor retardant membrane overlying 2 inches of sand**
Minimum Slab Reinforcing[2]	6" x 6" – W1.4W1.4 welded wire fabric or No. 3 bars placed at 24 inch centers, placed in middle of slab	6" x 6" – W2.9/W2.9 welded wire fabric or No. 3 bars placed at 18 inch centers, placed in middle of slab	No. 4 bars at 18 inch centers, each way, placed in center of slab
Minimum Footing Reinforcement[2]	Two No. 4 reinforcing bars, one placed near the top and one near the bottom	Two No. 4 reinforcing bars, one placed near the top and one near the bottom	Four No. 4 bars, 2 top and 2 bottom
Effective Plasticity Index***	N/A	15	25
Presaturation of Subgrade Soil (Percent of Optimum)	Minimum of 100% of the optimum moisture content to a depth of at least 12 inches prior to placing concrete	Minimum of 110% of the optimum moisture content to a depth of at least 12 inches prior to placing concrete	Minimum of 120% of the optimum moisture content to a depth of at least 18 inches prior to placing concrete

* Code minimums per Table 1809.7 of the 2019 CBC.
** Sand should have a sand equivalent of at least 30.
*** Effective plasticity index should be verified at the completion of rough grading.

1. Slab thickness and reinforcement should be determined by the structural engineer.
2. Floor slab & foundation reinforcement should consider estimated seismic settlements.

It should be noted that the criteria provided are based on soil support characteristics only. The structural engineer should design the slab and beam reinforcement based on actual loading conditions.

Post Tensioned Foundation Option

A post-tensioned foundation is considered a suitable option for the site and can be used to resist the effects of expansive soils and the estimated seismic-induced settlements.

The post-tensioned foundations design should also consider the estimated seismic settlement of up to about 2.9 inches total and 1 inch differential over a 40-foot span or as designed by the project structural engineer.

Presented below are post-tensioned foundation design parameters for the proposed structures at this site based on the presence of expansive soils. These parameters are in general conformance with *Standard Requirements for Design and Analysis of Shallow Post-Tensioned Concrete Foundations on Expansive Soils* (PTI, 2012). These are minimal recommendations and are not intended to supersede the design by the project structural engineer.

DESIGN PARAMETERS FOR POST-TENSIONED SLABS	
Foundation Design Parameter	"Low & Medium" Expansion Potential (LL≤45; PI≤25; Passing #200 Sieve ≈ 80%; Clay fines ≈ 25%)
Edge Moisture Variation Distance, e_m - Edge Lift (swelling) - Center Lift (shrinkage)	 4.3 ft 8.4 ft
Soil Differential Movement, y_m - Edge Lift (swelling) - Center Lift (shrinkage)	 ≈0.72 in ≈0.28 in
Ext. Perimeter Beam Embedment	12 inches*
Presaturation of Subgrade Soil (Percent of Optimum)	Minimum 120% to a depth of 12 inches

* Required depth of perimeter beam/stiffening rib per structural calculations may govern.

The following assumptions were used to generate e_m and y_m values: Thornthwaite Moisture Index = -20; constant suction value = 3.9pF; post-equilibrium case assumed with wet (swelling) cycle going from 3.9pF to 3.0pF and drying (shrinking) cycle going from 3.9pF to 4.5pF.

An allowable bearing capacity of 2,500 pounds per square foot (psf) may be used for design of footings 12 inches deep and 12 inches wide. This value may be increased by 500 pounds per square foot for each additional 12 inches in depth and 250 pounds per square foot for each additional 12 inches in width to a maximum value of 3,500 psf. An increase of one-third may be applied when considering short-term live loads (e.g. seismic and wind loads).

Structural foundations should be designed in accordance with the 2019 CBC, and to withstand a total static settlement of 1 inch and maximum differential static settlement of one-half of the total settlement over a horizontal distance of 40 feet.

The passive earth pressure may be computed as an equivalent fluid having a density of 240 psf per foot of depth, to a maximum earth pressure of 3,000 psf for footings founded on engineered fill. A coefficient of friction between soil and concrete of 0.35 may be used with

dead load forces. When combining passive pressure and frictional resistance, the passive pressure component should be reduced by one-third.

If desired, the building floor slabs may be designed using an estimated subgrade modulus of 150 pci, which is based on a value typically obtained from a 1 foot by 1-foot plate bearing test. Depending on how the floor slab is loaded, the subgrade modulus may need to be geometrically modified.

A moisture and vapor retarding system should be placed below slabs-on-grade where moisture migration through the slab is undesirable. Guidelines for these are also provided in the 2019 California Green Building Standards Code (CALGreen) Section 4.505.2 and the 2019 CBC Section 1907.1 and ACI 360R-10. The vapor retarder design and construction should also meet the requirements of ASTM E1643. A portion of the vapor retarder design should be the implementation of a moisture vapor retardant membrane.

It should be realized that the effectiveness of the vapor retarding membrane can be adversely impacted as a result of construction related punctures (e.g. stake penetrations, tears, punctures from walking on the aggregate layer, etc.). These occurrences should be limited as much as possible during construction. Thicker membranes are generally more resistant to accidental puncture than thinner ones. Products specifically designed for use as moisture/vapor retarders may also be more puncture resistant. Although the CBC specifies a six (6) mil vapor retarder membrane, it is GeoTek's opinion that a minimum 10 mil thick membrane with joints properly overlapped and sealed should be considered, unless otherwise specified by the slab design professional. The membrane should consist of Stego wrap or the equivalent.

Moisture and vapor retarding systems are intended to provide a certain level of resistance to vapor and moisture transmission through the concrete, but do not eliminate it. The acceptable level of moisture transmission through the slab is to a large extent based on the type of flooring used and environmental conditions. Ultimately, the vapor retarding system should be comprised of suitable elements to limit migration of water and reduce transmission of water vapor through the slab to acceptable levels. The selected elements should have suitable properties (i.e., thickness, composition, strength, and permeability) to achieve the desired performance level. Consideration should be given to consulting with an individual possessing specific expertise in this area for additional evaluation.

Moisture retarders can reduce, but not eliminate, moisture vapor rise from the underlying soils up through the slab. Moisture retarders should be designed and constructed in accordance with applicable American Concrete Institute, Portland Cement Association, Post-Tensioning Concrete Institute, ASTM and California Building Code requirements and guidelines.

GeoTek recommends that a qualified person, such as the flooring contractor, structural engineer, and/or architect be consulted to evaluate the general and specific moisture vapor transmission paths and associated potential impact.

In addition, the recommendations in this report and our services in general are not intended to address mold prevention, since we along with geotechnical consultants in general, do not practice in areas of mold prevention. If specific recommendations are desired, a professional mold prevention consultant should be contacted.

5.3.2 Miscellaneous Foundation Recommendations

- To reduce moisture penetration beneath the slab on grade areas, utility trenches should be backfilled with engineered fill, lean concrete or concrete slurry where they intercept the perimeter footing or thickened slab edge.

- Soils from the footing excavations should not be placed in the slab-on-grade areas unless properly compacted and tested. The excavations should be free of loose/sloughed materials and be neatly trimmed at the time of concrete placement.

- Under-slab utility trenches should be compacted to project specifications. Compaction should be achieved with a mechanical compaction device. If soils to be used as backfill have dried out, they should be thoroughly moisture conditioned prior to placement in trenches.

5.3.3 Foundation Setbacks

Minimum setbacks for all foundations should comply with the 2019 CBC or City of San Jacinto/County of Riverside requirements, whichever is more stringent. Improvements not conforming to these setbacks are subject to the increased likelihood of excessive lateral movements and/or differential settlements. If large enough, these movements can compromise the integrity of the improvements. The following recommendations are presented:

- The bottom of all footings for new structures near retaining walls should be deepened so as to extend below a 1:1 projection upward from the bottom inside edge of the wall footing.

5.3.4 Retaining and Garden Wall Design and Construction

5.3.4.1 General Design Criteria

Recommendations presented in this report apply to typical masonry or concrete vertical retaining walls to a maximum height of up to six (6) feet. Additional review and recommendations should be requested for higher walls. These are typical design criteria and are not intended to supersede the design by the structural engineer.

Retaining wall foundations should be embedded a minimum of 12 inches into engineered fill. Retaining wall foundations should be designed in accordance with Sections 5.3.1 of this report. Structural needs may govern and should be evaluated by the project structural engineer.

All earth retention structure plans, as applicable, should be reviewed by this office prior to finalization.

Earthwork considerations, site clearing and remedial earthwork for all earth retention structures should meet the requirements of this report, unless specifically provided otherwise, or more stringent requirements or recommendations are made by the designer. The backfill material placement for all earth retention structures should meet the requirement of Section 5.3.4.3 in this report.

In general, cantilever earth retention structures, which are designed to yield at least 0.001H, where H is equal to the height of the earth retention structure, may be designed using the active condition. Rigid earth retention structures (including but not limited to rigid walls, and walls braced at top, such as typical basement walls) should be designed using the at-rest condition.

In addition to the design lateral forces due to retained earth, surcharges due to improvements, such as an adjacent building or traffic loading, should be considered in the design of the earth retention structures. Loads applied within a 1:1 (h:v) projection from the surcharge on the stem of the earth retention structure should be considered in the design.

Final selection of the appropriate design parameters should be made by the designer of the earth retention structures.

5.3.4.2 Cantilevered Walls

The recommendations presented below are for cantilevered retaining walls up to six (6) feet high. Active earth pressure may be used for retaining wall design, provided the top of the wall

is not restrained from minor deflections. An equivalent fluid pressure approach may be used to compute the horizontal pressure against the wall. Appropriate fluid unit weights are given below for specific slope gradients of the retained material. These do not include other superimposed loading conditions such as traffic, structures, seismic events, or adverse geologic conditions.

ACTIVE EARTH PRESSURES	
Surface Slope of Retained Materials (h:v)	Equivalent Fluid Pressure (pcf) Select Backfill*
Level	40
2:1	60

* The design pressures assume the backfill material has an expansion index less than or equal to 20. Backfill zone includes area between back of the wall to a plane (1:1 h:v) up from bottom of the wall foundation (on the backside of the wall) to the ground surface.

5.3.4.3 Retaining Wall Backfill and Drainage

The wall backfill should also include a minimum one (1) foot wide section of ¾- to 1-inch clean crushed rock (or an approved equivalent). The rock should be placed immediately adjacent to the back of the wall and extend up from a back drain to within approximately 24 inches of the finish grade. The upper 24 inches should consist of compacted on-site materials. The rock should be separated from the earth with filter fabric. The presence of other materials might necessitate revision to the parameters provided and modification of the wall designs. The backfill materials should be placed in lifts no greater than eight (8) inches in thickness and compacted to a minimum of 90% relative compaction in accordance with ASTM Test Method D 1557. Proper surface drainage needs to be provided and maintained.

As an alternative to the drain, rock and fabric, Miradrain 2000 or approved equivalent may be used behind the retaining wall. The Miradrain 2000 should extend from the base of the wall to within two (2) feet of the ground surface. The subdrain should be placed in direct contact with the Miradrain 2000.

Retaining walls should be provided with an adequate pipe and gravel back drain system to help prevent buildup of hydrostatic pressures. Backdrains should consist of a four (4)-inch diameter perforated collector pipe (Schedule 40, SDR 35, or approved equivalent) embedded in a minimum of one (1) cubic foot per linear foot of ¾- to 1-inch clean crushed rock or an approved equivalent, wrapped in filter fabric (Mirafi 140N or an approved equivalent). The

drain system should be connected to a suitable outlet. Waterproofing of site walls should be performed where moisture migration through the walls is undesirable.

5.3.4.4 Restrained Retaining Walls

Retaining walls that will be restrained at the top that support level backfill or that have reentrant or male corners, should be designed for an equivalent at-rest fluid pressure of 60 pcf, plus any applicable surcharge loading. For areas of male or reentrant corners, the restrained wall design should extend a minimum distance of twice the height of the wall laterally from the corner, or a distance otherwise determined by the project structural engineer.

5.3.4.5 Other Design Considerations

- Wall design should consider the additional surcharge loads from superjacent slopes and/or footings, where appropriate.
- No backfill should be placed against concrete until minimum design strengths are evident by compression tests of cylinders.
- The retaining wall footing excavations, backcuts and backfill materials should be approved by the project geotechnical engineer or their authorized representative.
- Positive separations should be provided in garden walls at horizontal distances not exceeding 20 feet.

5.3.5 Soil Corrosivity

The soil resistivity was tested in the laboratory on two representative samples collected during our field exploration. The results of the testing (938 to2,680 ohm-cm) indicate that the soil samples are "extremely corrosive" to "highly corrosive" to buried ferrous metals, based on the guidelines provided in *Corrosion Basics: An Introduction* (Roberge, 2000). Consideration should be given to consulting with a corrosion engineer.

5.3.6 Soil Sulfate Content

The sulfate content was determined in the laboratory for one on-site soil sample. The results indicate that the water-soluble sulfate result is less than 0.1 percent by weight, which is considered "not applicable" (negligible) as per Table 4.2.1 of ACI 318.

5.3.7 Import Soils

Import soils should have expansion characteristics similar to the on-site soils. GeoTek also recommends that the proposed import soils be tested for expansion and corrosivity potential.

GeoTek should be notified a minimum of 72 hours prior to importing so that appropriate sampling and laboratory testing can be performed.

5.3.8 Concrete Flatwork

5.3.8.1 Exterior Concrete Slabs, Sidewalks and Driveways

Exterior concrete slabs, sidewalks and driveways should be designed using a four (4) inch minimum thickness. No specific reinforcement is required from a geotechnical perspective. However, some shrinkage and cracking of the concrete should be anticipated as a result of typical mix designs and curing practices commonly utilized in residential construction.

Sidewalks and driveways may be under the jurisdiction of the governing agency. If so, jurisdictional design and construction criteria would apply, if more restrictive than the recommendations presented in this report.

Subgrade soils (typically "low" expansion potential) should be pre-moistened prior to placing concrete. The subgrade soils below exterior slabs, sidewalks, driveways, etc. at the subject site should be pre-saturated to a minimum of 100% to 120% of optimum moisture content, depending upon the soil expansive potential, to a depth of at least 12 inches.

All concrete installation, including preparation and compaction of subgrade, should be done in accordance with the City of San Jacinto/County of Riverside specifications, and under the observation and testing of GeoTek and a City/County inspector, if necessary.

5.3.8.2 Concrete Performance

Concrete cracks should be expected. These cracks can vary from sizes that are essentially unnoticeable to more than 0.125-inch in width. Most cracks in concrete, while unsightly, do not significantly impact long-term performance. While it is possible to take measures (proper concrete mix, placement, curing, control joints, etc.) to reduce the extent and size of cracks, some cracking will occur despite the best efforts to minimize it. Concrete can also undergo chemical processes that are dependent upon a wide range of variables, which are difficult, at best, to control. Concrete, while seemingly a stable material, is subject to internal expansion and contraction due to external changes over time.

One of the simplest means to control cracking is to provide weakened control joints for cracking to occur along. These do not prevent cracks from developing; they simply provide a relief point for the stresses that develop. These joints are a widely accepted means to control cracks but are not always effective. Control joints are more effective the more closely spaced

they are. GeoTek suggests that control joints be placed in two orthogonal directions and located a distance apart approximately equal to 24 to 36 times the slab thickness.

Exterior concrete flatwork (patios, walkways, driveways, etc.) is often some of the most visible aspects of site development. They are typically given the least level of quality control, being considered "non-structural" components. We suggest that the same standards of care be applied to these features as to the structures themselves.

5.4 PRELIMINARY PAVEMENT DESIGN

Pavement design for areas to receive new pavements was conducted per Caltrans *Highway Design Manual* guidelines for flexible pavements. These preliminary pavement section recommendations are based on assumed Traffic Index (TI) and R-values of the subgrade soils. Based on a review of the boring logs from this site, we have assumed a post-graded R-value of 40. Final pavement section recommendations should be based on the assigned TI and R-value testing of the as-graded soils.

Traffic Index	Asphalt Thickness	Base Course Thickness
5.5	0.25 ft	0.50 ft
6.5	0.30 ft	0.55 ft
7.5	0.36 ft	0.66 ft

All base material and the upper 12 inches of subgrade should be compacted to at least 95 percent of the material's maximum dry density, per ASTM D-1557.

Traffic Indices (TIs) used in our preliminary pavement design are considered reasonable values for the proposed pavement areas and should provide a pavement life of approximately 20 years with a normal amount of flexible pavement maintenance. Irrigation adjacent to pavements, without a deep curb or other cutoff to separate landscaping from the paving may result in premature pavement failure. Traffic parameters used for preliminary design were selected based upon engineering judgment and not upon information furnished to us such as an equivalent wheel load analysis or a traffic study. We recommend that final pavement design be based on R-value testing of the subgrade soils along with the assigned TI values for the planned pavement areas.

Asphalt concrete and aggregate base should conform to current Caltrans Standard Specifications Section 39 and 26-1.02, respectively. As an alternative, asphalt concrete can conform to Section 203-6 of the current Standard Specifications for Public Work (Green

Book). Crushed aggregate base or crushed miscellaneous base can conform to Section 200-2.2 and 200-2.4 of the Green Book, respectively.

All pavement installation, including preparation and compaction of subgrade, compaction of base material, placement and rolling of asphaltic concrete, should be done in accordance with the City of San Jacinto/County of Riverside specifications, and under the observation and testing of GeoTek and a City/County Inspector where required. Jurisdictional minimum compaction requirements in excess of the aforementioned minimums may govern.

5.5 POST CONSTRUCTION CONSIDERATIONS

5.5.1 Irrigation

Control of irrigation water is a necessary part of site maintenance. Soggy ground, near-surface perched water, or seeps may result if irrigation water is excessively or improperly applied. All irrigation systems should be adjusted to provide the minimum water needed to sustain landscaping and prevent excessive drying of the soils. Generally significant runoff during an irrigation cycle indicates excessive irrigation, while soils which dry to a depth of more than several inches between irrigation cycles indicate inadequate irrigation. Adjustments should be made for changes in the climate and rainfall. Irrigation should stop when sufficient water is provided by precipitation.

It is important to avoid repeated wetting and drying of the slope surface, which may cause the soil to crack, loosen and/or slowly move laterally (creep) downslope. Landscaping and irrigation will reduce repeated wetting and drying of the slopes.

It is important to maintain uniform soil moisture conditions adjacent to the structure to reduce soil expansion and shrinkage that can cause cracking to the structure. Irrigation should be utilized to prevent the soils from drying to a depth more than several inches.

Broken, leaking or plugged sprinklers or irrigation lines should be repaired immediately. Frequent inspections of the irrigation systems should be performed.

It is common for planting to be placed adjacent to structures in planter or lawn areas. This will result in the introduction of water into the ground adjacent to the foundation. This type of landscaping should be avoided. If used, then extreme care should be exercised with regard to the irrigation and drainage in these areas. Waterproofing of the foundation and/or subdrains may be necessary and advisable.

5.5.2 Drainage

The need to maintain proper surface drainage and subsurface systems cannot be overly emphasized. Positive site drainage should be maintained at all times. Drainage should not flow uncontrolled down any descending slope. Water should be directed away from foundations and not allowed to pond or seep into the ground adjacent to the footings. Roof gutters and downspouts should discharge onto paved surfaces sloping away from the structure or into a closed pipe system which outfalls to the street gutter pan or directly to the storm drain system. Pad drainage should be directed toward approved areas and not be blocked by other improvements.

It is the owner's responsibility to maintain and clean drainage devices on or contiguous to their lot. In order to be effective, maintenance should be conducted on a regular and routine schedule and necessary corrections made prior to each rainy season.

5.6 PLAN REVIEW AND CONSTRUCTION OBSERVATIONS

We recommend that specifications and foundation plans be reviewed by this office prior to construction to check for conformance with the recommendations of this report. We also recommend that GeoTek representatives be present during site grading and foundation construction to observe and document proper implementation of the geotechnical recommendations. The owner/developer should verify that GeoTek representatives perform at least the following duties:

- Observe site clearing and grubbing operations for proper removal of unsuitable materials.
- Observe and test bottom of removals prior to fill placement.
- Evaluate the suitability of on-site and import materials for fill placement and collect soil samples for laboratory testing where necessary.
- Observe the fill for uniformity during placement, including utility trench backfill. Also, perform field density testing of the fill materials.
- Observe and probe foundation excavations to confirm suitability of bearing materials with respect to density.

If requested, a construction observation and compaction report can be provided by GeoTek, which can comply with the requirements of the governmental agencies having jurisdiction over the project. We recommend that these agencies be notified prior to commencement of construction so that necessary grading permits can be obtained.

6 INTENT

It is the intent of this report to aid in the design and construction of the proposed development. Implementation of the advice presented in this report is intended to reduce risk associated with construction projects. The professional opinions and geotechnical advice contained in this report are not intended to imply total performance of the project or guarantee that unusual or variable conditions will not be discovered during or after construction.

The scope of our evaluation is limited to the boundaries of the subject property. This review does not and should in no way be construed to encompass any areas beyond the specific area of the proposed construction as indicated to us by the client. Further, no evaluation of any existing site improvements is included. The scope is based on our understanding of the project and the client's needs, our fee estimate (Proposal No. P-1200519 dated December 2, 2019) and geotechnical engineering standards normally used on similar projects in this locality at the present.

7 LIMITATIONS

Our findings are based on site conditions observed and the stated sources. GeoTek has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the engineering and science professions currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report.

Our recommendations are based on the site conditions observed and encountered and laboratory testing. Our conclusions and recommendations are professional opinions that are limited to the extent of the available data. Observations during construction are important to allow for any change in recommendations found to be warranted. These opinions have been derived in accordance with current standards of practice and no warranty of any kind is expressed or implied. Standards of care/practice are subject to change with time.

8 SELECTED REFERENCES

American Concrete Institute (ACI), 2006, Publication 302.2R-06, Guide for Concrete Slabs That Receive Moisture Sensitive Flooring Materials.

_____, 2010, Publications 360R-10, Guide to Design of Slabs-On-Ground.

American Society of Civil Engineers (ASCE), 2013, "Minimum Design Loads for Buildings and Other Structures," ASCE/SEI 7-10, Third Printing, Errata Incorporated through March 15.

Bowles, J. E., 1977, "Foundation Analysis and Design", second Edition.

Bryant, W.A., and Hart, E.W., 2007, "Fault Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps," California Geological Survey: Special Publication 42.

California Code of Regulations, Title 24, 2019, Part 2 "California Building Code," 2 volumes.

California Geological Survey, 1988, "Special Studies Zones, Lakeview Quadrangle", March 1.

County of Riverside Transportation and Land Management Agency, Building and Safety Department, 2006, "Conditions of Approval, GEO No. 1576," dated May 22.

_____, 2000, "Technical Guidelines for the Review of Geotechnical and Geologic Reports".

Dibblee, T.W. and Minch, J.A., 2003a, "Geologic Map of the San Jacinto Quadrangle, Riverside County, California," Dibblee Geological Foundation, Dibblee Foundation Map DF-116, scale 1:24,000.

GeoLogismiki, CLiq, CPT Liquefaction Assessment Software, Version 2.2.0.32.

GeoTek, Inc., In-house proprietary information.

Post Tensioning Institute, 2012, "Standard Requirement for Design and Analysis of Shallow Post-Tensioned Concrete Foundations on Expansive Soils", PTI DC10.5-12.

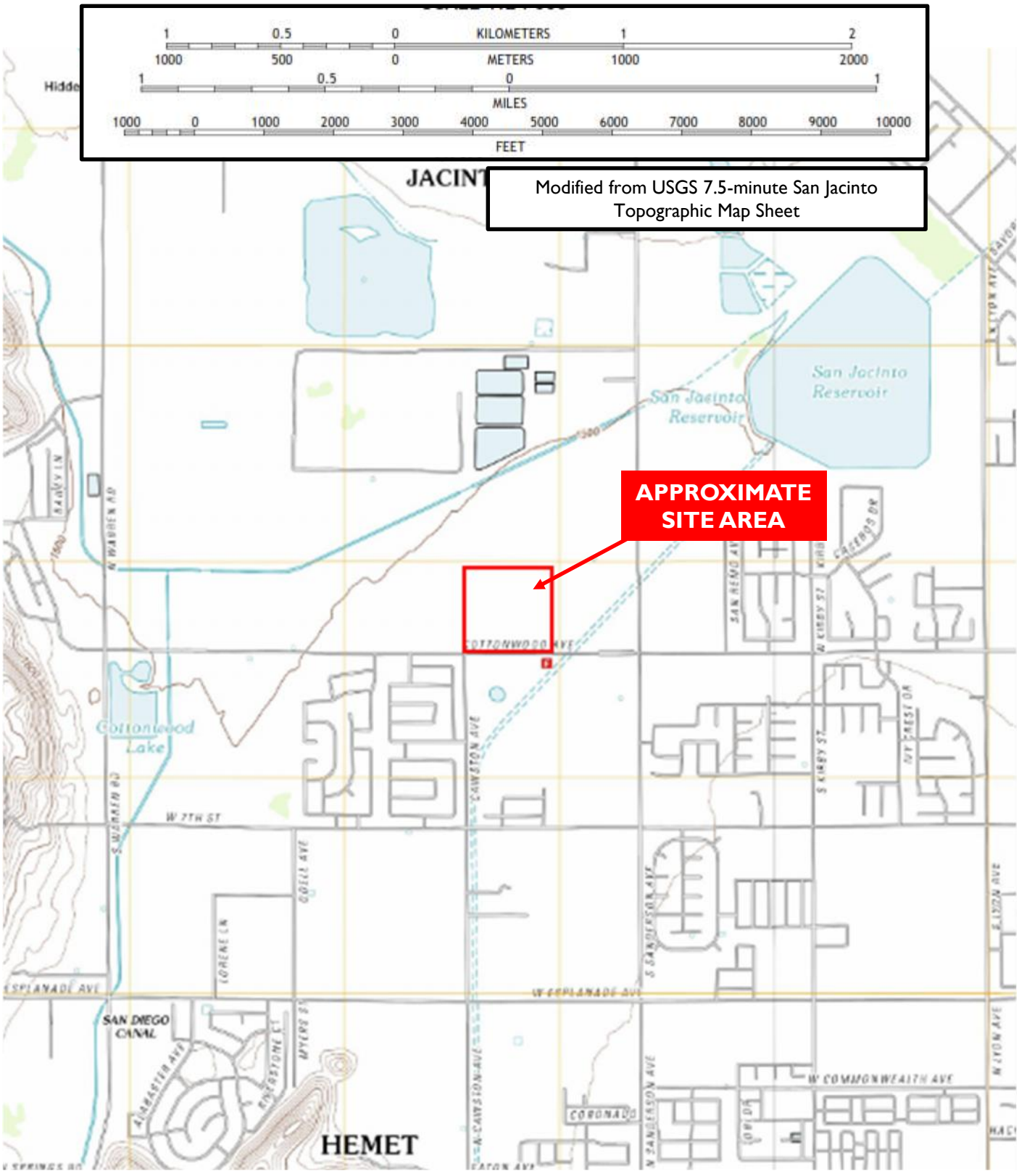
Roberge, P. R., 2000, "Corrosion Basics An Introduction", second edition.

SEA/OSHPD web service, "Seismic Design Maps" (https://seismicmaps.org).

Southern California Earthquake Center (SCEC), 1999, Martin, G. R., and Lew, M., ed., "Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California,", dated March 1999.

State of California, California Geological Survey (CGS, formerly referred to as the California Division of Mines and Geology), 2008, "Guidelines for Evaluating and Mitigating Seismic Hazards in California," Special Publication 117A.

Terzaghi, K. and Peck, R. B., 1967, "Soil Mechanics in Engineering Practice", second edition.



West Coast Partners IV, LLC.
APNs: 432-130-006 & -007
San Jacinto, Riverside County, California

GeoTek Project No. 2298-CR

NORTH

Figure 1

Site Location and General Topography Map

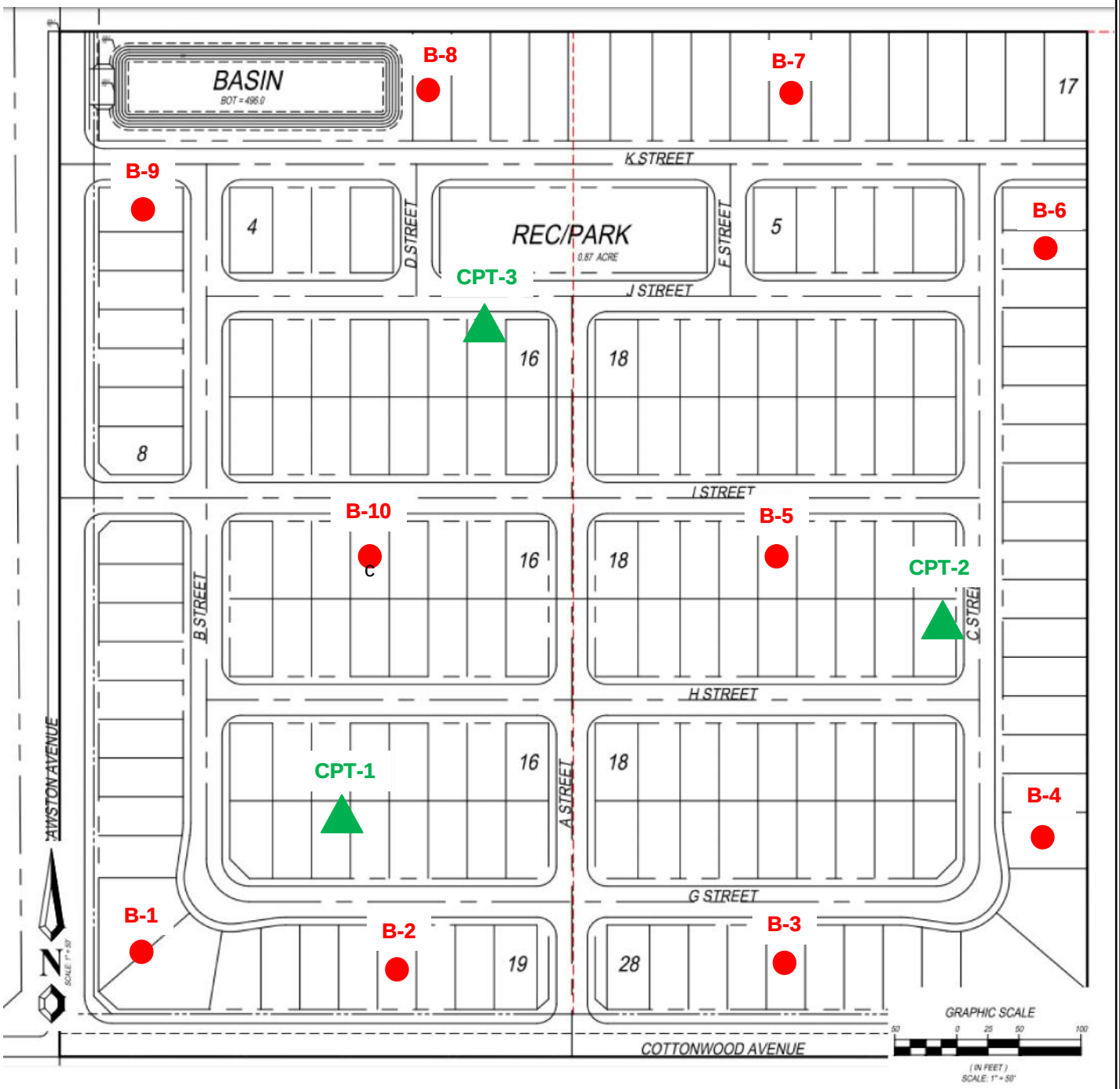
GEOTEK

Legend

(Locations are approximate)

B-10 - Approximate location of Exploratory Boring

CPT-3 - Approximate location of CPT Sounding



West Coast Partners IV, LLC
APNs 432-130-006 &-007
San Jacinto, Riverside County, California

Project No. 2298-CR

GEOTEK

Figure 2

Boring Location Map

APPENDIX A

LOGS OF EXPLORATORY BORINGS

APNs 432-130-006 and -007
City of San Jacinto, Riverside County, California
Project No. 2298-CR

GEOTEK

A - FIELD TESTING AND SAMPLING PROCEDURES

The Modified Split-Barrel Sampler (Ring)

The ring sampler is driven into the ground in accordance with ASTM Test Method D 3550. The sampler, with an external diameter of 3.0 inches, is lined with 1-inch long, thin brass rings with inside diameters of approximately 2.4 inches. The sampler is typically driven into the ground 12 or 18 inches with a 140-pound hammer free falling from a height of 30 inches. Blow counts are recorded for every 6 inches of penetration as indicated on the log of boring. The samples are removed from the sample barrel in the brass rings, sealed, and transported to the laboratory for testing.

Bulk Samples (Large)

These samples are normally large bags of earth materials over 20 pounds in weight collected from the field by means of hand digging or exploratory cuttings.

Bulk Samples (Small)

These are plastic bag samples which are normally airtight and contain less than 5 pounds in weight of earth materials collected from the field by means of hand digging or exploratory cuttings. These samples are primarily used for determining natural moisture content and classification indices.

B - BORING LOG LEGEND

The following abbreviations and symbols often appear in the classification and description of soil and rock on the log of borings:

SOILS

USCS	Unified Soil Classification System
f-c	Fine to coarse
f-m	Fine to medium

GEOLOGIC

B: Attitudes	Bedding: strike/dip
J: Attitudes	Joint: strike/dip
C: Contact line	
……..	Dashed line denotes USCS material change
———	Solid Line denotes unit / formational change
———	Thick solid line denotes end of the boring

(Additional denotations and symbols are provided on the log of boring)

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	West Coast Partners IV, LLC	**DRILLER:**	2R Drilling	**LOGGED BY:**	D. Alvarez
PROJECT NAME:	APNs 432-130-006 & -007	**DRILL METHOD:**	Hollow Stem	**OPERATOR:**	Jerry/Victor
PROJECT NO.:	2298-CR	**HAMMER:**	140#/30"	**RIG TYPE:**	CME 75
LOCATION:	San Jacinto, CA			**DATE:**	1/3/2020

Boring No.: B-1

Depth (ft)	Sample Type	Blows/ 6 in	Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Water Content (%)	Dry Density (pcf)	Others
0					**Fill Soils:**			
				SM	F SAND with silt, brown, slightly moist, some grass and rootlets			SH, EI, MD
					Alluvium:			EI=49
		8		SM-SC	Silty and clayey f SAND, light brown, moist, medium dense	18.2	107.5	
		8						
		11						
		4				13.6	115.7	Collapse
5		8						
		12						
		7		ML	SILT with sand, light brown, moist, very stiff	12.8	100.7	Collapse
		10		SP	F SAND with a trace of silt, tan, slightly moist, medium dense			
		14						
10		6		ML	SILT with sand, light brown, very moist, stiff			
		4						
		4						
15		3		SM-ML	Silty f SAND to sandy SILT, light brown, very moist, medium dense to stiff			
		4						
		6						
20		5		ML	SILT with sand, light brown, very moist, stiff			
		6						
		6						
					BORING TERMINATED AT 21.5 FEET			
					Boring backfilled with excavated soils.			
					No groundwater encountered.			
25								
30								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	West Coast Partners IV, LLC	**DRILLER:**	2R Drilling	**LOGGED BY:**	D. Alvarez
PROJECT NAME:	APNs 432-130-006 & -007	**DRILL METHOD:**	Hollow Stem	**OPERATOR:**	Jerry/Victor
PROJECT NO.:	2298-CR	**HAMMER:**	140#/30"	**RIG TYPE:**	CME 75
LOCATION:	San Jacinto, CA			**DATE:**	1/3/2020

Boring No.: B-2

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
0					**Fill Soils:**			
				SM	F SAND with silt, brown, slightly moist, few grass and rootlets			
					Alluvium:			
		9 10 9		SM	Silty f SAND, light brown, moist, medium dense	17.2	109.0	
5		4 5 10		SM-ML	Silty f SAND to sandy SILT, brown, very moist, medium dense to stiff	16.7	110.9	
10		9		ML	SILT with sand, brown, very moist, very stiff	18.3	101.9	
		11 12		SM	F-m SAND with silt, tan, slightly moist, medium dense			
		4 7 6		ML	SILT with sand, light brown to tan, very moist, stiff			
15		5 7 10		SM	M SAND with silt, tan, moist, medium dense			
		10 13 24			M SAND with silt, tan, moist, dense			
20					**BORING TERMINATED AT 20 FEET**			
					Boring backfilled with excavated soils. No groundwater encountered.			
25								
30								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	West Coast Partners IV, LLC	**DRILLER:**	2R Drilling	**LOGGED BY:**	D. Alvarez
PROJECT NAME:	APNs 432-130-006 & -007	**DRILL METHOD:**	Hollow Stem	**OPERATOR:**	Jerry/Victor
PROJECT NO.:	2298-CR	**HAMMER:**	140#/30"	**RIG TYPE:**	CME 75
LOCATION:	San Jacinto, CA			**DATE:**	1/3/2020

Boring No.: B-3

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
0				SM	**Fill Soils:** F SAND with silt, brown, slightly moist, some grass and rootlets			
					Alluvium:			
5		4 7 10 9 14 23		SM	Silty f SAND, brown, moist, medium dense	15.7	112.1	
					F-m SAND with silt, brown, very moist, dense	15.8	112.1	
10		4 10 11		SM-ML	Silty f SAND to sandy SILT, brown, very moist, medium dense to very stiff	17.7	114.4	
15		3 5 7		ML	SILT with sand, brown, very moist, stiff			
20		14 15 14		SM	F-m SAND with silt, tan, very moist, dense			
					BORING TERMINATED AT 21.5 FEET			
					Boring backfilled with excavated soils. No groundwater encountered.			
25								
30								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	West Coast Partners IV, LLC	**DRILLER:**	2R Drilling	**LOGGED BY:**	D. Alvarez
PROJECT NAME:	APNs 432-130-006 & -007	**DRILL METHOD:**	Hollow Stem	**OPERATOR:**	Jerry/Victor
PROJECT NO.:	2298-CR	**HAMMER:**	140#/30"	**RIG TYPE:**	CME 75
LOCATION:	San Jacinto, CA			**DATE:**	1/3/2020

Boring No.: B-4

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
0				SM	**Fill Soils:** F SAND with silt, brown, slightly moist, some grass and rootlets			
					Alluvium:			
5		12 12 13		SM-ML	Silty f SAND to sandy SILT, brown, moist, medium dense to very stiff	14.6	116.7	Collapse
10		6 10 9		SP	F-m SAND, tan, slightly moist, medium dense	12.0	88.7	
15		17 19 14			F-m SAND with silt, tan, slightly moist, medium dense	7.3	110.3	
20		7 13 21		SM	F-m SAND with silt, tan, moist, dense			
					BORING TERMINATED AT 21.5 FEET			
					Boring backfilled with excavated soils. No groundwater encountered.			
25								
30								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	West Coast Partners IV, LLC	**DRILLER:**	2R Drilling	**LOGGED BY:**	D. Alvarez
PROJECT NAME:	APNs 432-130-006 & -007	**DRILL METHOD:**	Hollow Stem	**OPERATOR:**	Jerry/Victor
PROJECT NO.:	2298-CR	**HAMMER:**	140#/30"	**RIG TYPE:**	CME 75
LOCATION:	San Jacinto, CA			**DATE:**	1/3/2020

Boring No.: B-5

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
0				SM	**Fill Soils:** F SAND with silt, brown, slightly moist, some grass and rootlets			
					Alluvium:			
		7 7 7		SM	Silty f SAND, light brown, moist, loose	12.8	103.9	
5		6 9 10			Silty f SAND, brown, moist, medium dense	5.6	102.7	
		9 11 18			F-m SAND with silt, light brown, moist, medium dense			
10		4 4 7		ML	SILT with clay, brown, very moist, medium stiff	27.0	91.5	SA % Passing #200 = 69
15		3 5 6		CL	CLAY with silt, brown, very moist, medium stiff	28.5		SA, AL % Passing %200 = 78.6 LL=43; PI=20
20		12 23 30		SM	Silty f-m SAND, tan, moist, dense			SA % Passing #200 = 12.1
25		7 12 13		SP	F-m SAND, tan, moist, medium dense			
30		6 7 17		SM	Silty f-m SAND, brown, moist to very moist, medium dense			

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	West Coast Partners IV, LLC	**DRILLER:**	2R Drilling	**LOGGED BY:**	D. Alvarez
PROJECT NAME:	APNs 432-130-006 & -007	**DRILL METHOD:**	Hollow Stem	**OPERATOR:**	Jerry/Victor
PROJECT NO.:	2298-CR	**HAMMER:**	140#/30"	**RIG TYPE:**	CME 75
LOCATION:	San Jacinto, CA			**DATE:**	1/3/2020

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	Boring No.: B-5 (Continued) / MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
30								
35		8 13 14		SP	M-c SAND, tan, slightly moist, medium dense			SA % Passing #200 = 4.3
40		15 15 11		SM	Silty f-m SAND, brown, slightly moist, medium dense			SA % Passing #200 = 40.2
45		8 11 13			Silty m-c SAND with clay, brown, very moist, medium dense			SA % Passing #200 = 14.1
50		9 15 19		SP	M-c SAND, brown to tan, moist, dense			
					BORING TERMINATED AT 51.5 FEET Boring backfilled with excavated soils. No groundwater encountered.			
55								
60								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	West Coast Partners IV, LLC	**DRILLER:**	2R Drilling	**LOGGED BY:**	D. Alvarez
PROJECT NAME:	APNs 432-130-006 & -007	**DRILL METHOD:**	Hollow Stem	**OPERATOR:**	Jerry/Victor
PROJECT NO.:	2298-CR	**HAMMER:**	140#/30"	**RIG TYPE:**	CME 75
LOCATION:	San Jacinto, CA			**DATE:**	1/3/2020

Boring No.: B-6

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
0				SM	**Fill Soils:** F SAND with silt, brown, slightly moist, some grass and rootlets			
					Alluvium:			
		38		SM	Silty f SAND, light brown, slightly moist, very dense	5.5	121.3	
		46						
		37						
		7			-becomes medium dense @ 4.0 feet	6.3	107.4	
5		21						
		21						
		13		SP	M SAND, tan, slightly moist, medium dense	2.6	101.7	
		13						
		14						
10								
		4						
		8		ML	SILT with sand, brown, very moist, stiff			
15		12						
		6			-becomes stiff @ 19.0 feet			
20		5						
		9						
					BORING TERMINATED AT 20.5 FEET			
					Boring backfilled with excavated soils. No groundwater encountered.			
25								
30								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	West Coast Partners IV, LLC	**DRILLER:**	2R Drilling	**LOGGED BY:**	D. Alvarez
PROJECT NAME:	APNs 432-130-006 & -007	**DRILL METHOD:**	Hollow Stem	**OPERATOR:**	Jerry/Victor
PROJECT NO.:	2298-CR	**HAMMER:**	140#/30"	**RIG TYPE:**	CME 75
LOCATION:	San Jacinto, CA			**DATE:**	1/3/2020

Boring No.: B-7

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
0					**Fill Soils:**			
				SM	F SAND with silt, brown, slightly moist, some grass and rootlets			SH, EI, MD
					Alluvium:			EI=20
		16 14 14		SM	Silty f SAND, light brown, slightly moist, medium dense	11.3	114.7	
5		7 10 13		ML	SILT with sand, brown, very moist, stiff	16.1	105.4	
10		7 9 11			SILT with trace f sand, brown, very moist, stiff	18.3	101.6	
15		4 5 8		SM	Silty f-m SAND, brown, moist to very moist, medium dense			
		6 13 17			F SAND with silt, tan, slightly moist, dense			
					BORING TERMINATED AT 19 FEET			
20					Boring backfilled with excavated soils. No groundwater encountered.			
25								
30								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	West Coast Partners IV, LLC	**DRILLER:**	2R Drilling	**LOGGED BY:**	D. Alvarez
PROJECT NAME:	APNs 432-130-006 & -007	**DRILL METHOD:**	Hollow Stem	**OPERATOR:**	Jerry/Victor
PROJECT NO.:	2298-CR	**HAMMER:**	140#/30"	**RIG TYPE:**	CME 75
LOCATION:	San Jacinto, CA			**DATE:**	1/3/2020

Boring No.: B-8

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
0				SM	**Fill Soils:** F SAND with silt, brown, slightly moist, some grass and rootlets			
					Alluvium:			
5		22 21 19		SP	F-m SAND, brown-tan, slightly moist, medium dense	3.2	108.2	Collapse
10		4 7 8		ML	SILT with sand, brown, very moist, stiff	32.8	91.7	
15		11 11 14		SM-ML	Silty f SAND to sandy SILT, brown, very moist, medium dense to very stiff			
20		15 19 24		SP	F-m SAND, tan, slightly moist, dense			
					BORING TERMINATED AT 21.5 FEET Boring backfilled with excavated soils. No groundwater encountered.			
25								
30								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	West Coast Partners IV, LLC	**DRILLER:**	2R Drilling	**LOGGED BY:**	D. Alvarez
PROJECT NAME:	APNs 432-130-006 & -007	**DRILL METHOD:**	Hollow Stem	**OPERATOR:**	Jerry/Victor
PROJECT NO.:	2298-CR	**HAMMER:**	140#/30"	**RIG TYPE:**	CME 75
LOCATION:	San Jacinto, CA			**DATE:**	1/3/2020

Boring No.: B-9

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
0				SM	**Fill Soils:** F SAND with silt, brown, slightly moist, some grass and rootlets			
					Alluvium:			
5		9 9 12		ML	SILT with sand, brown, very moist, stiff	19.2	107.8	
		6		SM-ML	Silty f SAND to sandy SILT, brown, very moist, stiff	30.0	91.8	
10		8 8		SM	Silty f SAND, brown, very moist, medium dense			
15		8 10 15		SM-ML	Silty f SAND to sandy SILT, brown, very moist, medium dense to very stiff			
20		7 9 13			Silty f SAND to sandy SILT, brown, moist, medium denst to very stiff			
					BORING TERMINATED AT 20.5 FEET			
					Boring backfilled with excavated soils. No groundwater encountered.			
25								
30								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

GeoTek, Inc.

LOG OF EXPLORATORY BORING

CLIENT:	West Coast Partners IV, LLC	**DRILLER:**	2R Drilling	**LOGGED BY:**	D. Alvarez
PROJECT NAME:	APNs 432-130-006 & -007	**DRILL METHOD:**	Hollow Stem	**OPERATOR:**	Jerry/Victor
PROJECT NO.:	2298-CR	**HAMMER:**	140#/30"	**RIG TYPE:**	CME 75
LOCATION:	San Jacinto, CA			**DATE:**	1/3/2020

Boring No.: B-10

Depth (ft)	SAMPLES: Sample Type	SAMPLES: Blows/ 6 in	SAMPLES: Sample Number	USCS Symbol	MATERIAL DESCRIPTION AND COMMENTS	Laboratory Testing: Water Content (%)	Laboratory Testing: Dry Density (pcf)	Laboratory Testing: Others
0				SM	**Fill Soils:** F SAND with silt, brown, slightly moist, some grass and rootlets			
					Alluvium:			
		5 7 8		SM	Silty f SAND, brown, moist, loose	16.1	110.8	Collapse
5		7 9 15			-becomes medium dense @ 5.0 feet	14.6	116.4	Collapse
10		7 10 15		ML	SILT with sand and trace clay, brown, very moist, very stiff	29.5	95.0	
15		6 9 11		SM-ML	Silty f SAND to sandy SILT, brown, very moist, medium dense to very stiff			
20		15 17 17		SM	Silty f SAND, tan, moist, dense			
					BORING TERMINATED AT 21.5 FEET Boring backfilled with excavated soils. No groundwater encountered.			
25								
30								

LEGEND

Sample type: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

Lab testing: AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

APPENDIX B

LOGS OF CPT SOUNDINGS

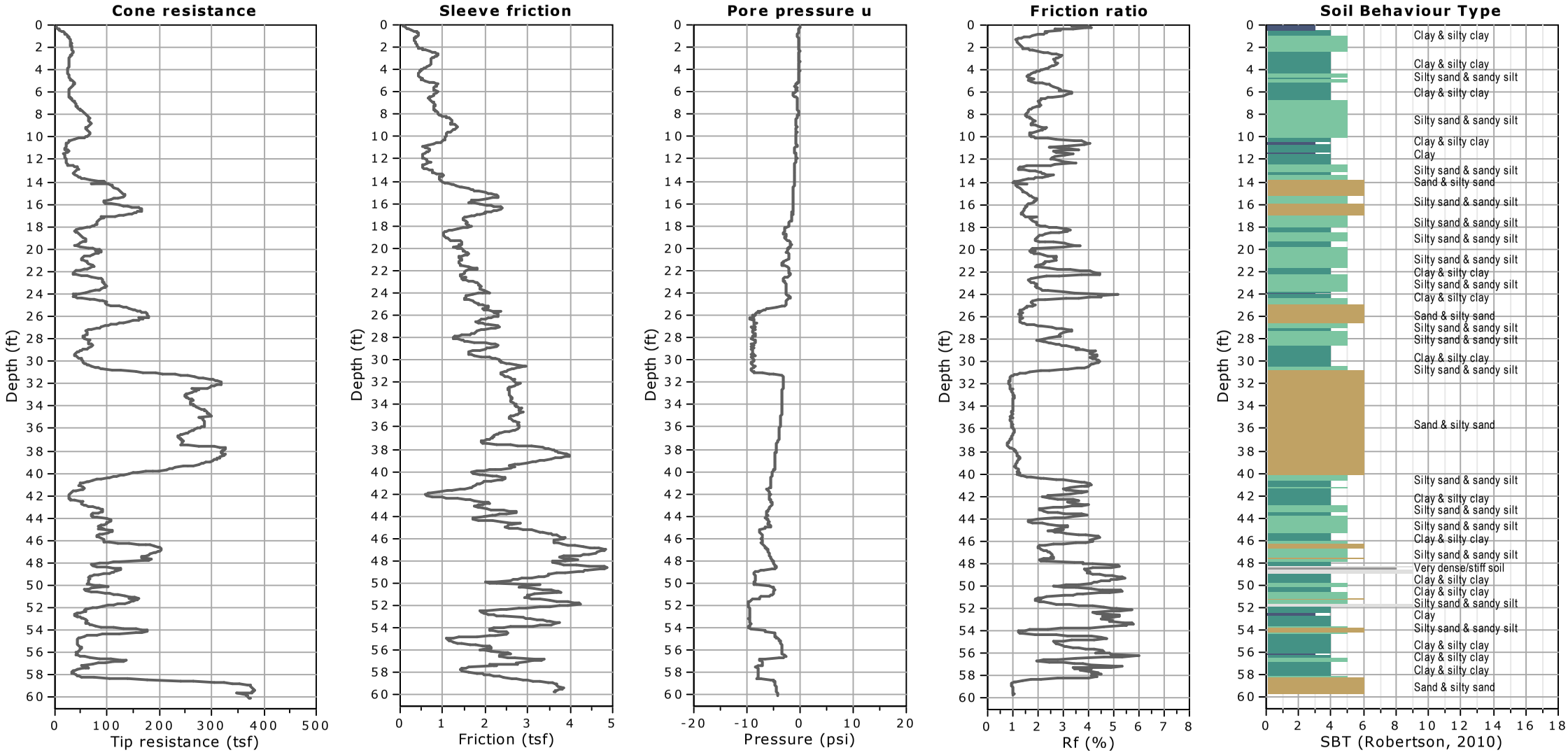
APNs 432-130-006 and -007
City of San Jacinto, Riverside County, California
Project No. 2298-CR

GEOTEK

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

Project: GeoTek / Cottonwood Avenue
Location: San Jacinto, CA

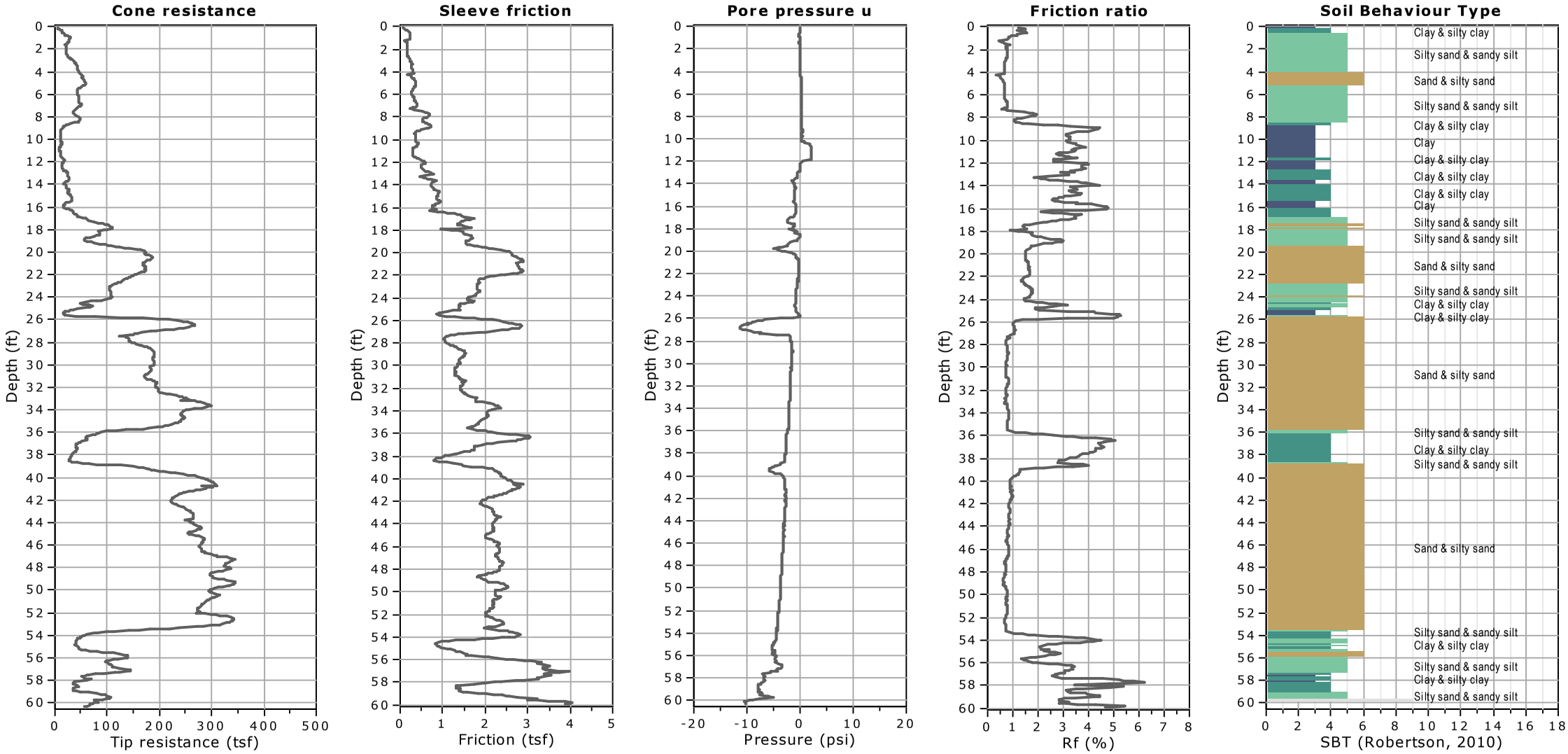
CPT-1
Total depth: 60.11 ft, Date: 2/5/2020



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

Project: GeoTek / Cottonwood Avenue
Location: San Jacinto, CA

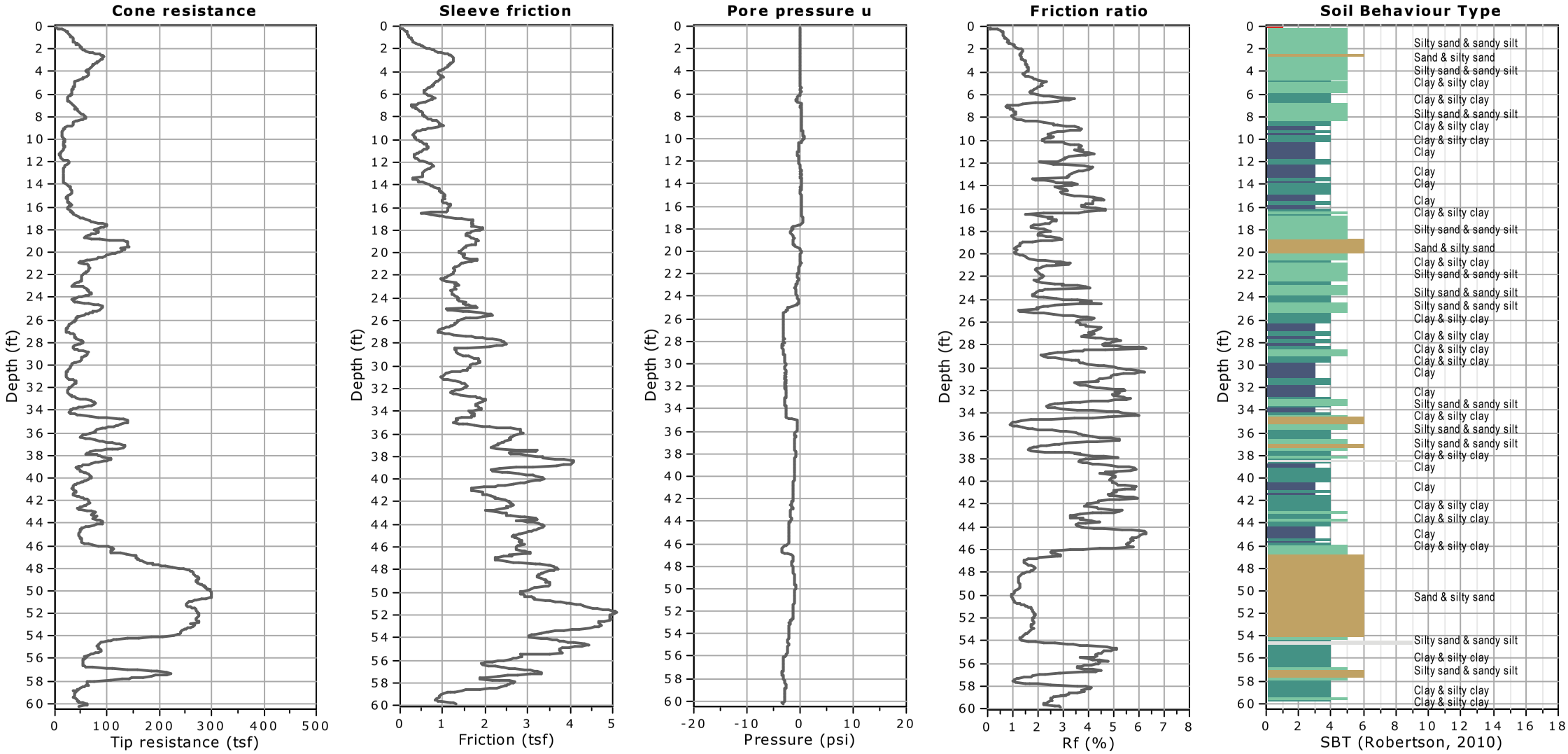
CPT-2
Total depth: 60.31 ft, Date: 2/5/2020



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

Project: GeoTek / Cottonwood Avenue
Location: San Jacinto, CA

CPT-3
Total depth: 60.25 ft, Date: 2/5/2020



APPENDIX C

LABORATORY TEST RESULTS

APNs 432-130-006 and -007
City of San Jacinto, Riverside County, California
Project No. 2298-CR

GEOTEK

SUMMARY OF LABORATORY TESTING

Atterberg Limits

Atterberg limits testing were performed on three fine-grained samples collected from the site. The tests were performed in general accordance with ASTM D 4318. The test results are shown on the logs of borings in Appendix A.

Classification

Soils were classified visually in general accordance to the Unified Soil Classification System (ASTM Test Method D 2487). The soil classifications are shown on the logs of borings in Appendix A.

Consolidation

Consolidation/collapse testing was performed on selected samples of the site soils according to ASTM Test Method D 2435. The results of this testing are presented in Appendix C.

Direct Shear

Shear testing was performed in a direct shear machine of the strain-control type in general accordance with ASTM Test Method D 3080. The rate of deformation was approximately 0.035 inch per minute. The sample was sheared under varying confining loads in order to determine the coulomb shear strength parameters, angle of internal friction and cohesion. Three tests were performed on relatively undisturbed soil samples. The shear test results are presented in Appendix C.

Expansion Index

Expansion Index testing was performed on one soil sample. Testing was performed in general accordance with ASTM Test Method D 4829. The results of the testing are provided below.

Boring No.	Depth (ft.)	Description	Expansion Index	Classification
B-1	1-5	Silty Clayey Sand	49	Low
B-7	1-5	Silty Sand	20	Very low

In-Situ Moisture and Density

The natural water content was determined (ASTM D 2216) on samples of the materials recovered from the subsurface exploration. In addition, in-place dry density determinations (ASTM D 2937) were performed on relatively undisturbed samples to measure the unit weight of the subsurface soils. Results of these tests are shown on the boring logs at the appropriate sample depths in Appendix A.

Moisture-Density Relationship

Laboratory testing was performed on a sample obtained during the subsurface exploration. The laboratory maximum dry density and optimum moisture content was determined in general accordance with ASTM D 1557. The results of the testing are provided below and in Appendix C.

Boring No.	Depth (ft.)	Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
B-1	1-5	Silty Clayey Sand	116.0	13.5
B-7	1-5	Silty Sand	123.0	11.0

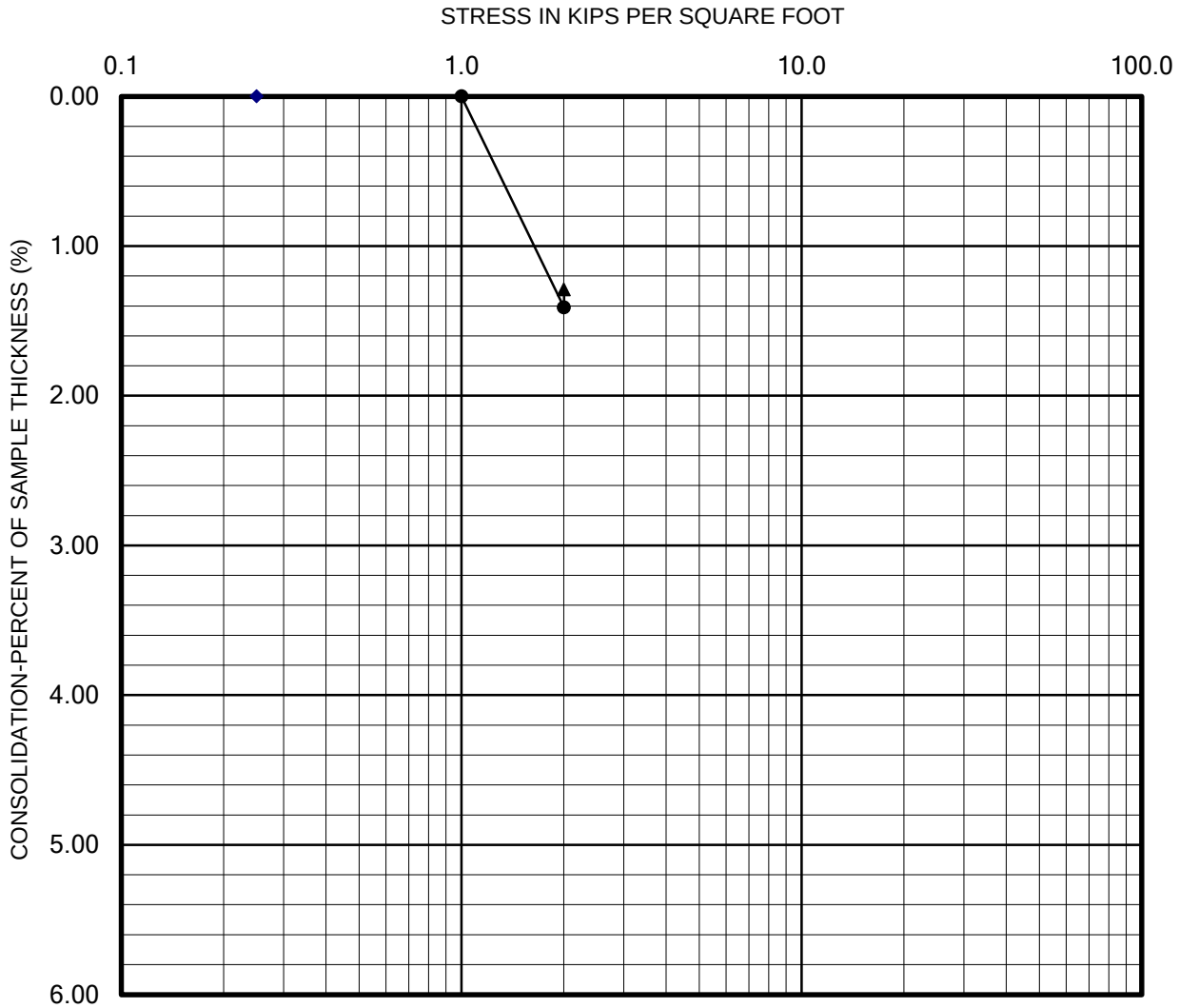
Percent of Soil Finer than No. 200 Sieve

Tests to determine the percent of soil finer than No. 200 sieve were performed on selected samples obtained from the property. The tests were conducted in general accordance with ASTM D1140. The test results are shown on the logs of borings in Appendix A.

Sulfate Content, Resistivity and Chloride Content

Testing to determine the water-soluble sulfate content was performed by others in general accordance with ASTM D4327. Resistivity testing was completed by others in general accordance with ASTM G187. Testing to determine the chloride content was performed by others in general accordance with ASTM D4327. The results of the testing are provided below and in Appendix B.

Boring No.	Depth (ft.)	pH ASTM G51	Chloride ASTM D4327 (mg/kg)	Sulfate ASTM D4327 (% by weight)	Resistivity ASTM G187 (ohm-cm)
B-1	1-5	8.2	535	0.0621	938
B-7	1-5	9.2	136.2	0.0184	2,680



Seating Cycle
Loading Prior to Inundation
Loading After Inundation
Rebound Cycle

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4546

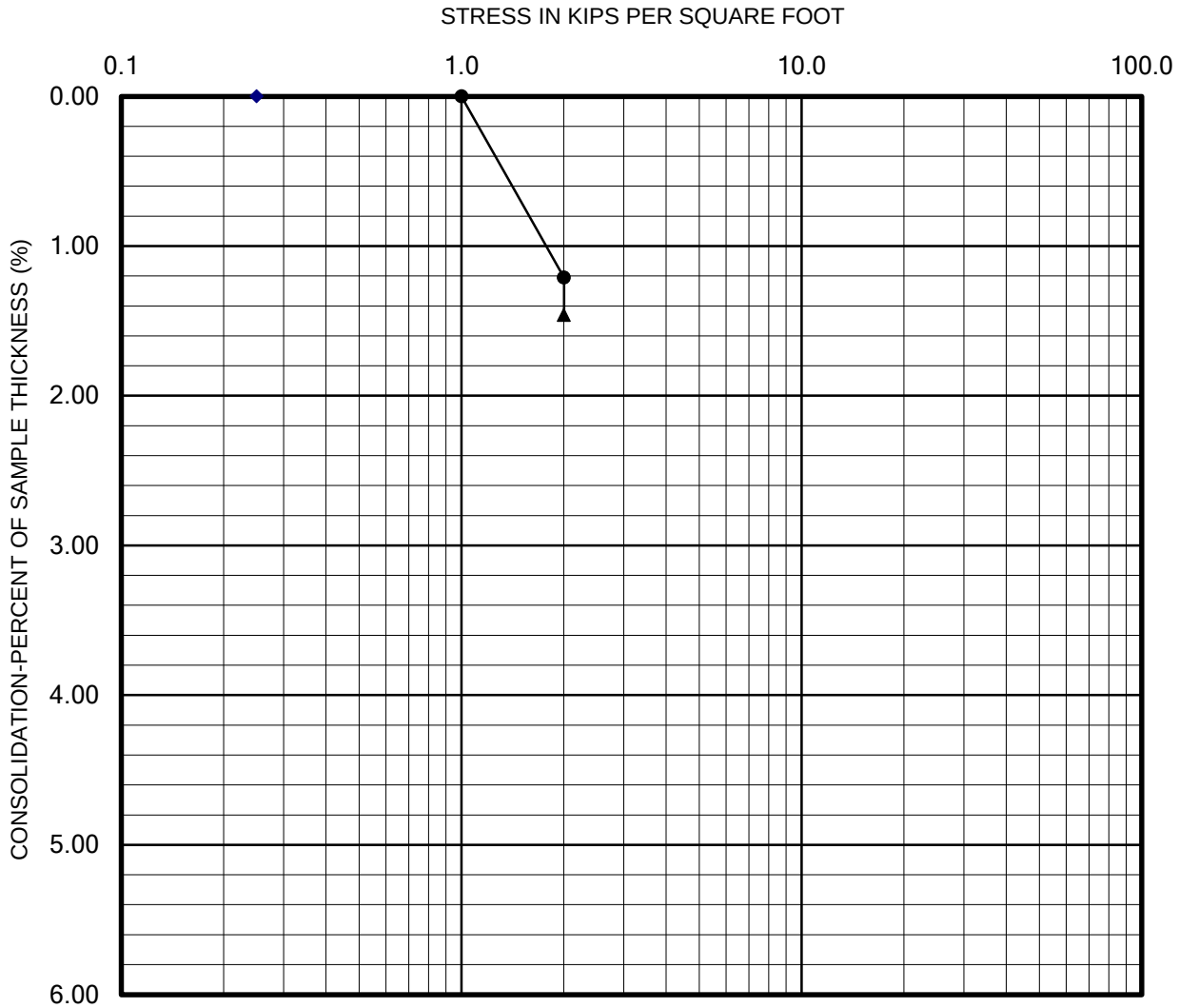
GEOTEK

CHECKED BY: RRR	Lab: DI
PROJECT NO.: 2298-CR	Date: 02/2020

COLLAPSE REPORT

Sample: B-1 @ 4'

APNs 432-130-006 and -007
San Jacinto, California



Seating Cycle
Loading Prior to Inundation
Loading After Inundation
Rebound Cycle

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4546

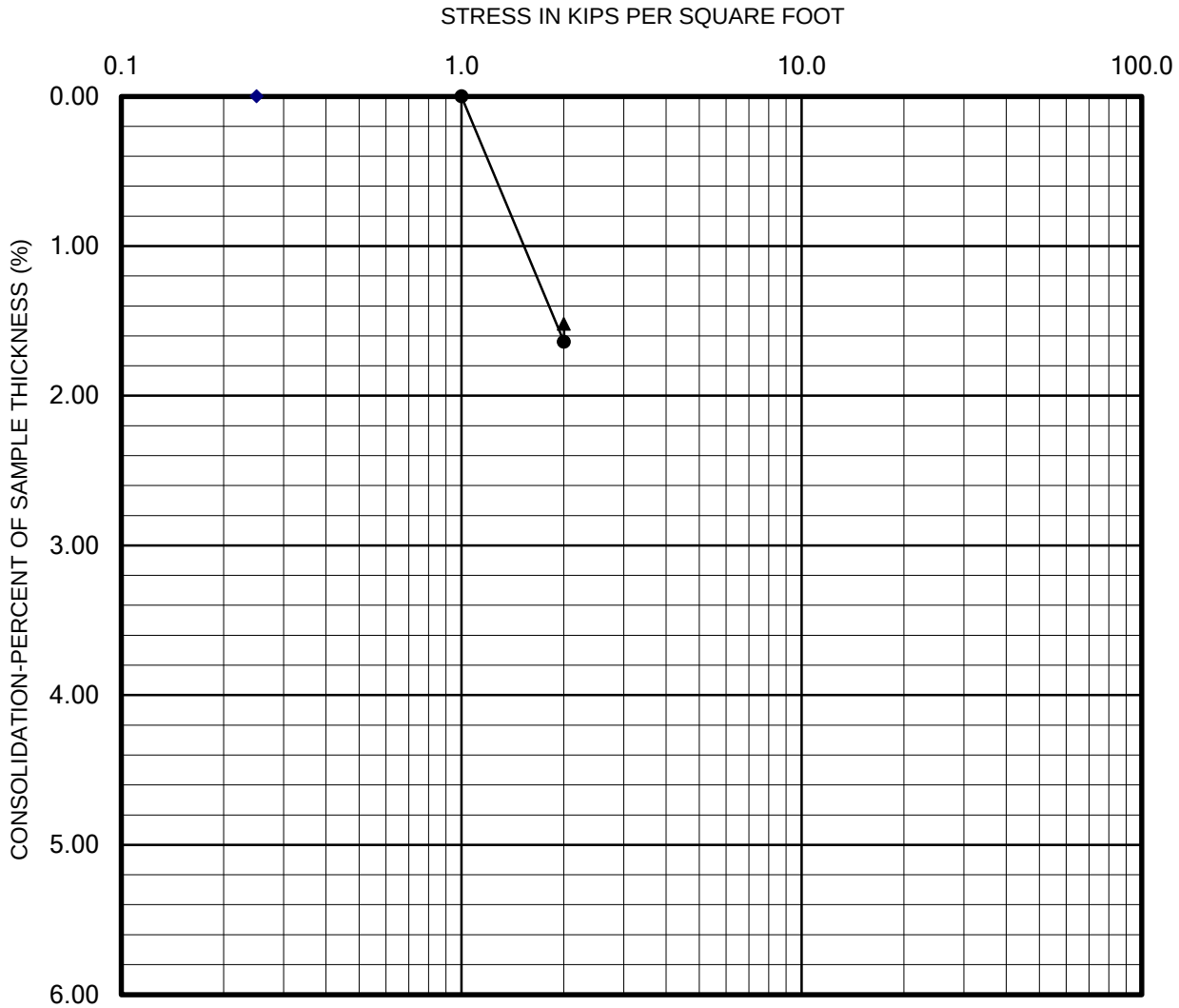
GEOTEK

CHECKED BY: RRR	Lab: DI
PROJECT NO.: 2298-CR	Date: 02/2020

COLLAPSE REPORT

Sample: B-1 @ 7.5'

APNs 432-130-006 and -007
San Jacinto, California



Seating Cycle
Loading Prior to Inundation
Loading After Inundation
Rebound Cycle

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4546

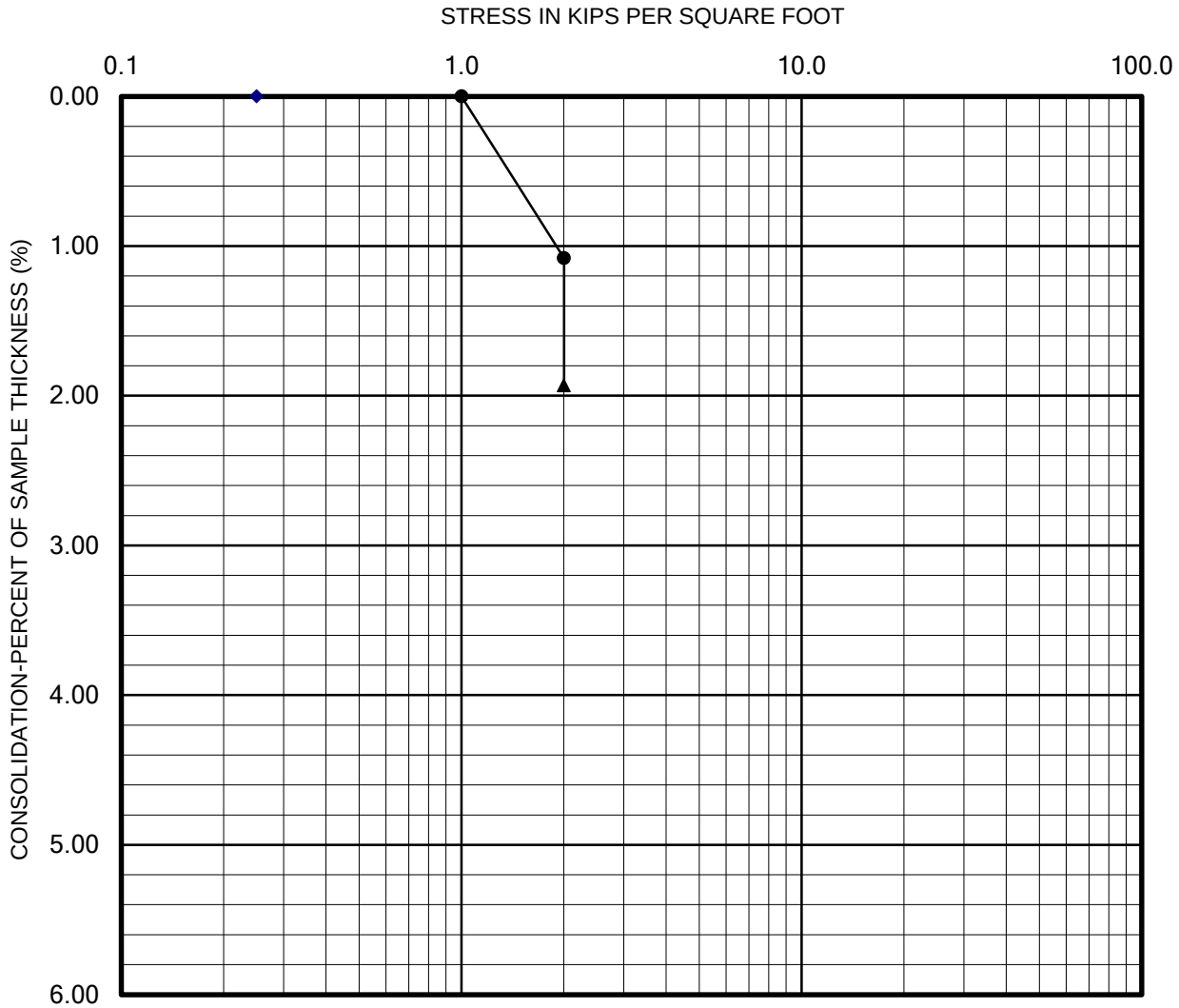
GEOTEK

CHECKED BY: RRR	Lab: DI
PROJECT NO.: 2298-CR	Date: 02/2020

COLLAPSE REPORT

Sample: B-4 @ 5'

APNs 432-130-006 and -007
San Jacinto, California



Seating Cycle
Loading Prior to Inundation
Loading After Inundation
Rebound Cycle

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4546

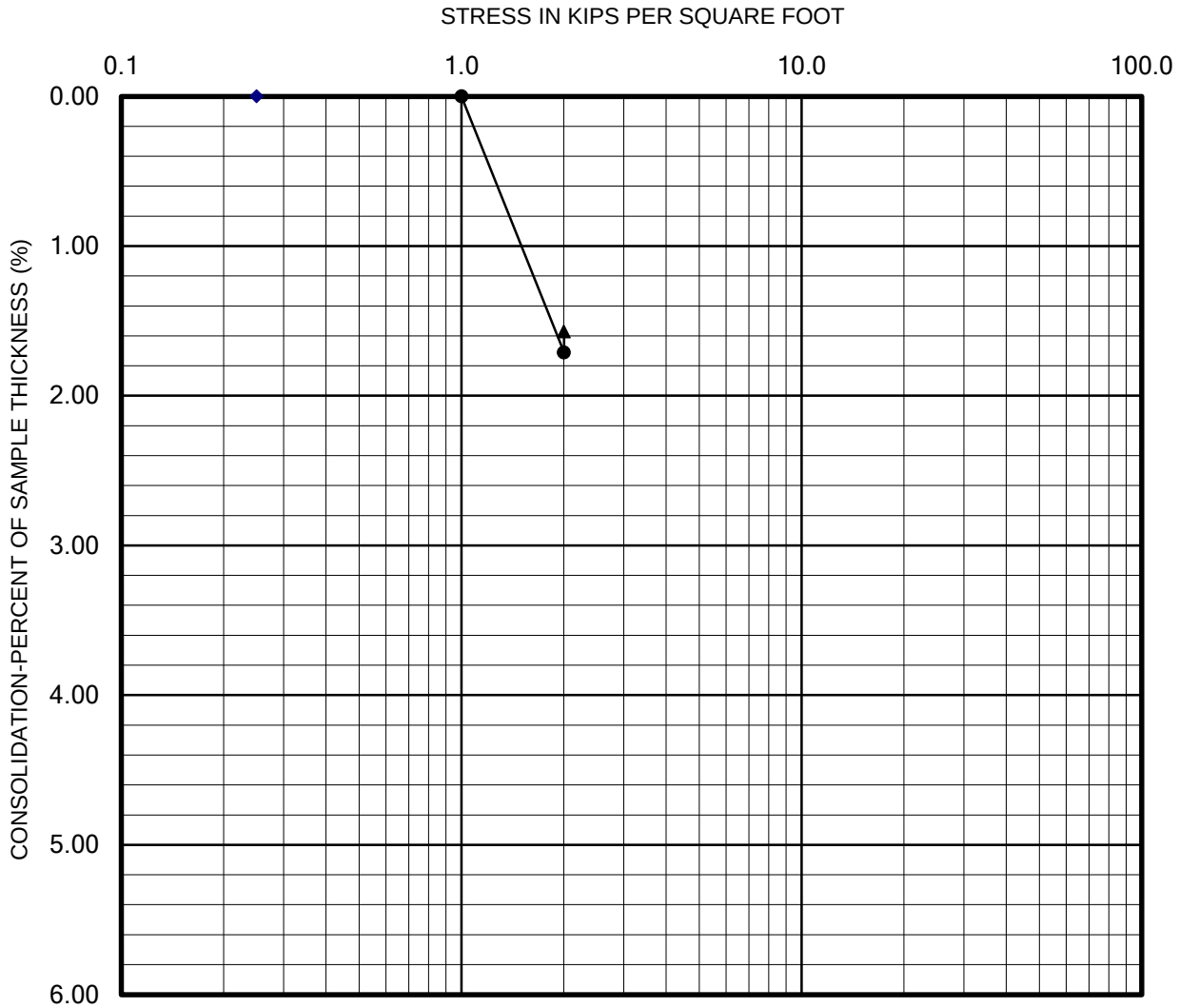
GEOTEK

CHECKED BY: RRR	Lab: DI
PROJECT NO.: 2298-CR	Date: 02/2020

COLLAPSE REPORT

Sample: B-8 @ 5'

APNs 432-130-006 and -007
San Jacinto, California



Seating Cycle
Loading Prior to Inundation
Loading After Inundation
Rebound Cycle

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4546

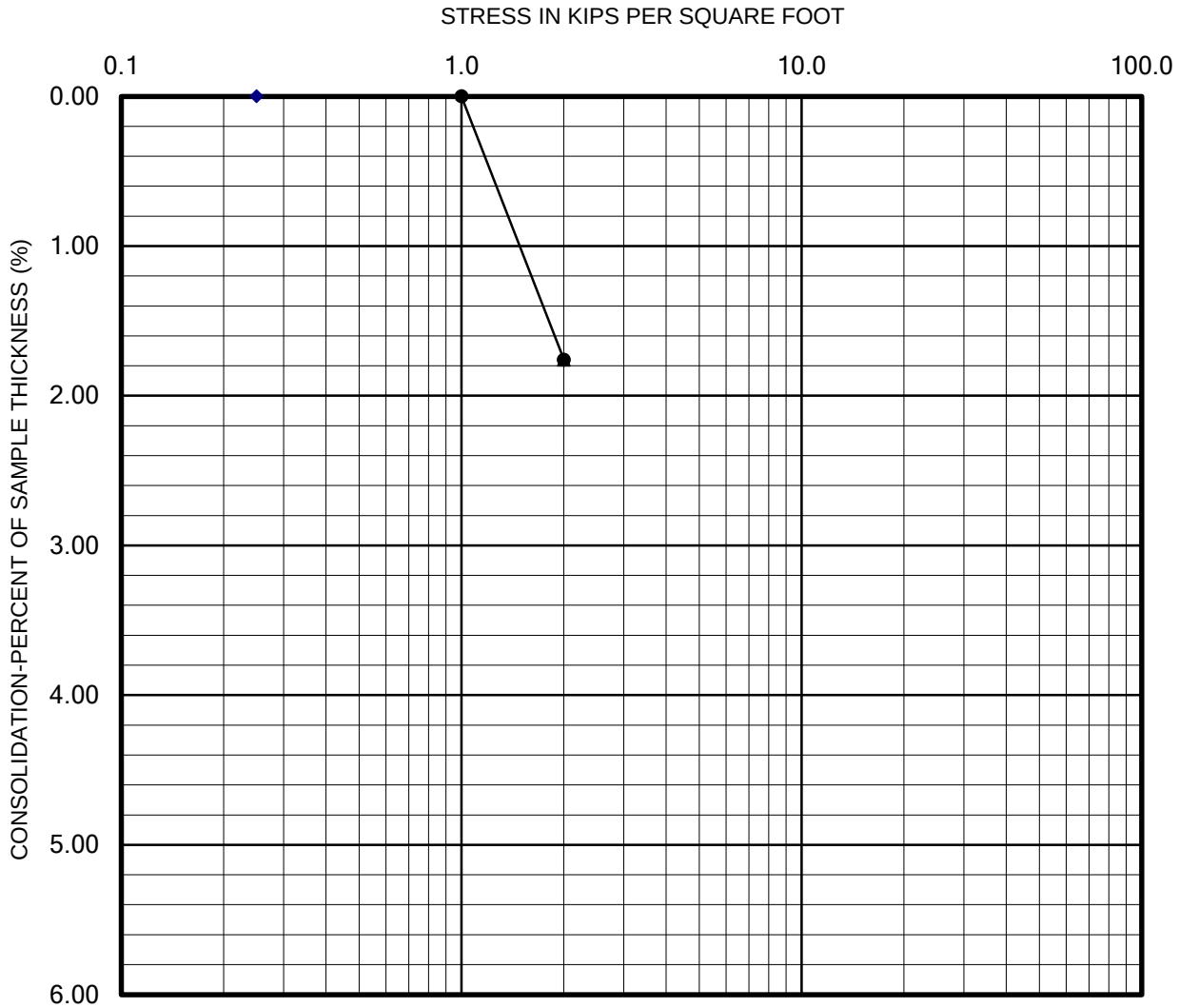
GEOTEK

CHECKED BY: RRR	Lab: DI
PROJECT NO.: 2298-CR	Date: 02/2020

COLLAPSE REPORT

Sample: B-10 @ 3'

APNs 432-130-006 and -007
San Jacinto, California



Seating Cycle
Loading Prior to Inundation
Loading After Inundation
Rebound Cycle

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4546

GEOTEK

CHECKED BY: RRR	Lab: DI
PROJECT NO.: 2298-CR	Date: 02/2020

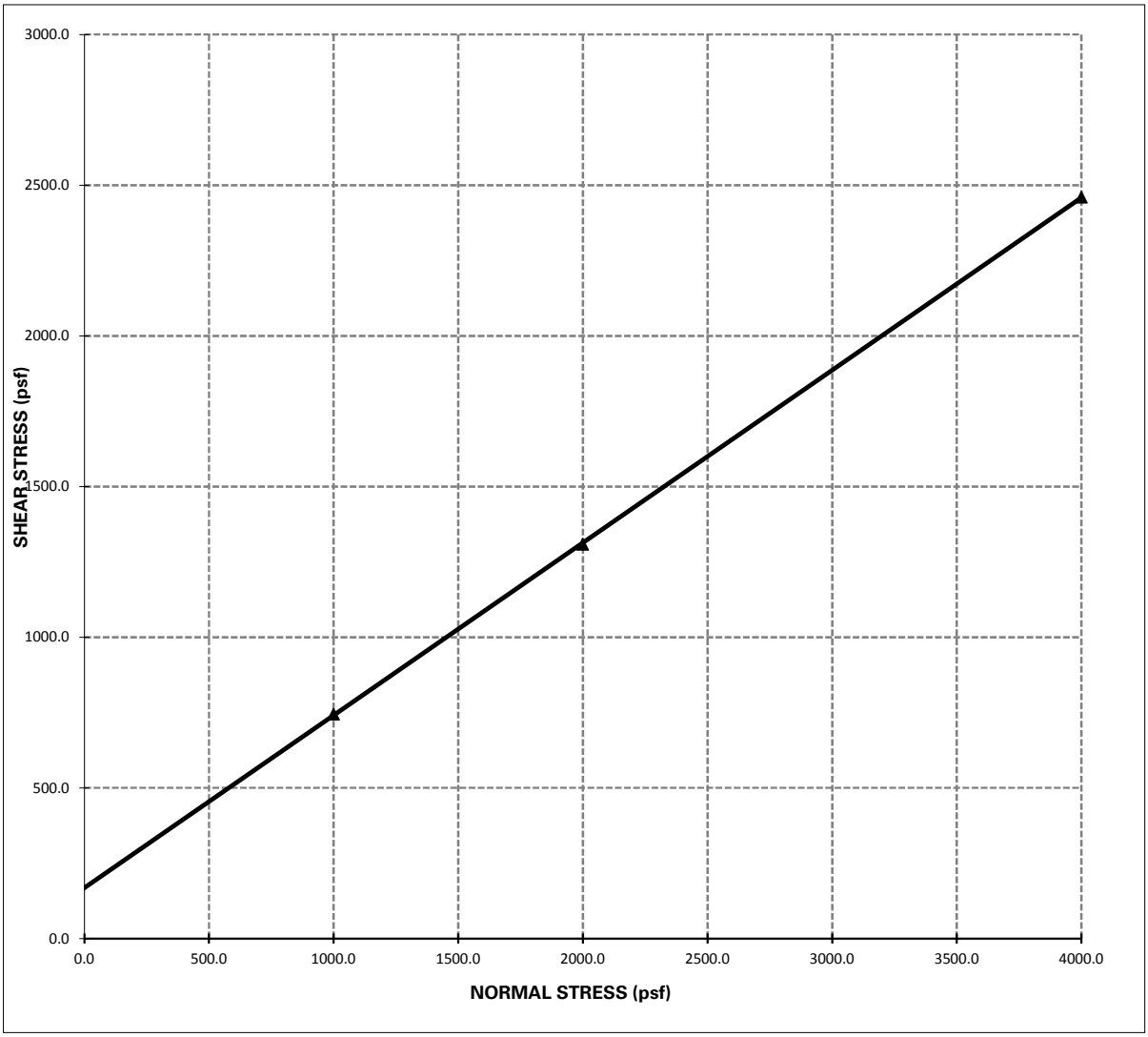
COLLAPSE REPORT

Sample: B-10 @ 5'

APNs 432-130-006 and -007
San Jacinto, California

DIRECT SHEAR TEST

Project Name:	San Jacinto	***Sample Location:***	B-1 @ 1 - 5
Project Number:	2298-CR	***Date Tested:***	1/22/2020



Shear Strength: Φ = **29.8** ° , **C = 168.00 psf**

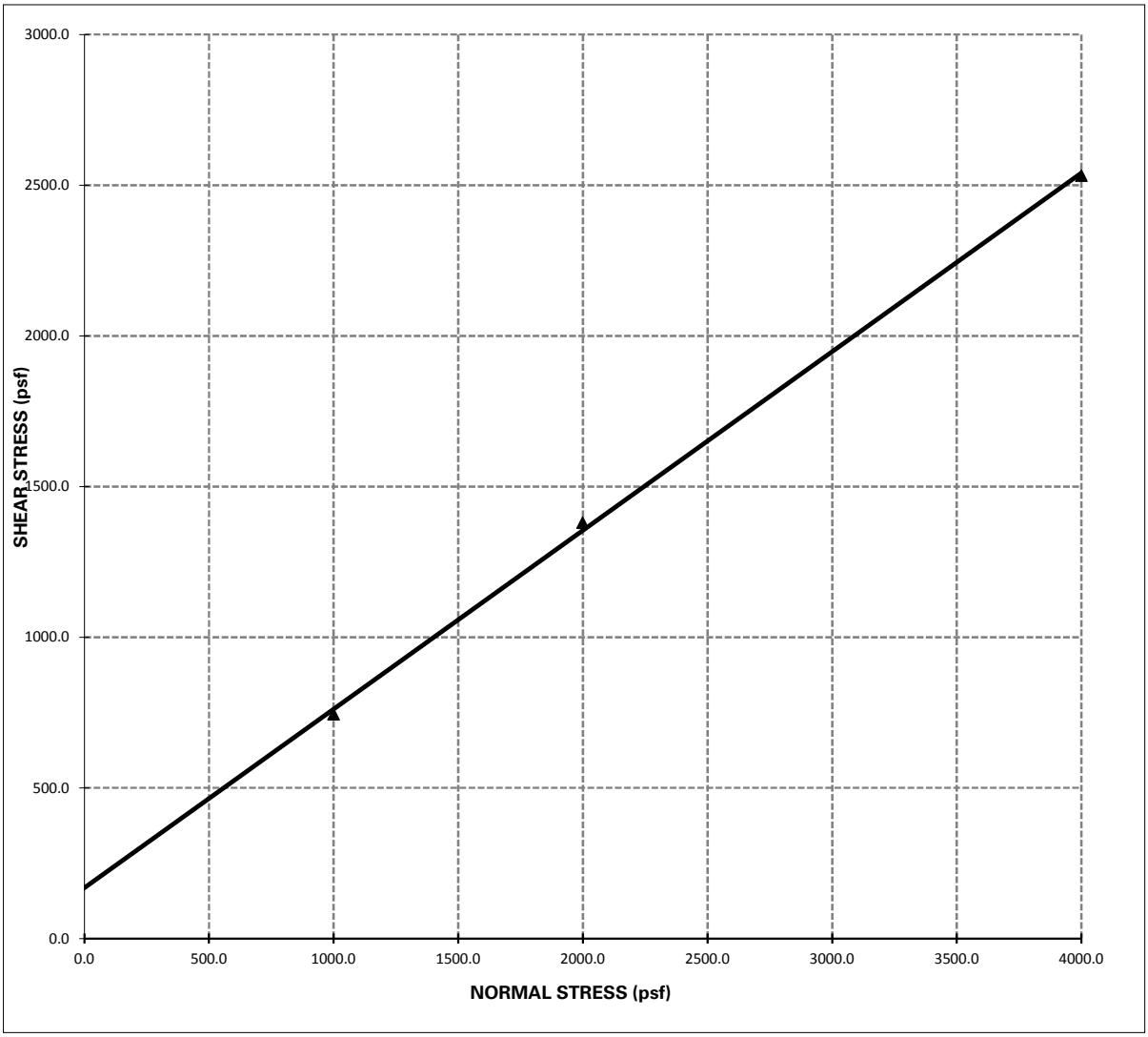
Notes: 1 - The soil specimen used in the shear box was a ring sample remolded to approximately 90% relative compaction from a bulk sample collected during the field investigation.

2 - The above reflect direct shear strength at saturated conditions.

3 - The tests were run at a shear rate of 0.035 in/min.

DIRECT SHEAR TEST

Project Name:	San Jacinto	***Sample Location:***	B-7 @ 1 - 5
Project Number:	2298-CR	***Date Tested:***	1/22/2020



Shear Strength: Φ = **30.7** ° , **C = 168.00 psf**

Notes: 1 - The soil specimen used in the shear box was a ring sample remolded to approximately 90% relative compaction from a bulk sample collected during the field investigation.

2 - The above reflect direct shear strength at saturated conditions.

3 - The tests were run at a shear rate of 0.035 in/min.

GEOTEK

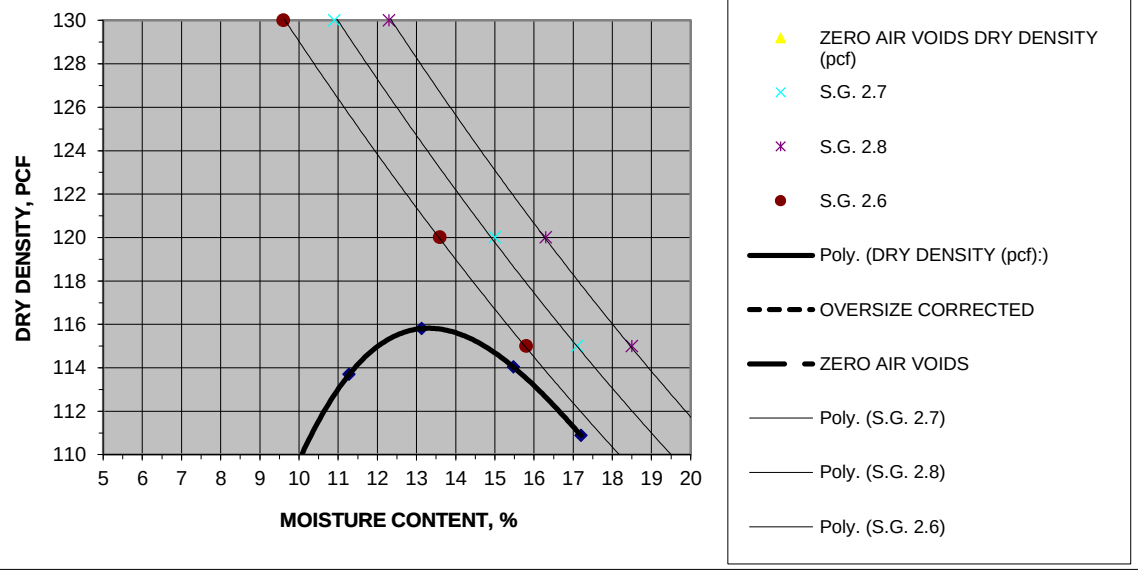
MOISTURE/DENSITY RELATIONSHIP

Client:	West Coast Inland Partners IV, LLC	**Job No.:**	2298-CR
Project:	APNs 432-130-006 and -007	**Lab No.:**	Corona
Location:	San Jacinto		
Material Type:	Brown Clayey Fine Sand		
Material Supplier:	-		
Material Source:	-		
Sample Location:	B-1 @ 1 - 5		
	-		
Sampled By:	DA	**Date Sampled:**	1/6/2020
Received By:	DLI	**Date Received:**	1/7/2020
Tested By:	DLI	**Date Tested:**	1/20/2020
Reviewed By:	-	**Date Reviewed:**	-

Test Procedure: ASTM D1557 **Method:** A

Oversized Material (%): 1.1 **Correction Required:** [ ] yes [x] no

MOISTURE/DENSITY RELATIONSHIP CURVE



MOISTURE DENSITY RELATIONSHIP VALUES

Maximum Dry Density, pcf	116.0	**@ Optimum Moisture, %**	13.5
Corrected Maximum Dry Density, pcf		**@ Optimum Moisture, %**	

MATERIAL DESCRIPTION

Grain Size Distribution:

	% Gravel (retained on No. 4)
	% Sand (Passing No. 4, Retained on No. 200)
	% Silt and Clay (Passing No. 200)

Atterberg Limits:

	Liquid Limit, %
	Plastic Limit, %
	Plasticity Index, %

Classification:

Unified Soils Classification: _____

AASHTO Soils Classification: _____

GEOTEK

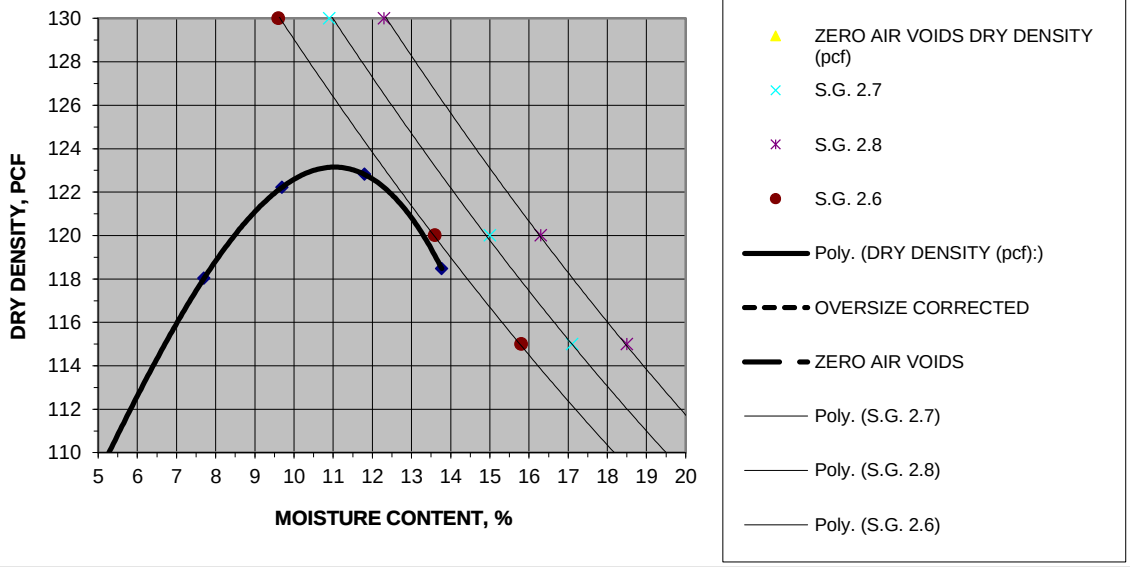
MOISTURE/DENSITY RELATIONSHIP

Client: West Coast Inland Partners IV, LLC
Project: APNs 432-130-006 and -007
Location: San Jacinto
Material Type: Brown Silty F - M Sand w/Clay
Material Supplier: -
Material Source: -
Sample Location: B-7 @ 1 - 5
-
Sampled By: DA
Received By: DLI
Tested By: DLI
Reviewed By: -

Job No.: 2298-CR
Lab No.: Corona
Date Sampled: 1/6/2020
Date Received: 1/7/2020
Date Tested: 1/20/2020
Date Reviewed: -

Test Procedure: ASTM D1557 **Method:** A
Oversized Material (%): 1.1 **Correction Required:** [ ] yes [x] no

MOISTURE/DENSITY RELATIONSHIP CURVE



MOISTURE DENSITY RELATIONSHIP VALUES

Maximum Dry Density, pcf	123.0	**@ Optimum Moisture, %**	11.0
Corrected Maximum Dry Density, pcf		**@ Optimum Moisture, %**	

MATERIAL DESCRIPTION

Grain Size Distribution:

	% Gravel (retained on No. 4)
	% Sand (Passing No. 4, Retained on No. 200)
	% Silt and Clay (Passing No. 200)

Atterberg Limits:

	Liquid Limit, %
	Plastic Limit, %
	Plasticity Index, %

Classification:

Unified Soils Classification: _____
AASHTO Soils Classification: _____

Results Only Soil Testing for San Jacinto

January 20, 2020

Prepared for:
Anna Scott
GeoTek, Inc.
1548 North Maple Street
Corona, CA 92880
ascott@geotekusa.com

Project X Job#: S200116C
Client Job or PO#: 2298-CR

Respectfully Submitted,

Eduardo Hernandez, M.Sc., P.E.
Sr. Corrosion Consultant
NACE Corrosion Technologist #16592
Professional Engineer
California No. M37102
ehernandez@projectxcorrosion.com

Soil Analysis Lab Results

Client: GeoTek, Inc.
Job Name: San Jacinto
Client Job Number: 2298-CR
Project X Job Number: S200116C
January 20, 2020

	Method	ASTM D4327		ASTM D4327		ASTM G187		ASTM G51	ASTM G200	SM 4500-S2-D	ASTM D4327	ASTM D4327	ASTM D4327	ASTM D4327	ASTM D4327	ASTM D4327	ASTM D4327	ASTM D4327	ASTM D4327
Bore# / Description	**Depth**	**Sulfates** SO_4^{2-}		**Chlorides** Cl^-		**Resistivity** As Rec'd	Minimum	**pH**	**Redox**	**Sulfide** S^{2-}	**Nitrate** NO_3^-	**Ammonium** NH_4^+	**Lithium** Li^+	**Sodium** Na^+	**Potassium** K^+	**Magnesium** Mg^{2+}	**Calcium** Ca^{2+}	**Flouride** F_2^{--}	**Phosphate** PO_4^{3-}
	(ft)	(mg/kg)	(wt%)	(mg/kg)	(wt%)	(Ohm-cm)	(Ohm-cm)		(mV)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
B-1	1.0-5.0	621.3	0.0621	535.0	0.0535	2,144	938	8.2	230.0	0.1	1,516.3	ND	ND	1,130.4	792.5	31.9	71.8	4.5	50.1
B-7	0.0-5.0	184.1	0.0184	136.2	0.0136	5,896	2,680	9.2	183.0	1.7	176.6	ND	ND	597.7	358.6	21.9	73.6	10.9	66.7

Cations and Anions, except Sulfide and Bicarbonate, tested with Ion Chromatography
mg/kg = milligrams per kilogram (parts per million) of dry soil weight
ND = 0 = Not Detected | NT = Not Tested | Unk = Unknown
Chemical Analysis performed on 1:3 Soil-To-Water extract

APPENDIX D

SEISMIC SETTLEMENT ANALYSIS

APNs 432-130-006 and -007

City of San Jacinto, Riverside County, California

Project No. 2298-CR

GEOTEK

GeoTek, Inc.
1548 N. Maple Street
Corona, CA 92880
http://www.geotekusa.com

LIQUEFACTION ANALYSIS REPORT

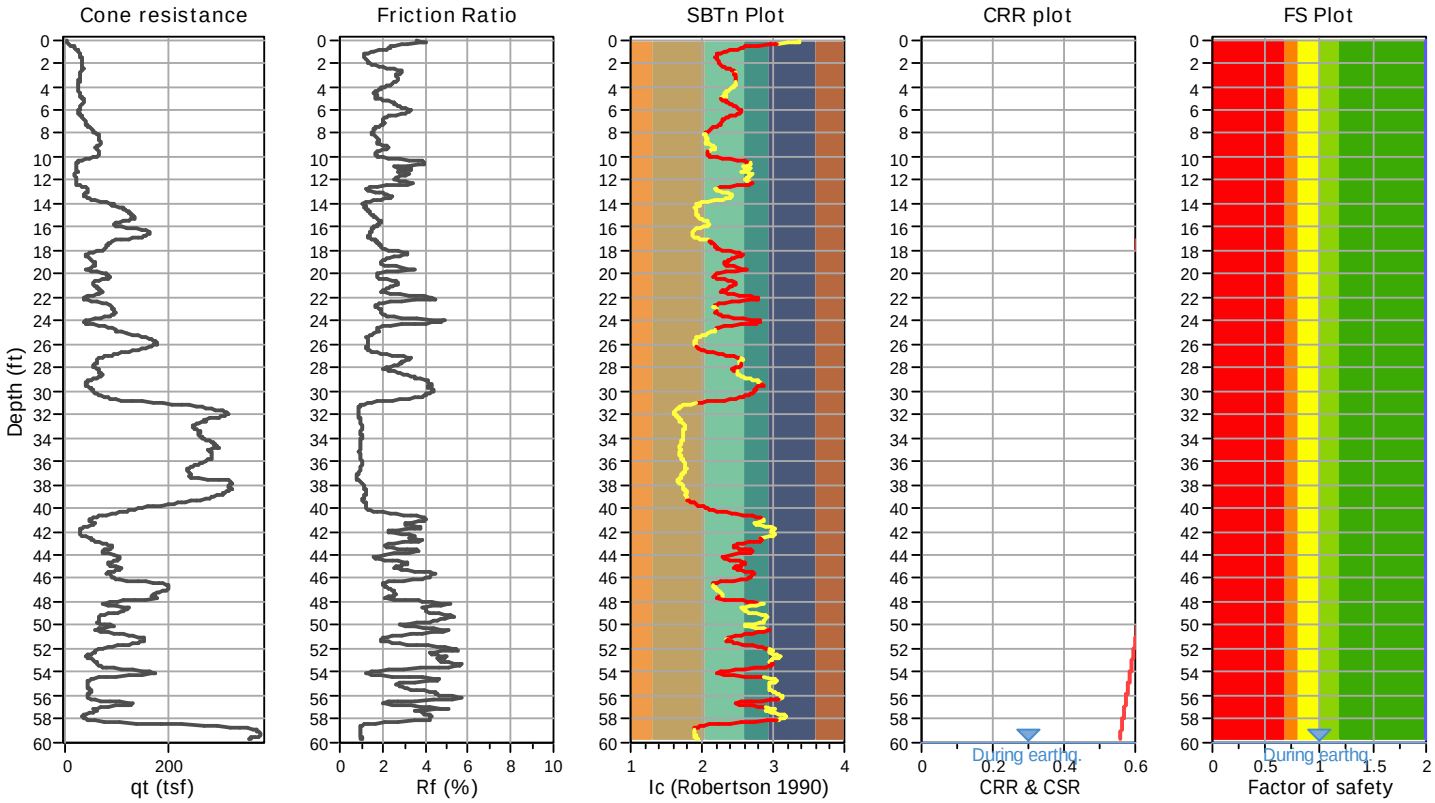
Project title : Proposed Residential Development

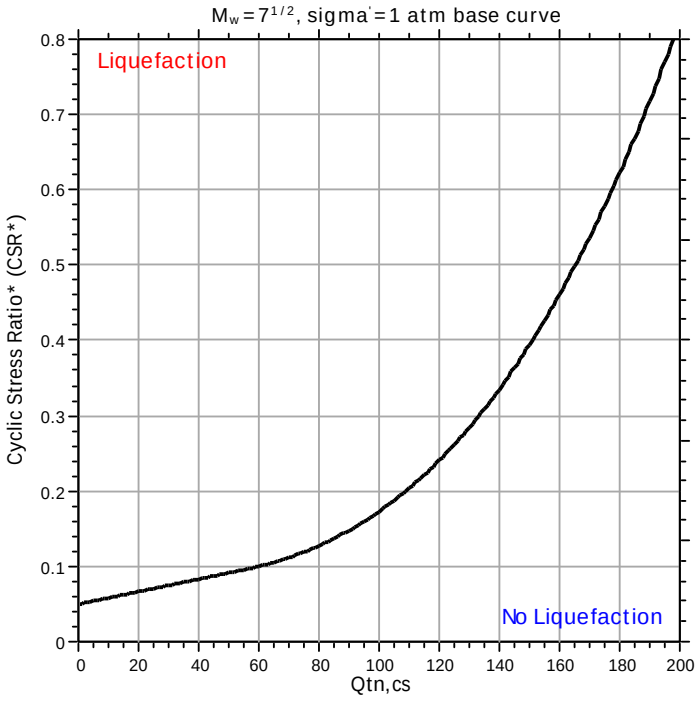
Location : NEC Cawston Avenue and Cottonwood Avenue, San

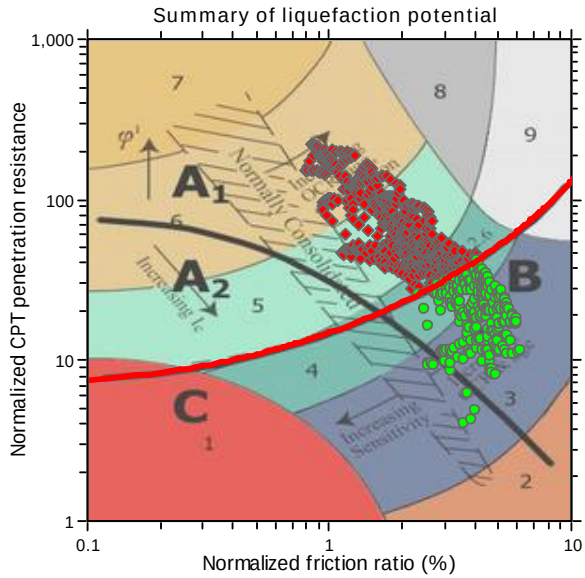
CPT file : CPT-1

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	60.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	60.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	7.44	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.99	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

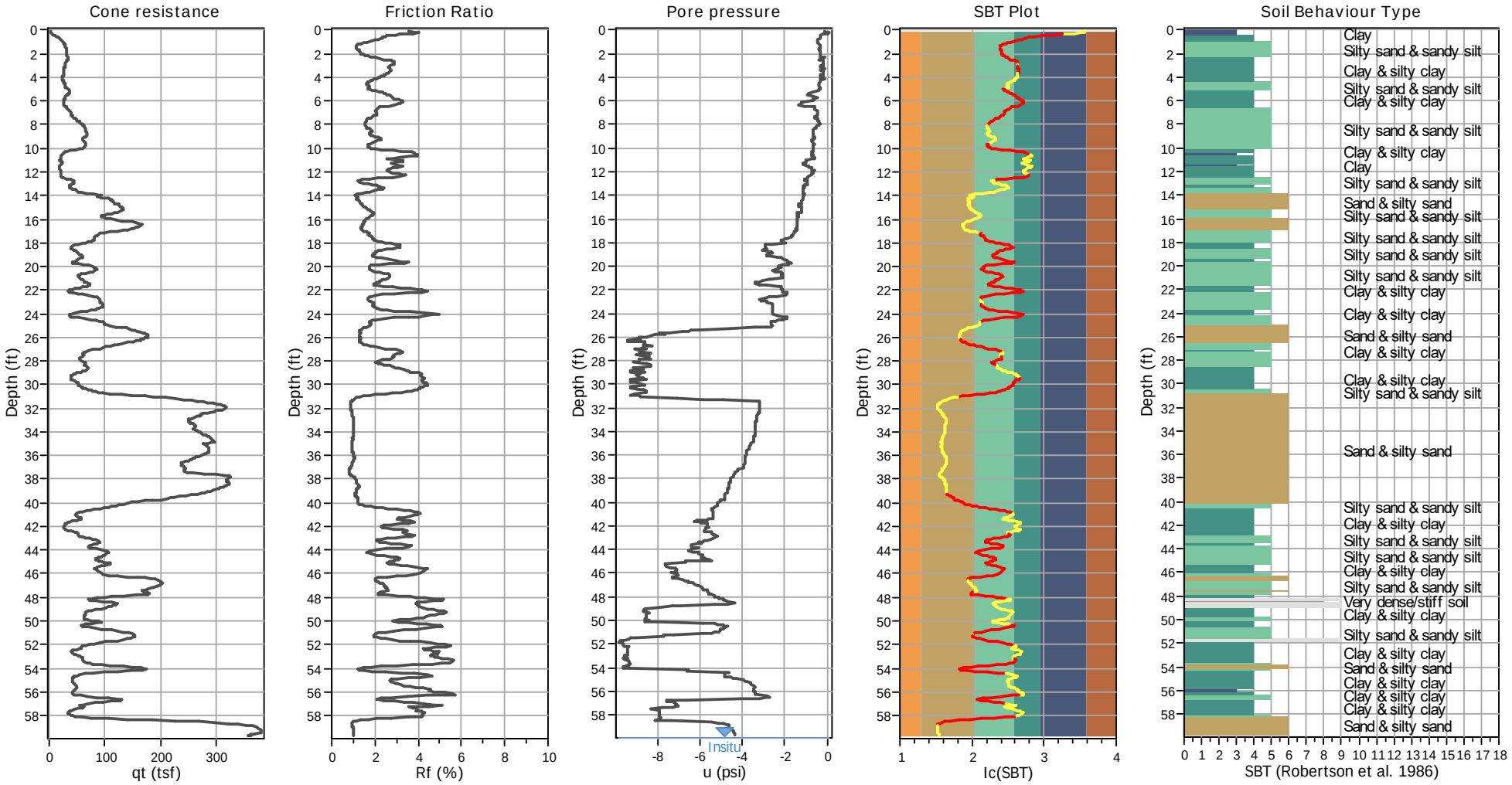






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



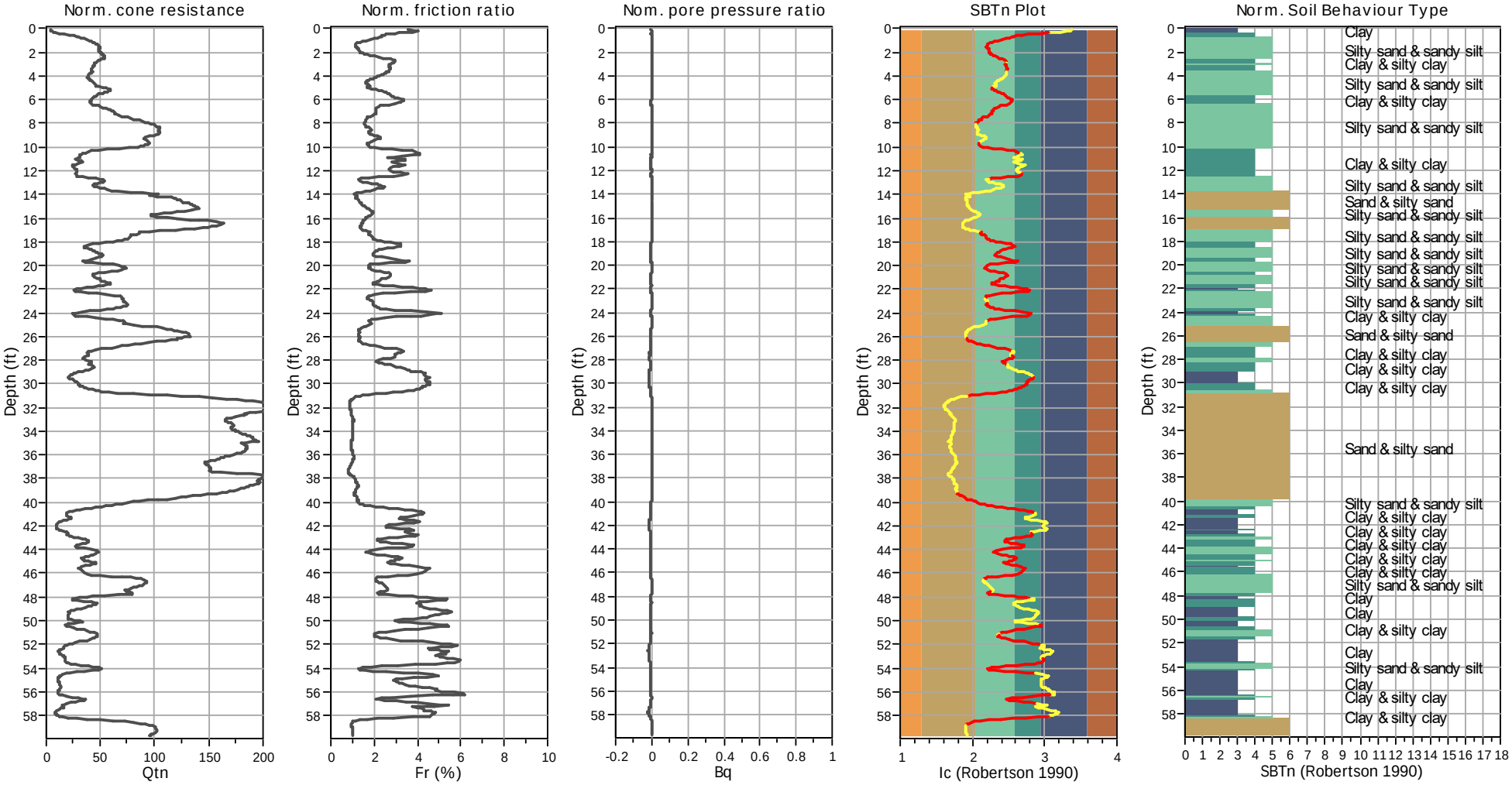
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	60.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	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:	7.44	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.99	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	60.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

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)



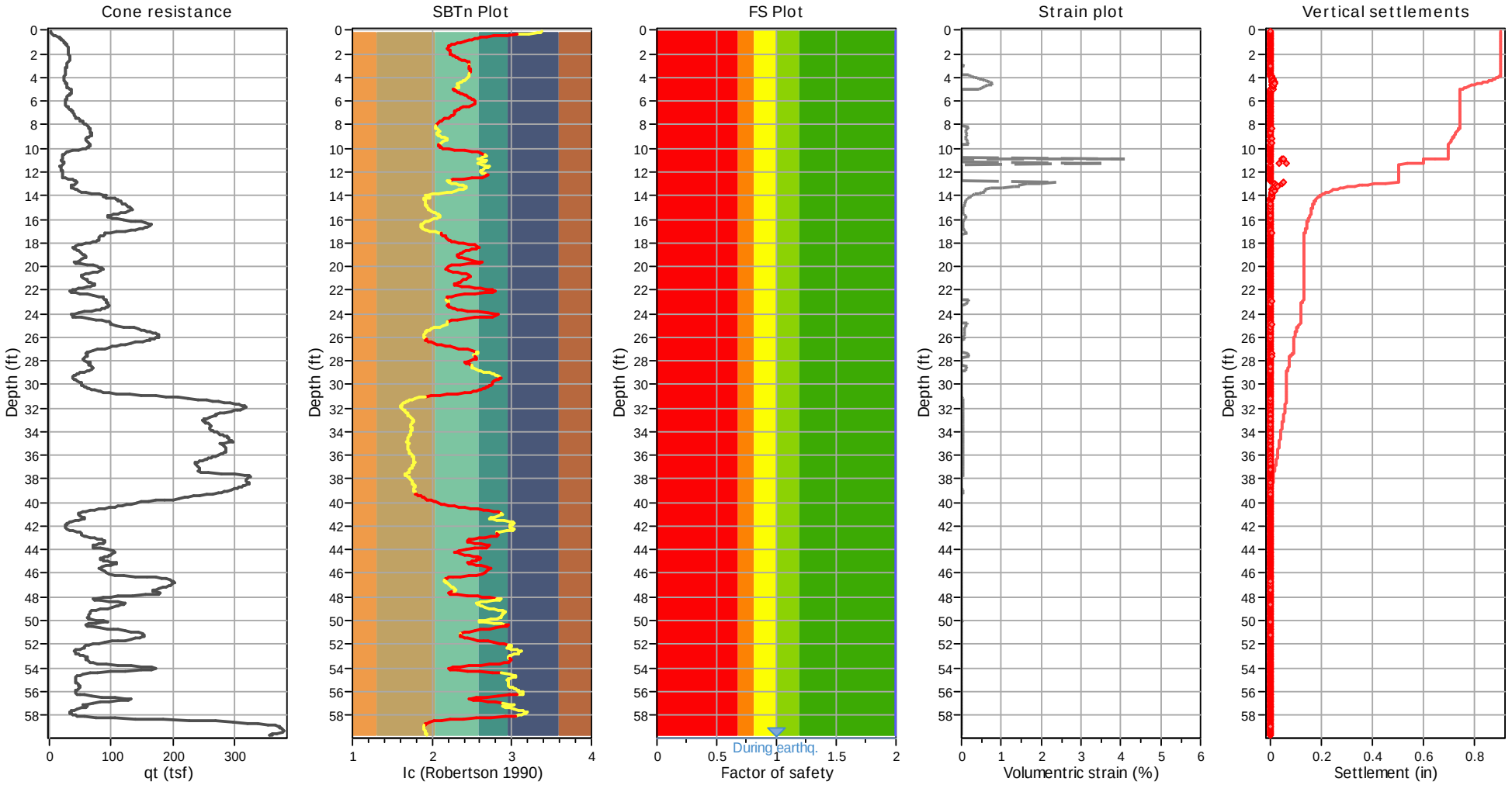
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	60.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	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:	7.44	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.99	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	60.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

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

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement of dry sands ::

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
0.07	3.37	4.00	11.87	47.47	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.17	3.36	4.31	11.70	50.46	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.21	3.32	4.91	11.08	54.41	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.26	3.22	6.21	9.57	59.38	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.34	3.06	8.67	7.47	64.71	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.40	2.94	11.64	6.08	70.72	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.48	2.78	16.47	4.61	75.90	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.53	2.68	21.12	3.87	81.83	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.62	2.60	25.68	3.33	85.62	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.66	2.57	28.04	3.15	88.40	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.73	2.54	29.80	2.99	89.23	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.81	2.51	31.79	2.81	89.26	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.86	2.46	34.39	2.57	88.50	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.95	2.41	37.17	2.34	87.13	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.00	2.35	39.91	2.13	85.11	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.10	2.31	41.72	1.99	83.09	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.14	2.28	43.21	1.87	81.01	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.18	2.24	44.51	1.78	79.31	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.27	2.22	45.52	1.71	77.95	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.31	2.20	46.82	1.67	78.24	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.45	2.20	47.69	1.66	79.39	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.52	2.20	48.67	1.66	80.79	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.56	2.20	49.08	1.66	81.52	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.61	2.20	49.12	1.67	82.18	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.66	2.21	49.02	1.69	83.00	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.71	2.22	48.88	1.71	83.80	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.80	2.23	48.82	1.73	84.55	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.87	2.23	48.96	1.74	85.23	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.92	2.23	49.23	1.75	86.07	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.01	2.23	49.69	1.75	86.90	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.06	2.24	50.57	1.78	89.82	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.16	2.25	51.30	1.81	92.76	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.19	2.27	51.86	1.87	96.81	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.23	2.29	52.42	1.93	101.04	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.31	2.32	53.34	2.00	106.60	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.40	2.34	53.99	2.08	112.33	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.47	2.36	53.88	2.17	116.87	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.54	2.39	52.99	2.27	120.33	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.58	2.42	51.55	2.38	122.63	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.67	2.44	49.87	2.48	123.78	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.71	2.46	48.29	2.56	123.38	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.80	2.47	47.02	2.60	122.15	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.84	2.47	45.90	2.61	119.66	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.93	2.47	44.96	2.61	117.34	0	0	0.63	0.000	0.00	14.60	0.00	0.000
2.98	2.46	44.44	2.58	114.83	29	563	0.63	0.101	0.06	14.60	0.06	0.001
3.03	2.46	44.11	2.57	113.38	0	0	0.63	0.000	0.00	14.60	0.00	0.000
3.09	2.46	43.73	2.58	112.68	0	0	0.63	0.000	0.00	14.60	0.00	0.000
3.19	2.46	43.44	2.59	112.62	0	0	0.63	0.000	0.00	14.60	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
3.24	2.47	43.11	2.61	112.65	0	0	0.63	0.000	0.00	14.60	0.00	0.000
3.30	2.47	42.64	2.64	112.70	0	0	0.63	0.000	0.00	14.60	0.00	0.000
3.37	2.48	42.13	2.68	112.73	0	0	0.63	0.000	0.00	14.60	0.00	0.000
3.41	2.48	41.89	2.69	112.67	0	0	0.63	0.000	0.00	14.60	0.00	0.000
3.50	2.48	42.11	2.66	112.03	0	0	0.63	0.000	0.00	14.60	0.00	0.000
3.58	2.47	42.29	2.62	110.89	0	0	0.63	0.000	0.00	14.60	0.00	0.000
3.63	2.46	41.87	2.60	108.72	0	0	0.63	0.000	0.00	14.60	0.00	0.000
3.72	2.46	41.21	2.59	106.76	0	0	0.63	0.000	0.00	14.60	0.00	0.000
3.74	2.46	40.13	2.60	104.19	26	510	0.63	0.283	0.20	14.60	0.19	0.001
3.84	2.47	39.38	2.60	102.48	26	501	0.63	0.332	0.24	14.60	0.22	0.005
3.87	2.46	38.63	2.58	99.78	25	489	0.63	0.387	0.29	14.60	0.27	0.002
3.97	2.45	38.39	2.54	97.66	25	481	0.63	0.455	0.35	14.60	0.33	0.008
4.02	2.44	38.29	2.49	95.47	24	473	0.63	0.519	0.42	14.60	0.38	0.005
4.07	2.43	38.24	2.45	93.84	23	467	0.63	0.578	0.48	14.60	0.44	0.005
4.15	2.42	38.47	2.40	92.23	23	462	0.63	0.649	0.55	14.60	0.51	0.009
4.23	2.41	38.89	2.34	91.07	22	459	0.63	0.712	0.62	14.60	0.57	0.011
4.27	2.39	39.63	2.27	90.01	22	458	0.63	0.746	0.66	14.60	0.61	0.006
4.37	2.37	40.26	2.21	89.05	22	456	0.63	0.815	0.74	14.60	0.68	0.016
4.41	2.35	41.33	2.13	88.03	21	456	0.63	0.849	0.79	14.60	0.72	0.008
4.51	2.33	42.48	2.06	87.59	21	457	0.63	0.886	0.84	14.60	0.77	0.017
4.55	2.32	43.59	2.01	87.65	21	460	0.63	0.877	0.84	14.60	0.76	0.009
4.62	2.31	44.19	2.00	88.24	21	464	0.63	0.871	0.83	14.60	0.75	0.012
4.68	2.33	44.65	2.03	90.80	22	475	0.62	0.780	0.71	14.60	0.65	0.009
4.76	2.33	45.25	2.06	93.08	22	486	0.62	0.723	0.64	14.60	0.58	0.012
4.81	2.33	46.23	2.05	94.58	23	495	0.62	0.671	0.58	14.60	0.53	0.006
4.87	2.30	48.73	1.94	94.68	22	501	0.62	0.644	0.57	14.60	0.51	0.007
4.96	2.27	51.89	1.87	96.93	23	518	0.62	0.567	0.49	14.60	0.44	0.010
5.02	2.26	55.56	1.84	102.07	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.11	2.28	57.45	1.87	107.69	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.15	2.29	58.42	1.92	112.46	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.19	2.31	58.42	1.99	116.26	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.26	2.33	57.94	2.06	119.17	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.32	2.35	56.54	2.13	120.69	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.42	2.38	54.29	2.22	120.54	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.46	2.40	51.73	2.31	119.58	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.52	2.43	48.98	2.43	118.81	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.63	2.45	46.69	2.53	118.04	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.68	2.47	45.11	2.62	118.16	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.72	2.48	44.45	2.66	118.10	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.81	2.49	43.61	2.73	118.90	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.85	2.51	42.81	2.83	121.23	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.95	2.53	42.20	2.93	123.77	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.02	2.54	41.91	2.99	125.29	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.07	2.54	41.39	3.01	124.43	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.11	2.54	40.87	3.00	122.56	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.20	2.54	40.59	2.98	120.82	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.25	2.53	40.86	2.92	119.19	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.31	2.50	41.97	2.77	116.28	0	0	0.62	0.000	0.00	14.60	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
6.41	2.46	43.59	2.59	112.70	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.46	2.42	45.50	2.40	109.14	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.50	2.38	47.87	2.25	107.79	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.60	2.36	49.72	2.16	107.44	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.65	2.33	52.74	2.05	108.29	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.74	2.31	55.11	1.99	109.76	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.81	2.29	57.94	1.93	111.81	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.86	2.29	59.29	1.91	113.19	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.90	2.28	60.54	1.89	114.61	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.99	2.28	61.60	1.88	115.87	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.10	2.27	62.52	1.87	116.82	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.16	2.27	63.07	1.86	117.13	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.21	2.26	63.76	1.83	116.81	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.25	2.25	64.93	1.80	116.59	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.29	2.23	66.92	1.74	116.25	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.40	2.20	69.43	1.67	116.12	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.46	2.18	72.22	1.61	116.24	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.50	2.15	74.81	1.56	116.88	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.55	2.13	77.88	1.52	118.37	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.64	2.12	80.66	1.49	120.16	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.69	2.11	83.22	1.47	122.01	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.75	2.10	85.72	1.45	123.94	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.86	2.08	88.32	1.42	125.70	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.90	2.07	90.97	1.40	127.27	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.94	2.05	93.57	1.38	128.80	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.04	2.04	96.40	1.36	131.31	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.11	2.04	99.33	1.35	134.30	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.16	2.04	101.27	1.36	137.63	29	753	0.62	0.326	0.21	14.60	0.18	0.002
8.25	2.05	102.54	1.37	140.01	30	768	0.62	0.307	0.19	14.60	0.16	0.004
8.28	2.05	104.01	1.37	142.82	30	784	0.62	0.281	0.17	14.60	0.14	0.001
8.36	2.06	104.06	1.39	144.13	31	796	0.62	0.270	0.16	14.60	0.14	0.003
8.42	2.07	104.05	1.40	146.16	31	810	0.62	0.255	0.15	14.60	0.13	0.002
8.51	2.08	103.03	1.43	146.94	32	817	0.62	0.251	0.15	14.60	0.12	0.003
8.56	2.09	102.74	1.43	147.43	32	822	0.62	0.248	0.14	14.60	0.12	0.001
8.60	2.08	103.38	1.42	147.05	32	825	0.62	0.248	0.14	14.60	0.12	0.001
8.69	2.07	103.95	1.41	146.40	31	828	0.62	0.250	0.15	14.60	0.12	0.003
8.73	2.06	104.78	1.39	145.77	31	829	0.62	0.252	0.15	14.60	0.12	0.001
8.81	2.06	104.07	1.39	144.78	31	829	0.62	0.258	0.15	14.60	0.13	0.002
8.87	2.07	103.20	1.41	145.39	31	834	0.62	0.255	0.15	14.60	0.13	0.002
8.95	2.09	101.71	1.44	146.74	32	844	0.62	0.248	0.14	14.60	0.12	0.002
9.00	2.12	99.10	1.50	148.37	32	850	0.62	0.244	0.14	14.60	0.11	0.001
9.08	2.16	94.83	1.57	148.85	33	848	0.62	0.252	0.14	14.60	0.12	0.002
9.18	2.18	91.20	1.63	148.36	33	843	0.62	0.265	0.14	14.60	0.12	0.003
9.25	2.19	89.57	1.65	147.37	33	840	0.62	0.275	0.15	14.60	0.13	0.002
9.29	2.18	90.04	1.62	145.79	33	838	0.62	0.282	0.16	14.60	0.13	0.001
9.33	2.17	90.36	1.60	144.43	32	835	0.62	0.288	0.16	14.60	0.14	0.001
9.38	2.14	92.64	1.53	142.15	31	835	0.62	0.293	0.17	14.60	0.14	0.002
9.56	2.11	93.82	1.48	139.09	30	835	0.62	0.307	0.19	14.60	0.15	0.006

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
9.60	2.09	95.73	1.43	136.90	29	830	0.62	0.320	0.20	14.60	0.17	0.002
9.66	2.08	95.03	1.42	135.24	0	0	0.62	0.000	0.00	14.60	0.00	0.000
9.73	2.08	93.74	1.43	133.78	0	0	0.62	0.000	0.00	14.60	0.00	0.000
9.78	2.09	92.61	1.44	132.93	0	0	0.62	0.000	0.00	14.60	0.00	0.000
9.82	2.10	91.44	1.45	132.21	0	0	0.62	0.000	0.00	14.60	0.00	0.000
9.89	2.10	89.95	1.46	131.31	0	0	0.62	0.000	0.00	14.60	0.00	0.000
9.94	2.12	87.76	1.49	130.47	0	0	0.62	0.000	0.00	14.60	0.00	0.000
9.98	2.14	84.34	1.53	129.34	0	0	0.62	0.000	0.00	14.60	0.00	0.000
10.04	2.20	76.66	1.67	127.87	0	0	0.62	0.000	0.00	14.60	0.00	0.000
10.13	2.28	67.19	1.89	127.32	0	0	0.62	0.000	0.00	14.60	0.00	0.000
10.18	2.40	55.83	2.32	129.30	0	0	0.62	0.000	0.00	14.60	0.00	0.000
10.30	2.50	47.70	2.76	131.40	0	0	0.62	0.000	0.00	14.60	0.00	0.000
10.34	2.57	41.97	3.17	133.09	0	0	0.62	0.000	0.00	14.60	0.00	0.000
10.39	2.61	38.86	3.40	132.21	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.48	2.64	36.19	3.59	129.99	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.53	2.67	33.56	3.80	127.39	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.59	2.69	32.00	3.89	124.53	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.65	2.68	31.07	3.82	118.66	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.78	2.63	30.88	3.53	108.97	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.83	2.59	30.82	3.26	100.56	27	496	0.62	10.817	7.52	14.60	4.08	0.050
10.88	2.58	30.43	3.18	96.85	26	485	0.62	13.217	9.69	14.60	4.08	0.048
10.93	2.61	29.23	3.38	98.81	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.00	2.65	28.10	3.62	101.83	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.04	2.68	27.50	3.87	106.49	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.13	2.67	29.00	3.75	108.87	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.18	2.61	31.93	3.39	108.33	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.26	2.57	33.82	3.12	105.65	28	549	0.62	5.781	3.84	14.60	3.07	0.061
11.31	2.57	33.29	3.12	103.90	28	542	0.62	6.451	4.38	14.60	3.49	0.036
11.35	2.63	29.59	3.50	103.64	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.46	2.69	26.30	3.92	102.99	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.51	2.72	24.30	4.16	101.05	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.57	2.70	24.65	3.97	97.89	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.66	2.67	25.30	3.76	95.05	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.70	2.65	25.82	3.63	93.65	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.75	2.64	26.09	3.58	93.30	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.86	2.63	26.66	3.49	93.02	0	0	0.61	0.000	0.00	0.00	0.00	0.000
11.91	2.61	27.62	3.40	93.93	0	0	0.61	0.000	0.00	0.00	0.00	0.000
11.96	2.61	28.32	3.41	96.54	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.09	2.63	28.34	3.51	99.37	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.16	2.66	27.90	3.71	103.40	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.25	2.68	27.31	3.89	106.18	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.30	2.70	26.96	4.00	107.79	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.35	2.67	27.80	3.76	104.52	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.44	2.63	28.56	3.49	99.71	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.49	2.50	33.43	2.76	92.19	0	0	0.61	0.000	0.00	14.60	0.00	0.000
12.58	2.38	39.07	2.24	87.51	0	0	0.61	0.000	0.00	14.60	0.00	0.000
12.63	2.27	46.17	1.85	85.29	0	0	0.61	0.000	0.00	14.60	0.00	0.000
12.70	2.22	49.90	1.71	85.57	0	0	0.61	0.000	0.00	14.60	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
12.75	2.19	52.68	1.64	86.66	0	0	0.61	0.000	0.00	14.60	0.00	0.000
12.84	2.20	53.23	1.67	88.85	20	638	0.61	3.100	3.09	14.60	2.39	0.050
12.94	2.23	52.18	1.76	91.66	21	654	0.61	2.713	2.56	14.60	1.98	0.048
12.98	2.29	49.80	1.92	95.56	22	667	0.61	2.424	2.12	14.60	1.63	0.018
13.05	2.34	47.33	2.08	98.45	24	672	0.61	2.342	1.92	14.60	1.48	0.023
13.09	2.38	45.36	2.22	100.51	24	673	0.61	2.339	1.84	14.60	1.41	0.016
13.14	2.40	43.88	2.31	101.18	25	670	0.61	2.436	1.88	14.60	1.44	0.015
13.22	2.41	42.94	2.36	101.55	25	670	0.61	2.488	1.89	14.60	1.45	0.030
13.28	2.42	42.92	2.40	103.21	26	679	0.61	2.312	1.72	14.60	1.31	0.017
13.33	2.43	43.76	2.45	107.42	27	704	0.61	1.873	1.32	14.60	1.01	0.012
13.39	2.42	46.48	2.40	111.52	28	739	0.61	1.413	0.96	14.60	0.73	0.010
13.49	2.39	49.69	2.28	113.20	28	769	0.61	1.153	0.78	14.60	0.59	0.014
13.53	2.34	53.52	2.07	110.85	27	779	0.61	1.080	0.77	14.60	0.59	0.006
13.63	2.29	56.29	1.93	108.57	25	785	0.61	1.061	0.79	14.60	0.60	0.015
13.69	2.24	60.21	1.78	107.11	25	794	0.61	1.004	0.78	14.60	0.59	0.008
13.73	2.18	66.34	1.63	107.91	24	819	0.61	0.861	0.69	14.60	0.52	0.006
13.79	2.09	77.41	1.43	110.72	24	856	0.61	0.689	0.56	14.60	0.42	0.006
13.88	2.00	88.43	1.30	115.35	24	893	0.61	0.570	0.46	14.60	0.35	0.008
13.94	1.94	97.87	1.23	120.52	25	923	0.61	0.492	0.38	14.60	0.29	0.004
13.99	1.92	102.85	1.20	123.78	25	942	0.61	0.452	0.35	14.60	0.26	0.003
14.05	1.97	95.54	1.26	120.78	25	936	0.61	0.469	0.36	14.60	0.27	0.004
14.12	1.97	98.45	1.26	123.76	25	962	0.61	0.421	0.32	14.60	0.24	0.004
14.18	1.96	101.99	1.25	127.87	26	995	0.61	0.364	0.26	14.60	0.20	0.003
14.27	1.90	115.92	1.19	137.57	28	1053	0.61	0.291	0.20	14.60	0.15	0.003
14.31	1.90	118.75	1.19	141.06	28	1083	0.61	0.263	0.17	14.60	0.13	0.001
14.37	1.91	120.06	1.19	143.40	29	1106	0.61	0.243	0.16	14.60	0.12	0.002
14.47	1.91	120.98	1.20	145.42	29	1130	0.61	0.228	0.14	14.60	0.11	0.002
14.52	1.92	123.88	1.21	149.56	30	1167	0.61	0.204	0.12	14.60	0.09	0.001
14.65	1.92	126.75	1.21	153.19	31	1203	0.61	0.186	0.11	14.60	0.08	0.003
14.71	1.92	130.32	1.21	157.32	32	1238	0.61	0.170	0.10	14.60	0.07	0.001
14.76	1.92	132.19	1.21	159.46	32	1257	0.61	0.162	0.09	14.60	0.07	0.001
14.82	1.92	133.26	1.21	161.01	33	1274	0.61	0.157	0.09	14.60	0.06	0.001
14.87	1.93	133.83	1.21	162.40	33	1290	0.61	0.151	0.08	14.60	0.06	0.001
14.91	1.93	134.95	1.22	164.84	33	1315	0.61	0.143	0.08	14.60	0.06	0.001
15.00	1.94	136.38	1.23	167.73	34	1347	0.61	0.134	0.07	14.60	0.05	0.001
15.06	1.95	138.43	1.24	170.98	35	1379	0.61	0.126	0.06	14.60	0.05	0.001
15.10	1.95	140.16	1.24	173.78	35	1406	0.61	0.119	0.06	14.60	0.04	0.000
15.21	1.96	140.27	1.25	175.08	36	1427	0.61	0.116	0.06	14.60	0.04	0.001
15.26	1.97	138.99	1.26	175.64	36	1440	0.61	0.113	0.06	14.60	0.04	0.000
15.30	1.99	134.23	1.29	173.62	36	1434	0.61	0.115	0.06	14.60	0.04	0.000
15.40	2.02	127.83	1.33	170.37	36	1421	0.61	0.120	0.06	14.60	0.04	0.001
15.43	2.05	121.25	1.37	166.27	35	1393	0.61	0.128	0.06	14.60	0.05	0.000
15.51	2.07	115.61	1.40	161.46	34	1359	0.61	0.140	0.07	14.60	0.05	0.001
15.56	2.08	108.89	1.42	154.56	33	1304	0.61	0.161	0.09	14.60	0.06	0.001
15.65	2.09	102.10	1.44	146.98	32	1246	0.61	0.191	0.11	14.60	0.08	0.002
15.75	2.10	97.05	1.46	141.35	31	1203	0.61	0.219	0.13	14.60	0.10	0.002
15.80	2.09	96.04	1.44	138.57	30	1182	0.61	0.236	0.15	14.60	0.11	0.001
15.87	2.08	98.17	1.42	139.09	30	1190	0.61	0.232	0.14	14.60	0.10	0.002

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
15.91	2.05	102.43	1.38	141.13	30	1209	0.61	0.221	0.14	14.60	0.10	0.001
15.96	2.02	111.33	1.32	147.49	31	1260	0.61	0.191	0.11	14.60	0.08	0.001
16.06	1.98	121.38	1.28	155.41	32	1324	0.61	0.164	0.09	14.60	0.07	0.002
16.13	1.95	132.25	1.24	164.17	34	1389	0.61	0.141	0.08	14.60	0.05	0.001
16.17	1.93	140.37	1.22	171.13	35	1440	0.61	0.127	0.07	14.60	0.05	0.000
16.22	1.91	149.42	1.19	178.55	36	1491	0.61	0.115	0.06	14.60	0.04	0.000
16.31	1.89	156.75	1.18	184.61	37	1535	0.61	0.107	0.05	14.60	0.04	0.001
16.38	1.87	162.32	1.16	189.03	38	1565	0.61	0.102	0.05	14.60	0.03	0.001
16.43	1.87	164.22	1.16	190.20	38	1572	0.61	0.102	0.05	14.60	0.03	0.000
16.48	1.86	164.09	1.15	189.28	37	1563	0.61	0.104	0.05	14.60	0.03	0.000
16.57	1.86	161.02	1.15	185.93	37	1542	0.61	0.109	0.05	14.60	0.04	0.001
16.66	1.87	156.75	1.16	181.62	36	1515	0.61	0.116	0.06	14.60	0.04	0.001
16.71	1.87	152.41	1.16	177.09	35	1483	0.61	0.124	0.06	14.60	0.04	0.001
16.75	1.87	148.80	1.16	173.27	34	1455	0.61	0.132	0.07	14.60	0.05	0.000
16.83	1.88	144.34	1.17	169.37	34	1434	0.61	0.140	0.07	14.60	0.05	0.001
16.88	1.91	136.82	1.20	163.72	33	1404	0.61	0.150	0.08	14.60	0.06	0.001
16.97	1.94	128.12	1.23	157.23	32	1370	0.61	0.164	0.09	14.60	0.07	0.001
17.03	1.97	118.87	1.26	150.18	31	1327	0.61	0.184	0.11	14.60	0.08	0.001
17.07	2.04	104.92	1.35	141.69	30	1273	0.61	0.214	0.13	14.60	0.09	0.001
17.13	2.08	94.91	1.43	135.31	29	1224	0.61	0.249	0.16	14.60	0.11	0.002
17.23	2.12	86.56	1.50	129.87	28	1180	0.61	0.291	0.19	14.60	0.13	0.003
17.27	2.12	85.84	1.48	127.30	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.36	2.13	82.67	1.51	125.17	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.41	2.15	79.87	1.55	123.97	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.46	2.17	78.37	1.59	124.33	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.55	2.18	77.34	1.62	124.92	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.61	2.19	76.83	1.64	125.63	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.66	2.19	76.19	1.65	125.53	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.75	2.20	75.04	1.67	124.94	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.80	2.22	72.77	1.72	124.82	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.91	2.25	69.68	1.79	125.06	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.96	2.29	65.76	1.91	125.85	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.01	2.34	61.32	2.07	126.92	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.05	2.40	55.13	2.31	127.14	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.14	2.46	48.84	2.58	126.23	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.20	2.53	42.29	2.91	123.16	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.30	2.56	38.62	3.07	118.59	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.36	2.59	35.35	3.24	114.67	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.40	2.58	34.81	3.19	110.87	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.48	2.56	35.06	3.07	107.70	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.54	2.50	37.44	2.79	104.30	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.62	2.46	39.96	2.56	102.23	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.69	2.42	42.19	2.40	101.13	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.76	2.40	43.59	2.31	100.58	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.81	2.38	44.68	2.24	100.25	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.87	2.37	45.65	2.20	100.26	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.92	2.36	46.87	2.15	100.69	0	0	0.61	0.000	0.00	14.60	0.00	0.000
18.97	2.34	48.89	2.07	101.42	0	0	0.61	0.000	0.00	14.60	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
19.06	2.32	50.64	2.02	102.26	0	0	0.61	0.000	0.00	14.60	0.00	0.000
19.11	2.31	52.14	1.98	103.30	0	0	0.61	0.000	0.00	14.60	0.00	0.000
19.17	2.32	52.23	2.00	104.72	0	0	0.61	0.000	0.00	14.60	0.00	0.000
19.27	2.34	51.41	2.08	107.14	0	0	0.61	0.000	0.00	14.60	0.00	0.000
19.31	2.38	49.68	2.24	111.09	0	0	0.62	0.000	0.00	14.60	0.00	0.000
19.36	2.44	46.23	2.49	115.33	0	0	0.62	0.000	0.00	14.60	0.00	0.000
19.46	2.51	42.10	2.81	118.26	0	0	0.62	0.000	0.00	14.60	0.00	0.000
19.56	2.57	38.01	3.15	119.91	0	0	0.62	0.000	0.00	14.60	0.00	0.000
19.63	2.62	35.15	3.42	120.28	0	0	0.62	0.000	0.00	0.00	0.00	0.000
19.66	2.63	34.06	3.52	120.01	0	0	0.62	0.000	0.00	0.00	0.00	0.000
19.71	2.60	35.91	3.31	118.89	0	0	0.62	0.000	0.00	14.60	0.00	0.000
19.76	2.47	43.32	2.63	113.88	0	0	0.62	0.000	0.00	14.60	0.00	0.000
19.85	2.35	52.35	2.11	110.40	0	0	0.62	0.000	0.00	14.60	0.00	0.000
19.91	2.24	61.26	1.78	109.16	0	0	0.62	0.000	0.00	14.60	0.00	0.000
19.97	2.20	67.45	1.66	112.21	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.06	2.20	69.24	1.65	114.56	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.10	2.18	71.94	1.62	116.65	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.17	2.18	72.31	1.62	117.16	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.23	2.17	73.92	1.59	117.87	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.30	2.18	72.43	1.63	118.01	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.36	2.22	69.34	1.71	118.24	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.43	2.26	65.39	1.82	118.74	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.50	2.31	60.17	1.98	119.01	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.55	2.37	53.73	2.21	118.61	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.64	2.43	48.19	2.43	117.31	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.70	2.47	44.36	2.60	115.24	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.78	2.47	43.04	2.63	113.24	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.85	2.48	42.34	2.66	112.44	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.90	2.48	42.45	2.67	113.33	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.94	2.45	44.61	2.55	113.65	0	0	0.62	0.000	0.00	14.60	0.00	0.000
21.04	2.42	47.14	2.40	112.91	0	0	0.62	0.000	0.00	14.60	0.00	0.000
21.08	2.39	49.13	2.27	111.51	0	0	0.63	0.000	0.00	14.60	0.00	0.000
21.18	2.38	49.67	2.22	110.45	0	0	0.63	0.000	0.00	14.60	0.00	0.000
21.25	2.37	50.12	2.20	110.08	0	0	0.63	0.000	0.00	14.60	0.00	0.000
21.29	2.36	51.08	2.15	110.03	0	0	0.63	0.000	0.00	14.60	0.00	0.000
21.34	2.33	53.64	2.05	110.08	0	0	0.63	0.000	0.00	14.60	0.00	0.000
21.43	2.30	56.52	1.95	110.11	0	0	0.63	0.000	0.00	14.60	0.00	0.000
21.49	2.28	58.99	1.87	110.48	0	0	0.63	0.000	0.00	14.60	0.00	0.000
21.54	2.28	59.24	1.87	111.04	0	0	0.63	0.000	0.00	14.60	0.00	0.000
21.60	2.31	56.78	2.00	113.28	0	0	0.63	0.000	0.00	14.60	0.00	0.000
21.69	2.37	52.80	2.21	116.62	0	0	0.63	0.000	0.00	14.60	0.00	0.000
21.73	2.46	47.71	2.55	121.80	0	0	0.63	0.000	0.00	14.60	0.00	0.000
21.81	2.53	42.85	2.92	125.25	0	0	0.63	0.000	0.00	14.60	0.00	0.000
21.86	2.61	36.97	3.41	126.05	0	0	0.63	0.000	0.00	0.00	0.00	0.000
21.95	2.69	31.87	3.89	124.05	0	0	0.63	0.000	0.00	0.00	0.00	0.000
21.99	2.75	27.82	4.36	121.44	0	0	0.63	0.000	0.00	0.00	0.00	0.000
22.10	2.78	25.99	4.63	120.20	0	0	0.63	0.000	0.00	0.00	0.00	0.000
22.14	2.80	25.07	4.78	119.84	0	0	0.63	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
22.20	2.76	26.62	4.47	119.12	0	0	0.63	0.000	0.00	0.00	0.00	0.000
22.25	2.66	31.42	3.71	116.63	0	0	0.63	0.000	0.00	0.00	0.00	0.000
22.34	2.53	38.61	2.93	113.01	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.39	2.41	46.68	2.35	109.88	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.45	2.31	55.42	1.97	109.16	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.55	2.24	62.57	1.76	110.38	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.60	2.20	67.80	1.66	112.66	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.65	2.18	69.61	1.62	112.94	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.77	2.17	70.38	1.60	112.87	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.82	2.17	70.90	1.59	113.02	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.86	2.18	71.15	1.61	114.56	26	1272	0.63	0.408	0.30	14.60	0.18	0.002
22.90	2.19	71.36	1.64	116.77	26	1297	0.63	0.378	0.27	14.60	0.17	0.002
23.00	2.20	71.33	1.66	118.75	27	1322	0.63	0.354	0.25	14.60	0.15	0.003
23.04	2.21	71.43	1.69	120.78	27	1345	0.63	0.332	0.23	14.60	0.14	0.001
23.10	2.21	72.22	1.69	122.01	28	1361	0.64	0.319	0.22	14.60	0.13	0.002
23.17	2.20	73.63	1.67	122.98	28	1376	0.64	0.308	0.21	14.60	0.12	0.002
23.25	2.20	74.71	1.66	123.67	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.34	2.20	74.53	1.66	123.92	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.39	2.21	73.16	1.70	124.02	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.44	2.23	70.73	1.75	123.45	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.52	2.25	67.82	1.81	122.75	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.60	2.28	64.64	1.89	122.03	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.65	2.31	61.53	1.98	121.79	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.69	2.37	56.07	2.19	123.07	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.80	2.45	49.44	2.54	125.57	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.84	2.58	40.53	3.22	130.43	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.95	2.70	33.29	3.97	132.10	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.00	2.80	27.27	4.82	131.46	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.04	2.82	25.74	4.94	127.07	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.09	2.82	24.73	4.97	122.88	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.19	2.79	25.42	4.68	119.02	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.26	2.75	26.47	4.40	116.59	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.30	2.67	30.13	3.81	114.83	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.35	2.54	37.37	3.00	112.29	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.44	2.42	45.84	2.40	110.07	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.50	2.31	54.97	1.99	109.16	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.55	2.25	61.49	1.80	110.42	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.61	2.21	67.23	1.68	113.16	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.69	2.19	70.79	1.63	115.75	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.74	2.18	72.23	1.62	117.20	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.80	2.19	72.14	1.64	118.06	26	1391	0.64	0.341	0.24	14.60	0.14	0.002
24.91	2.20	71.69	1.66	118.86	27	1405	0.64	0.332	0.23	14.60	0.13	0.003
24.96	2.19	73.73	1.63	120.34	27	1425	0.64	0.316	0.22	14.60	0.13	0.001
25.00	2.14	80.25	1.53	123.08	27	1459	0.64	0.291	0.20	14.60	0.11	0.001
25.11	2.09	88.72	1.44	127.40	27	1506	0.64	0.262	0.18	14.60	0.10	0.003
25.17	2.05	96.97	1.37	132.45	28	1553	0.64	0.236	0.16	14.60	0.09	0.001
25.22	2.02	101.93	1.33	135.82	29	1583	0.64	0.222	0.15	14.60	0.08	0.001
25.26	1.99	107.13	1.29	138.23	29	1594	0.64	0.218	0.14	14.60	0.08	0.001

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
25.36	1.96	111.20	1.26	139.59	29	1593	0.64	0.220	0.14	14.60	0.08	0.002
25.43	1.94	114.96	1.23	141.02	29	1591	0.64	0.222	0.14	14.60	0.08	0.001
25.48	1.93	118.14	1.21	143.48	29	1610	0.64	0.214	0.14	14.60	0.08	0.001
25.57	1.92	121.45	1.21	146.75	30	1645	0.65	0.201	0.13	14.60	0.07	0.002
25.61	1.92	125.81	1.21	151.74	31	1701	0.65	0.182	0.11	14.60	0.06	0.001
25.70	1.91	128.94	1.20	154.60	31	1730	0.65	0.174	0.10	14.60	0.06	0.001
25.75	1.90	131.12	1.19	156.07	31	1738	0.65	0.172	0.10	14.60	0.06	0.001
25.80	1.90	131.59	1.19	155.96	31	1734	0.65	0.174	0.10	14.60	0.06	0.001
25.91	1.90	131.76	1.19	156.30	31	1743	0.65	0.172	0.10	14.60	0.06	0.001
25.96	1.90	132.28	1.19	157.19	32	1758	0.65	0.169	0.10	14.60	0.05	0.001
26.00	1.90	132.38	1.19	157.11	31	1757	0.65	0.169	0.10	14.60	0.05	0.001
26.05	1.91	127.67	1.20	153.50	31	1736	0.65	0.176	0.10	14.60	0.06	0.001
26.14	1.92	124.86	1.21	150.85	30	1716	0.65	0.184	0.11	14.60	0.06	0.001
26.18	1.93	120.83	1.22	147.07	30	1683	0.65	0.196	0.12	14.60	0.07	0.001
26.27	1.92	120.35	1.21	145.61	0	0	0.65	0.000	0.00	14.60	0.00	0.000
26.32	1.94	115.16	1.22	140.99	0	0	0.65	0.000	0.00	14.60	0.00	0.000
26.40	1.95	109.65	1.24	136.44	0	0	0.65	0.000	0.00	14.60	0.00	0.000
26.45	1.99	101.60	1.28	130.48	0	0	0.65	0.000	0.00	14.60	0.00	0.000
26.53	2.02	94.56	1.33	125.92	0	0	0.65	0.000	0.00	14.60	0.00	0.000
26.61	2.07	87.69	1.40	122.50	0	0	0.65	0.000	0.00	14.60	0.00	0.000
26.66	2.12	81.57	1.48	121.12	0	0	0.65	0.000	0.00	14.60	0.00	0.000
26.75	2.17	75.65	1.60	120.91	0	0	0.65	0.000	0.00	14.60	0.00	0.000
26.80	2.22	70.22	1.73	121.47	0	0	0.65	0.000	0.00	14.60	0.00	0.000
26.84	2.28	65.15	1.90	123.67	0	0	0.65	0.000	0.00	14.60	0.00	0.000
26.96	2.34	60.34	2.09	125.91	0	0	0.65	0.000	0.00	14.60	0.00	0.000
27.01	2.40	55.59	2.31	128.31	0	0	0.65	0.000	0.00	14.60	0.00	0.000
27.05	2.45	50.75	2.53	128.40	0	0	0.65	0.000	0.00	14.60	0.00	0.000
27.14	2.50	45.85	2.78	127.50	0	0	0.65	0.000	0.00	14.60	0.00	0.000
27.19	2.55	41.14	3.04	124.86	0	0	0.65	0.000	0.00	14.60	0.00	0.000
27.28	2.57	38.75	3.14	121.63	0	0	0.65	0.000	0.00	14.60	0.00	0.000
27.32	2.56	37.91	3.12	118.18	31	1351	0.65	0.472	0.27	14.60	0.15	0.001
27.42	2.55	38.36	3.02	115.89	31	1338	0.65	0.494	0.30	14.60	0.16	0.004
27.46	2.53	39.01	2.93	114.35	30	1331	0.65	0.507	0.31	14.60	0.17	0.002
27.51	2.53	39.07	2.90	113.42	30	1325	0.65	0.519	0.32	14.60	0.17	0.002
27.61	2.53	38.34	2.93	112.24	29	1313	0.65	0.543	0.34	14.60	0.18	0.005
27.67	2.54	36.96	3.00	110.79	29	1292	0.65	0.586	0.37	14.60	0.20	0.002
27.71	2.56	34.84	3.10	107.92	0	0	0.65	0.000	0.00	14.60	0.00	0.000
27.81	2.55	34.20	3.05	104.24	0	0	0.65	0.000	0.00	14.60	0.00	0.000
27.85	2.54	33.38	3.00	100.21	0	0	0.65	0.000	0.00	14.60	0.00	0.000
27.91	2.51	34.33	2.84	97.49	0	0	0.65	0.000	0.00	14.60	0.00	0.000
27.96	2.47	36.34	2.64	95.82	0	0	0.65	0.000	0.00	14.60	0.00	0.000
28.06	2.43	39.69	2.42	95.94	0	0	0.65	0.000	0.00	14.60	0.00	0.000
28.11	2.41	41.63	2.35	97.91	0	0	0.65	0.000	0.00	14.60	0.00	0.000
28.21	2.43	41.20	2.43	100.17	0	0	0.65	0.000	0.00	14.60	0.00	0.000
28.27	2.46	40.02	2.56	102.35	0	0	0.65	0.000	0.00	14.60	0.00	0.000
28.32	2.47	39.45	2.64	104.03	0	0	0.65	0.000	0.00	14.60	0.00	0.000
28.36	2.49	39.33	2.72	107.10	0	0	0.65	0.000	0.00	14.60	0.00	0.000
28.41	2.50	40.69	2.75	111.83	0	0	0.65	0.000	0.00	14.60	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
28.50	2.50	42.56	2.75	116.90	30	1424	0.65	0.415	0.25	14.60	0.13	0.003
28.55	2.50	44.12	2.75	121.28	31	1480	0.65	0.359	0.21	14.60	0.11	0.001
28.62	2.51	43.67	2.84	124.17	32	1508	0.65	0.337	0.19	14.60	0.10	0.002
28.72	2.55	41.32	3.05	125.89	33	1511	0.65	0.336	0.18	14.60	0.09	0.002
28.81	2.59	38.59	3.24	125.12	34	1487	0.65	0.359	0.19	14.60	0.10	0.002
28.88	2.62	35.94	3.42	123.00	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.93	2.64	33.81	3.58	121.00	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.97	2.68	31.46	3.83	120.60	0	0	0.65	0.000	0.00	0.00	0.00	0.000
29.02	2.72	29.07	4.15	120.63	0	0	0.65	0.000	0.00	0.00	0.00	0.000
29.07	2.75	27.06	4.41	119.26	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.15	2.78	25.17	4.62	116.29	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.20	2.80	23.64	4.76	112.48	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.27	2.82	22.27	4.94	109.92	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.37	2.84	21.24	5.12	108.83	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.41	2.85	20.70	5.26	108.88	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.49	2.86	20.69	5.29	109.37	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.53	2.83	21.83	5.06	110.54	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.60	2.80	23.56	4.81	113.22	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.70	2.77	25.66	4.57	117.19	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.80	2.76	27.09	4.47	121.13	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.84	2.76	28.11	4.41	124.09	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.88	2.75	28.60	4.41	125.97	0	0	0.66	0.000	0.00	0.00	0.00	0.000
29.97	2.75	29.09	4.37	127.23	0	0	0.66	0.000	0.00	0.00	0.00	0.000
30.04	2.74	29.63	4.32	127.97	0	0	0.66	0.000	0.00	0.00	0.00	0.000
30.08	2.73	30.54	4.19	128.13	0	0	0.66	0.000	0.00	0.00	0.00	0.000
30.15	2.71	31.52	4.07	128.20	0	0	0.66	0.000	0.00	0.00	0.00	0.000
30.20	2.69	33.04	3.91	129.09	0	0	0.66	0.000	0.00	0.00	0.00	0.000
30.28	2.67	34.37	3.79	130.39	0	0	0.66	0.000	0.00	0.00	0.00	0.000
30.32	2.65	36.43	3.64	132.77	0	0	0.66	0.000	0.00	0.00	0.00	0.000
30.41	2.62	39.47	3.44	135.80	0	0	0.66	0.000	0.00	0.00	0.00	0.000
30.51	2.59	42.67	3.24	138.16	0	0	0.66	0.000	0.00	14.60	0.00	0.000
30.56	2.55	45.75	3.04	139.28	0	0	0.66	0.000	0.00	14.60	0.00	0.000
30.59	2.51	48.45	2.84	137.71	0	0	0.66	0.000	0.00	14.60	0.00	0.000
30.67	2.47	51.30	2.64	135.48	0	0	0.66	0.000	0.00	14.60	0.00	0.000
30.71	2.40	57.37	2.31	132.77	0	0	0.66	0.000	0.00	14.60	0.00	0.000
30.80	2.32	65.66	2.00	131.39	0	0	0.66	0.000	0.00	14.60	0.00	0.000
30.85	2.19	80.60	1.64	132.41	0	0	0.66	0.000	0.00	14.60	0.00	0.000
30.93	2.09	94.91	1.44	136.24	0	0	0.66	0.000	0.00	14.60	0.00	0.000
30.98	1.99	111.89	1.28	143.61	0	0	0.66	0.000	0.00	14.60	0.00	0.000
31.07	1.92	124.71	1.21	150.41	0	0	0.66	0.000	0.00	14.60	0.00	0.000
31.11	1.84	140.54	1.14	160.15	0	0	0.66	0.000	0.00	14.60	0.00	0.000
31.20	1.79	153.18	1.10	168.41	32	1942	0.66	0.171	0.10	14.60	0.04	0.001
31.25	1.74	165.79	1.07	176.93	34	1963	0.66	0.166	0.09	14.60	0.04	0.001
31.30	1.71	175.53	1.05	183.65	34	1986	0.66	0.161	0.08	14.60	0.04	0.000
31.40	1.69	184.02	1.03	189.58	35	2013	0.66	0.156	0.08	14.60	0.04	0.001
31.46	1.67	191.16	1.02	194.82	36	2044	0.66	0.150	0.07	14.60	0.03	0.000
31.50	1.66	198.39	1.01	200.15	37	2077	0.66	0.144	0.07	14.60	0.03	0.000
31.59	1.64	204.89	1.00	204.63	37	2103	0.66	0.140	0.07	14.60	0.03	0.001

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
31.63	1.63	210.65	1.00	210.65	38	2127	0.66	0.136	0.06	14.60	0.03	0.000
31.69	1.62	213.83	1.00	213.83	39	2144	0.66	0.133	0.06	14.60	0.03	0.000
31.76	1.62	217.21	1.00	217.21	39	2160	0.66	0.131	0.06	14.60	0.03	0.000
31.86	1.61	219.56	1.00	219.56	40	2172	0.66	0.130	0.06	14.60	0.03	0.001
31.90	1.61	221.31	1.00	221.31	40	2179	0.66	0.129	0.06	14.60	0.03	0.000
31.98	1.61	220.92	1.00	220.92	40	2188	0.66	0.128	0.06	14.60	0.03	0.000
32.03	1.62	218.78	1.00	218.78	40	2200	0.66	0.127	0.06	14.60	0.03	0.000
32.12	1.63	215.16	1.00	215.16	39	2200	0.66	0.127	0.06	14.60	0.03	0.001
32.19	1.65	210.82	1.00	210.87	39	2193	0.66	0.129	0.06	14.60	0.03	0.000
32.22	1.65	207.21	1.00	208.16	38	2176	0.66	0.132	0.06	14.60	0.03	0.000
32.29	1.66	203.52	1.01	205.05	38	2153	0.66	0.136	0.06	14.60	0.03	0.000
32.38	1.68	193.28	1.02	197.77	37	2119	0.66	0.142	0.07	14.60	0.03	0.001
32.42	1.69	187.73	1.03	193.38	36	2091	0.66	0.147	0.07	14.60	0.03	0.000
32.51	1.70	183.01	1.04	190.09	35	2081	0.66	0.150	0.08	14.60	0.03	0.001
32.55	1.69	185.12	1.03	191.26	36	2080	0.66	0.150	0.08	14.60	0.03	0.000
32.64	1.70	182.93	1.04	189.84	35	2080	0.66	0.151	0.08	14.60	0.03	0.001
32.68	1.71	179.40	1.05	187.61	35	2078	0.66	0.151	0.08	14.60	0.03	0.000
32.75	1.73	174.98	1.06	184.79	35	2077	0.66	0.152	0.08	14.60	0.03	0.001
32.85	1.74	170.05	1.07	181.47	34	2073	0.66	0.154	0.08	14.60	0.04	0.001
32.94	1.75	166.36	1.07	178.83	34	2066	0.66	0.156	0.08	14.60	0.04	0.001
32.98	1.76	165.08	1.08	177.95	34	2066	0.66	0.156	0.08	14.60	0.04	0.000
33.07	1.76	164.49	1.08	177.56	34	2068	0.66	0.156	0.08	14.60	0.04	0.001
33.12	1.76	164.85	1.08	177.85	34	2072	0.66	0.156	0.08	14.60	0.04	0.000
33.16	1.76	164.90	1.08	177.94	34	2075	0.66	0.155	0.08	14.60	0.04	0.000
33.21	1.76	166.12	1.08	178.77	34	2079	0.66	0.155	0.08	14.60	0.04	0.000
33.29	1.75	167.50	1.07	179.72	34	2084	0.66	0.154	0.08	14.60	0.03	0.001
33.34	1.75	169.90	1.07	181.53	34	2095	0.66	0.152	0.08	14.60	0.03	0.000
33.43	1.74	171.92	1.06	183.06	35	2106	0.66	0.151	0.08	14.60	0.03	0.001
33.49	1.73	173.71	1.06	184.37	35	2114	0.66	0.150	0.08	14.60	0.03	0.001
33.54	1.74	173.30	1.06	183.99	35	2112	0.66	0.150	0.08	14.60	0.03	0.000
33.61	1.74	171.79	1.06	182.82	35	2108	0.66	0.152	0.08	14.60	0.03	0.001
33.67	1.74	170.37	1.07	181.74	34	2105	0.66	0.153	0.08	14.60	0.03	0.000
33.73	1.75	169.96	1.07	181.63	34	2111	0.66	0.152	0.08	14.60	0.03	0.001
33.81	1.74	170.91	1.07	182.53	35	2122	0.66	0.150	0.08	14.60	0.03	0.001
33.87	1.74	171.99	1.07	183.60	35	2136	0.66	0.148	0.08	14.60	0.03	0.001
33.93	1.74	173.94	1.06	185.14	35	2147	0.66	0.146	0.07	14.60	0.03	0.000
34.01	1.74	175.12	1.06	186.03	35	2154	0.66	0.145	0.07	14.60	0.03	0.001
34.07	1.73	177.14	1.06	187.51	35	2163	0.66	0.144	0.07	14.60	0.03	0.000
34.16	1.73	178.92	1.06	188.89	36	2174	0.66	0.143	0.07	14.60	0.03	0.001
34.21	1.72	181.11	1.05	190.74	36	2190	0.66	0.140	0.07	14.60	0.03	0.000
34.25	1.72	183.51	1.05	192.85	36	2209	0.66	0.138	0.07	14.60	0.03	0.000
34.35	1.71	185.80	1.05	194.55	36	2221	0.66	0.136	0.07	14.60	0.03	0.001
34.42	1.71	188.20	1.04	196.07	37	2226	0.66	0.136	0.07	14.60	0.03	0.000
34.47	1.70	189.52	1.04	196.62	37	2221	0.66	0.137	0.07	14.60	0.03	0.000
34.52	1.70	190.30	1.04	197.21	37	2226	0.66	0.136	0.07	14.60	0.03	0.000
34.60	1.70	190.72	1.04	197.82	37	2239	0.66	0.135	0.06	14.60	0.03	0.001
34.70	1.70	191.73	1.04	198.46	37	2244	0.66	0.135	0.06	14.60	0.03	0.001
34.77	1.69	193.36	1.03	199.15	37	2239	0.66	0.136	0.06	14.60	0.03	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
34.82	1.68	194.94	1.02	199.53	37	2227	0.66	0.138	0.07	14.60	0.03	0.000
34.86	1.67	195.73	1.02	199.64	37	2220	0.66	0.139	0.07	14.60	0.03	0.000
34.91	1.69	189.74	1.03	195.27	36	2198	0.66	0.143	0.07	14.60	0.03	0.000
35.00	1.70	183.75	1.04	190.61	36	2172	0.66	0.148	0.07	14.60	0.03	0.001
35.05	1.71	179.73	1.04	187.30	35	2149	0.66	0.152	0.08	14.60	0.03	0.000
35.12	1.69	182.03	1.03	188.26	35	2140	0.66	0.154	0.08	14.60	0.03	0.001
35.21	1.69	183.87	1.03	189.33	35	2143	0.66	0.154	0.08	14.60	0.03	0.001
35.25	1.69	184.57	1.03	190.06	35	2153	0.66	0.153	0.08	14.60	0.03	0.000
35.34	1.69	185.09	1.03	190.88	36	2169	0.66	0.150	0.08	14.60	0.03	0.001
35.42	1.69	185.33	1.03	191.46	36	2184	0.66	0.148	0.07	14.60	0.03	0.001
35.46	1.70	184.86	1.04	191.46	36	2193	0.66	0.147	0.07	14.60	0.03	0.000
35.51	1.70	184.29	1.04	191.39	36	2202	0.66	0.145	0.07	14.60	0.03	0.000
35.57	1.71	183.62	1.04	191.34	36	2214	0.66	0.144	0.07	14.60	0.03	0.000
35.64	1.71	183.58	1.04	191.55	36	2222	0.66	0.142	0.07	14.60	0.03	0.000
35.73	1.71	182.91	1.04	191.13	36	2225	0.66	0.142	0.07	14.60	0.03	0.001
35.77	1.71	181.61	1.05	190.22	36	2224	0.66	0.143	0.07	14.60	0.03	0.000
35.86	1.72	179.36	1.05	188.72	35	2223	0.66	0.143	0.07	14.60	0.03	0.001
35.90	1.73	176.28	1.06	186.70	35	2222	0.66	0.144	0.07	14.60	0.03	0.000
35.96	1.74	172.52	1.07	184.20	35	2219	0.66	0.145	0.07	14.60	0.03	0.000
36.08	1.76	168.63	1.08	181.42	35	2214	0.66	0.146	0.08	14.60	0.03	0.001
36.12	1.76	165.62	1.08	179.18	34	2206	0.66	0.148	0.08	14.60	0.03	0.000
36.17	1.77	163.38	1.08	177.16	34	2189	0.66	0.151	0.08	14.60	0.03	0.000
36.28	1.77	161.14	1.09	175.09	34	2174	0.66	0.154	0.08	14.60	0.03	0.001
36.32	1.77	159.27	1.09	173.04	33	2150	0.66	0.159	0.09	14.60	0.03	0.000
36.38	1.77	157.90	1.08	171.24	33	2124	0.66	0.165	0.09	14.60	0.03	0.000
36.43	1.77	155.04	1.08	168.12	32	2087	0.66	0.173	0.10	14.60	0.04	0.000
36.52	1.77	151.80	1.09	164.91	32	2055	0.66	0.181	0.10	14.60	0.04	0.001
36.57	1.78	148.59	1.09	161.89	31	2028	0.66	0.188	0.11	14.60	0.04	0.000
36.64	1.78	146.77	1.09	160.12	31	2011	0.66	0.193	0.12	14.60	0.04	0.001
36.69	1.78	145.90	1.09	158.98	30	1995	0.66	0.198	0.12	14.60	0.04	0.001
36.78	1.77	146.00	1.09	158.62	30	1985	0.66	0.201	0.12	14.60	0.05	0.001
36.83	1.76	147.10	1.08	159.04	30	1979	0.66	0.204	0.12	14.60	0.05	0.001
36.89	1.76	148.51	1.08	159.86	30	1978	0.66	0.204	0.12	14.60	0.05	0.001
36.95	1.75	149.89	1.07	160.52	30	1973	0.66	0.206	0.12	14.60	0.05	0.001
37.04	1.74	150.90	1.07	160.77	30	1964	0.66	0.210	0.13	14.60	0.05	0.001
37.09	1.73	151.92	1.06	160.87	30	1950	0.66	0.215	0.13	14.60	0.05	0.001
37.14	1.72	152.10	1.05	160.19	30	1928	0.66	0.222	0.14	14.60	0.05	0.001
37.23	1.72	151.88	1.05	159.21	30	1906	0.66	0.231	0.14	14.60	0.05	0.001
37.27	1.71	151.40	1.05	158.22	30	1887	0.66	0.238	0.15	14.60	0.05	0.001
37.35	1.71	150.91	1.05	157.78	30	1885	0.66	0.240	0.15	14.60	0.05	0.001
37.41	1.71	153.67	1.04	160.17	30	1907	0.66	0.232	0.14	14.60	0.05	0.001
37.47	1.70	161.05	1.04	166.73	31	1968	0.66	0.211	0.12	14.60	0.04	0.001
37.54	1.67	175.48	1.02	179.04	33	2074	0.66	0.182	0.10	14.60	0.04	0.001
37.63	1.66	189.11	1.01	190.87	35	2184	0.66	0.159	0.08	14.60	0.03	0.001
37.67	1.66	199.94	1.01	201.37	37	2299	0.66	0.139	0.07	14.60	0.02	0.000
37.76	1.67	203.22	1.02	206.83	38	2396	0.66	0.126	0.06	14.60	0.02	0.000
37.84	1.69	203.18	1.03	209.60	39	2475	0.66	0.117	0.05	14.60	0.02	0.000
37.89	1.71	200.96	1.04	209.69	39	2518	0.66	0.113	0.05	14.60	0.02	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
37.93	1.72	198.63	1.05	208.91	39	2539	0.66	0.111	0.05	14.60	0.02	0.000
38.02	1.73	196.88	1.06	208.37	39	2559	0.66	0.109	0.05	14.60	0.02	0.000
38.07	1.74	195.55	1.06	208.00	39	2575	0.66	0.108	0.05	14.60	0.02	0.000
38.15	1.74	194.78	1.07	207.77	39	2586	0.66	0.107	0.05	14.60	0.02	0.000
38.19	1.74	195.20	1.07	208.39	39	2599	0.66	0.106	0.05	14.60	0.02	0.000
38.28	1.74	196.36	1.07	209.49	40	2614	0.66	0.105	0.05	14.60	0.02	0.000
38.33	1.75	197.20	1.07	210.72	40	2637	0.66	0.103	0.04	14.60	0.02	0.000
38.41	1.75	196.55	1.07	210.94	40	2660	0.66	0.101	0.04	14.60	0.02	0.000
38.46	1.77	193.97	1.08	209.85	40	2680	0.66	0.100	0.04	14.60	0.01	0.000
38.55	1.78	191.15	1.09	208.19	40	2689	0.66	0.099	0.04	14.60	0.01	0.000
38.59	1.78	188.38	1.09	206.01	40	2678	0.66	0.100	0.04	14.60	0.02	0.000
38.67	1.78	186.58	1.09	204.04	39	2656	0.66	0.102	0.05	14.60	0.02	0.000
38.72	1.78	184.59	1.09	201.52	39	2618	0.65	0.106	0.05	14.60	0.02	0.000
38.80	1.78	182.82	1.09	199.22	38	2585	0.65	0.109	0.05	14.60	0.02	0.000
38.85	1.77	180.40	1.09	196.23	38	2542	0.65	0.113	0.05	14.60	0.02	0.000
38.94	1.77	176.69	1.09	192.36	37	2498	0.65	0.118	0.06	14.60	0.02	0.000
39.02	1.78	172.56	1.09	188.15	36	2452	0.65	0.123	0.06	14.60	0.02	0.000
39.08	1.78	168.92	1.09	184.57	35	2415	0.65	0.128	0.06	14.60	0.02	0.000
39.13	1.78	166.33	1.09	181.73	35	2379	0.65	0.133	0.07	14.60	0.02	0.000
39.18	1.78	162.02	1.09	177.29	34	2328	0.65	0.141	0.07	14.60	0.02	0.000
39.28	1.79	156.38	1.10	172.00	33	2279	0.65	0.149	0.08	14.60	0.03	0.001
39.33	1.80	149.65	1.11	166.15	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.38	1.83	142.22	1.13	160.08	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.48	1.85	134.97	1.15	154.82	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.55	1.88	128.79	1.17	150.47	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.59	1.90	124.86	1.18	147.90	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.64	1.91	119.09	1.20	142.76	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.75	1.93	111.97	1.22	136.28	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.81	1.96	102.97	1.25	128.50	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.85	1.99	94.08	1.29	121.30	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.90	2.02	86.34	1.33	114.73	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.96	2.04	80.05	1.36	109.00	0	0	0.65	0.000	0.00	14.60	0.00	0.000
40.03	2.07	74.77	1.40	105.03	0	0	0.65	0.000	0.00	14.60	0.00	0.000
40.12	2.11	69.59	1.47	102.17	0	0	0.65	0.000	0.00	14.60	0.00	0.000
40.16	2.16	64.20	1.58	101.19	0	0	0.65	0.000	0.00	14.60	0.00	0.000
40.25	2.21	59.92	1.69	101.03	0	0	0.65	0.000	0.00	14.60	0.00	0.000
40.29	2.28	54.78	1.88	102.98	0	0	0.65	0.000	0.00	14.60	0.00	0.000
40.38	2.34	50.72	2.07	105.17	0	0	0.65	0.000	0.00	14.60	0.00	0.000
40.42	2.42	45.63	2.37	108.36	0	0	0.65	0.000	0.00	14.60	0.00	0.000
40.51	2.49	40.99	2.70	110.55	0	0	0.65	0.000	0.00	14.60	0.00	0.000
40.57	2.57	35.77	3.14	112.40	0	0	0.65	0.000	0.00	14.60	0.00	0.000
40.64	2.64	31.29	3.60	112.77	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.70	2.71	27.58	4.06	111.88	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.75	2.77	24.15	4.54	109.73	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.82	2.82	21.46	4.96	106.45	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.90	2.86	19.28	5.36	103.27	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.96	2.87	18.58	5.43	100.99	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.04	2.88	18.14	5.50	99.75	0	0	0.65	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
41.08	2.86	18.43	5.36	98.85	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.15	2.83	19.34	5.08	98.16	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.22	2.78	21.20	4.58	97.15	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.30	2.73	22.63	4.25	96.10	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.34	2.73	22.65	4.20	95.15	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.43	2.75	21.58	4.38	94.43	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.47	2.82	18.79	4.93	92.70	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.56	2.90	15.79	5.70	90.00	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.60	2.98	13.12	6.53	85.75	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.69	3.01	11.91	6.90	82.16	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.73	3.03	10.99	7.05	77.45	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.82	3.02	10.35	6.95	71.94	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.89	3.00	9.83	6.78	66.64	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.95	2.98	9.56	6.57	62.87	0	0	0.65	0.000	0.00	0.00	0.00	0.000
42.00	2.98	9.49	6.48	61.53	0	0	0.65	0.000	0.00	0.00	0.00	0.000
42.08	2.98	9.32	6.57	61.26	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.15	3.00	9.39	6.70	62.90	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.21	3.03	9.61	7.04	67.63	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.29	3.04	10.12	7.18	72.66	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.33	3.01	11.52	6.84	78.79	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.42	2.94	13.88	6.05	84.00	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.48	2.85	17.20	5.20	89.40	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.55	2.81	19.19	4.83	92.71	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.60	2.81	19.72	4.87	96.04	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.69	2.84	19.43	5.11	99.26	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.74	2.84	20.00	5.10	101.94	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.82	2.80	21.25	4.82	102.32	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.89	2.74	23.45	4.31	101.16	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.93	2.67	26.16	3.79	99.04	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.99	2.58	29.97	3.23	96.75	0	0	0.64	0.000	0.00	14.60	0.00	0.000
43.08	2.51	33.46	2.83	94.86	0	0	0.64	0.000	0.00	14.60	0.00	0.000
43.12	2.46	36.49	2.59	94.53	0	0	0.64	0.000	0.00	14.60	0.00	0.000
43.21	2.45	37.98	2.51	95.42	0	0	0.64	0.000	0.00	14.60	0.00	0.000
43.25	2.44	39.12	2.49	97.56	0	0	0.64	0.000	0.00	14.60	0.00	0.000
43.35	2.45	39.21	2.55	99.85	0	0	0.64	0.000	0.00	14.60	0.00	0.000
43.40	2.49	38.31	2.71	103.83	0	0	0.64	0.000	0.00	14.60	0.00	0.000
43.47	2.54	36.44	2.96	107.78	0	0	0.64	0.000	0.00	14.60	0.00	0.000
43.51	2.61	33.03	3.40	112.17	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.60	2.68	29.72	3.85	114.54	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.65	2.71	27.96	4.08	114.00	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.76	2.71	27.37	4.06	111.26	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.81	2.67	28.23	3.81	107.58	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.86	2.64	29.60	3.55	105.07	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.91	2.53	34.95	2.92	101.98	0	0	0.64	0.000	0.00	14.60	0.00	0.000
44.00	2.42	41.13	2.39	98.21	0	0	0.64	0.000	0.00	14.60	0.00	0.000
44.10	2.33	46.60	2.04	95.17	0	0	0.64	0.000	0.00	14.60	0.00	0.000
44.16	2.29	48.60	1.92	93.37	0	0	0.64	0.000	0.00	14.60	0.00	0.000
44.21	2.29	48.63	1.91	92.99	0	0	0.64	0.000	0.00	14.60	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
44.26	2.31	47.42	1.98	93.73	0	0	0.64	0.000	0.00	14.60	0.00	0.000
44.32	2.35	45.27	2.14	96.70	0	0	0.64	0.000	0.00	14.60	0.00	0.000
44.42	2.40	43.38	2.33	101.17	0	0	0.64	0.000	0.00	14.60	0.00	0.000
44.48	2.46	41.32	2.58	106.49	0	0	0.63	0.000	0.00	14.60	0.00	0.000
44.56	2.51	39.03	2.84	111.03	0	0	0.63	0.000	0.00	14.60	0.00	0.000
44.62	2.57	36.13	3.13	113.09	0	0	0.63	0.000	0.00	14.60	0.00	0.000
44.68	2.60	33.94	3.34	113.21	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.73	2.61	32.78	3.40	111.53	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.78	2.60	33.42	3.31	110.71	0	0	0.63	0.000	0.00	14.60	0.00	0.000
44.87	2.56	35.38	3.10	109.76	0	0	0.63	0.000	0.00	14.60	0.00	0.000
44.93	2.56	35.42	3.08	109.07	0	0	0.63	0.000	0.00	14.60	0.00	0.000
44.96	2.51	38.73	2.81	109.00	0	0	0.63	0.000	0.00	14.60	0.00	0.000
45.03	2.48	41.31	2.68	110.66	0	0	0.63	0.000	0.00	14.60	0.00	0.000
45.12	2.44	45.77	2.48	113.37	0	0	0.63	0.000	0.00	14.60	0.00	0.000
45.16	2.46	45.31	2.58	116.81	0	0	0.63	0.000	0.00	14.60	0.00	0.000
45.25	2.49	43.61	2.74	119.41	0	0	0.63	0.000	0.00	14.60	0.00	0.000
45.30	2.55	40.26	3.03	121.90	0	0	0.63	0.000	0.00	14.60	0.00	0.000
45.38	2.61	36.64	3.37	123.58	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.42	2.68	32.86	3.82	125.49	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.51	2.72	30.88	4.11	126.93	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.56	2.74	29.90	4.29	128.31	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.62	2.74	30.18	4.29	129.47	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.68	2.71	32.15	4.07	130.77	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.85	2.69	33.91	3.90	132.18	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.92	2.67	35.49	3.75	133.05	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.98	2.66	35.40	3.73	132.10	0	0	0.63	0.000	0.00	0.00	0.00	0.000
46.12	2.63	37.11	3.52	130.45	0	0	0.63	0.000	0.00	0.00	0.00	0.000
46.16	2.56	41.88	3.08	128.83	0	0	0.63	0.000	0.00	14.60	0.00	0.000
46.21	2.46	50.15	2.56	128.58	0	0	0.63	0.000	0.00	14.60	0.00	0.000
46.26	2.35	60.41	2.14	129.11	0	0	0.63	0.000	0.00	14.60	0.00	0.000
46.31	2.27	70.38	1.86	130.72	0	0	0.63	0.000	0.00	14.60	0.00	0.000
46.36	2.21	78.36	1.70	133.19	0	0	0.63	0.000	0.00	14.60	0.00	0.000
46.42	2.18	83.67	1.62	135.72	0	0	0.63	0.000	0.00	14.60	0.00	0.000
46.47	2.16	87.78	1.58	138.68	0	0	0.63	0.000	0.00	14.60	0.00	0.000
46.56	2.15	90.59	1.56	141.41	0	0	0.63	0.000	0.00	14.60	0.00	0.000
46.62	2.15	92.61	1.56	144.37	0	0	0.63	0.000	0.00	14.60	0.00	0.000
46.71	2.16	93.02	1.58	146.77	33	2760	0.62	0.106	0.06	14.60	0.01	0.000
46.78	2.17	93.04	1.60	148.79	33	2807	0.62	0.103	0.06	14.60	0.01	0.000
46.81	2.18	92.64	1.62	150.27	34	2843	0.62	0.100	0.05	14.60	0.01	0.000
46.86	2.19	91.61	1.65	151.28	34	2872	0.62	0.098	0.05	14.60	0.01	0.000
46.96	2.21	90.07	1.69	151.84	34	2895	0.62	0.097	0.05	14.60	0.01	0.000
47.01	2.22	88.21	1.72	151.73	35	2901	0.62	0.096	0.05	14.60	0.01	0.000
47.08	2.23	86.33	1.75	150.78	34	2890	0.62	0.097	0.05	14.60	0.01	0.000
47.12	2.24	83.76	1.78	149.07	34	2863	0.62	0.099	0.05	14.60	0.01	0.000
47.21	2.26	80.95	1.82	147.33	34	2837	0.62	0.101	0.05	14.60	0.01	0.000
47.27	2.28	77.55	1.87	145.12	34	2800	0.62	0.104	0.06	14.60	0.01	0.000
47.38	2.29	74.56	1.92	142.99	34	2766	0.62	0.107	0.06	14.60	0.01	0.000
47.42	2.29	73.34	1.93	141.34	33	2736	0.62	0.109	0.06	14.60	0.01	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
47.47	2.30	72.18	1.94	140.14	33	2715	0.62	0.111	0.06	14.60	0.01	0.000
47.52	2.28	73.43	1.88	137.91	32	2673	0.62	0.115	0.06	14.60	0.01	0.000
47.58	2.24	76.24	1.78	135.66	31	2625	0.62	0.119	0.07	14.60	0.01	0.000
47.68	2.21	79.47	1.69	134.53	0	0	0.62	0.000	0.00	14.60	0.00	0.000
47.73	2.22	78.62	1.71	134.82	0	0	0.62	0.000	0.00	14.60	0.00	0.000
47.78	2.32	66.51	2.02	134.15	0	0	0.62	0.000	0.00	14.60	0.00	0.000
47.87	2.44	53.87	2.50	134.63	0	0	0.62	0.000	0.00	14.60	0.00	0.000
47.91	2.57	42.57	3.15	134.11	0	0	0.62	0.000	0.00	14.60	0.00	0.000
47.98	2.64	36.91	3.55	131.04	0	0	0.62	0.000	0.00	0.00	0.00	0.000
48.04	2.72	30.67	4.16	127.71	0	0	0.62	0.000	0.00	0.00	0.00	0.000
48.13	2.81	25.83	4.87	125.83	0	0	0.62	0.000	0.00	0.00	0.00	0.000
48.16	2.86	23.68	5.34	126.35	0	0	0.62	0.000	0.00	0.00	0.00	0.000
48.25	2.85	24.64	5.19	127.79	0	0	0.62	0.000	0.00	0.00	0.00	0.000
48.30	2.77	28.80	4.55	131.14	0	0	0.62	0.000	0.00	0.00	0.00	0.000
48.38	2.68	34.81	3.88	134.94	0	0	0.62	0.000	0.00	0.00	0.00	0.000
48.44	2.60	41.81	3.34	139.69	0	0	0.62	0.000	0.00	0.00	0.00	0.000
48.52	2.57	45.84	3.13	143.29	38	2743	0.62	0.109	0.05	14.60	0.01	0.000
48.56	2.56	46.59	3.11	144.98	39	2779	0.62	0.107	0.05	14.60	0.01	0.000
48.65	2.58	45.02	3.21	144.40	39	2764	0.61	0.108	0.05	14.60	0.01	0.000
48.70	2.60	42.85	3.31	141.97	38	2711	0.61	0.112	0.05	14.60	0.01	0.000
48.79	2.61	41.49	3.36	139.58	0	0	0.61	0.000	0.00	0.00	0.00	0.000
48.83	2.62	39.54	3.48	137.55	0	0	0.61	0.000	0.00	0.00	0.00	0.000
48.91	2.66	36.74	3.71	136.40	0	0	0.61	0.000	0.00	0.00	0.00	0.000
48.96	2.71	32.80	4.08	133.84	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.04	2.77	28.55	4.56	130.25	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.09	2.83	24.88	5.07	126.21	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.17	2.88	22.37	5.52	123.52	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.22	2.91	20.94	5.82	121.92	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.30	2.92	20.67	5.85	120.95	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.36	2.90	20.87	5.74	119.72	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.41	2.89	20.88	5.63	117.54	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.48	2.89	20.60	5.56	114.55	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.57	2.88	20.19	5.52	111.46	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.65	2.87	20.24	5.38	108.99	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.70	2.86	20.23	5.31	107.33	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.74	2.84	20.10	5.18	104.05	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.83	2.81	20.51	4.87	99.93	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.90	2.74	22.35	4.33	96.80	0	0	0.61	0.000	0.00	0.00	0.00	0.000
49.96	2.66	26.13	3.72	97.09	0	0	0.61	0.000	0.00	0.00	0.00	0.000
50.00	2.60	31.39	3.32	104.12	28	2036	0.61	0.228	0.15	14.60	0.02	0.000
50.09	2.60	33.73	3.30	111.31	30	2182	0.61	0.189	0.12	14.60	0.02	0.000
50.14	2.66	30.92	3.72	115.14	0	0	0.61	0.000	0.00	0.00	0.00	0.000
50.25	2.77	25.07	4.52	113.27	0	0	0.61	0.000	0.00	0.00	0.00	0.000
50.30	2.86	20.55	5.35	109.85	0	0	0.61	0.000	0.00	0.00	0.00	0.000
50.36	2.92	18.35	5.94	109.03	0	0	0.61	0.000	0.00	0.00	0.00	0.000
50.40	2.96	17.65	6.26	110.52	0	0	0.61	0.000	0.00	0.00	0.00	0.000
50.49	2.94	18.48	6.14	113.53	0	0	0.61	0.000	0.00	0.00	0.00	0.000
50.55	2.88	21.16	5.51	116.67	0	0	0.60	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
50.61	2.79	25.16	4.69	118.02	0	0	0.60	0.000	0.00	0.00	0.00	0.000
50.70	2.72	28.80	4.11	118.31	0	0	0.60	0.000	0.00	0.00	0.00	0.000
50.75	2.65	32.16	3.67	117.95	0	0	0.60	0.000	0.00	0.00	0.00	0.000
50.80	2.61	34.54	3.39	116.93	0	0	0.60	0.000	0.00	0.00	0.00	0.000
50.86	2.54	37.64	2.99	112.45	0	0	0.60	0.000	0.00	14.60	0.00	0.000
50.96	2.47	40.81	2.63	107.22	0	0	0.60	0.000	0.00	14.60	0.00	0.000
51.01	2.40	44.15	2.32	102.56	0	0	0.60	0.000	0.00	14.60	0.00	0.000
51.07	2.36	46.75	2.17	101.24	0	0	0.60	0.000	0.00	14.60	0.00	0.000
51.16	2.36	46.60	2.16	100.86	0	0	0.60	0.000	0.00	14.60	0.00	0.000
51.18	2.35	47.09	2.13	100.44	0	0	0.60	0.000	0.00	14.60	0.00	0.000
51.25	2.36	46.60	2.16	100.44	24	2650	0.60	0.120	0.09	14.60	0.01	0.000
51.33	2.35	47.36	2.12	100.61	0	0	0.60	0.000	0.00	14.60	0.00	0.000
51.39	2.38	46.26	2.22	102.57	0	0	0.60	0.000	0.00	14.60	0.00	0.000
51.46	2.41	44.64	2.36	105.52	0	0	0.60	0.000	0.00	14.60	0.00	0.000
51.54	2.45	42.85	2.54	109.06	0	0	0.60	0.000	0.00	14.60	0.00	0.000
51.59	2.51	40.14	2.82	113.32	0	0	0.60	0.000	0.00	14.60	0.00	0.000
51.68	2.57	37.27	3.15	117.31	0	0	0.60	0.000	0.00	14.60	0.00	0.000
51.72	2.64	33.80	3.60	121.65	0	0	0.60	0.000	0.00	0.00	0.00	0.000
51.77	2.71	30.70	4.06	124.61	0	0	0.60	0.000	0.00	0.00	0.00	0.000
51.85	2.78	27.15	4.62	125.51	0	0	0.60	0.000	0.00	0.00	0.00	0.000
51.94	2.84	24.22	5.13	124.25	0	0	0.60	0.000	0.00	0.00	0.00	0.000
51.99	2.90	21.18	5.73	121.44	0	0	0.60	0.000	0.00	0.00	0.00	0.000
52.06	2.96	18.89	6.26	118.34	0	0	0.60	0.000	0.00	0.00	0.00	0.000
52.12	2.99	17.16	6.65	114.08	0	0	0.60	0.000	0.00	0.00	0.00	0.000
52.20	2.99	16.64	6.61	110.00	0	0	0.60	0.000	0.00	0.00	0.00	0.000
52.24	2.96	16.72	6.29	105.16	0	0	0.60	0.000	0.00	0.00	0.00	0.000
52.34	2.94	16.62	6.10	101.39	0	0	0.60	0.000	0.00	0.00	0.00	0.000
52.38	2.95	15.58	6.20	96.64	0	0	0.60	0.000	0.00	0.00	0.00	0.000
52.46	2.99	13.97	6.64	92.73	0	0	0.59	0.000	0.00	0.00	0.00	0.000
52.51	3.06	11.99	7.49	89.77	0	0	0.59	0.000	0.00	0.00	0.00	0.000
52.59	3.08	11.54	7.73	89.18	0	0	0.59	0.000	0.00	0.00	0.00	0.000
52.64	3.12	11.06	8.14	90.00	0	0	0.59	0.000	0.00	0.00	0.00	0.000
52.73	3.09	11.67	7.81	91.18	0	0	0.59	0.000	0.00	0.00	0.00	0.000
52.77	3.08	12.14	7.64	92.75	0	0	0.59	0.000	0.00	0.00	0.00	0.000
52.84	3.03	13.28	7.11	94.43	0	0	0.59	0.000	0.00	0.00	0.00	0.000
52.90	3.00	14.43	6.70	96.67	0	0	0.59	0.000	0.00	0.00	0.00	0.000
52.97	2.98	15.53	6.49	100.86	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.07	2.96	16.60	6.31	104.78	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.10	2.95	17.31	6.25	108.21	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.18	2.96	17.37	6.33	110.00	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.26	2.98	17.16	6.54	112.24	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.31	3.00	16.96	6.74	114.36	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.36	3.00	17.31	6.69	115.83	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.43	2.98	18.07	6.49	117.25	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.51	2.95	19.09	6.21	118.59	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.55	2.91	20.60	5.76	118.67	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.64	2.84	22.66	5.17	117.22	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.68	2.73	26.95	4.19	112.82	0	0	0.59	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
53.77	2.61	32.02	3.36	107.67	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.82	2.46	38.60	2.59	99.88	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.91	2.36	43.61	2.15	93.96	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.95	2.27	48.23	1.84	88.82	0	0	0.59	0.000	0.00	14.60	0.00	0.000
54.03	2.22	50.41	1.72	86.50	0	0	0.59	0.000	0.00	14.60	0.00	0.000
54.08	2.21	50.48	1.68	84.83	0	0	0.59	0.000	0.00	14.60	0.00	0.000
54.16	2.23	48.22	1.75	84.37	0	0	0.59	0.000	0.00	14.60	0.00	0.000
54.21	2.31	42.85	1.99	85.10	0	0	0.59	0.000	0.00	14.60	0.00	0.000
54.28	2.44	35.52	2.49	88.34	0	0	0.58	0.000	0.00	14.60	0.00	0.000
54.36	2.60	28.13	3.31	92.98	0	0	0.58	0.000	0.00	14.60	0.00	0.000
54.40	2.75	22.07	4.40	97.17	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.48	2.86	18.41	5.35	98.49	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.53	2.97	15.13	6.43	97.32	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.64	3.02	13.46	7.03	94.58	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.68	3.05	12.27	7.36	90.27	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.74	3.04	11.69	7.24	84.61	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.83	3.01	11.34	6.91	78.39	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.88	2.98	11.20	6.50	72.74	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.93	2.96	11.21	6.28	70.42	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.04	2.95	11.24	6.18	69.48	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.09	2.95	11.31	6.20	70.05	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.14	2.95	11.36	6.22	70.67	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.19	2.95	11.46	6.25	71.63	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.27	2.96	11.61	6.29	73.06	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.34	2.96	11.91	6.29	74.88	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.40	2.95	12.43	6.26	77.79	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.49	2.95	12.96	6.25	80.93	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.55	2.96	13.36	6.33	84.56	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.61	2.98	13.40	6.54	87.55	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.66	3.01	13.14	6.84	89.91	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.75	3.04	12.74	7.14	91.01	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.80	3.05	12.30	7.35	90.48	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.86	3.06	11.92	7.43	88.55	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.92	3.08	11.39	7.67	87.37	0	0	0.58	0.000	0.00	0.00	0.00	0.000
56.01	3.09	11.23	7.84	88.00	0	0	0.58	0.000	0.00	0.00	0.00	0.000
56.05	3.13	10.93	8.36	91.37	0	0	0.58	0.000	0.00	0.00	0.00	0.000
56.16	3.14	11.16	8.49	94.75	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.23	3.13	11.66	8.37	97.59	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.27	3.07	13.07	7.55	98.68	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.31	2.97	15.26	6.39	97.44	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.45	2.84	18.58	5.09	94.64	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.51	2.68	23.49	3.89	91.34	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.57	2.56	29.17	3.09	90.04	0	0	0.57	0.000	0.00	14.60	0.00	0.000
56.62	2.48	34.16	2.65	90.61	0	0	0.57	0.000	0.00	14.60	0.00	0.000
56.66	2.47	36.23	2.60	94.38	0	0	0.57	0.000	0.00	14.60	0.00	0.000
56.76	2.52	34.84	2.85	99.44	0	0	0.57	0.000	0.00	14.60	0.00	0.000
56.81	2.61	30.89	3.38	104.38	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.88	2.70	26.41	4.02	106.19	0	0	0.57	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
56.93	2.78	22.67	4.65	105.55	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.97	2.88	18.70	5.55	103.72	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.12	2.98	15.75	6.48	102.15	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.17	3.03	14.14	7.14	100.99	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.23	2.98	14.90	6.53	97.25	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.27	2.91	16.11	5.82	93.73	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.32	2.88	16.39	5.53	90.59	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.37	2.92	15.54	5.88	91.30	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.42	2.97	13.59	6.46	87.77	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.54	3.04	11.59	7.15	82.88	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.58	3.09	9.93	7.81	77.55	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.62	3.15	8.88	8.55	75.88	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.71	3.16	8.58	8.75	75.07	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.76	3.19	8.24	9.07	74.70	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.85	3.17	8.45	8.87	74.97	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.89	3.15	8.85	8.63	76.39	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.98	3.11	9.78	8.11	79.31	0	0	0.57	0.000	0.00	0.00	0.00	0.000
58.04	3.08	10.72	7.72	82.74	0	0	0.57	0.000	0.00	0.00	0.00	0.000
58.11	3.05	11.63	7.32	85.15	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.15	2.92	14.74	5.89	86.80	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.24	2.74	20.13	4.30	86.62	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.30	2.55	28.21	3.03	85.61	0	0	0.56	0.000	0.00	14.60	0.00	0.000
58.37	2.39	37.44	2.27	84.95	0	0	0.56	0.000	0.00	14.60	0.00	0.000
58.41	2.23	49.80	1.74	86.88	0	0	0.56	0.000	0.00	14.60	0.00	0.000
58.50	2.12	61.26	1.49	91.09	0	0	0.56	0.000	0.00	14.60	0.00	0.000
58.54	2.03	72.87	1.34	97.41	0	0	0.56	0.000	0.00	14.60	0.00	0.000
58.64	1.98	80.31	1.27	102.22	0	0	0.56	0.000	0.00	14.60	0.00	0.000
58.69	1.94	87.12	1.23	107.09	0	0	0.56	0.000	0.00	14.60	0.00	0.000
58.74	1.92	91.50	1.21	110.69	0	0	0.56	0.000	0.00	14.60	0.00	0.000
58.80	1.91	95.69	1.20	114.47	0	0	0.56	0.000	0.00	14.60	0.00	0.000
58.89	1.90	98.61	1.19	117.36	0	0	0.56	0.000	0.00	14.60	0.00	0.000
58.95	1.90	100.28	1.19	119.26	0	0	0.56	0.000	0.00	14.60	0.00	0.000
59.00	1.90	100.58	1.19	119.93	24	3708	0.56	0.066	0.05	14.60	0.00	0.000
59.07	1.91	100.75	1.19	120.29	24	3726	0.56	0.065	0.05	14.60	0.00	0.000
59.15	1.90	101.11	1.19	120.63	24	3741	0.56	0.065	0.05	14.60	0.00	0.000
59.20	1.90	101.77	1.19	121.38	24	3767	0.56	0.064	0.05	14.60	0.00	0.000
59.35	1.91	101.80	1.19	121.65	24	3789	0.56	0.064	0.05	14.60	0.00	0.000
59.40	1.91	101.74	1.20	121.78	24	3801	0.56	0.063	0.05	14.60	0.00	0.000
59.46	1.91	101.29	1.20	121.28	24	3790	0.56	0.064	0.05	14.60	0.00	0.000
59.51	1.91	100.92	1.20	120.68	24	3772	0.56	0.064	0.05	14.60	0.00	0.000
59.57	1.92	98.07	1.21	118.59	24	3733	0.56	0.065	0.05	14.60	0.00	0.000
59.59	1.93	96.39	1.22	117.30	24	3706	0.56	0.066	0.05	14.60	0.00	0.000
59.66	1.93	95.12	1.22	116.37	24	3691	0.56	0.066	0.05	14.60	0.00	0.000
59.72	1.93	96.38	1.21	116.99	24	3700	0.56	0.066	0.05	14.60	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)

Total estimated settlement: 0.90

Abbreviations

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

GeoTek, Inc.
1548 N. Maple Street
Corona, CA 92880
http://www.geotekusa.com

LIQUEFACTION ANALYSIS REPORT

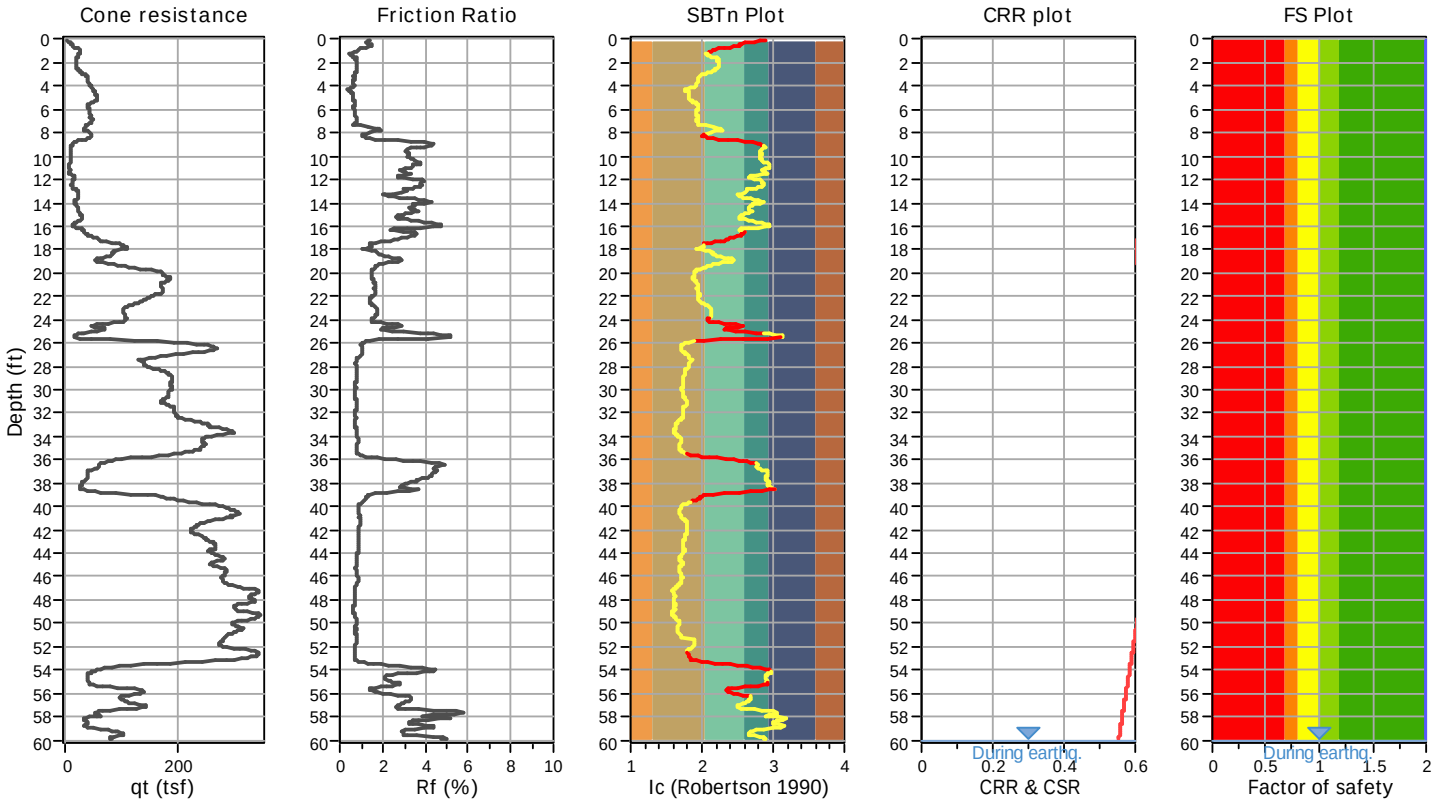
Project title : Proposed Residential Development

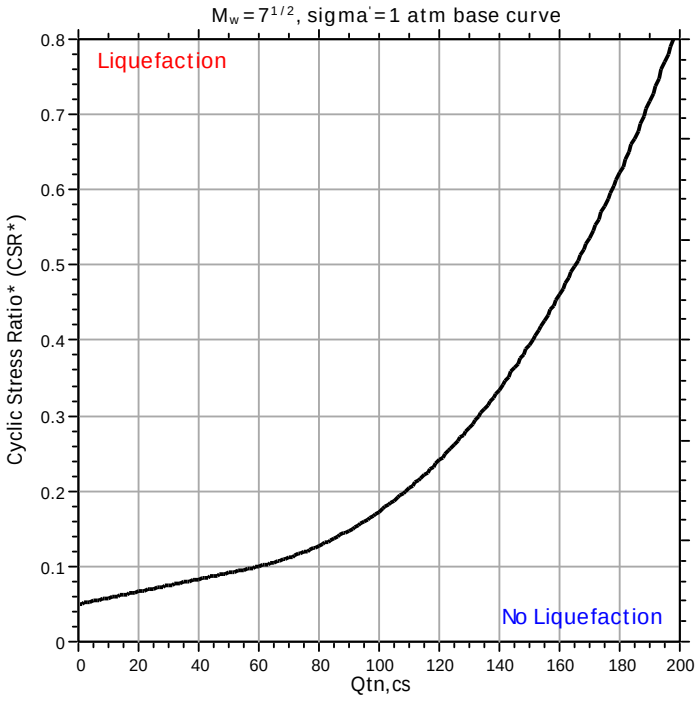
Location : NEC Cawston Avenue and Cottonwood Avenue, San

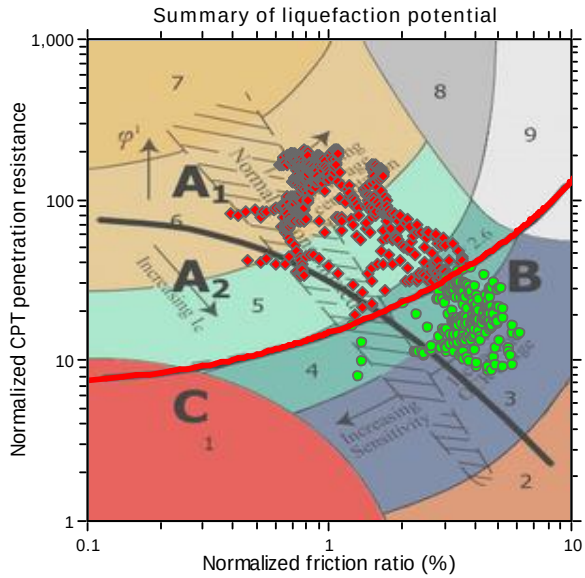
CPT file : CPT-2

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	60.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	60.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	7.44	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.99	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

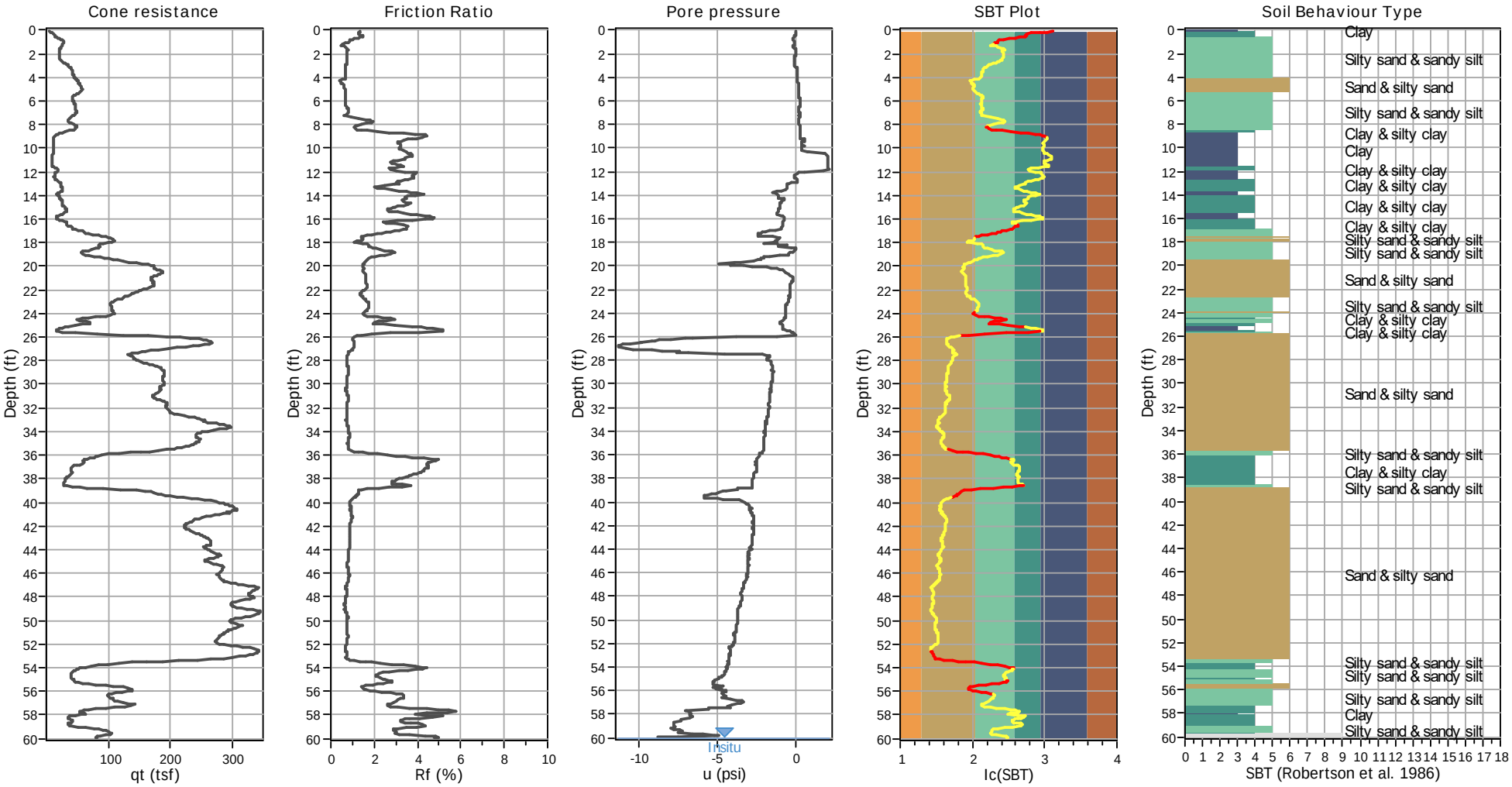






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



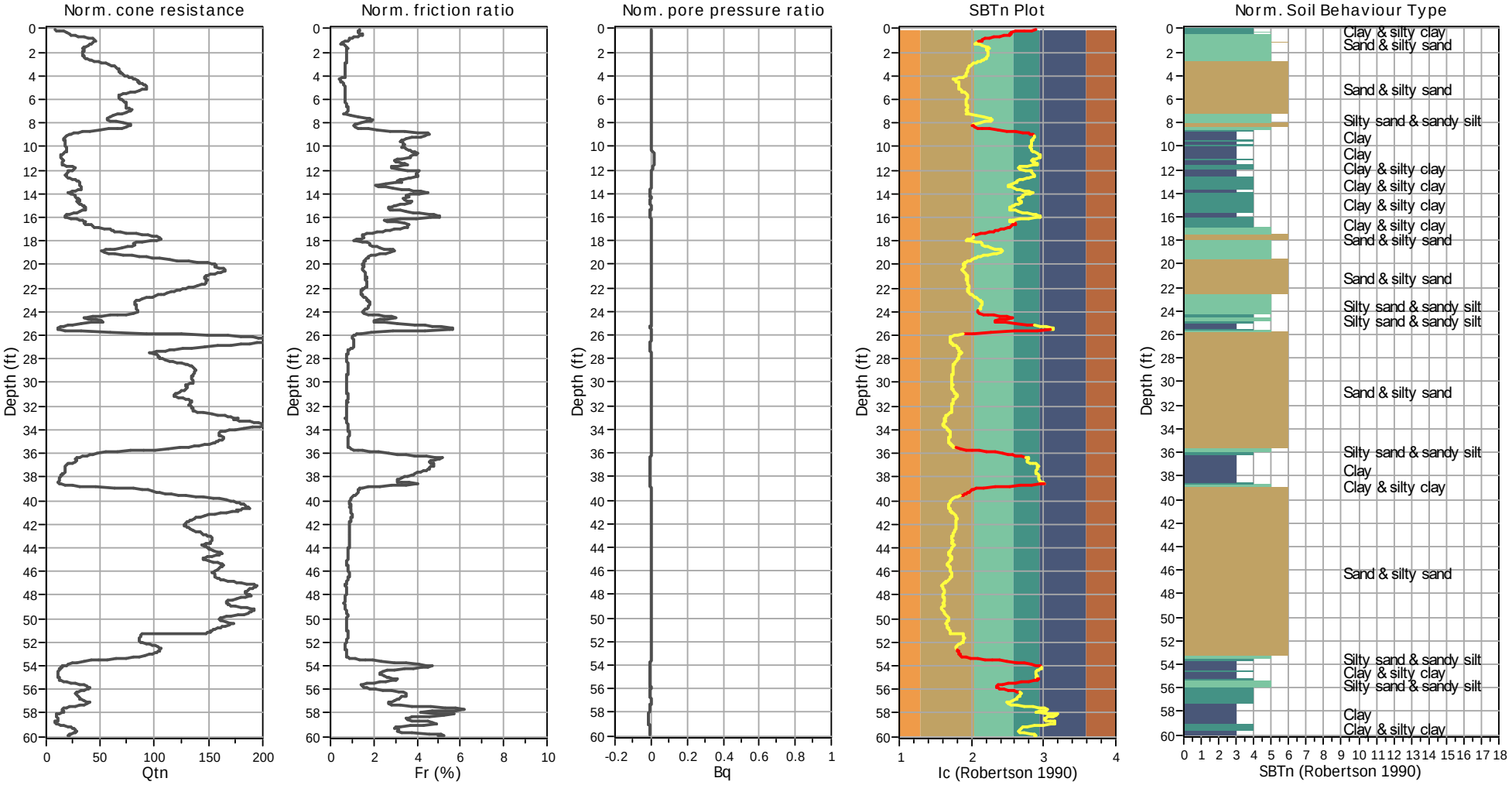
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	60.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	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:	7.44	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.99	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	60.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

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)



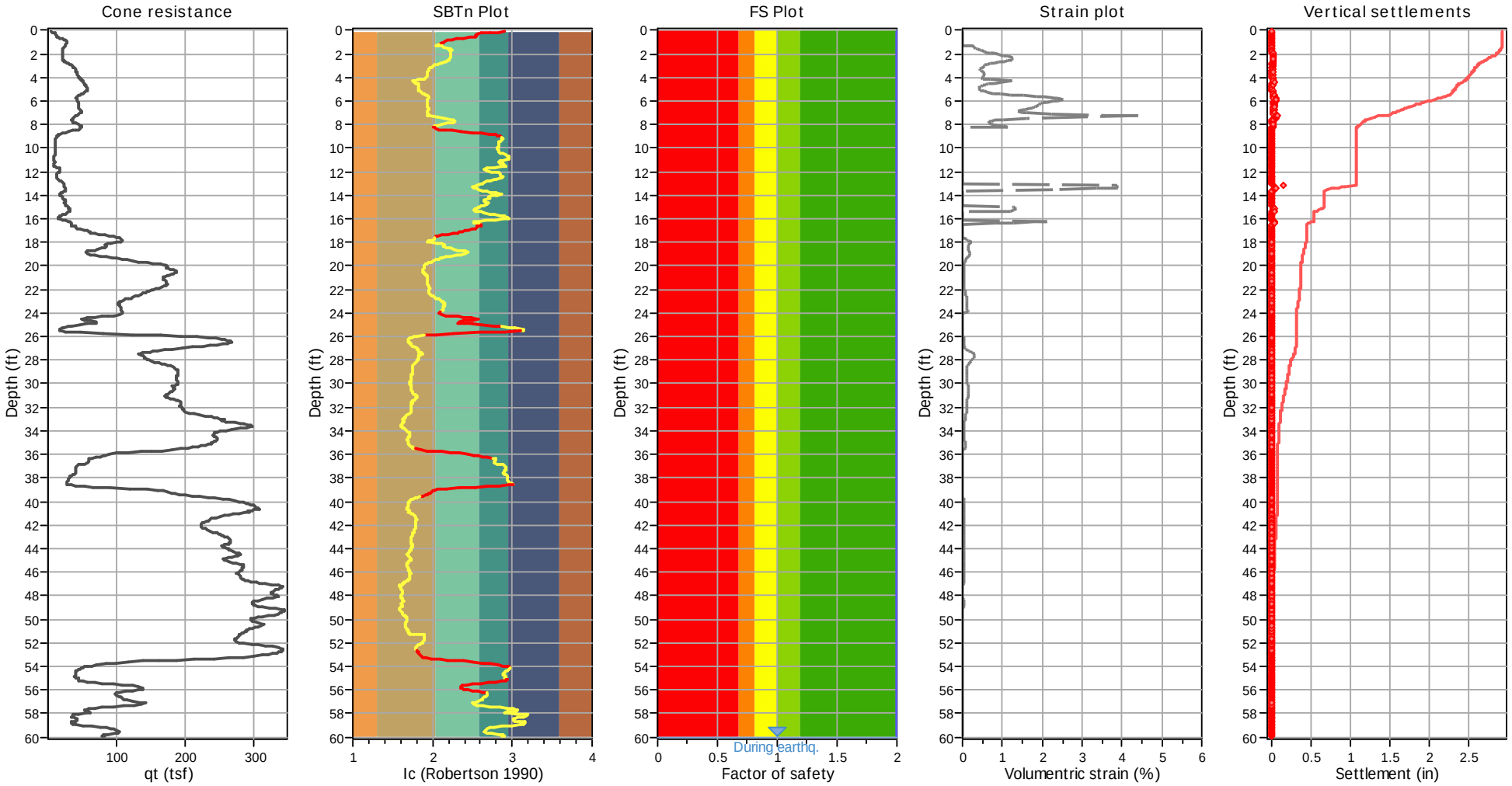
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	60.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	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:	7.44	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.99	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	60.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

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

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement of dry sands ::

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
0.09	2.90	7.89	5.71	45.04	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.15	2.82	9.85	4.98	49.07	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.22	2.73	12.70	4.19	53.21	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.27	2.61	16.48	3.39	55.83	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.35	2.56	19.32	3.07	59.23	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.44	2.53	21.23	2.95	62.63	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.48	2.55	21.73	3.02	65.57	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.53	2.53	22.81	2.94	67.05	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.59	2.46	26.36	2.56	67.40	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.69	2.40	29.48	2.29	67.59	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.74	2.31	34.47	1.97	67.84	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.79	2.24	38.53	1.78	68.59	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.88	2.18	42.97	1.62	69.61	0	0	0.63	0.000	0.00	14.60	0.00	0.000
0.93	2.15	44.88	1.56	69.81	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.02	2.14	45.10	1.54	69.26	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.09	2.14	44.72	1.53	68.48	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.13	2.11	43.83	1.47	64.46	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.23	2.08	42.84	1.41	60.46	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.27	2.05	41.81	1.00	41.81	0	0	0.63	0.000	0.00	14.60	0.00	0.000
1.33	2.08	41.01	1.42	58.31	13	321	0.63	0.161	0.28	14.60	0.27	0.004
1.38	2.12	40.21	1.49	59.80	13	329	0.63	0.156	0.26	14.60	0.25	0.003
1.48	2.14	39.50	1.53	60.55	13	333	0.63	0.178	0.29	14.60	0.28	0.007
1.53	2.20	36.09	1.66	60.03	14	327	0.63	0.212	0.34	14.60	0.33	0.004
1.59	2.22	34.59	1.73	59.69	14	324	0.63	0.251	0.40	14.60	0.38	0.005
1.66	2.24	33.37	1.78	59.42	14	320	0.63	0.299	0.47	14.60	0.45	0.007
1.73	2.21	35.00	1.70	59.64	14	324	0.63	0.316	0.51	14.60	0.48	0.008
1.79	2.22	34.81	1.71	59.60	14	324	0.63	0.356	0.57	14.60	0.54	0.009
1.88	2.22	34.52	1.72	59.47	14	322	0.63	0.417	0.67	14.60	0.64	0.013
1.92	2.23	34.15	1.74	59.26	14	321	0.63	0.461	0.74	14.60	0.71	0.008
2.00	2.23	33.90	1.74	59.08	13	320	0.63	0.528	0.85	14.60	0.81	0.014
2.06	2.23	33.71	1.75	58.98	13	319	0.63	0.590	0.95	14.60	0.90	0.014
2.14	2.23	33.61	1.75	58.96	13	319	0.63	0.669	1.07	14.60	1.02	0.020
2.19	2.23	33.65	1.75	58.97	13	319	0.63	0.713	1.14	14.60	1.09	0.012
2.23	2.23	33.74	1.75	59.08	14	319	0.63	0.754	1.21	14.60	1.15	0.013
2.32	2.23	34.15	1.74	59.31	14	321	0.63	0.821	1.31	14.60	1.25	0.026
2.37	2.22	34.62	1.73	59.81	14	324	0.63	0.825	1.31	14.60	1.24	0.014
2.45	2.22	35.50	1.70	60.52	14	329	0.63	0.845	1.33	14.60	1.26	0.026
2.53	2.21	36.47	1.68	61.35	14	334	0.63	0.845	1.31	14.60	1.24	0.023
2.58	2.19	38.10	1.64	62.53	14	341	0.63	0.777	1.19	14.60	1.12	0.013
2.66	2.17	39.68	1.61	63.71	14	349	0.63	0.753	1.13	14.60	1.07	0.022
2.71	2.15	42.25	1.55	65.46	14	359	0.63	0.659	0.97	14.60	0.92	0.010
2.78	2.12	44.81	1.50	67.22	15	370	0.63	0.603	0.87	14.60	0.82	0.015
2.84	2.09	48.41	1.44	69.56	15	383	0.63	0.521	0.74	14.60	0.69	0.009
2.93	2.06	51.58	1.39	71.65	15	393	0.63	0.488	0.67	14.60	0.63	0.014
2.97	2.03	55.22	1.34	73.92	16	404	0.63	0.438	0.59	14.60	0.56	0.006
3.06	2.00	58.06	1.30	75.74	16	411	0.63	0.430	0.57	14.60	0.53	0.012
3.11	1.98	60.44	1.28	77.34	16	418	0.63	0.414	0.54	14.60	0.51	0.006
3.18	1.97	62.07	1.26	78.48	16	422	0.63	0.414	0.53	14.60	0.50	0.007

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
3.22	1.97	63.66	1.26	80.07	16	430	0.63	0.389	0.49	14.60	0.46	0.005
3.32	1.96	65.05	1.25	81.40	17	436	0.63	0.392	0.49	14.60	0.45	0.011
3.36	1.95	66.13	1.24	82.32	17	440	0.63	0.388	0.48	14.60	0.44	0.005
3.41	1.95	66.68	1.24	82.46	17	440	0.63	0.407	0.50	14.60	0.47	0.005
3.51	1.94	67.09	1.23	82.58	17	439	0.63	0.446	0.55	14.60	0.51	0.012
3.57	1.94	67.37	1.23	82.82	17	440	0.63	0.462	0.57	14.60	0.53	0.007
3.62	1.94	67.69	1.23	83.07	17	441	0.63	0.476	0.58	14.60	0.54	0.006
3.68	1.94	68.15	1.23	83.49	17	443	0.63	0.487	0.59	14.60	0.55	0.008
3.77	1.93	68.84	1.22	84.12	17	446	0.63	0.503	0.61	14.60	0.56	0.011
3.81	1.93	69.68	1.22	84.92	17	450	0.63	0.499	0.60	14.60	0.55	0.006
3.88	1.93	71.03	1.21	86.23	17	456	0.63	0.486	0.57	14.60	0.53	0.008
3.98	1.92	72.56	1.21	87.66	18	462	0.63	0.485	0.56	14.60	0.52	0.012
4.02	1.91	74.80	1.20	89.64	18	471	0.63	0.451	0.51	14.60	0.47	0.005
4.11	1.89	76.80	1.18	90.54	18	471	0.63	0.483	0.55	14.60	0.50	0.011
4.17	1.83	78.85	1.13	89.15	17	449	0.63	0.657	0.78	14.60	0.71	0.009
4.22	1.78	80.30	1.00	80.30	15	428	0.63	0.922	1.26	14.60	1.16	0.016
4.28	1.75	82.26	1.00	82.26	16	424	0.63	1.014	1.36	14.60	1.25	0.016
4.41	1.78	83.98	1.00	83.98	16	446	0.63	0.824	1.07	14.60	0.98	0.031
4.47	1.79	85.52	1.00	85.52	16	462	0.63	0.691	0.87	14.60	0.80	0.011
4.50	1.81	84.49	1.11	93.97	18	467	0.63	0.662	0.74	14.60	0.68	0.005
4.57	1.82	84.95	1.12	95.08	18	475	0.63	0.627	0.69	14.60	0.63	0.011
4.65	1.83	85.59	1.13	96.47	19	485	0.62	0.588	0.63	14.60	0.58	0.011
4.70	1.82	88.11	1.12	99.00	19	496	0.62	0.532	0.56	14.60	0.51	0.006
4.75	1.82	89.42	1.13	100.60	20	505	0.62	0.497	0.51	14.60	0.46	0.005
4.82	1.82	90.63	1.13	101.96	20	512	0.62	0.484	0.49	14.60	0.44	0.008
4.88	1.82	91.98	1.12	103.33	20	518	0.62	0.467	0.46	14.60	0.42	0.005
4.96	1.82	92.72	1.12	104.08	20	521	0.62	0.475	0.47	14.60	0.42	0.009
5.01	1.82	92.80	1.12	104.32	20	523	0.62	0.478	0.47	14.60	0.42	0.005
5.10	1.83	92.04	1.13	103.81	20	522	0.62	0.512	0.50	14.60	0.46	0.011
5.17	1.84	90.78	1.13	102.87	20	519	0.62	0.547	0.54	14.60	0.49	0.007
5.19	1.84	89.14	1.14	101.47	20	514	0.62	0.588	0.59	14.60	0.53	0.003
5.26	1.86	85.87	1.15	98.84	20	505	0.62	0.677	0.70	14.60	0.63	0.011
5.35	1.88	82.08	1.17	95.74	19	494	0.62	0.812	0.86	14.60	0.78	0.017
5.40	1.90	77.86	1.19	92.38	18	482	0.62	0.971	1.07	14.60	0.96	0.011
5.45	1.92	74.02	1.20	89.16	18	469	0.62	1.184	1.35	14.60	1.21	0.015
5.56	1.93	70.65	1.22	86.31	18	458	0.62	1.479	1.73	14.60	1.55	0.038
5.61	1.95	67.98	1.24	84.11	17	449	0.62	1.747	2.10	14.60	1.88	0.026
5.66	1.95	67.35	1.24	83.36	17	445	0.62	1.906	2.31	14.60	2.07	0.024
5.75	1.95	66.87	1.24	82.82	17	442	0.62	2.096	2.56	14.60	2.29	0.048
5.80	1.94	67.24	1.23	82.85	17	441	0.62	2.183	2.68	14.60	2.38	0.027
5.89	1.94	67.45	1.23	82.97	17	441	0.62	2.301	2.82	14.60	2.51	0.060
5.95	1.94	68.57	1.22	83.98	17	446	0.62	2.220	2.69	14.60	2.39	0.034
6.05	1.94	69.49	1.22	85.05	17	451	0.62	2.162	2.58	14.60	2.29	0.055
6.10	1.93	70.51	1.22	86.21	18	457	0.62	2.024	2.38	14.60	2.10	0.021
6.14	1.93	71.35	1.22	87.05	18	461	0.62	1.954	2.27	14.60	2.01	0.020
6.20	1.93	72.19	1.22	87.77	18	464	0.62	1.931	2.22	14.60	1.97	0.028
6.24	1.93	72.79	1.21	88.32	18	467	0.62	1.912	2.19	14.60	1.93	0.021
6.32	1.92	73.25	1.21	88.85	18	469	0.62	1.910	2.17	14.60	1.92	0.033

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
6.40	1.93	73.52	1.22	89.34	18	473	0.62	1.915	2.16	14.60	1.90	0.039
6.44	1.93	73.66	1.22	89.92	18	477	0.62	1.849	2.06	14.60	1.82	0.019
6.54	1.94	73.70	1.23	90.42	18	480	0.62	1.845	2.04	14.60	1.79	0.042
6.61	1.95	73.50	1.23	90.74	18	483	0.62	1.830	2.01	14.60	1.76	0.028
6.64	1.95	73.55	1.24	91.25	19	487	0.62	1.765	1.92	14.60	1.68	0.013
6.71	1.95	74.47	1.24	92.35	19	493	0.62	1.693	1.82	14.60	1.59	0.027
6.80	1.94	76.10	1.23	93.84	19	500	0.62	1.618	1.71	14.60	1.49	0.031
6.84	1.93	77.96	1.22	95.24	19	505	0.62	1.545	1.61	14.60	1.41	0.016
6.89	1.93	78.80	1.22	95.79	19	507	0.62	1.549	1.61	14.60	1.40	0.016
7.01	1.93	78.46	1.22	95.53	19	506	0.62	1.662	1.73	14.60	1.50	0.044
7.05	1.94	76.82	1.23	94.39	19	502	0.62	1.778	1.87	14.60	1.62	0.015
7.10	1.94	73.59	1.23	90.73	18	483	0.62	2.350	2.58	14.60	2.24	0.027
7.19	1.94	70.31	1.23	86.22	18	458	0.62	3.567	4.18	14.60	3.63	0.077
7.25	1.94	67.37	1.22	82.44	17	437	0.62	5.136	6.36	14.60	4.39	0.058
7.29	1.96	65.68	1.25	82.14	17	440	0.62	5.028	6.18	14.60	4.38	0.046
7.36	2.06	61.99	1.39	86.23	18	473	0.62	3.069	3.39	14.60	2.93	0.051
7.49	2.16	59.12	1.57	93.08	21	511	0.62	1.944	1.87	14.60	1.61	0.051
7.58	2.24	56.68	1.77	100.32	23	541	0.62	1.383	1.17	14.60	1.01	0.021
7.62	2.27	56.63	1.84	104.36	24	559	0.62	1.156	0.92	14.60	0.79	0.007
7.70	2.28	56.76	1.87	106.39	25	568	0.62	1.089	0.84	14.60	0.72	0.015
7.75	2.28	57.04	1.89	107.99	25	575	0.62	1.028	0.78	14.60	0.67	0.007
7.83	2.26	59.24	1.83	108.52	25	582	0.62	0.993	0.76	14.60	0.65	0.013
7.88	2.20	64.93	1.66	107.66	24	587	0.62	0.959	0.76	14.60	0.65	0.007
8.02	2.12	71.09	1.50	106.45	23	585	0.62	1.032	0.86	14.60	0.74	0.026
8.09	2.06	76.03	1.38	105.04	22	576	0.62	1.168	1.02	14.60	0.87	0.014
8.14	2.03	77.24	1.34	103.53	22	565	0.62	1.337	1.21	14.60	1.03	0.013
8.18	2.01	77.84	1.32	102.74	22	559	0.62	1.454	1.33	14.60	1.13	0.011
8.23	2.01	77.94	1.31	102.36	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.29	2.02	76.58	1.33	101.63	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.37	2.05	74.14	1.36	101.10	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.44	2.09	70.39	1.43	100.95	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.49	2.15	65.90	1.54	101.72	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.53	2.24	58.04	1.78	103.25	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.64	2.36	49.15	2.16	106.31	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.68	2.50	40.42	2.75	111.17	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.74	2.61	33.82	3.41	115.47	0	0	0.62	0.000	0.00	0.00	0.00	0.000
8.84	2.71	29.00	4.08	118.42	0	0	0.62	0.000	0.00	0.00	0.00	0.000
8.88	2.79	25.40	4.67	118.55	0	0	0.62	0.000	0.00	0.00	0.00	0.000
8.97	2.82	23.42	4.94	115.79	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.03	2.85	21.13	5.21	110.02	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.14	2.87	19.25	5.42	104.25	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.19	2.88	17.85	5.52	98.56	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.23	2.88	17.33	5.48	94.99	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.27	2.87	16.90	5.41	91.43	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.32	2.86	16.71	5.30	88.57	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.43	2.84	16.75	5.17	86.64	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.46	2.83	16.98	5.07	86.11	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.53	2.83	17.25	5.01	86.36	0	0	0.62	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
9.58	2.82	17.49	4.99	87.28	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.67	2.83	17.52	5.03	88.15	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.71	2.83	17.47	5.07	88.55	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.81	2.83	17.36	5.09	88.37	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.86	2.83	17.41	5.08	88.51	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.93	2.83	17.69	5.02	88.70	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.02	2.82	17.96	4.95	88.98	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.06	2.81	18.15	4.89	88.76	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.11	2.82	18.18	4.95	90.03	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.22	2.83	18.32	5.01	91.81	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.28	2.83	18.50	5.07	93.71	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.32	2.83	18.69	5.05	94.41	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.38	2.83	18.69	5.06	94.58	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.44	2.85	18.18	5.18	94.17	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.51	2.88	16.97	5.50	93.29	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.57	2.92	15.66	5.85	91.59	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.64	2.94	14.44	6.12	88.37	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.73	2.95	13.68	6.20	84.90	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.78	2.95	13.26	6.19	82.05	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.83	2.95	13.07	6.25	81.59	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.90	2.95	13.20	6.21	81.91	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.99	2.94	13.52	6.07	82.06	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.05	2.89	14.49	5.62	81.44	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.12	2.85	15.42	5.22	80.45	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.16	2.83	15.64	5.09	79.56	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.26	2.85	15.16	5.23	79.22	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.34	2.88	14.49	5.49	79.53	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.38	2.90	14.12	5.69	80.29	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.43	2.91	14.17	5.78	81.82	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.51	2.92	14.27	5.87	83.76	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.56	2.86	16.31	5.30	86.45	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.65	2.77	19.37	4.57	88.43	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.69	2.68	23.99	3.82	91.65	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.84	2.65	26.28	3.62	95.06	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.90	2.68	26.11	3.82	99.71	0	0	0.61	0.000	0.00	0.00	0.00	0.000
11.99	2.74	23.75	4.33	102.86	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.04	2.81	21.48	4.87	104.66	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.09	2.83	20.45	5.08	103.88	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.18	2.84	19.68	5.15	101.40	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.27	2.85	18.92	5.22	98.70	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.38	2.86	18.14	5.34	96.96	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.42	2.87	17.74	5.45	96.75	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.47	2.88	17.75	5.47	97.15	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.52	2.86	18.23	5.36	97.75	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.57	2.84	19.01	5.18	98.42	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.62	2.80	20.65	4.79	98.89	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.72	2.77	21.86	4.57	99.93	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.78	2.71	24.43	4.10	100.23	0	0	0.61	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
12.82	2.68	26.40	3.83	101.19	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.87	2.64	28.81	3.59	103.31	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.96	2.64	29.82	3.57	106.37	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.01	2.64	30.70	3.55	109.04	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.06	2.61	30.96	3.38	104.79	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.22	2.56	30.84	3.11	95.93	25	547	0.61	8.539	6.38	14.60	3.88	0.142
13.26	2.52	30.85	2.86	88.12	23	521	0.61	12.658	10.76	14.60	3.88	0.041
13.31	2.50	31.24	2.77	86.60	22	520	0.61	13.123	11.50	14.60	3.87	0.041
13.35	2.51	31.87	2.83	90.12	23	538	0.61	10.084	8.37	14.60	3.87	0.043
13.41	2.52	32.44	2.89	93.82	24	558	0.61	7.834	6.15	14.60	3.86	0.051
13.46	2.55	32.73	3.01	98.63	26	579	0.61	6.013	4.39	14.60	3.35	0.043
13.53	2.58	32.70	3.21	105.06	28	604	0.61	4.508	2.99	14.60	2.28	0.036
13.60	2.62	31.70	3.48	110.42	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.67	2.67	29.60	3.81	112.90	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.74	2.72	26.91	4.18	112.43	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.79	2.79	23.70	4.68	110.91	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.92	2.84	21.34	5.14	109.68	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.96	2.86	20.40	5.32	108.44	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.00	2.81	22.16	4.83	107.05	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.06	2.74	24.50	4.32	105.90	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.11	2.71	26.27	4.04	106.18	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.22	2.71	26.47	4.05	107.17	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.27	2.71	26.51	4.08	108.24	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.31	2.70	27.28	3.97	108.25	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.40	2.67	28.57	3.79	108.28	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.45	2.65	30.09	3.65	109.76	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.56	2.65	30.71	3.64	111.77	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.61	2.66	30.58	3.72	113.91	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.65	2.68	29.72	3.86	114.72	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.70	2.70	28.82	3.98	114.63	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.79	2.68	29.34	3.86	113.36	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.88	2.65	30.75	3.63	111.63	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.93	2.61	32.54	3.38	110.10	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.97	2.59	33.62	3.24	108.82	29	684	0.61	2.765	1.75	14.60	1.29	0.011
15.03	2.57	34.34	3.13	107.55	29	687	0.61	2.732	1.78	14.60	1.31	0.019
15.10	2.55	35.18	3.01	106.01	28	689	0.61	2.712	1.82	14.60	1.34	0.021
15.19	2.53	35.87	2.92	104.86	27	693	0.61	2.674	1.83	14.60	1.34	0.029
15.23	2.52	36.39	2.88	104.95	27	699	0.61	2.562	1.76	14.60	1.29	0.013
15.33	2.53	36.16	2.93	106.07	28	706	0.61	2.448	1.65	14.60	1.21	0.030
15.38	2.56	35.33	3.07	108.40	29	712	0.61	2.343	1.52	14.60	1.11	0.013
15.44	2.61	32.97	3.36	110.88	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.53	2.65	30.72	3.66	112.39	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.58	2.72	27.64	4.11	113.57	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.62	2.77	24.87	4.52	112.36	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.71	2.85	21.41	5.18	111.03	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.77	2.90	19.13	5.68	108.61	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.83	2.93	17.96	5.97	107.28	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.88	2.94	17.27	6.15	106.16	0	0	0.61	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
15.97	2.95	17.00	6.20	105.43	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.01	2.89	19.01	5.60	106.47	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.13	2.79	22.64	4.69	106.09	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.17	2.67	27.58	3.76	103.57	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.23	2.57	31.48	3.12	98.19	26	673	0.61	4.055	2.94	14.60	2.11	0.028
16.27	2.52	34.13	2.87	98.08	26	693	0.61	3.360	2.51	14.60	1.79	0.019
16.38	2.53	35.32	2.90	102.38	27	725	0.61	2.559	1.81	14.60	1.29	0.032
16.43	2.57	35.57	3.12	110.98	30	769	0.61	1.805	1.13	14.60	0.81	0.010
16.49	2.60	35.53	3.33	118.36	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.56	2.61	36.86	3.36	123.80	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.62	2.59	39.03	3.26	127.32	0	0	0.61	0.000	0.00	14.60	0.00	0.000
16.68	2.56	41.58	3.10	129.05	0	0	0.61	0.000	0.00	14.60	0.00	0.000
16.74	2.55	43.15	3.03	130.90	0	0	0.61	0.000	0.00	14.60	0.00	0.000
16.83	2.54	44.50	2.98	132.52	0	0	0.61	0.000	0.00	14.60	0.00	0.000
16.87	2.50	48.56	2.79	135.32	0	0	0.61	0.000	0.00	14.60	0.00	0.000
16.97	2.45	53.53	2.54	136.01	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.03	2.40	58.61	2.32	135.71	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.07	2.37	60.57	2.19	132.51	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.13	2.34	61.97	2.08	128.85	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.22	2.31	63.18	1.99	125.73	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.27	2.26	68.18	1.81	123.59	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.34	2.19	74.45	1.65	122.99	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.40	2.12	82.61	1.49	123.36	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.48	2.07	88.84	1.40	124.48	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.53	2.03	94.33	1.35	127.18	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.61	2.02	98.23	1.33	130.54	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.66	2.02	101.90	1.32	134.94	0	0	0.61	0.000	0.00	14.60	0.00	0.000
17.75	2.02	104.27	1.32	138.15	29	1229	0.61	0.236	0.15	14.60	0.10	0.002
17.80	1.99	106.01	1.29	136.98	28	1214	0.61	0.249	0.16	14.60	0.11	0.001
17.86	1.95	105.90	1.24	130.80	27	1145	0.61	0.316	0.22	14.60	0.15	0.002
17.91	1.93	102.32	1.22	124.56	25	1086	0.61	0.398	0.30	14.60	0.21	0.003
18.00	1.97	96.44	1.26	121.46	25	1077	0.61	0.417	0.32	14.60	0.22	0.005
18.05	2.06	88.44	1.39	122.82	26	1113	0.61	0.365	0.26	14.60	0.18	0.002
18.15	2.12	83.03	1.49	123.62	27	1127	0.61	0.351	0.25	14.60	0.17	0.004
18.19	2.15	80.38	1.55	124.44	27	1133	0.61	0.344	0.24	14.60	0.16	0.002
18.24	2.15	80.66	1.55	124.66	27	1138	0.61	0.341	0.23	14.60	0.16	0.002
18.33	2.14	81.52	1.54	125.35	28	1149	0.61	0.332	0.23	14.60	0.15	0.003
18.38	2.15	81.24	1.56	126.97	28	1165	0.61	0.316	0.21	14.60	0.14	0.002
18.46	2.18	79.45	1.62	128.50	29	1179	0.61	0.304	0.20	14.60	0.13	0.003
18.51	2.22	75.23	1.72	129.25	29	1178	0.61	0.307	0.19	14.60	0.13	0.001
18.60	2.27	69.36	1.86	128.88	30	1162	0.61	0.329	0.20	14.60	0.14	0.003
18.68	2.32	63.32	2.03	128.62	31	1140	0.61	0.359	0.22	14.60	0.15	0.003
18.73	2.38	58.47	2.21	129.49	32	1125	0.61	0.383	0.22	14.60	0.15	0.002
18.77	2.41	54.74	2.37	129.75	32	1108	0.61	0.411	0.23	14.60	0.16	0.002
18.86	2.44	52.22	2.47	129.19	32	1094	0.61	0.439	0.25	14.60	0.17	0.003
18.90	2.44	51.53	2.47	127.13	32	1079	0.61	0.469	0.27	14.60	0.18	0.002
18.99	2.41	53.06	2.36	125.24	31	1081	0.61	0.470	0.28	14.60	0.19	0.004
19.08	2.36	57.58	2.14	123.41	30	1098	0.61	0.444	0.28	14.60	0.18	0.004

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
19.11	2.30	63.18	1.94	122.87	29	1121	0.61	0.408	0.26	14.60	0.18	0.001
19.16	2.23	70.84	1.74	123.36	28	1154	0.61	0.365	0.24	14.60	0.16	0.002
19.25	2.17	78.77	1.60	125.69	28	1193	0.61	0.321	0.21	14.60	0.14	0.003
19.34	2.12	86.50	1.50	129.52	28	1238	0.61	0.281	0.19	14.60	0.12	0.003
19.38	2.09	92.52	1.45	133.73	29	1280	0.61	0.249	0.16	14.60	0.11	0.001
19.43	2.07	98.53	1.41	138.61	30	1327	0.61	0.220	0.14	14.60	0.09	0.001
19.51	2.05	104.71	1.37	143.47	30	1374	0.61	0.197	0.12	14.60	0.08	0.002
19.56	2.02	113.45	1.32	149.78	31	1427	0.61	0.174	0.10	14.60	0.07	0.001
19.64	1.99	121.03	1.28	155.20	32	1471	0.61	0.159	0.09	14.60	0.06	0.001
19.69	1.95	131.49	1.24	163.23	33	1531	0.61	0.141	0.08	14.60	0.05	0.001
19.78	1.93	139.89	1.22	170.51	35	1590	0.61	0.127	0.07	14.60	0.04	0.001
19.83	1.91	148.57	1.20	177.99	36	1647	0.61	0.116	0.06	14.60	0.04	0.000
19.92	1.90	153.09	1.19	181.98	36	1681	0.61	0.111	0.05	14.60	0.04	0.001
19.99	1.89	155.96	1.18	184.32	37	1701	0.61	0.108	0.05	14.60	0.03	0.001
20.03	1.89	156.58	1.18	185.01	37	1709	0.61	0.107	0.05	14.60	0.03	0.000
20.12	1.90	155.72	1.19	184.56	37	1714	0.61	0.107	0.05	14.60	0.03	0.001
20.16	1.90	155.27	1.19	184.41	37	1717	0.61	0.107	0.05	14.60	0.03	0.000
20.21	1.90	156.32	1.19	185.35	37	1727	0.61	0.106	0.05	14.60	0.03	0.000
20.29	1.89	159.74	1.18	187.97	37	1747	0.62	0.103	0.05	14.60	0.03	0.001
20.34	1.88	163.70	1.17	191.16	38	1770	0.62	0.100	0.05	14.60	0.03	0.000
20.42	1.87	165.61	1.17	193.11	38	1791	0.62	0.098	0.04	14.60	0.03	0.001
20.52	1.88	165.20	1.17	193.50	39	1806	0.62	0.097	0.04	14.60	0.03	0.001
20.56	1.89	163.67	1.18	193.16	39	1815	0.62	0.096	0.04	14.60	0.03	0.000
20.63	1.90	161.40	1.19	191.96	38	1818	0.62	0.096	0.04	14.60	0.03	0.001
20.69	1.91	158.54	1.20	190.22	38	1814	0.62	0.097	0.04	14.60	0.03	0.000
20.76	1.92	155.20	1.21	187.62	38	1802	0.62	0.100	0.05	14.60	0.03	0.000
20.83	1.93	151.78	1.22	184.61	37	1783	0.62	0.103	0.05	14.60	0.03	0.001
20.91	1.93	148.94	1.22	181.88	37	1765	0.62	0.106	0.05	14.60	0.03	0.001
20.96	1.94	147.27	1.23	180.48	37	1758	0.62	0.108	0.05	14.60	0.03	0.000
21.01	1.94	146.52	1.23	180.00	37	1758	0.62	0.109	0.05	14.60	0.03	0.000
21.10	1.94	146.05	1.23	179.80	37	1764	0.62	0.109	0.05	14.60	0.03	0.001
21.15	1.94	146.29	1.23	179.92	37	1767	0.62	0.109	0.05	14.60	0.03	0.000
21.20	1.94	147.60	1.22	180.76	37	1774	0.62	0.108	0.05	14.60	0.03	0.000
21.31	1.94	147.51	1.23	180.72	37	1780	0.62	0.108	0.05	14.60	0.03	0.001
21.34	1.93	148.46	1.22	181.40	37	1786	0.62	0.107	0.05	14.60	0.03	0.000
21.42	1.94	147.24	1.23	180.71	37	1788	0.62	0.108	0.05	14.60	0.03	0.001
21.47	1.94	148.16	1.23	181.54	37	1798	0.62	0.107	0.05	14.60	0.03	0.000
21.55	1.94	147.72	1.23	181.61	37	1807	0.62	0.106	0.05	14.60	0.03	0.001
21.60	1.94	148.09	1.23	181.97	37	1812	0.62	0.106	0.05	14.60	0.03	0.000
21.69	1.94	146.39	1.23	180.64	37	1808	0.62	0.107	0.05	14.60	0.03	0.001
21.73	1.95	144.02	1.24	178.50	36	1794	0.62	0.110	0.05	14.60	0.03	0.000
21.79	1.96	140.07	1.25	174.96	36	1768	0.62	0.115	0.06	14.60	0.04	0.000
21.86	1.96	135.66	1.25	170.20	35	1727	0.62	0.123	0.06	14.60	0.04	0.001
21.95	1.96	131.55	1.26	165.28	34	1683	0.62	0.133	0.07	14.60	0.04	0.001
21.99	1.96	128.35	1.25	160.52	33	1633	0.63	0.146	0.08	14.60	0.05	0.001
22.08	1.96	125.83	1.25	156.83	32	1598	0.63	0.157	0.09	14.60	0.06	0.001
22.12	1.95	123.15	1.24	153.02	31	1558	0.63	0.170	0.10	14.60	0.06	0.001
22.21	1.95	120.74	1.24	150.07	31	1533	0.63	0.181	0.11	14.60	0.07	0.001

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
22.25	1.95	117.99	1.24	146.78	30	1502	0.63	0.194	0.12	14.60	0.07	0.001
22.34	1.96	115.28	1.25	143.98	29	1480	0.63	0.206	0.13	14.60	0.08	0.002
22.38	1.97	111.98	1.26	141.11	29	1458	0.63	0.217	0.14	14.60	0.09	0.001
22.48	1.98	108.89	1.28	139.07	29	1450	0.63	0.224	0.14	14.60	0.09	0.002
22.53	2.00	106.08	1.30	137.59	29	1445	0.63	0.228	0.15	14.60	0.09	0.001
22.60	2.01	103.91	1.31	136.50	29	1442	0.63	0.230	0.15	14.60	0.09	0.002
22.65	2.02	101.23	1.33	134.99	28	1435	0.63	0.236	0.15	14.60	0.09	0.001
22.73	2.04	98.31	1.36	133.24	28	1426	0.63	0.243	0.16	14.60	0.10	0.002
22.78	2.06	95.32	1.38	131.57	28	1415	0.63	0.251	0.17	14.60	0.10	0.001
22.84	2.07	92.10	1.41	129.97	28	1406	0.63	0.258	0.17	14.60	0.11	0.001
22.91	2.09	88.89	1.45	128.51	28	1397	0.63	0.266	0.18	14.60	0.11	0.002
22.98	2.11	85.96	1.48	127.28	28	1389	0.63	0.273	0.18	14.60	0.11	0.002
23.04	2.13	83.88	1.51	126.48	28	1384	0.63	0.278	0.19	14.60	0.11	0.002
23.13	2.14	82.40	1.53	125.76	28	1381	0.63	0.283	0.19	14.60	0.12	0.002
23.22	2.14	81.46	1.54	125.34	28	1380	0.63	0.286	0.19	14.60	0.12	0.003
23.28	2.14	81.50	1.54	125.50	28	1385	0.63	0.284	0.19	14.60	0.12	0.002
23.33	2.14	81.78	1.54	126.04	28	1393	0.63	0.279	0.19	14.60	0.11	0.002
23.39	2.14	82.28	1.54	126.62	28	1402	0.63	0.274	0.18	14.60	0.11	0.001
23.43	2.14	82.86	1.53	126.74	28	1405	0.63	0.273	0.18	14.60	0.11	0.001
23.52	2.13	83.13	1.52	126.27	28	1404	0.63	0.277	0.19	14.60	0.11	0.002
23.57	2.13	83.26	1.51	125.62	28	1398	0.63	0.282	0.19	14.60	0.11	0.001
23.63	2.13	83.13	1.50	125.01	27	1394	0.63	0.287	0.20	14.60	0.12	0.002
23.73	2.13	82.83	1.50	124.43	27	1392	0.63	0.291	0.20	14.60	0.12	0.003
23.77	2.12	82.77	1.50	123.76	27	1386	0.63	0.297	0.21	14.60	0.12	0.001
23.82	2.11	83.23	1.47	122.69	27	1375	0.63	0.307	0.22	14.60	0.13	0.002
23.91	2.10	83.94	1.45	121.38	26	1361	0.63	0.321	0.23	14.60	0.14	0.003
23.96	2.08	84.90	1.42	120.39	0	0	0.63	0.000	0.00	14.60	0.00	0.000
24.02	2.08	84.23	1.42	119.49	0	0	0.63	0.000	0.00	14.60	0.00	0.000
24.13	2.11	80.20	1.47	117.76	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.21	2.16	73.91	1.58	116.78	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.26	2.24	66.28	1.76	116.53	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.32	2.31	58.72	1.99	116.74	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.35	2.39	50.91	2.28	115.93	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.43	2.49	42.41	2.70	114.39	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.50	2.55	36.85	3.04	112.04	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.56	2.57	34.99	3.13	109.45	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.64	2.49	39.14	2.73	106.86	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.69	2.40	45.64	2.31	105.30	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.76	2.33	51.10	2.05	104.99	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.82	2.32	52.00	2.02	104.80	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.91	2.36	48.95	2.14	104.85	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.94	2.46	41.13	2.58	106.04	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.04	2.60	32.20	3.33	107.38	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.10	2.77	23.96	4.51	107.97	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.14	2.86	19.60	5.36	104.98	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.20	2.95	16.08	6.20	99.77	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.30	3.03	13.32	7.14	95.09	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.35	3.12	11.19	8.16	91.31	0	0	0.64	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
25.41	3.14	10.68	8.42	89.99	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.48	3.14	10.71	8.40	90.03	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.55	3.10	11.76	7.91	93.02	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.61	2.91	17.00	5.79	98.53	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.66	2.59	31.67	3.24	102.61	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.74	2.27	58.50	1.85	107.98	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.82	2.03	92.25	1.35	124.23	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.87	1.89	124.39	1.18	146.89	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.94	1.81	148.81	1.12	165.97	0	0	0.64	0.000	0.00	14.60	0.00	0.000
26.00	1.77	167.15	1.08	180.91	35	1812	0.64	0.147	0.08	14.60	0.04	0.001
26.09	1.73	180.35	1.06	191.04	36	1868	0.64	0.135	0.07	14.60	0.04	0.001
26.14	1.71	190.02	1.04	198.50	37	1912	0.64	0.128	0.06	14.60	0.03	0.000
26.22	1.70	195.67	1.04	203.16	38	1946	0.64	0.122	0.06	14.60	0.03	0.001
26.26	1.70	199.62	1.04	207.10	39	1984	0.64	0.117	0.05	14.60	0.03	0.000
26.32	1.70	202.43	1.04	210.27	39	2020	0.64	0.112	0.05	14.60	0.03	0.000
26.39	1.70	204.59	1.04	212.70	40	2048	0.64	0.109	0.05	14.60	0.03	0.000
26.45	1.70	205.78	1.04	214.04	40	2065	0.64	0.107	0.05	14.60	0.03	0.000
26.53	1.71	204.79	1.04	213.36	40	2066	0.64	0.107	0.05	14.60	0.03	0.000
26.58	1.71	201.29	1.05	210.71	40	2054	0.64	0.109	0.05	14.60	0.03	0.000
26.66	1.72	194.87	1.05	205.33	39	2021	0.64	0.114	0.05	14.60	0.03	0.001
26.74	1.73	187.98	1.06	199.16	38	1977	0.65	0.122	0.06	14.60	0.03	0.001
26.79	1.74	180.33	1.07	192.09	36	1922	0.65	0.131	0.06	14.60	0.03	0.000
26.84	1.75	171.05	1.07	183.87	35	1862	0.65	0.144	0.07	14.60	0.04	0.001
26.92	1.78	158.64	1.09	172.87	33	1783	0.65	0.164	0.09	14.60	0.05	0.001
27.01	1.80	146.59	1.11	162.14	31	1706	0.65	0.188	0.11	14.60	0.06	0.001
27.05	1.81	134.84	1.12	150.38	29	1599	0.65	0.233	0.15	14.60	0.08	0.001
27.15	1.82	125.94	1.12	140.97	27	1508	0.65	0.287	0.20	14.60	0.10	0.002
27.19	1.82	118.23	1.12	132.29	26	1416	0.65	0.364	0.27	14.60	0.14	0.002
27.25	1.82	113.80	1.12	127.49	25	1369	0.65	0.418	0.32	14.60	0.17	0.002
27.31	1.82	109.87	1.12	123.21	24	1326	0.65	0.478	0.38	14.60	0.20	0.003
27.40	1.85	101.78	1.15	116.60	23	1286	0.65	0.548	0.46	14.60	0.25	0.005
27.44	1.86	97.88	1.16	113.24	22	1262	0.65	0.597	0.52	14.60	0.28	0.003
27.51	1.87	95.96	1.16	111.53	22	1250	0.65	0.625	0.55	14.60	0.29	0.004
27.56	1.84	100.21	1.14	113.95	22	1252	0.65	0.624	0.55	14.60	0.29	0.004
27.64	1.83	101.78	1.13	114.87	22	1254	0.65	0.623	0.54	14.60	0.29	0.005
27.70	1.82	102.81	1.12	115.56	23	1257	0.65	0.619	0.54	14.60	0.28	0.004
27.79	1.82	103.09	1.12	115.89	23	1263	0.65	0.609	0.53	14.60	0.28	0.006
27.86	1.82	103.34	1.12	116.16	23	1268	0.65	0.603	0.52	14.60	0.27	0.005
27.90	1.82	104.11	1.12	116.89	23	1276	0.65	0.589	0.50	14.60	0.26	0.003
27.98	1.82	105.36	1.12	117.95	23	1285	0.65	0.574	0.49	14.60	0.25	0.005
28.03	1.81	107.74	1.11	120.10	23	1303	0.65	0.542	0.45	14.60	0.23	0.002
28.10	1.80	110.29	1.11	122.36	24	1323	0.65	0.512	0.42	14.60	0.22	0.004
28.15	1.79	114.02	1.10	125.73	24	1351	0.65	0.471	0.37	14.60	0.19	0.003
28.25	1.78	117.41	1.10	128.67	25	1375	0.65	0.441	0.34	14.60	0.18	0.004
28.29	1.77	121.45	1.09	132.18	25	1402	0.65	0.410	0.31	14.60	0.16	0.002
28.38	1.77	124.72	1.08	134.94	26	1423	0.65	0.389	0.29	14.60	0.15	0.003
28.42	1.76	128.19	1.08	137.97	26	1447	0.65	0.366	0.26	14.60	0.14	0.001
28.51	1.75	130.75	1.07	140.31	27	1468	0.65	0.348	0.25	14.60	0.13	0.003

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
28.55	1.75	132.94	1.07	142.57	27	1492	0.65	0.329	0.23	14.60	0.12	0.001
28.64	1.75	134.01	1.07	143.88	27	1511	0.65	0.316	0.22	14.60	0.11	0.002
28.68	1.75	135.48	1.07	145.38	28	1527	0.65	0.305	0.21	14.60	0.11	0.001
28.77	1.75	136.36	1.07	146.14	28	1535	0.65	0.301	0.20	14.60	0.10	0.002
28.82	1.75	137.44	1.07	146.99	28	1541	0.65	0.297	0.20	14.60	0.10	0.001
28.90	1.75	137.65	1.07	147.13	28	1544	0.65	0.297	0.20	14.60	0.10	0.002
28.94	1.74	137.77	1.07	147.09	28	1543	0.65	0.299	0.20	14.60	0.10	0.001
29.02	1.74	137.30	1.07	146.56	28	1539	0.65	0.303	0.20	14.60	0.10	0.002
29.09	1.74	136.85	1.07	146.00	28	1535	0.65	0.308	0.21	14.60	0.10	0.002
29.16	1.74	136.43	1.07	145.57	28	1532	0.65	0.311	0.21	14.60	0.11	0.002
29.21	1.74	136.40	1.06	145.26	27	1527	0.65	0.316	0.22	14.60	0.11	0.001
29.30	1.74	136.10	1.06	144.62	27	1518	0.65	0.324	0.22	14.60	0.11	0.002
29.36	1.73	135.68	1.06	143.78	27	1506	0.65	0.335	0.23	14.60	0.12	0.002
29.43	1.73	135.08	1.06	142.94	27	1497	0.65	0.345	0.24	14.60	0.12	0.002
29.47	1.73	134.77	1.06	142.44	27	1491	0.65	0.351	0.25	14.60	0.12	0.001
29.55	1.73	134.50	1.06	142.13	27	1489	0.65	0.354	0.25	14.60	0.12	0.002
29.60	1.73	134.74	1.06	142.39	27	1493	0.65	0.351	0.25	14.60	0.12	0.001
29.73	1.73	134.82	1.06	142.69	27	1503	0.65	0.346	0.24	14.60	0.12	0.004
29.77	1.73	135.35	1.06	143.35	27	1512	0.65	0.339	0.24	14.60	0.12	0.001
29.82	1.73	135.74	1.06	143.35	27	1508	0.65	0.343	0.24	14.60	0.12	0.001
29.86	1.72	135.98	1.05	143.12	27	1501	0.65	0.351	0.25	14.60	0.12	0.001
29.95	1.72	135.92	1.05	142.58	27	1491	0.65	0.361	0.25	14.60	0.12	0.003
30.00	1.72	135.49	1.05	142.15	27	1488	0.65	0.365	0.26	14.60	0.13	0.002
30.06	1.72	133.15	1.05	140.27	26	1478	0.65	0.376	0.27	14.60	0.13	0.002
30.16	1.73	130.75	1.06	138.31	26	1468	0.65	0.388	0.28	14.60	0.14	0.004
30.22	1.74	128.72	1.06	136.64	26	1458	0.65	0.400	0.29	14.60	0.14	0.002
30.26	1.73	129.09	1.06	136.69	26	1455	0.65	0.404	0.30	14.60	0.14	0.002
30.32	1.73	129.56	1.06	136.98	26	1457	0.65	0.404	0.30	14.60	0.14	0.002
30.40	1.73	130.01	1.06	137.32	26	1461	0.65	0.401	0.29	14.60	0.14	0.003
30.48	1.73	130.07	1.06	137.39	26	1464	0.65	0.400	0.29	14.60	0.14	0.003
30.52	1.73	129.51	1.06	137.01	26	1464	0.65	0.401	0.29	14.60	0.14	0.001
30.58	1.74	128.42	1.06	136.43	26	1467	0.65	0.399	0.29	14.60	0.14	0.002
30.65	1.74	127.00	1.07	135.51	26	1468	0.65	0.400	0.30	14.60	0.14	0.002
30.72	1.75	125.46	1.07	134.45	26	1467	0.65	0.403	0.30	14.60	0.14	0.002
30.79	1.76	123.28	1.08	132.77	25	1460	0.65	0.412	0.31	14.60	0.15	0.003
30.88	1.77	120.80	1.09	131.14	25	1459	0.65	0.415	0.32	14.60	0.15	0.003
30.92	1.79	118.81	1.10	130.21	25	1468	0.65	0.407	0.31	14.60	0.15	0.002
31.01	1.80	117.66	1.10	129.91	25	1481	0.65	0.395	0.30	14.60	0.14	0.003
31.05	1.80	117.65	1.11	130.35	25	1494	0.65	0.383	0.29	14.60	0.14	0.001
31.14	1.80	118.36	1.11	130.97	25	1501	0.65	0.379	0.29	14.60	0.13	0.003
31.19	1.80	119.91	1.10	132.28	26	1512	0.65	0.369	0.28	14.60	0.13	0.002
31.25	1.79	122.47	1.10	134.67	26	1534	0.65	0.351	0.26	14.60	0.12	0.002
31.33	1.78	125.55	1.09	137.29	26	1555	0.66	0.335	0.24	14.60	0.11	0.002
31.39	1.77	128.90	1.08	139.75	27	1567	0.66	0.327	0.23	14.60	0.11	0.001
31.44	1.75	131.29	1.07	140.95	27	1562	0.66	0.332	0.23	14.60	0.11	0.001
31.50	1.74	133.07	1.07	141.96	27	1562	0.66	0.333	0.23	14.60	0.11	0.002
31.58	1.74	133.71	1.06	142.34	27	1564	0.66	0.333	0.23	14.60	0.11	0.002
31.66	1.74	133.68	1.07	142.49	27	1570	0.66	0.330	0.23	14.60	0.11	0.002

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
31.71	1.74	133.37	1.07	142.06	27	1566	0.66	0.334	0.23	14.60	0.11	0.001
31.79	1.74	133.07	1.06	141.43	27	1556	0.66	0.343	0.24	14.60	0.11	0.002
31.84	1.73	132.66	1.06	140.69	27	1545	0.66	0.353	0.25	14.60	0.11	0.001
31.93	1.73	132.21	1.06	140.15	26	1541	0.66	0.359	0.26	14.60	0.12	0.002
31.97	1.73	132.63	1.06	140.51	27	1544	0.66	0.356	0.25	14.60	0.11	0.001
32.06	1.73	133.57	1.06	141.20	27	1550	0.66	0.353	0.25	14.60	0.11	0.003
32.11	1.72	134.80	1.05	142.17	27	1557	0.66	0.348	0.25	14.60	0.11	0.001
32.19	1.72	135.25	1.05	142.55	27	1562	0.66	0.345	0.24	14.60	0.11	0.002
32.25	1.73	135.45	1.06	142.97	27	1572	0.66	0.339	0.24	14.60	0.11	0.002
32.34	1.73	135.24	1.06	143.18	27	1583	0.66	0.332	0.23	14.60	0.10	0.002
32.40	1.73	135.52	1.06	143.76	27	1595	0.66	0.324	0.22	14.60	0.10	0.001
32.45	1.73	136.42	1.06	144.67	27	1606	0.66	0.317	0.22	14.60	0.10	0.001
32.49	1.72	140.03	1.05	147.38	28	1620	0.66	0.308	0.21	14.60	0.09	0.001
32.58	1.71	144.77	1.04	150.80	28	1638	0.66	0.297	0.20	14.60	0.09	0.002
32.63	1.68	152.49	1.02	156.25	29	1664	0.66	0.283	0.18	14.60	0.08	0.001
32.73	1.66	158.86	1.01	160.66	30	1687	0.66	0.271	0.17	14.60	0.07	0.002
32.78	1.65	164.53	1.00	165.26	30	1723	0.66	0.253	0.15	14.60	0.07	0.001
32.84	1.65	167.41	1.00	167.92	31	1750	0.66	0.242	0.14	14.60	0.06	0.001
32.88	1.65	170.43	1.00	170.50	31	1773	0.66	0.232	0.14	14.60	0.06	0.001
32.97	1.64	173.19	1.00	173.19	32	1777	0.66	0.232	0.13	14.60	0.06	0.001
33.03	1.62	176.77	1.00	176.77	32	1785	0.66	0.229	0.13	14.60	0.06	0.001
33.13	1.63	173.65	1.00	173.65	32	1783	0.66	0.231	0.13	14.60	0.06	0.001
33.15	1.63	176.23	1.00	176.23	32	1810	0.66	0.220	0.12	14.60	0.05	0.000
33.22	1.64	178.70	1.00	178.70	33	1849	0.66	0.207	0.11	14.60	0.05	0.001
33.29	1.62	187.59	1.00	187.59	34	1903	0.66	0.190	0.10	14.60	0.04	0.001
33.33	1.62	192.17	1.00	192.17	35	1943	0.66	0.179	0.09	14.60	0.04	0.000
33.42	1.61	195.98	1.00	195.98	36	1974	0.66	0.172	0.09	14.60	0.04	0.001
33.48	1.61	199.43	1.00	199.43	36	2005	0.66	0.165	0.08	14.60	0.03	0.000
33.55	1.61	201.80	1.00	201.80	37	2025	0.66	0.161	0.08	14.60	0.03	0.001
33.63	1.61	202.94	1.00	202.94	37	2041	0.66	0.158	0.08	14.60	0.03	0.001
33.67	1.62	201.72	1.00	201.72	37	2048	0.66	0.157	0.08	14.60	0.03	0.000
33.75	1.63	197.45	1.00	197.45	36	2037	0.66	0.160	0.08	14.60	0.03	0.001
33.81	1.64	190.29	1.00	190.15	35	2005	0.66	0.168	0.09	14.60	0.04	0.001
33.89	1.66	181.94	1.01	183.57	34	1959	0.66	0.180	0.10	14.60	0.04	0.001
33.95	1.67	174.81	1.02	177.90	33	1920	0.66	0.191	0.11	14.60	0.04	0.001
33.99	1.68	169.07	1.03	173.60	32	1896	0.66	0.198	0.11	14.60	0.05	0.000
34.07	1.69	165.37	1.03	171.00	32	1887	0.66	0.202	0.12	14.60	0.05	0.001
34.16	1.70	162.68	1.04	169.16	32	1884	0.66	0.204	0.12	14.60	0.05	0.001
34.19	1.71	161.52	1.04	168.33	31	1881	0.66	0.205	0.12	14.60	0.05	0.000
34.28	1.71	160.26	1.05	167.53	31	1883	0.66	0.205	0.12	14.60	0.05	0.001
34.32	1.71	159.45	1.05	167.02	31	1883	0.66	0.205	0.12	14.60	0.05	0.000
34.42	1.71	159.28	1.05	166.87	31	1885	0.66	0.206	0.12	14.60	0.05	0.001
34.48	1.71	160.16	1.04	167.32	31	1885	0.66	0.206	0.12	14.60	0.05	0.001
34.54	1.70	161.61	1.04	168.14	31	1886	0.66	0.206	0.12	14.60	0.05	0.001
34.60	1.70	163.25	1.03	168.90	31	1882	0.66	0.208	0.12	14.60	0.05	0.001
34.68	1.69	164.20	1.03	169.12	31	1876	0.66	0.211	0.12	14.60	0.05	0.001
34.73	1.68	163.83	1.03	168.25	31	1861	0.66	0.217	0.13	14.60	0.05	0.001
34.82	1.69	162.05	1.03	166.65	31	1849	0.66	0.222	0.13	14.60	0.05	0.001

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
34.86	1.69	160.08	1.03	164.84	31	1833	0.66	0.228	0.14	14.60	0.06	0.001
34.95	1.69	158.58	1.03	163.45	30	1822	0.66	0.233	0.14	14.60	0.06	0.001
34.99	1.69	157.58	1.03	162.41	30	1812	0.66	0.238	0.15	14.60	0.06	0.001
35.08	1.69	156.08	1.03	161.21	30	1806	0.66	0.241	0.15	14.60	0.06	0.001
35.14	1.70	153.72	1.04	159.45	30	1798	0.66	0.245	0.15	14.60	0.06	0.001
35.20	1.71	150.49	1.04	157.07	29	1788	0.66	0.250	0.16	14.60	0.06	0.001
35.25	1.72	146.07	1.05	153.55	29	1767	0.66	0.260	0.17	14.60	0.07	0.001
35.34	1.73	141.37	1.06	149.69	28	1743	0.66	0.273	0.18	14.60	0.07	0.002
35.39	1.74	136.52	1.07	145.46	28	1709	0.66	0.292	0.20	14.60	0.08	0.001
35.45	1.75	131.91	1.07	141.68	27	1685	0.66	0.307	0.21	14.60	0.08	0.001
35.51	1.79	123.17	1.10	135.79	26	1677	0.66	0.314	0.23	14.60	0.09	0.001
35.64	1.86	112.91	1.15	129.78	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.69	1.93	101.29	1.22	123.91	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.74	2.01	90.50	1.32	119.13	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.78	2.11	78.26	1.47	114.86	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.86	2.22	65.48	1.71	111.96	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.90	2.33	54.50	2.06	112.21	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.98	2.44	46.73	2.48	115.74	0	0	0.66	0.000	0.00	14.60	0.00	0.000
36.06	2.51	42.47	2.84	120.54	0	0	0.66	0.000	0.00	14.60	0.00	0.000
36.10	2.57	40.31	3.12	125.96	0	0	0.66	0.000	0.00	14.60	0.00	0.000
36.18	2.62	37.67	3.45	129.97	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.24	2.69	33.97	3.92	133.05	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.33	2.75	30.59	4.38	133.95	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.37	2.80	28.09	4.75	133.27	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.42	2.79	27.81	4.73	131.40	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.50	2.79	27.41	4.72	129.47	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.57	2.77	28.10	4.55	127.75	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.63	2.77	27.93	4.52	126.28	0	0	0.65	0.000	0.00	0.00	0.00	0.000
36.69	2.78	26.64	4.61	122.72	0	0	0.65	0.000	0.00	0.00	0.00	0.000
36.80	2.81	24.26	4.87	118.28	0	0	0.65	0.000	0.00	0.00	0.00	0.000
36.85	2.85	21.60	5.25	113.36	0	0	0.65	0.000	0.00	0.00	0.00	0.000
36.89	2.88	19.84	5.55	110.05	0	0	0.65	0.000	0.00	0.00	0.00	0.000
36.98	2.91	18.48	5.78	106.90	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.06	2.92	17.58	5.95	104.53	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.10	2.92	17.40	5.92	102.95	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.15	2.92	17.35	5.89	102.15	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.26	2.92	17.40	5.85	101.73	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.32	2.91	17.43	5.83	101.67	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.36	2.91	17.62	5.77	101.67	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.42	2.90	17.73	5.70	101.05	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.50	2.89	17.74	5.64	100.14	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.54	2.89	17.55	5.59	98.08	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.63	2.89	17.11	5.58	95.55	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.68	2.90	16.29	5.66	92.14	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.77	2.91	15.40	5.82	89.58	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.81	2.93	14.39	6.01	86.55	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.89	2.94	13.75	6.10	83.91	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.95	2.94	13.26	6.11	81.05	0	0	0.65	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
38.01	2.94	13.01	6.06	78.86	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.11	2.93	12.74	6.04	76.93	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.16	2.93	12.44	6.03	75.00	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.20	2.94	11.98	6.10	73.08	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.34	2.95	11.50	6.22	71.55	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.39	2.96	11.19	6.33	70.87	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.44	2.98	11.13	6.53	72.62	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.50	3.00	11.24	6.77	76.10	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.55	3.02	11.68	6.94	81.05	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.59	2.95	13.78	6.25	86.13	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.69	2.83	17.74	5.07	89.97	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.74	2.68	23.86	3.84	91.71	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.80	2.53	30.94	2.95	91.30	0	0	0.65	0.000	0.00	14.60	0.00	0.000
38.86	2.33	45.74	2.04	93.23	0	0	0.65	0.000	0.00	14.60	0.00	0.000
38.93	2.17	63.11	1.59	100.63	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.00	2.06	80.42	1.39	111.60	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.08	2.03	88.89	1.33	118.63	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.13	2.00	94.36	1.30	123.05	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.21	1.99	98.29	1.28	125.97	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.28	1.97	102.06	1.26	128.75	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.35	1.96	105.22	1.25	131.14	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.39	1.94	109.90	1.22	134.53	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.47	1.91	114.90	1.20	137.97	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.51	1.88	122.36	1.17	143.08	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.60	1.85	129.06	1.14	147.67	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.63	1.81	138.13	1.11	153.98	0	0	0.65	0.000	0.00	14.60	0.00	0.000
39.73	1.78	145.35	1.09	159.11	31	2076	0.65	0.183	0.11	14.60	0.04	0.001
39.78	1.75	153.79	1.07	165.22	31	2099	0.65	0.178	0.10	14.60	0.03	0.000
39.87	1.74	159.67	1.06	169.64	32	2123	0.65	0.173	0.10	14.60	0.03	0.001
39.91	1.72	166.00	1.05	174.34	33	2146	0.65	0.168	0.09	14.60	0.03	0.000
40.01	1.71	169.82	1.04	177.24	33	2166	0.65	0.164	0.09	14.60	0.03	0.001
40.08	1.70	173.65	1.04	180.39	34	2191	0.65	0.159	0.09	14.60	0.03	0.000
40.18	1.70	176.02	1.04	182.41	34	2211	0.65	0.156	0.08	14.60	0.03	0.001
40.22	1.69	178.16	1.03	184.26	34	2229	0.65	0.153	0.08	14.60	0.03	0.000
40.26	1.69	179.82	1.03	185.46	34	2236	0.65	0.152	0.08	14.60	0.02	0.000
40.31	1.69	181.38	1.03	186.62	35	2244	0.65	0.151	0.08	14.60	0.02	0.000
40.36	1.69	182.59	1.03	188.47	35	2278	0.65	0.145	0.07	14.60	0.02	0.000
40.43	1.69	184.11	1.03	189.45	35	2282	0.65	0.145	0.07	14.60	0.02	0.000
40.52	1.69	185.14	1.03	190.38	35	2294	0.65	0.143	0.07	14.60	0.02	0.001
40.57	1.68	186.69	1.02	190.86	35	2283	0.65	0.145	0.07	14.60	0.02	0.000
40.62	1.68	187.70	1.02	192.17	36	2305	0.65	0.142	0.07	14.60	0.02	0.000
40.73	1.70	181.16	1.04	188.10	35	2305	0.65	0.142	0.07	14.60	0.02	0.001
40.79	1.71	179.52	1.04	186.96	35	2303	0.65	0.143	0.07	14.60	0.02	0.000
40.82	1.71	175.31	1.05	183.62	34	2281	0.65	0.146	0.08	14.60	0.02	0.000
40.90	1.70	177.44	1.04	184.41	34	2268	0.65	0.149	0.08	14.60	0.02	0.000
40.96	1.72	171.68	1.05	179.93	34	2242	0.65	0.153	0.08	14.60	0.02	0.000
41.03	1.73	166.39	1.06	176.00	33	2226	0.64	0.156	0.09	14.60	0.03	0.000
41.08	1.75	160.41	1.07	171.51	33	2206	0.64	0.160	0.09	14.60	0.03	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
41.16	1.76	155.47	1.08	167.66	32	2186	0.64	0.164	0.09	14.60	0.03	0.001
41.23	1.77	150.51	1.09	163.59	31	2160	0.64	0.170	0.10	14.60	0.03	0.000
41.30	1.78	146.03	1.09	159.82	31	2135	0.64	0.176	0.10	14.60	0.03	0.001
41.36	1.79	142.63	1.10	156.70	30	2106	0.64	0.182	0.11	14.60	0.03	0.000
41.43	1.79	140.29	1.10	154.40	30	2083	0.64	0.188	0.12	14.60	0.03	0.001
41.47	1.79	138.06	1.10	152.19	29	2059	0.64	0.195	0.12	14.60	0.04	0.000
41.56	1.80	136.32	1.10	150.44	29	2042	0.64	0.200	0.13	14.60	0.04	0.001
41.60	1.79	134.70	1.10	148.52	29	2014	0.64	0.208	0.13	14.60	0.04	0.000
41.68	1.79	133.35	1.10	146.90	28	1992	0.64	0.215	0.14	14.60	0.04	0.001
41.75	1.79	131.43	1.10	144.74	28	1964	0.64	0.224	0.15	14.60	0.04	0.001
41.82	1.79	129.90	1.10	143.11	28	1945	0.64	0.231	0.16	14.60	0.05	0.001
41.86	1.79	129.07	1.10	141.88	27	1923	0.64	0.239	0.16	14.60	0.05	0.000
41.95	1.79	128.75	1.10	141.22	27	1910	0.64	0.245	0.17	14.60	0.05	0.001
42.01	1.79	128.32	1.10	140.65	27	1902	0.64	0.248	0.17	14.60	0.05	0.001
42.09	1.78	128.08	1.10	140.35	27	1899	0.64	0.250	0.17	14.60	0.05	0.001
42.17	1.78	128.11	1.10	140.35	27	1901	0.64	0.249	0.17	14.60	0.05	0.001
42.21	1.78	128.73	1.09	140.89	27	1906	0.64	0.247	0.17	14.60	0.05	0.000
42.26	1.78	129.79	1.09	141.94	27	1920	0.64	0.242	0.17	14.60	0.05	0.001
42.33	1.78	131.37	1.09	143.54	28	1941	0.64	0.235	0.16	14.60	0.04	0.001
42.42	1.78	133.18	1.09	145.22	28	1960	0.64	0.228	0.15	14.60	0.04	0.001
42.46	1.77	135.97	1.09	147.81	28	1987	0.64	0.219	0.14	14.60	0.04	0.000
42.61	1.77	138.33	1.08	149.95	29	2011	0.64	0.212	0.14	14.60	0.04	0.001
42.65	1.76	141.01	1.08	152.30	29	2033	0.64	0.206	0.13	14.60	0.04	0.000
42.69	1.76	142.38	1.08	153.39	29	2041	0.64	0.204	0.13	14.60	0.04	0.000
42.74	1.75	143.43	1.07	154.11	29	2043	0.64	0.203	0.13	14.60	0.04	0.000
42.79	1.75	144.24	1.07	154.65	29	2045	0.64	0.203	0.13	14.60	0.03	0.000
42.86	1.75	145.59	1.07	155.71	30	2053	0.64	0.201	0.13	14.60	0.03	0.001
42.95	1.74	147.27	1.07	156.99	30	2063	0.64	0.199	0.12	14.60	0.03	0.001
43.00	1.74	149.20	1.06	158.48	30	2072	0.64	0.196	0.12	14.60	0.03	0.000
43.05	1.73	151.25	1.06	159.91	30	2077	0.64	0.195	0.12	14.60	0.03	0.000
43.18	1.73	152.49	1.06	160.89	30	2087	0.64	0.193	0.12	14.60	0.03	0.001
43.25	1.73	153.28	1.06	161.72	30	2100	0.64	0.190	0.11	14.60	0.03	0.001
43.30	1.73	153.03	1.06	162.02	31	2116	0.64	0.186	0.11	14.60	0.03	0.000
43.35	1.74	152.66	1.06	162.20	31	2132	0.64	0.183	0.11	14.60	0.03	0.000
43.39	1.74	152.53	1.06	162.05	31	2131	0.64	0.183	0.11	14.60	0.03	0.000
43.50	1.73	152.17	1.06	161.51	31	2123	0.64	0.185	0.11	14.60	0.03	0.001
43.55	1.73	151.91	1.06	160.91	30	2110	0.64	0.188	0.11	14.60	0.03	0.000
43.61	1.73	151.55	1.06	160.55	30	2108	0.64	0.189	0.11	14.60	0.03	0.000
43.65	1.74	147.62	1.07	157.67	30	2097	0.64	0.192	0.12	14.60	0.03	0.000
43.74	1.75	145.28	1.07	155.82	30	2089	0.64	0.194	0.12	14.60	0.03	0.001
43.79	1.76	143.41	1.08	154.29	29	2079	0.63	0.197	0.12	14.60	0.03	0.000
43.86	1.74	145.92	1.07	155.82	30	2078	0.63	0.198	0.12	14.60	0.03	0.000
43.92	1.74	147.32	1.06	156.61	30	2076	0.63	0.198	0.12	14.60	0.03	0.001
43.97	1.73	149.05	1.06	157.77	30	2078	0.63	0.198	0.12	14.60	0.03	0.000
44.05	1.73	150.32	1.06	158.60	30	2081	0.63	0.197	0.12	14.60	0.03	0.001
44.14	1.72	150.87	1.05	158.95	30	2084	0.63	0.197	0.12	14.60	0.03	0.001
44.17	1.72	152.35	1.05	159.91	30	2085	0.63	0.196	0.12	14.60	0.03	0.000
44.23	1.71	154.85	1.04	161.67	30	2093	0.63	0.195	0.12	14.60	0.03	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
44.32	1.70	158.17	1.04	163.90	31	2100	0.63	0.193	0.12	14.60	0.03	0.001
44.37	1.69	160.61	1.03	165.57	31	2107	0.63	0.191	0.11	14.60	0.03	0.000
44.46	1.69	161.82	1.03	166.34	31	2110	0.63	0.191	0.11	14.60	0.03	0.001
44.50	1.69	161.48	1.03	166.16	31	2112	0.63	0.190	0.11	14.60	0.03	0.000
44.60	1.69	159.54	1.03	164.82	31	2110	0.63	0.191	0.11	14.60	0.03	0.001
44.63	1.70	156.90	1.04	162.87	30	2101	0.63	0.194	0.12	14.60	0.03	0.000
44.69	1.71	153.55	1.04	160.33	30	2088	0.63	0.197	0.12	14.60	0.03	0.000
44.77	1.72	149.65	1.05	157.26	30	2070	0.63	0.202	0.13	14.60	0.03	0.001
44.84	1.73	146.16	1.06	154.45	29	2052	0.63	0.207	0.13	14.60	0.03	0.001
44.89	1.73	144.74	1.06	153.01	29	2036	0.63	0.212	0.14	14.60	0.03	0.000
44.97	1.72	144.98	1.05	152.78	29	2025	0.63	0.216	0.14	14.60	0.03	0.001
45.02	1.71	146.89	1.05	153.84	29	2021	0.63	0.217	0.14	14.60	0.03	0.000
45.10	1.70	150.05	1.04	155.89	29	2025	0.63	0.216	0.14	14.60	0.03	0.001
45.19	1.69	153.78	1.03	158.41	29	2034	0.63	0.213	0.13	14.60	0.03	0.001
45.21	1.68	157.77	1.02	161.44	30	2054	0.63	0.208	0.13	14.60	0.03	0.000
45.30	1.67	160.83	1.02	163.97	30	2078	0.63	0.201	0.12	14.60	0.03	0.001
45.37	1.67	163.02	1.02	166.13	31	2106	0.63	0.194	0.12	14.60	0.03	0.000
45.43	1.67	163.64	1.02	166.98	31	2121	0.63	0.190	0.11	14.60	0.03	0.000
45.51	1.68	162.91	1.02	166.89	31	2134	0.63	0.187	0.11	14.60	0.03	0.000
45.56	1.69	161.95	1.03	166.58	31	2144	0.63	0.185	0.11	14.60	0.02	0.000
45.61	1.70	160.73	1.03	166.32	31	2162	0.63	0.181	0.11	14.60	0.02	0.000
45.71	1.70	159.62	1.04	166.02	31	2177	0.63	0.178	0.11	14.60	0.02	0.001
45.80	1.71	158.99	1.04	165.69	31	2181	0.63	0.177	0.10	14.60	0.02	0.000
45.85	1.70	158.70	1.04	165.16	31	2171	0.63	0.180	0.11	14.60	0.02	0.000
45.89	1.70	157.89	1.04	164.39	31	2163	0.63	0.181	0.11	14.60	0.02	0.000
45.94	1.71	156.07	1.05	163.22	31	2164	0.63	0.181	0.11	14.60	0.02	0.000
46.05	1.72	154.31	1.05	162.24	30	2172	0.63	0.180	0.11	14.60	0.02	0.001
46.11	1.72	153.47	1.05	161.81	30	2177	0.62	0.179	0.11	14.60	0.02	0.000
46.15	1.72	154.25	1.05	162.42	31	2182	0.62	0.178	0.11	14.60	0.02	0.000
46.24	1.72	155.09	1.05	163.01	31	2186	0.62	0.177	0.11	14.60	0.02	0.000
46.30	1.72	156.08	1.05	163.69	31	2190	0.62	0.176	0.11	14.60	0.02	0.000
46.37	1.72	156.06	1.05	163.64	31	2190	0.62	0.177	0.11	14.60	0.02	0.000
46.41	1.72	156.10	1.05	163.64	31	2190	0.62	0.177	0.11	14.60	0.02	0.000
46.50	1.71	156.30	1.05	163.60	31	2187	0.62	0.177	0.11	14.60	0.02	0.000
46.56	1.71	157.75	1.04	164.35	31	2183	0.62	0.178	0.11	14.60	0.02	0.000
46.61	1.70	160.09	1.03	165.61	31	2177	0.62	0.180	0.11	14.60	0.02	0.000
46.66	1.69	160.98	1.03	165.83	31	2168	0.62	0.182	0.11	14.60	0.02	0.000
46.73	1.68	164.26	1.02	167.84	31	2170	0.62	0.181	0.11	14.60	0.02	0.000
46.79	1.66	167.89	1.01	169.99	31	2171	0.62	0.181	0.11	14.60	0.02	0.000
46.86	1.65	173.30	1.00	173.64	32	2189	0.62	0.178	0.10	14.60	0.02	0.000
46.95	1.64	175.61	1.00	175.22	32	2199	0.62	0.176	0.10	14.60	0.02	0.000
46.99	1.63	180.44	1.00	180.44	33	2220	0.62	0.171	0.09	14.60	0.02	0.000
47.08	1.61	185.07	1.00	185.07	34	2236	0.62	0.168	0.09	14.60	0.02	0.000
47.12	1.59	191.41	1.00	191.41	34	2256	0.62	0.165	0.09	14.60	0.02	0.000
47.21	1.59	193.75	1.00	193.75	35	2269	0.62	0.162	0.08	14.60	0.02	0.000
47.25	1.59	194.70	1.00	194.70	35	2281	0.62	0.160	0.08	14.60	0.02	0.000
47.33	1.60	193.40	1.00	193.40	35	2290	0.62	0.159	0.08	14.60	0.02	0.000
47.38	1.60	191.87	1.00	191.87	35	2291	0.62	0.159	0.08	14.60	0.02	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
47.46	1.61	190.42	1.00	190.42	34	2289	0.62	0.159	0.08	14.60	0.02	0.000
47.51	1.61	188.53	1.00	188.53	34	2280	0.62	0.161	0.08	14.60	0.02	0.000
47.59	1.62	186.71	1.00	186.71	34	2276	0.62	0.162	0.09	14.60	0.02	0.000
47.65	1.62	185.24	1.00	185.24	34	2266	0.62	0.164	0.09	14.60	0.02	0.000
47.73	1.62	184.42	1.00	184.42	33	2258	0.62	0.165	0.09	14.60	0.02	0.000
47.78	1.62	183.99	1.00	183.99	33	2250	0.62	0.167	0.09	14.60	0.02	0.000
47.85	1.62	184.45	1.00	184.45	33	2253	0.62	0.166	0.09	14.60	0.02	0.000
47.92	1.61	185.71	1.00	185.71	34	2257	0.62	0.166	0.09	14.60	0.02	0.000
47.99	1.60	188.10	1.00	188.10	34	2266	0.62	0.164	0.09	14.60	0.02	0.000
48.08	1.60	189.11	1.00	189.11	34	2265	0.62	0.164	0.09	14.60	0.02	0.000
48.12	1.60	187.83	1.00	187.83	34	2255	0.62	0.166	0.09	14.60	0.02	0.000
48.21	1.61	184.27	1.00	184.27	33	2233	0.61	0.171	0.09	14.60	0.02	0.000
48.26	1.62	179.92	1.00	179.92	33	2207	0.61	0.176	0.10	14.60	0.02	0.000
48.30	1.62	175.38	1.00	175.38	32	2172	0.61	0.183	0.10	14.60	0.02	0.000
48.39	1.63	171.34	1.00	171.34	31	2138	0.61	0.191	0.11	14.60	0.02	0.000
48.45	1.63	168.26	1.00	168.26	31	2113	0.61	0.198	0.12	14.60	0.02	0.000
48.51	1.63	167.11	1.00	167.11	30	2081	0.61	0.206	0.12	14.60	0.02	0.000
48.56	1.62	166.59	1.00	166.59	30	2056	0.61	0.213	0.13	14.60	0.02	0.000
48.65	1.61	166.42	1.00	166.42	30	2036	0.61	0.219	0.13	14.60	0.02	0.000
48.70	1.61	167.35	1.00	167.35	30	2051	0.61	0.215	0.13	14.60	0.02	0.000
48.78	1.62	168.08	1.00	168.08	30	2075	0.61	0.208	0.13	14.60	0.02	0.000
48.87	1.62	168.65	1.00	168.65	31	2094	0.61	0.203	0.12	14.60	0.02	0.000
48.93	1.62	170.63	1.00	170.63	31	2112	0.61	0.198	0.12	14.60	0.02	0.000
48.97	1.61	174.68	1.00	174.68	32	2131	0.61	0.194	0.11	14.60	0.02	0.000
49.06	1.59	179.81	1.00	179.81	32	2156	0.61	0.188	0.11	14.60	0.02	0.000
49.10	1.58	185.32	1.00	185.32	33	2206	0.61	0.177	0.10	14.60	0.02	0.000
49.21	1.59	189.08	1.00	189.08	34	2256	0.61	0.167	0.09	14.60	0.01	0.000
49.24	1.59	191.66	1.00	191.66	34	2306	0.61	0.158	0.08	14.60	0.01	0.000
49.32	1.60	191.31	1.00	191.31	35	2328	0.61	0.155	0.08	14.60	0.01	0.000
49.36	1.61	190.44	1.00	190.44	34	2344	0.61	0.152	0.08	14.60	0.01	0.000
49.45	1.61	189.42	1.00	189.42	34	2352	0.61	0.151	0.08	14.60	0.01	0.000
49.49	1.62	187.94	1.00	187.94	34	2357	0.61	0.150	0.08	14.60	0.01	0.000
49.58	1.63	185.98	1.00	185.98	34	2357	0.61	0.150	0.08	14.60	0.01	0.000
49.62	1.64	182.08	1.00	181.52	33	2345	0.61	0.152	0.08	14.60	0.01	0.000
49.71	1.65	176.90	1.01	177.90	33	2327	0.61	0.155	0.09	14.60	0.01	0.000
49.75	1.67	171.11	1.01	173.52	32	2297	0.61	0.160	0.09	14.60	0.01	0.000
49.81	1.67	166.57	1.02	169.62	31	2261	0.61	0.167	0.10	14.60	0.01	0.000
49.90	1.68	162.95	1.02	166.36	31	2228	0.61	0.173	0.10	14.60	0.02	0.000
49.96	1.68	160.95	1.02	164.49	30	2208	0.61	0.177	0.11	14.60	0.02	0.000
50.01	1.68	160.16	1.02	163.92	30	2206	0.61	0.178	0.11	14.60	0.02	0.000
50.10	1.68	160.12	1.02	163.87	30	2208	0.60	0.178	0.11	14.60	0.02	0.000
50.16	1.68	160.79	1.02	164.25	30	2208	0.60	0.178	0.11	14.60	0.02	0.000
50.21	1.67	162.91	1.02	165.60	31	2212	0.60	0.177	0.11	14.60	0.02	0.000
50.27	1.66	166.66	1.01	168.30	31	2228	0.60	0.174	0.10	14.60	0.02	0.000
50.37	1.65	170.24	1.00	171.03	31	2250	0.60	0.169	0.10	14.60	0.01	0.000
50.41	1.65	172.48	1.00	172.99	32	2272	0.60	0.165	0.10	14.60	0.01	0.000
50.46	1.65	171.10	1.01	172.18	32	2273	0.60	0.165	0.10	14.60	0.01	0.000
50.56	1.66	168.49	1.01	170.14	31	2259	0.60	0.168	0.10	14.60	0.01	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
50.63	1.66	165.53	1.01	167.58	31	2235	0.60	0.173	0.10	14.60	0.01	0.000
50.67	1.66	162.99	1.01	165.26	30	2210	0.60	0.178	0.11	14.60	0.01	0.000
50.76	1.67	160.42	1.02	163.19	30	2195	0.60	0.181	0.11	14.60	0.02	0.000
50.84	1.68	157.88	1.02	161.39	30	2188	0.60	0.182	0.11	14.60	0.02	0.000
50.89	1.68	156.24	1.03	160.42	30	2191	0.60	0.182	0.11	14.60	0.02	0.000
50.94	1.69	154.90	1.03	159.63	30	2193	0.60	0.181	0.11	14.60	0.02	0.000
50.99	1.69	153.52	1.03	158.81	30	2196	0.60	0.181	0.11	14.60	0.02	0.000
51.07	1.70	152.25	1.04	157.85	29	2193	0.60	0.182	0.11	14.60	0.02	0.000
51.15	1.70	151.02	1.04	156.92	29	2189	0.60	0.182	0.12	14.60	0.02	0.000
51.20	1.71	149.47	1.04	155.72	29	2183	0.60	0.184	0.12	14.60	0.02	0.000
51.28	1.71	148.03	1.05	154.80	29	2185	0.60	0.183	0.12	14.60	0.02	0.000
51.32	1.89	88.00	1.18	103.85	21	2720	0.60	0.110	0.11	14.60	0.01	0.000
51.42	1.89	87.56	1.18	103.34	21	2712	0.60	0.111	0.11	14.60	0.01	0.000
51.47	1.89	87.09	1.18	102.77	21	2699	0.60	0.112	0.11	14.60	0.01	0.000
51.52	1.89	86.59	1.18	102.32	20	2692	0.60	0.113	0.11	14.60	0.01	0.000
51.62	1.90	85.85	1.19	101.75	20	2688	0.60	0.113	0.11	14.60	0.01	0.000
51.67	1.90	85.53	1.19	101.43	20	2683	0.60	0.113	0.11	14.60	0.01	0.000
51.72	1.89	85.27	1.18	100.95	20	2670	0.60	0.115	0.11	14.60	0.01	0.000
51.81	1.89	85.32	1.18	100.65	20	2661	0.60	0.116	0.11	14.60	0.01	0.000
51.85	1.88	85.57	1.17	100.55	20	2654	0.60	0.116	0.12	14.60	0.01	0.000
51.94	1.89	85.34	1.18	100.36	20	2655	0.60	0.116	0.12	14.60	0.01	0.000
51.98	1.88	86.63	1.17	101.23	20	2670	0.59	0.115	0.11	14.60	0.01	0.000
52.04	1.86	88.88	1.16	102.66	20	2688	0.59	0.113	0.11	14.60	0.01	0.000
52.12	1.84	92.42	1.14	105.08	21	2723	0.59	0.110	0.11	14.60	0.01	0.000
52.17	1.82	95.36	1.13	107.30	21	2759	0.59	0.107	0.10	14.60	0.01	0.000
52.25	1.81	98.25	1.12	109.67	21	2805	0.59	0.104	0.10	14.60	0.01	0.000
52.33	1.80	101.20	1.11	111.97	22	2845	0.59	0.101	0.09	14.60	0.01	0.000
52.39	1.79	103.89	1.10	114.19	22	2887	0.59	0.098	0.09	14.60	0.01	0.000
52.46	1.79	105.28	1.10	115.51	22	2920	0.59	0.096	0.08	14.60	0.01	0.000
52.51	1.79	105.65	1.10	116.25	22	2950	0.59	0.094	0.08	14.60	0.01	0.000
52.60	1.80	105.17	1.11	116.25	22	2968	0.59	0.093	0.08	14.60	0.01	0.000
52.64	1.80	104.83	1.11	116.35	0	0	0.59	0.000	0.00	14.60	0.00	0.000
52.71	1.81	104.23	1.11	116.09	0	0	0.59	0.000	0.00	14.60	0.00	0.000
52.78	1.82	103.33	1.12	115.55	0	0	0.59	0.000	0.00	14.60	0.00	0.000
52.83	1.82	101.99	1.12	114.50	0	0	0.59	0.000	0.00	14.60	0.00	0.000
52.90	1.83	100.20	1.13	112.97	0	0	0.59	0.000	0.00	14.60	0.00	0.000
52.99	1.83	98.14	1.13	111.02	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.03	1.84	95.17	1.14	108.17	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.11	1.85	91.08	1.15	104.42	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.20	1.87	86.54	1.16	100.66	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.23	1.92	79.97	1.21	96.80	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.34	1.99	73.34	1.28	94.23	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.38	2.09	64.13	1.44	92.30	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.47	2.19	56.34	1.63	91.90	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.51	2.29	48.54	1.91	92.56	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.56	2.39	41.43	2.27	94.09	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.64	2.50	35.05	2.76	96.67	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.69	2.63	28.64	3.50	100.26	0	0	0.59	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
53.77	2.72	24.67	4.16	102.68	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.82	2.82	20.77	5.00	103.81	0	0	0.59	0.000	0.00	0.00	0.00	0.000
53.96	2.89	18.37	5.60	102.94	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.00	2.95	16.35	6.16	100.76	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.05	2.96	15.41	6.34	97.62	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.12	2.97	14.60	6.42	93.75	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.16	2.97	13.88	6.43	89.27	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.21	2.97	13.09	6.36	83.34	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.30	2.95	12.43	6.22	77.34	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.35	2.93	11.85	6.00	71.13	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.40	2.92	11.52	5.85	67.40	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.46	2.90	11.24	5.72	64.31	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.56	2.90	11.10	5.66	62.85	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.60	2.89	11.12	5.61	62.41	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.75	2.89	11.18	5.61	62.74	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.78	2.89	11.23	5.64	63.31	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.86	2.92	10.78	5.92	63.81	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.87	2.91	11.07	5.84	64.66	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.94	2.91	11.40	5.85	66.63	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.03	2.90	12.15	5.68	69.01	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.06	2.92	12.18	5.89	71.76	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.15	2.93	12.16	6.02	73.18	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.20	2.92	12.64	5.86	74.04	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.26	2.86	14.01	5.34	74.80	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.34	2.79	16.12	4.69	75.65	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.38	2.70	19.26	3.97	76.40	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.47	2.61	22.44	3.39	76.16	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.52	2.50	26.99	2.78	74.92	0	0	0.58	0.000	0.00	14.60	0.00	0.000
55.59	2.42	30.98	2.41	74.64	0	0	0.58	0.000	0.00	14.60	0.00	0.000
55.65	2.37	35.20	2.18	76.78	0	0	0.58	0.000	0.00	14.60	0.00	0.000
55.74	2.35	37.71	2.12	79.89	0	0	0.57	0.000	0.00	14.60	0.00	0.000
55.79	2.35	39.39	2.12	83.38	0	0	0.57	0.000	0.00	14.60	0.00	0.000
55.89	2.36	39.75	2.17	86.25	0	0	0.57	0.000	0.00	14.60	0.00	0.000
55.95	2.39	39.37	2.27	89.53	0	0	0.57	0.000	0.00	14.60	0.00	0.000
55.98	2.44	37.51	2.50	93.64	0	0	0.57	0.000	0.00	14.60	0.00	0.000
56.08	2.51	34.80	2.81	97.77	0	0	0.57	0.000	0.00	14.60	0.00	0.000
56.14	2.58	31.79	3.22	102.23	0	0	0.57	0.000	0.00	14.60	0.00	0.000
56.19	2.63	29.68	3.55	105.23	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.24	2.67	28.05	3.81	106.90	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.33	2.69	27.28	3.93	107.11	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.38	2.69	27.49	3.91	107.46	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.48	2.68	28.21	3.84	108.42	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.53	2.67	28.90	3.79	109.64	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.58	2.66	29.32	3.75	109.80	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.64	2.65	29.95	3.62	108.50	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.73	2.63	30.34	3.53	107.21	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.77	2.62	30.76	3.47	106.75	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.86	2.61	31.88	3.36	107.16	0	0	0.57	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
56.91	2.57	34.57	3.12	108.04	29	2798	0.57	0.106	0.07	14.60	0.00	0.000
57.02	2.53	37.55	2.92	109.62	29	2906	0.57	0.098	0.06	14.60	0.00	0.000
57.07	2.50	39.59	2.78	109.95	28	2963	0.57	0.095	0.06	14.60	0.00	0.000
57.12	2.50	39.67	2.75	108.91	28	2948	0.57	0.096	0.06	14.60	0.00	0.000
57.16	2.51	37.79	2.82	106.52	28	2862	0.57	0.101	0.07	14.60	0.00	0.000
57.26	2.55	34.95	3.02	105.66	28	2784	0.57	0.107	0.07	14.60	0.00	0.000
57.32	2.63	30.64	3.51	107.48	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.41	2.73	26.28	4.20	110.32	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.42	2.85	21.54	5.21	112.31	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.52	2.94	18.31	6.10	111.70	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.56	3.01	16.16	6.81	110.13	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.65	3.05	14.89	7.34	109.26	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.69	3.06	14.46	7.42	107.35	0	0	0.57	0.000	0.00	0.00	0.00	0.000
57.78	3.04	14.55	7.20	104.77	0	0	0.56	0.000	0.00	0.00	0.00	0.000
57.82	2.95	16.13	6.18	99.72	0	0	0.56	0.000	0.00	0.00	0.00	0.000
57.91	2.90	16.68	5.72	95.42	0	0	0.56	0.000	0.00	0.00	0.00	0.000
57.95	2.94	14.97	6.10	91.31	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.04	3.06	11.89	7.47	88.79	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.08	3.19	9.35	9.06	84.74	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.17	3.17	9.03	8.89	80.24	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.26	3.14	8.95	8.47	75.81	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.30	3.10	9.13	7.98	72.85	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.35	3.06	9.75	7.47	72.86	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.43	3.04	10.16	7.18	73.01	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.47	3.01	10.76	6.85	73.75	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.56	3.01	10.87	6.85	74.47	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.62	3.04	10.40	7.19	74.78	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.70	3.09	9.50	7.82	74.27	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.74	3.15	8.67	8.57	74.33	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.83	3.16	8.69	8.71	75.75	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.87	3.15	9.29	8.52	79.13	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.95	3.10	10.39	7.98	82.84	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.99	2.99	13.03	6.69	87.12	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.06	2.87	16.53	5.45	90.05	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.13	2.77	20.20	4.54	91.78	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.22	2.72	22.53	4.12	92.82	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.26	2.69	24.06	3.92	94.19	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.32	2.69	25.17	3.89	97.91	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.42	2.67	26.54	3.79	100.47	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.48	2.66	27.51	3.69	101.42	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.52	2.65	27.82	3.64	101.32	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.61	2.68	27.07	3.83	103.59	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.65	2.74	25.57	4.26	109.03	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.74	2.82	22.90	4.99	114.33	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.78	2.88	21.34	5.50	117.39	0	0	0.55	0.000	0.00	0.00	0.00	0.000
59.87	2.90	20.67	5.68	117.48	0	0	0.55	0.000	0.00	0.00	0.00	0.000
59.91	2.87	21.51	5.41	116.38	0	0	0.55	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)

Total estimated settlement: 2.92

Abbreviations

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

GeoTek, Inc.
1548 N. Maple Street
Corona, CA 92880
http://www.geotekusa.com

LIQUEFACTION ANALYSIS REPORT

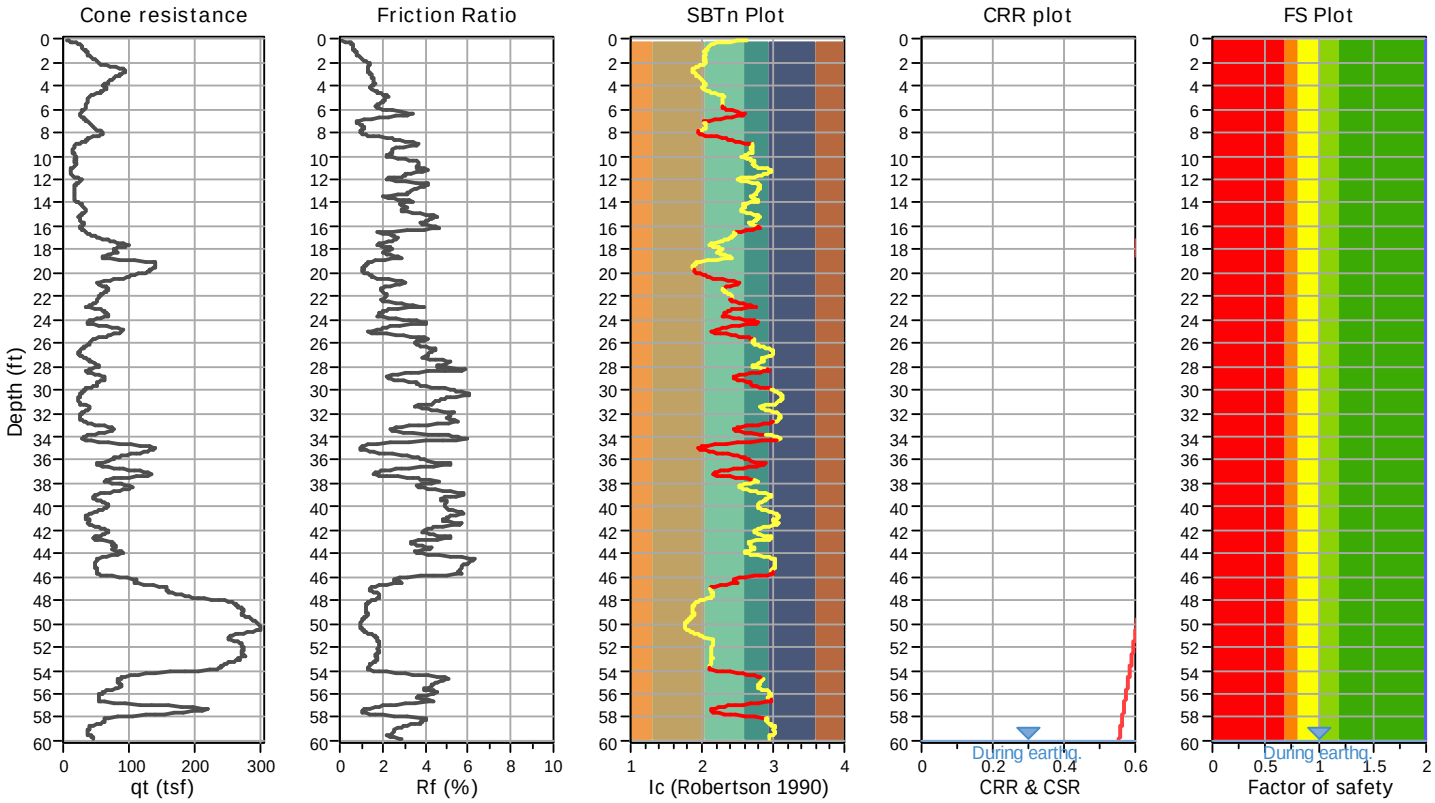
Project title : Proposed Residential Development

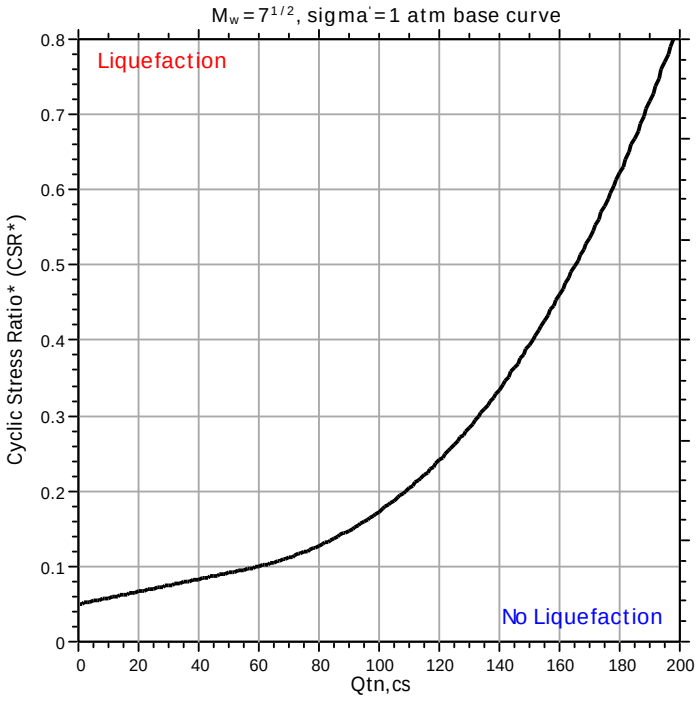
Location : NEC Cawston Avenue and Cottonwood Avenue, San

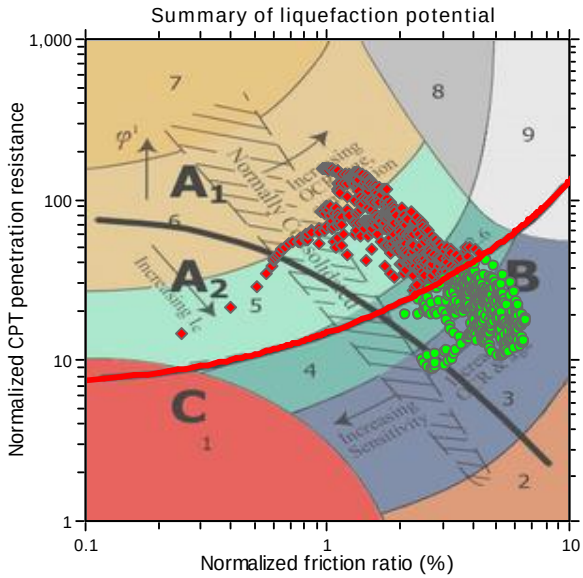
CPT file : CPT-3

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	60.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	60.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	7.44	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.99	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

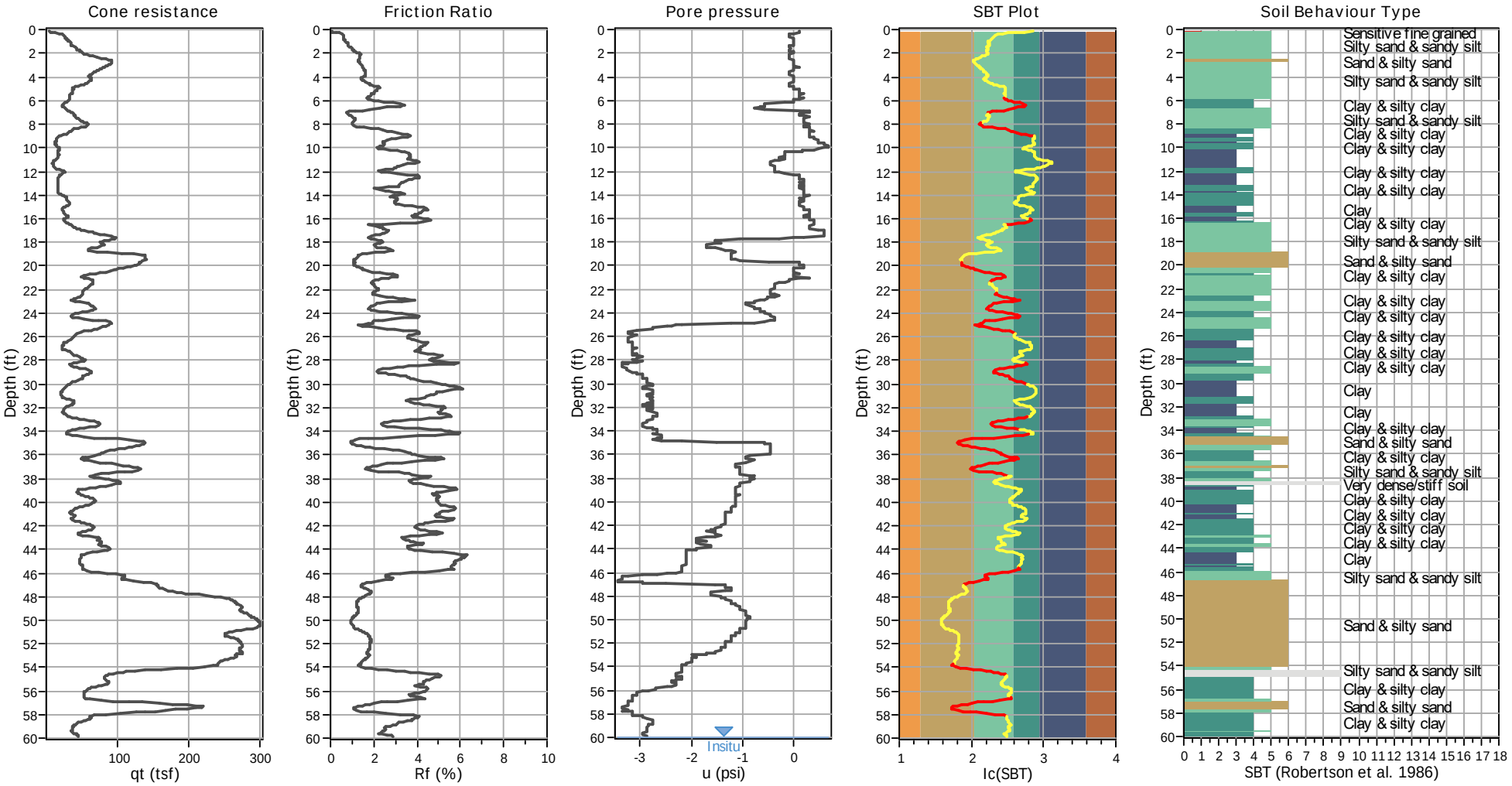






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and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

CPT basic interpretation plots



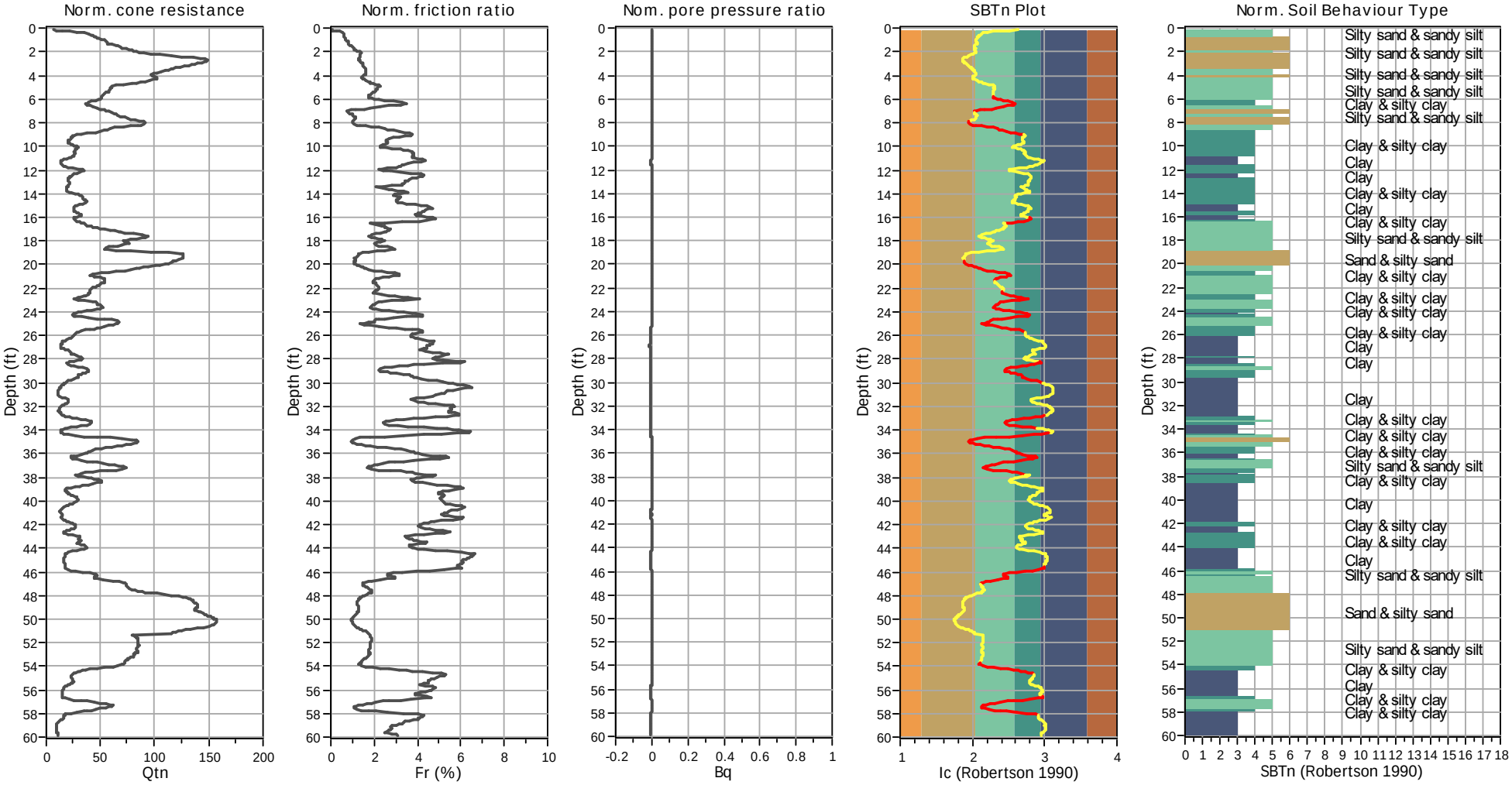
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	60.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	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:	7.44	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.99	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	60.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

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)



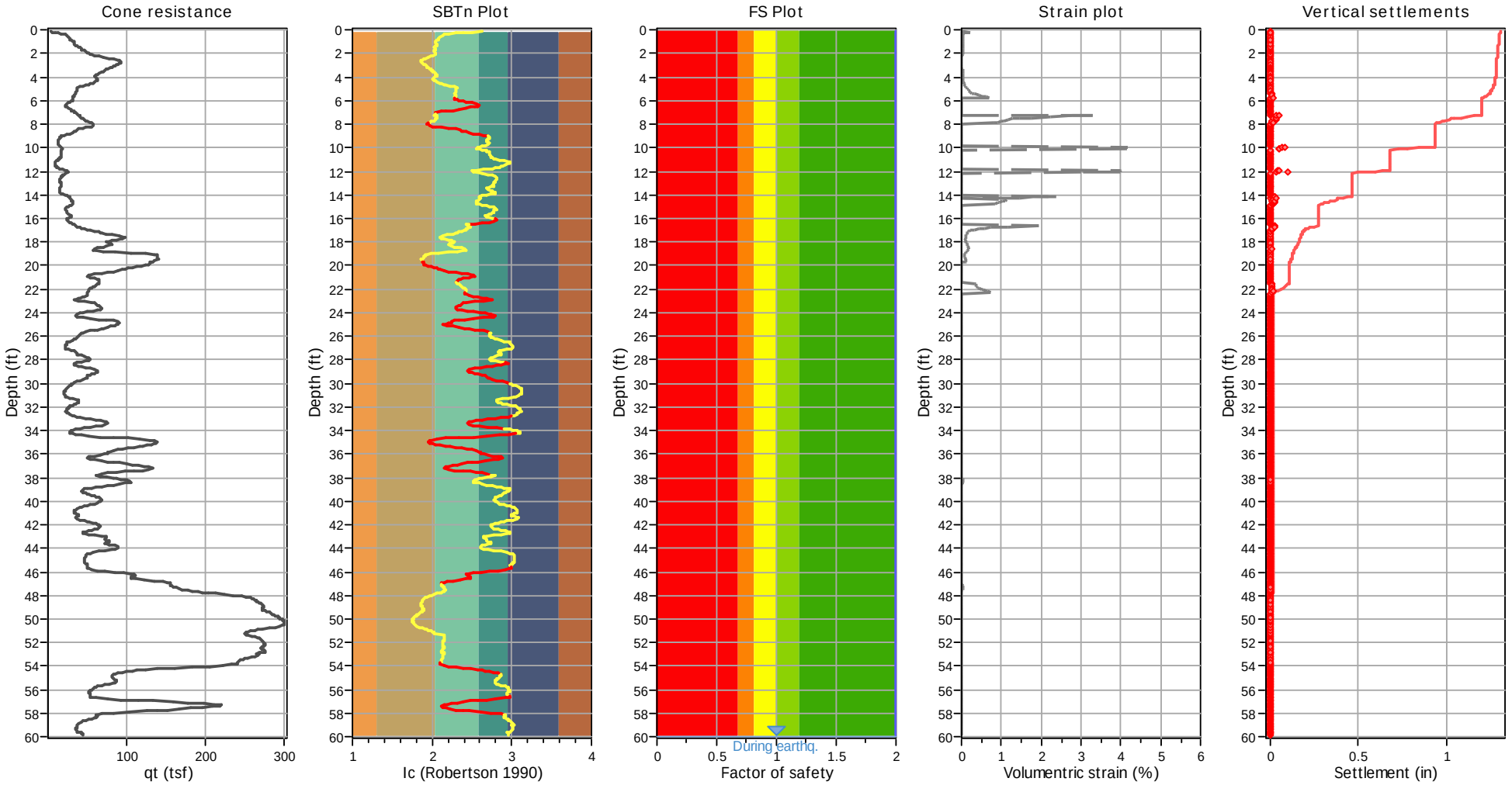
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	60.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	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:	7.44	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.99	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	60.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

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

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement of dry sands ::

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
0.11	2.63	6.96	3.53	24.55	0	0	0.63	0.000	0.00	0.00	0.00	0.000
0.17	2.51	9.34	2.80	26.14	7	125	0.63	0.056	0.21	14.60	0.20	0.003
0.20	2.38	14.66	2.25	32.98	8	168	0.63	0.019	0.06	14.60	0.06	0.000
0.27	2.29	21.34	1.00	21.34	5	218	0.63	0.015	0.08	14.60	0.08	0.001
0.34	2.22	28.81	1.71	49.15	11	267	0.63	0.012	0.02	14.60	0.02	0.000
0.42	2.16	35.12	1.56	54.94	12	301	0.63	0.012	0.02	14.60	0.02	0.000
0.49	2.13	38.71	1.51	58.38	13	321	0.63	0.014	0.02	14.60	0.02	0.000
0.55	2.10	41.50	1.46	60.66	13	334	0.63	0.015	0.03	14.60	0.03	0.000
0.65	2.09	42.71	1.44	61.71	13	339	0.63	0.021	0.03	14.60	0.03	0.001
0.69	2.08	44.07	1.42	62.79	13	345	0.63	0.022	0.04	14.60	0.04	0.000
0.73	2.08	45.38	1.41	64.09	14	352	0.63	0.024	0.04	14.60	0.04	0.000
0.85	2.07	46.49	1.41	65.50	14	360	0.63	0.030	0.05	14.60	0.04	0.001
0.89	2.06	48.64	1.39	67.49	14	370	0.63	0.030	0.05	14.60	0.04	0.000
0.93	2.05	50.83	1.37	69.72	15	382	0.63	0.030	0.04	14.60	0.04	0.000
1.03	2.04	53.39	1.35	72.27	15	395	0.63	0.033	0.05	14.60	0.04	0.001
1.08	2.04	54.98	1.35	74.44	16	407	0.63	0.033	0.04	14.60	0.04	0.000
1.12	2.05	55.58	1.37	76.33	16	418	0.63	0.033	0.04	14.60	0.04	0.000
1.23	2.06	55.71	1.39	77.27	16	424	0.63	0.038	0.05	14.60	0.05	0.001
1.28	2.06	56.03	1.39	77.93	17	428	0.63	0.040	0.05	14.60	0.05	0.001
1.33	2.05	57.15	1.38	78.68	17	431	0.63	0.043	0.05	14.60	0.05	0.001
1.38	2.04	60.37	1.35	81.72	17	447	0.63	0.041	0.05	14.60	0.05	0.001
1.47	2.02	64.38	1.33	85.70	18	467	0.63	0.040	0.04	14.60	0.04	0.001
1.52	2.03	66.30	1.34	89.09	19	487	0.63	0.037	0.04	14.60	0.04	0.000
1.60	2.04	68.20	1.35	92.15	19	504	0.63	0.037	0.04	14.60	0.04	0.001
1.66	2.04	70.44	1.36	95.54	20	523	0.63	0.035	0.03	14.60	0.03	0.000
1.74	2.02	74.41	1.33	99.09	21	540	0.63	0.035	0.03	14.60	0.03	0.001
1.78	2.02	76.93	1.33	102.22	21	557	0.63	0.033	0.03	14.60	0.03	0.000
1.84	2.03	78.61	1.34	105.30	22	575	0.63	0.032	0.03	14.60	0.03	0.000
1.91	2.04	80.57	1.36	109.48	23	599	0.63	0.030	0.03	14.60	0.02	0.000
1.97	2.05	82.89	1.37	113.81	24	624	0.63	0.029	0.02	14.60	0.02	0.000
2.04	2.05	86.53	1.37	118.46	25	649	0.63	0.028	0.02	14.60	0.02	0.000
2.13	2.04	90.55	1.35	122.23	26	668	0.63	0.028	0.02	14.60	0.02	0.000
2.17	2.01	97.23	1.31	127.75	27	695	0.63	0.026	0.02	14.60	0.02	0.000
2.26	1.98	104.74	1.28	134.10	28	724	0.63	0.025	0.02	14.60	0.02	0.000
2.32	1.95	114.88	1.24	142.85	29	763	0.63	0.023	0.01	14.60	0.01	0.000
2.39	1.92	125.25	1.21	151.54	31	800	0.63	0.022	0.01	14.60	0.01	0.000
2.44	1.89	135.06	1.18	159.85	32	833	0.63	0.020	0.01	14.60	0.01	0.000
2.52	1.87	142.39	1.17	165.99	33	856	0.63	0.020	0.01	14.60	0.01	0.000
2.57	1.87	146.45	1.16	169.71	34	872	0.63	0.020	0.01	14.60	0.01	0.000
2.65	1.86	148.45	1.16	171.61	34	880	0.63	0.021	0.01	14.60	0.01	0.000
2.70	1.87	148.64	1.16	172.25	34	885	0.63	0.021	0.01	14.60	0.01	0.000
2.77	1.87	148.07	1.16	172.21	34	887	0.63	0.022	0.01	14.60	0.01	0.000
2.83	1.88	146.19	1.17	171.40	34	888	0.63	0.023	0.01	14.60	0.01	0.000
2.92	1.90	143.47	1.18	169.99	34	886	0.63	0.024	0.01	14.60	0.01	0.000
2.96	1.91	140.20	1.20	168.25	34	884	0.63	0.025	0.01	14.60	0.01	0.000
3.03	1.93	136.92	1.21	166.16	34	878	0.63	0.026	0.01	14.60	0.01	0.000
3.09	1.93	133.97	1.22	163.76	33	869	0.63	0.028	0.02	14.60	0.01	0.000
3.17	1.94	130.88	1.23	161.10	33	857	0.63	0.030	0.02	14.60	0.02	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
3.22	1.95	127.50	1.24	158.36	32	846	0.63	0.032	0.02	14.60	0.02	0.000
3.30	1.97	123.71	1.26	155.78	32	837	0.63	0.034	0.02	14.60	0.02	0.000
3.36	1.98	119.96	1.28	153.33	32	828	0.63	0.036	0.02	14.60	0.02	0.000
3.42	1.99	116.97	1.29	151.20	31	819	0.63	0.039	0.02	14.60	0.02	0.000
3.48	2.00	114.95	1.30	149.52	31	811	0.63	0.041	0.02	14.60	0.02	0.000
3.55	2.01	112.98	1.31	148.00	31	804	0.63	0.044	0.03	14.60	0.02	0.000
3.61	2.02	109.70	1.33	145.49	31	793	0.63	0.047	0.03	14.60	0.03	0.000
3.74	2.03	105.81	1.35	142.50	30	779	0.63	0.053	0.03	14.60	0.03	0.001
3.79	2.05	101.69	1.37	139.00	29	761	0.63	0.059	0.04	14.60	0.03	0.000
3.83	2.06	98.83	1.38	136.29	29	747	0.63	0.064	0.04	14.60	0.04	0.000
3.88	2.06	96.87	1.38	133.67	28	733	0.63	0.070	0.05	14.60	0.04	0.000
3.96	2.05	96.44	1.37	131.91	28	722	0.63	0.076	0.05	14.60	0.05	0.001
4.01	2.03	97.94	1.34	131.52	28	718	0.63	0.080	0.05	14.60	0.05	0.001
4.10	2.02	99.99	1.32	132.17	28	720	0.63	0.083	0.06	14.60	0.05	0.001
4.15	2.00	101.80	1.31	132.94	28	722	0.63	0.085	0.06	14.60	0.05	0.001
4.20	2.01	102.08	1.31	133.45	28	725	0.63	0.086	0.06	14.60	0.05	0.001
4.31	2.02	101.36	1.32	133.85	28	729	0.63	0.089	0.06	14.60	0.05	0.001
4.36	2.04	99.40	1.35	134.14	28	733	0.63	0.089	0.06	14.60	0.05	0.001
4.40	2.07	95.84	1.40	134.11	29	736	0.63	0.089	0.06	14.60	0.05	0.001
4.49	2.10	91.72	1.45	132.81	29	731	0.63	0.096	0.06	14.60	0.06	0.001
4.55	2.12	87.41	1.50	131.18	29	722	0.63	0.103	0.07	14.60	0.06	0.001
4.62	2.14	83.76	1.54	128.94	28	708	0.63	0.115	0.08	14.60	0.07	0.001
4.66	2.17	79.03	1.61	127.01	28	695	0.62	0.126	0.08	14.60	0.08	0.001
4.75	2.23	71.59	1.74	124.26	28	673	0.62	0.150	0.10	14.60	0.09	0.002
4.84	2.28	64.57	1.89	122.02	28	650	0.62	0.182	0.12	14.60	0.11	0.002
4.87	2.31	60.78	1.98	120.07	28	633	0.62	0.208	0.14	14.60	0.12	0.001
4.96	2.31	60.26	1.97	118.52	28	626	0.62	0.229	0.15	14.60	0.14	0.003
5.00	2.29	60.54	1.93	116.99	27	620	0.62	0.245	0.17	14.60	0.15	0.002
5.06	2.30	59.36	1.95	115.90	27	613	0.62	0.267	0.18	14.60	0.17	0.002
5.15	2.30	58.89	1.95	114.93	27	608	0.62	0.291	0.20	14.60	0.18	0.004
5.21	2.30	58.51	1.95	113.81	27	602	0.62	0.313	0.22	14.60	0.20	0.003
5.26	2.29	58.28	1.92	112.13	26	595	0.62	0.342	0.25	14.60	0.22	0.003
5.35	2.29	57.80	1.91	110.26	26	586	0.62	0.386	0.28	14.60	0.26	0.005
5.40	2.29	56.81	1.91	108.33	25	576	0.62	0.432	0.33	14.60	0.29	0.003
5.45	2.29	55.45	1.91	106.04	25	563	0.62	0.499	0.38	14.60	0.35	0.004
5.56	2.29	53.85	1.92	103.46	24	549	0.62	0.607	0.48	14.60	0.43	0.011
5.61	2.29	52.54	1.92	100.79	24	535	0.62	0.724	0.59	14.60	0.53	0.007
5.66	2.29	51.93	1.90	98.90	23	526	0.62	0.820	0.69	14.60	0.62	0.007
5.74	2.28	51.50	1.90	97.68	23	520	0.62	0.916	0.78	14.60	0.70	0.014
5.79	2.28	51.40	1.89	97.39	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.88	2.29	51.29	1.91	98.08	0	0	0.62	0.000	0.00	14.60	0.00	0.000
5.92	2.31	50.87	1.98	100.49	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.02	2.34	49.74	2.08	103.52	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.06	2.38	47.77	2.24	107.14	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.11	2.43	45.43	2.44	110.70	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.18	2.50	41.86	2.76	115.69	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.32	2.56	38.95	3.07	119.62	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.36	2.59	36.93	3.29	121.36	0	0	0.62	0.000	0.00	14.60	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
6.41	2.59	36.89	3.25	119.71	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.46	2.57	37.44	3.14	117.41	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.50	2.54	37.99	3.00	114.05	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.58	2.49	40.27	2.70	108.88	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.66	2.42	42.88	2.41	103.20	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.71	2.33	46.77	2.06	96.15	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.85	2.27	49.14	1.84	90.52	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.89	2.18	51.44	1.61	82.72	0	0	0.62	0.000	0.00	14.60	0.00	0.000
6.94	2.11	53.12	1.47	77.97	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.01	2.05	55.17	1.37	75.55	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.06	2.04	57.46	1.35	77.61	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.11	2.03	60.45	1.35	81.40	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.20	2.03	63.05	1.34	84.64	0	0	0.62	0.000	0.00	14.60	0.00	0.000
7.24	2.05	63.52	1.37	86.83	18	476	0.62	3.440	3.80	14.60	3.29	0.036
7.31	2.06	64.44	1.38	88.87	19	487	0.62	2.990	3.20	14.60	2.77	0.046
7.37	2.06	65.79	1.39	91.54	20	502	0.62	2.492	2.57	14.60	2.22	0.034
7.46	2.05	68.82	1.38	94.81	20	520	0.62	2.057	2.04	14.60	1.76	0.035
7.50	2.06	70.41	1.38	97.16	21	533	0.62	1.783	1.71	14.60	1.48	0.016
7.55	2.05	72.32	1.37	99.34	21	544	0.62	1.582	1.48	14.60	1.28	0.014
7.66	2.04	74.65	1.36	101.32	21	554	0.62	1.475	1.36	14.60	1.17	0.031
7.70	2.02	77.54	1.33	103.24	22	563	0.62	1.365	1.24	14.60	1.06	0.012
7.75	1.99	81.46	1.29	105.32	22	570	0.62	1.282	1.15	14.60	0.99	0.010
7.84	1.97	85.61	1.26	107.75	22	579	0.62	1.217	1.08	14.60	0.92	0.020
7.88	1.94	89.41	1.23	110.32	22	592	0.62	1.077	0.94	14.60	0.80	0.008
7.98	1.94	91.12	1.23	111.76	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.02	1.94	91.66	1.23	113.15	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.13	1.97	90.03	1.26	113.37	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.19	2.00	87.68	1.31	114.46	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.23	2.05	84.88	1.37	116.08	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.28	2.12	78.38	1.50	117.26	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.37	2.20	70.85	1.68	118.93	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.42	2.29	62.85	1.93	121.37	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.53	2.35	58.49	2.11	123.22	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.58	2.38	55.77	2.23	124.13	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.62	2.39	55.11	2.27	125.27	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.67	2.42	53.61	2.39	128.02	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.78	2.47	50.29	2.60	130.63	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.83	2.53	45.05	2.91	131.00	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.89	2.60	38.22	3.30	126.15	0	0	0.62	0.000	0.00	14.60	0.00	0.000
8.98	2.66	32.60	3.68	120.08	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.02	2.71	28.15	4.03	113.54	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.07	2.72	25.99	4.16	108.19	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.16	2.72	24.54	4.16	101.98	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.22	2.71	23.51	4.07	95.78	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.28	2.70	22.95	3.98	91.21	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.32	2.69	22.38	3.90	87.34	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.41	2.68	21.77	3.88	84.50	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.46	2.70	20.69	3.98	82.42	0	0	0.62	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
9.55	2.70	20.38	4.01	81.67	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.65	2.72	19.90	4.12	82.07	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.70	2.71	20.46	4.06	82.99	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.76	2.70	21.00	4.00	83.91	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.81	2.67	22.39	3.77	84.36	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.85	2.63	24.02	3.52	84.49	0	0	0.62	0.000	0.00	0.00	0.00	0.000
9.94	2.59	25.83	3.30	85.13	23	387	0.62	64.735	54.81	14.60	4.16	0.087
10.01	2.57	27.61	3.13	86.43	23	403	0.62	45.813	38.72	14.60	4.15	0.068
10.06	2.55	28.97	3.06	88.71	23	419	0.62	32.473	26.79	14.60	4.15	0.051
10.11	2.59	28.44	3.27	93.01	25	429	0.62	27.065	20.66	14.60	4.14	0.051
10.20	2.63	27.72	3.51	97.18	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.25	2.68	26.60	3.83	101.89	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.34	2.69	26.60	3.93	104.53	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.38	2.71	26.28	4.08	107.19	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.45	2.73	26.11	4.19	109.28	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.54	2.73	26.23	4.21	110.37	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.58	2.73	26.45	4.20	111.09	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.63	2.72	26.71	4.15	110.91	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.72	2.74	25.91	4.26	110.33	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.81	2.75	25.04	4.34	108.73	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.86	2.75	24.16	4.40	106.38	0	0	0.62	0.000	0.00	0.00	0.00	0.000
10.91	2.77	22.94	4.52	103.66	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.00	2.80	21.08	4.79	100.94	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.06	2.85	18.76	5.27	98.80	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.11	2.91	16.66	5.79	96.43	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.20	2.95	14.98	6.26	93.70	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.25	2.98	13.74	6.57	90.27	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.30	2.98	13.35	6.54	87.33	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.37	2.95	13.58	6.23	84.68	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.46	2.92	13.97	5.93	82.83	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.51	2.89	14.66	5.60	82.05	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.57	2.87	15.39	5.37	82.73	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.65	2.84	16.38	5.14	84.16	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.70	2.80	17.98	4.80	86.20	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.75	2.75	20.30	4.37	88.73	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.85	2.65	24.72	3.62	89.39	0	0	0.62	0.000	0.00	0.00	0.00	0.000
11.89	2.55	29.44	3.06	90.05	24	488	0.61	16.535	13.40	14.60	3.99	0.038
11.94	2.50	33.49	2.77	92.80	24	526	0.61	9.342	7.54	14.60	3.99	0.047
12.04	2.51	34.49	2.82	97.23	25	551	0.61	6.767	5.13	14.60	3.98	0.096
12.09	2.55	33.82	3.04	102.83	27	567	0.61	5.543	3.84	14.60	3.02	0.033
12.15	2.63	30.89	3.49	107.86	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.29	2.70	27.87	4.01	111.85	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.34	2.76	25.48	4.49	114.44	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.39	2.79	24.45	4.66	113.94	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.45	2.80	23.50	4.78	112.44	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.51	2.81	22.79	4.85	110.50	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.56	2.81	22.27	4.87	108.55	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.60	2.81	21.65	4.89	105.95	0	0	0.61	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
12.69	2.81	21.07	4.89	103.04	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.73	2.81	20.67	4.84	100.02	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.83	2.80	20.50	4.77	97.73	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.90	2.79	20.41	4.71	96.17	0	0	0.61	0.000	0.00	0.00	0.00	0.000
12.95	2.78	20.68	4.62	95.53	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.08	2.77	20.83	4.56	95.02	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.13	2.76	21.08	4.49	94.67	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.18	2.77	20.92	4.50	94.09	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.23	2.77	20.74	4.50	93.36	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.29	2.77	20.47	4.53	92.83	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.34	2.74	19.98	4.28	85.51	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.43	2.70	19.48	4.03	78.43	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.47	2.68	19.14	3.82	73.12	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.54	2.71	19.13	4.07	77.79	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.62	2.74	19.09	4.30	82.05	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.70	2.76	19.13	4.42	84.55	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.73	2.78	19.10	4.60	87.86	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.79	2.80	19.40	4.76	92.33	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.86	2.79	20.98	4.66	97.75	0	0	0.61	0.000	0.00	0.00	0.00	0.000
13.95	2.74	23.46	4.28	100.35	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.00	2.67	26.61	3.81	101.46	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.08	2.62	29.22	3.46	101.24	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.13	2.59	31.27	3.27	102.37	28	626	0.61	4.627	3.15	14.60	2.36	0.025
14.18	2.59	32.49	3.25	105.47	28	649	0.61	3.652	2.40	14.60	1.80	0.024
14.28	2.60	32.93	3.30	108.66	29	669	0.61	3.062	1.93	14.60	1.45	0.036
14.33	2.60	33.26	3.35	111.28	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.39	2.59	34.03	3.28	111.56	30	693	0.61	2.495	1.53	14.60	1.14	0.016
14.48	2.58	34.62	3.21	111.31	30	700	0.61	2.384	1.47	14.60	1.10	0.023
14.52	2.56	35.86	3.10	111.16	30	711	0.61	2.198	1.38	14.60	1.03	0.010
14.61	2.55	36.46	3.06	111.45	29	720	0.61	2.064	1.30	14.60	0.96	0.021
14.67	2.55	36.95	3.03	112.06	30	729	0.61	1.944	1.22	14.60	0.90	0.013
14.71	2.56	36.83	3.09	113.75	30	737	0.61	1.836	1.12	14.60	0.83	0.008
14.78	2.59	35.71	3.24	115.65	31	740	0.61	1.821	1.07	14.60	0.79	0.013
14.87	2.62	33.90	3.47	117.71	0	0	0.61	0.000	0.00	0.00	0.00	0.000
14.91	2.68	30.93	3.86	119.29	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.01	2.73	28.64	4.19	119.93	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.06	2.77	26.45	4.55	120.32	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.10	2.79	25.62	4.71	120.68	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.21	2.81	24.91	4.85	120.73	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.26	2.80	25.33	4.76	120.46	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.31	2.78	25.72	4.63	119.15	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.39	2.77	25.82	4.56	117.84	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.45	2.77	25.85	4.54	117.40	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.57	2.76	26.29	4.46	117.31	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.61	2.74	27.53	4.29	118.10	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.65	2.71	29.16	4.09	119.34	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.70	2.68	31.19	3.88	121.00	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.76	2.67	32.50	3.76	122.13	0	0	0.61	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
15.82	2.68	32.11	3.82	122.75	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.89	2.71	30.24	4.06	122.87	0	0	0.61	0.000	0.00	0.00	0.00	0.000
15.96	2.76	27.80	4.42	122.93	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.05	2.79	26.06	4.71	122.68	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.10	2.81	25.05	4.89	122.53	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.14	2.81	25.07	4.87	122.14	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.21	2.77	26.74	4.52	120.86	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.31	2.72	28.82	4.13	119.08	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.36	2.63	31.13	3.53	110.00	0	0	0.61	0.000	0.00	0.00	0.00	0.000
16.44	2.54	32.25	3.00	96.69	0	0	0.61	0.000	0.00	14.60	0.00	0.000
16.51	2.45	33.35	2.55	85.03	0	0	0.61	0.000	0.00	14.60	0.00	0.000
16.55	2.43	34.32	2.46	84.41	0	0	0.61	0.000	0.00	14.60	0.00	0.000
16.61	2.45	36.55	2.54	92.90	23	714	0.61	3.294	2.73	14.60	1.94	0.026
16.71	2.47	38.01	2.63	100.15	25	764	0.61	2.178	1.63	14.60	1.15	0.027
16.75	2.46	41.24	2.57	106.09	27	818	0.61	1.471	1.03	14.60	0.73	0.007
16.83	2.45	43.41	2.51	108.77	27	849	0.61	1.209	0.83	14.60	0.59	0.012
16.88	2.43	46.78	2.42	113.44	28	897	0.61	0.907	0.60	14.60	0.42	0.005
16.97	2.42	49.33	2.40	118.58	29	944	0.61	0.708	0.44	14.60	0.31	0.007
17.01	2.41	53.42	2.34	124.98	31	1005	0.61	0.527	0.31	14.60	0.22	0.002
17.06	2.37	59.21	2.18	129.36	31	1064	0.61	0.411	0.24	14.60	0.17	0.002
17.15	2.34	63.68	2.07	132.03	32	1107	0.61	0.351	0.20	14.60	0.14	0.003
17.21	2.31	66.46	1.99	132.56	31	1126	0.61	0.330	0.19	14.60	0.13	0.002
17.28	2.30	68.26	1.94	132.08	31	1134	0.61	0.324	0.19	14.60	0.13	0.002
17.36	2.25	72.64	1.81	131.51	30	1151	0.61	0.309	0.19	14.60	0.13	0.003
17.41	2.19	80.15	1.65	132.56	30	1182	0.61	0.280	0.17	14.60	0.12	0.001
17.47	2.13	88.22	1.52	134.24	29	1210	0.61	0.257	0.16	14.60	0.11	0.002
17.55	2.10	93.08	1.46	135.60	29	1229	0.61	0.246	0.15	14.60	0.11	0.002
17.62	2.09	94.25	1.44	136.13	29	1237	0.61	0.242	0.15	14.60	0.11	0.002
17.67	2.12	91.88	1.49	137.08	30	1248	0.61	0.235	0.15	14.60	0.10	0.001
17.76	2.16	88.29	1.57	138.59	31	1262	0.61	0.228	0.14	14.60	0.09	0.002
17.80	2.20	83.82	1.67	139.67	31	1265	0.61	0.227	0.13	14.60	0.09	0.001
17.86	2.24	78.12	1.77	138.66	32	1246	0.61	0.243	0.14	14.60	0.10	0.001
17.97	2.27	73.55	1.86	136.51	32	1222	0.61	0.265	0.15	14.60	0.10	0.003
18.02	2.28	70.85	1.90	134.38	31	1200	0.61	0.286	0.17	14.60	0.11	0.001
18.06	2.25	72.95	1.81	132.14	30	1193	0.61	0.294	0.18	14.60	0.12	0.001
18.16	2.23	74.83	1.74	130.00	30	1188	0.61	0.303	0.19	14.60	0.13	0.003
18.20	2.20	76.22	1.68	127.95	29	1178	0.61	0.315	0.20	14.60	0.14	0.002
18.27	2.21	74.25	1.70	125.96	29	1161	0.61	0.337	0.22	14.60	0.15	0.002
18.32	2.24	70.23	1.77	124.03	28	1138	0.61	0.368	0.24	14.60	0.16	0.002
18.41	2.28	65.64	1.87	122.87	29	1119	0.61	0.400	0.26	14.60	0.18	0.004
18.46	2.32	61.32	2.01	123.25	29	1107	0.61	0.423	0.27	14.60	0.18	0.002
18.51	2.36	57.68	2.17	125.20	30	1105	0.61	0.428	0.26	14.60	0.18	0.002
18.65	2.41	54.51	2.33	127.20	31	1108	0.61	0.432	0.25	14.60	0.17	0.006
18.71	2.43	53.26	2.42	128.99	32	1115	0.61	0.424	0.24	14.60	0.16	0.002
18.76	2.40	56.47	2.29	129.55	32	1139	0.61	0.389	0.22	14.60	0.15	0.002
18.81	2.32	64.98	2.00	130.16	31	1188	0.61	0.329	0.20	14.60	0.13	0.002
18.85	2.21	78.28	1.69	132.20	30	1249	0.61	0.271	0.17	14.60	0.11	0.001
18.92	2.08	97.12	1.42	137.71	30	1316	0.61	0.226	0.14	14.60	0.09	0.001

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
18.99	1.99	112.85	1.28	144.59	30	1360	0.61	0.203	0.12	14.60	0.08	0.002
19.07	1.93	123.59	1.21	150.08	30	1385	0.61	0.192	0.12	14.60	0.08	0.001
19.12	1.91	126.05	1.20	151.22	30	1388	0.61	0.192	0.12	14.60	0.08	0.001
19.20	1.91	126.40	1.20	151.22	30	1390	0.61	0.193	0.12	14.60	0.08	0.002
19.25	1.90	126.35	1.19	150.46	30	1381	0.61	0.198	0.12	14.60	0.08	0.001
19.31	1.89	126.20	1.18	148.80	30	1360	0.61	0.210	0.13	14.60	0.09	0.001
19.41	1.88	126.13	1.17	147.20	29	1341	0.61	0.224	0.14	14.60	0.09	0.002
19.47	1.87	126.38	1.16	146.33	29	1327	0.61	0.233	0.15	14.60	0.10	0.001
19.51	1.86	126.42	1.15	145.93	29	1322	0.61	0.238	0.15	14.60	0.10	0.001
19.56	1.88	121.82	1.17	142.28	28	1303	0.61	0.253	0.17	14.60	0.11	0.001
19.64	1.88	119.35	1.17	140.08	28	1291	0.61	0.264	0.18	14.60	0.12	0.002
19.71	1.89	116.61	1.18	137.97	28	1281	0.61	0.274	0.19	14.60	0.12	0.002
19.76	1.88	117.58	1.17	138.13	0	0	0.62	0.000	0.00	14.60	0.00	0.000
19.82	1.89	115.76	1.18	136.41	0	0	0.62	0.000	0.00	14.60	0.00	0.000
19.89	1.90	113.08	1.19	134.21	0	0	0.62	0.000	0.00	14.60	0.00	0.000
19.95	1.91	109.99	1.20	132.21	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.02	1.94	105.29	1.23	129.92	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.10	1.98	100.22	1.28	127.88	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.15	2.02	94.35	1.33	125.70	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.24	2.06	89.76	1.38	123.80	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.28	2.08	85.98	1.42	122.09	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.35	2.10	82.66	1.46	120.81	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.45	2.15	77.40	1.56	120.63	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.51	2.22	71.90	1.71	122.62	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.56	2.30	64.83	1.94	125.48	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.65	2.37	57.96	2.19	126.87	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.70	2.45	50.46	2.51	126.42	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.76	2.50	44.95	2.78	124.79	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.80	2.51	43.18	2.82	121.65	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.89	2.53	40.69	2.93	119.21	0	0	0.62	0.000	0.00	14.60	0.00	0.000
20.94	2.49	42.44	2.73	115.90	0	0	0.62	0.000	0.00	14.60	0.00	0.000
21.04	2.46	44.01	2.59	114.12	0	0	0.62	0.000	0.00	14.60	0.00	0.000
21.08	2.39	49.27	2.28	112.22	0	0	0.62	0.000	0.00	14.60	0.00	0.000
21.16	2.35	51.83	2.14	110.74	0	0	0.62	0.000	0.00	14.60	0.00	0.000
21.21	2.33	53.14	2.05	108.89	0	0	0.62	0.000	0.00	14.60	0.00	0.000
21.26	2.31	53.77	1.99	106.95	0	0	0.62	0.000	0.00	14.60	0.00	0.000
21.37	2.30	54.12	1.96	105.82	0	0	0.62	0.000	0.00	14.60	0.00	0.000
21.42	2.30	54.04	1.95	105.58	0	0	0.62	0.000	0.00	14.60	0.00	0.000
21.51	2.31	53.25	1.98	105.63	25	1077	0.63	0.707	0.54	14.60	0.34	0.007
21.56	2.32	52.23	2.02	105.73	25	1076	0.63	0.716	0.54	14.60	0.34	0.005
21.60	2.34	50.95	2.07	105.42	25	1069	0.63	0.740	0.56	14.60	0.35	0.003
21.69	2.35	49.54	2.12	104.87	25	1062	0.63	0.774	0.59	14.60	0.37	0.008
21.76	2.36	48.04	2.17	104.36	25	1053	0.63	0.811	0.61	14.60	0.38	0.007
21.81	2.38	46.79	2.23	104.15	25	1047	0.63	0.840	0.63	14.60	0.39	0.004
21.86	2.40	45.10	2.30	103.69	25	1036	0.63	0.889	0.67	14.60	0.41	0.005
21.95	2.41	43.48	2.37	102.83	25	1024	0.63	0.954	0.71	14.60	0.44	0.009
22.00	2.42	41.94	2.41	101.27	25	1006	0.63	1.055	0.80	14.60	0.50	0.006
22.08	2.43	41.13	2.42	99.47	25	990	0.63	1.154	0.89	14.60	0.55	0.011

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
22.17	2.42	40.51	2.41	97.73	24	977	0.63	1.255	0.99	14.60	0.61	0.013
22.21	2.42	40.34	2.39	96.50	24	968	0.63	1.324	1.07	14.60	0.66	0.006
22.25	2.41	40.17	2.35	94.53	23	953	0.63	1.445	1.20	14.60	0.74	0.007
22.35	2.41	39.81	2.34	93.26	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.44	2.42	39.36	2.39	94.14	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.51	2.46	38.37	2.59	99.45	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.60	2.52	36.36	2.88	104.89	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.64	2.57	34.36	3.14	107.95	0	0	0.63	0.000	0.00	14.60	0.00	0.000
22.72	2.63	31.43	3.49	109.58	0	0	0.63	0.000	0.00	0.00	0.00	0.000
22.81	2.68	29.08	3.82	111.10	0	0	0.63	0.000	0.00	0.00	0.00	0.000
22.85	2.73	26.80	4.22	112.99	0	0	0.63	0.000	0.00	0.00	0.00	0.000
22.92	2.76	25.07	4.49	112.51	0	0	0.63	0.000	0.00	0.00	0.00	0.000
22.98	2.65	29.66	3.68	109.05	0	0	0.63	0.000	0.00	0.00	0.00	0.000
23.07	2.54	35.29	3.00	105.97	0	0	0.63	0.000	0.00	14.60	0.00	0.000
23.11	2.43	43.10	2.42	104.52	0	0	0.63	0.000	0.00	14.60	0.00	0.000
23.20	2.40	45.29	2.30	104.10	0	0	0.63	0.000	0.00	14.60	0.00	0.000
23.25	2.37	46.86	2.19	102.73	0	0	0.63	0.000	0.00	14.60	0.00	0.000
23.33	2.35	47.44	2.14	101.40	0	0	0.63	0.000	0.00	14.60	0.00	0.000
23.39	2.34	48.03	2.10	100.68	0	0	0.63	0.000	0.00	14.60	0.00	0.000
23.43	2.33	49.48	2.04	100.90	0	0	0.63	0.000	0.00	14.60	0.00	0.000
23.55	2.31	50.97	1.97	100.54	0	0	0.63	0.000	0.00	14.60	0.00	0.000
23.64	2.29	52.03	1.93	100.35	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.68	2.30	51.64	1.94	100.43	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.73	2.32	49.74	2.03	101.00	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.79	2.37	46.84	2.18	102.00	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.83	2.44	42.04	2.47	103.80	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.94	2.52	37.10	2.85	105.71	0	0	0.64	0.000	0.00	14.60	0.00	0.000
23.99	2.60	32.40	3.33	107.94	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.03	2.66	29.49	3.70	109.06	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.09	2.73	26.29	4.19	110.11	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.18	2.75	25.43	4.35	110.50	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.22	2.78	24.30	4.66	113.16	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.34	2.77	25.36	4.53	114.91	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.39	2.75	26.41	4.40	116.28	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.43	2.64	31.72	3.58	113.69	0	0	0.64	0.000	0.00	0.00	0.00	0.000
24.52	2.53	38.39	2.91	111.55	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.57	2.42	46.52	2.39	110.95	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.64	2.34	53.88	2.09	112.69	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.68	2.28	61.01	1.89	115.28	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.78	2.25	65.46	1.79	117.14	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.82	2.24	67.10	1.76	118.34	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.87	2.20	66.46	1.68	111.36	0	0	0.64	0.000	0.00	14.60	0.00	0.000
24.98	2.17	65.39	1.60	104.36	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.02	2.14	64.38	1.52	98.13	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.09	2.19	62.21	1.63	101.51	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.18	2.26	57.72	1.83	105.77	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.22	2.34	54.07	2.09	113.01	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.32	2.42	50.16	2.38	119.27	0	0	0.64	0.000	0.00	14.60	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
25.38	2.47	47.62	2.63	125.30	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.43	2.53	43.74	2.95	128.85	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.48	2.59	40.28	3.25	130.94	0	0	0.64	0.000	0.00	14.60	0.00	0.000
25.53	2.65	35.89	3.63	130.13	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.66	2.69	32.05	3.96	126.88	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.71	2.73	28.97	4.21	121.85	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.76	2.73	27.79	4.22	117.39	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.80	2.73	27.06	4.19	113.31	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.87	2.72	26.41	4.17	110.15	0	0	0.64	0.000	0.00	0.00	0.00	0.000
25.97	2.72	25.84	4.17	107.78	0	0	0.64	0.000	0.00	0.00	0.00	0.000
26.01	2.73	25.17	4.24	106.67	0	0	0.64	0.000	0.00	0.00	0.00	0.000
26.05	2.75	24.42	4.35	106.17	0	0	0.64	0.000	0.00	0.00	0.00	0.000
26.14	2.76	23.50	4.48	105.32	0	0	0.64	0.000	0.00	0.00	0.00	0.000
26.18	2.79	22.29	4.69	104.65	0	0	0.64	0.000	0.00	0.00	0.00	0.000
26.27	2.81	21.40	4.86	104.03	0	0	0.64	0.000	0.00	0.00	0.00	0.000
26.31	2.86	19.41	5.31	103.09	0	0	0.65	0.000	0.00	0.00	0.00	0.000
26.45	2.91	17.65	5.76	101.68	0	0	0.65	0.000	0.00	0.00	0.00	0.000
26.49	2.96	15.90	6.27	99.77	0	0	0.65	0.000	0.00	0.00	0.00	0.000
26.53	2.97	15.31	6.42	98.30	0	0	0.65	0.000	0.00	0.00	0.00	0.000
26.58	2.98	14.75	6.52	96.19	0	0	0.65	0.000	0.00	0.00	0.00	0.000
26.67	2.99	14.14	6.66	94.11	0	0	0.65	0.000	0.00	0.00	0.00	0.000
26.71	3.00	13.65	6.73	91.88	0	0	0.65	0.000	0.00	0.00	0.00	0.000
26.80	3.01	13.20	6.84	90.25	0	0	0.65	0.000	0.00	0.00	0.00	0.000
26.85	3.01	13.05	6.81	88.86	0	0	0.65	0.000	0.00	0.00	0.00	0.000
26.94	3.01	12.89	6.85	88.28	0	0	0.65	0.000	0.00	0.00	0.00	0.000
26.99	3.00	13.05	6.79	88.61	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.05	2.99	13.78	6.59	90.77	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.13	2.94	15.46	6.08	94.00	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.19	2.87	17.95	5.45	97.93	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.24	2.84	20.18	5.14	103.65	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.36	2.83	21.58	5.07	109.36	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.42	2.84	22.26	5.17	115.10	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.47	2.86	22.57	5.29	119.38	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.53	2.87	22.90	5.38	123.18	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.58	2.87	23.58	5.38	126.87	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.63	2.84	25.59	5.11	130.66	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.76	2.80	27.87	4.79	133.53	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.82	2.76	30.29	4.47	135.52	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.86	2.74	31.79	4.28	136.05	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.93	2.72	32.81	4.15	136.33	0	0	0.65	0.000	0.00	0.00	0.00	0.000
27.98	2.72	33.27	4.11	136.82	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.02	2.74	31.75	4.32	137.07	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.11	2.79	29.21	4.67	136.51	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.18	2.86	25.19	5.35	134.73	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.24	2.93	22.01	5.97	131.44	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.33	2.95	19.76	6.24	123.22	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.37	2.92	19.21	5.89	113.08	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.42	2.86	19.59	5.31	104.04	0	0	0.65	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
28.50	2.81	20.64	4.87	100.59	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.56	2.76	22.71	4.42	100.30	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.61	2.69	25.37	3.92	99.48	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.68	2.61	28.96	3.41	98.81	0	0	0.65	0.000	0.00	0.00	0.00	0.000
28.75	2.53	33.40	2.94	98.09	0	0	0.65	0.000	0.00	14.60	0.00	0.000
28.83	2.47	37.26	2.62	97.67	0	0	0.65	0.000	0.00	14.60	0.00	0.000
28.88	2.45	39.20	2.51	98.31	0	0	0.65	0.000	0.00	14.60	0.00	0.000
29.01	2.46	38.93	2.56	99.76	0	0	0.65	0.000	0.00	14.60	0.00	0.000
29.06	2.48	38.27	2.67	102.11	0	0	0.65	0.000	0.00	14.60	0.00	0.000
29.11	2.50	37.40	2.79	104.33	0	0	0.65	0.000	0.00	14.60	0.00	0.000
29.16	2.54	36.14	2.95	106.69	0	0	0.65	0.000	0.00	14.60	0.00	0.000
29.23	2.58	33.92	3.22	109.15	0	0	0.65	0.000	0.00	14.60	0.00	0.000
29.32	2.63	31.68	3.52	111.56	0	0	0.65	0.000	0.00	0.00	0.00	0.000
29.36	2.67	30.09	3.78	113.58	0	0	0.65	0.000	0.00	0.00	0.00	0.000
29.41	2.68	29.62	3.87	114.75	0	0	0.65	0.000	0.00	0.00	0.00	0.000
29.46	2.69	29.56	3.90	115.39	0	0	0.65	0.000	0.00	0.00	0.00	0.000
29.55	2.70	29.15	3.97	115.71	0	0	0.65	0.000	0.00	0.00	0.00	0.000
29.61	2.71	28.33	4.10	116.14	0	0	0.65	0.000	0.00	0.00	0.00	0.000
29.67	2.76	26.00	4.45	115.59	0	0	0.65	0.000	0.00	0.00	0.00	0.000
29.76	2.81	23.26	4.91	114.30	0	0	0.65	0.000	0.00	0.00	0.00	0.000
29.80	2.89	20.19	5.56	112.19	0	0	0.65	0.000	0.00	0.00	0.00	0.000
29.89	2.94	18.26	6.06	110.63	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.02	2.97	17.01	6.45	109.65	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.06	3.00	16.31	6.71	109.40	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.15	3.02	15.69	6.96	109.14	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.20	3.05	14.73	7.36	108.44	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.31	3.08	13.91	7.73	107.59	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.37	3.11	13.19	8.04	106.00	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.41	3.12	12.78	8.14	104.05	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.46	3.12	12.26	8.17	100.15	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.55	3.12	11.72	8.19	95.93	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.60	3.12	11.23	8.19	91.98	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.64	3.12	11.01	8.16	89.86	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.72	3.12	10.80	8.19	88.51	0	0	0.65	0.000	0.00	0.00	0.00	0.000
30.80	3.12	10.70	8.21	87.83	0	0	0.66	0.000	0.00	0.00	0.00	0.000
30.85	3.12	10.64	8.16	86.76	0	0	0.66	0.000	0.00	0.00	0.00	0.000
30.94	3.11	10.70	8.03	85.92	0	0	0.66	0.000	0.00	0.00	0.00	0.000
30.99	3.08	11.12	7.71	85.72	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.15	3.06	11.75	7.40	86.96	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.20	3.03	12.46	7.14	88.97	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.24	2.96	14.56	6.29	91.57	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.33	2.88	16.98	5.54	94.00	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.37	2.81	19.79	4.89	96.88	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.46	2.80	20.59	4.81	99.05	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.50	2.81	20.78	4.88	101.45	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.59	2.83	20.35	5.05	102.80	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.63	2.86	19.49	5.33	103.88	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.72	2.89	18.62	5.60	104.27	0	0	0.66	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
31.76	2.94	17.12	6.08	104.09	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.84	2.99	15.64	6.62	103.54	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.93	3.04	14.25	7.21	102.73	0	0	0.66	0.000	0.00	0.00	0.00	0.000
31.98	3.06	13.50	7.47	100.81	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.07	3.07	13.06	7.54	98.51	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.11	3.08	12.51	7.66	95.81	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.20	3.10	11.90	7.90	94.02	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.24	3.11	11.44	8.08	92.39	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.33	3.11	11.28	8.09	91.29	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.37	3.10	11.55	7.94	91.70	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.46	3.09	12.00	7.77	93.30	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.51	3.08	12.41	7.73	95.84	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.55	3.07	13.19	7.57	99.88	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.66	3.06	14.00	7.45	104.25	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.72	3.04	15.08	7.17	108.08	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.76	3.00	16.33	6.75	110.23	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.84	2.95	17.86	6.24	111.50	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.89	2.87	21.00	5.41	113.52	0	0	0.66	0.000	0.00	0.00	0.00	0.000
32.98	2.79	24.35	4.70	114.34	0	0	0.66	0.000	0.00	0.00	0.00	0.000
33.03	2.71	28.25	4.04	114.18	0	0	0.66	0.000	0.00	0.00	0.00	0.000
33.07	2.62	32.64	3.46	112.81	0	0	0.66	0.000	0.00	0.00	0.00	0.000
33.16	2.55	36.47	3.05	111.40	0	0	0.66	0.000	0.00	14.60	0.00	0.000
33.20	2.50	39.86	2.75	109.44	0	0	0.66	0.000	0.00	14.60	0.00	0.000
33.31	2.47	41.24	2.61	107.61	0	0	0.66	0.000	0.00	14.60	0.00	0.000
33.36	2.45	42.13	2.51	105.84	0	0	0.66	0.000	0.00	14.60	0.00	0.000
33.42	2.44	42.00	2.50	105.14	0	0	0.66	0.000	0.00	14.60	0.00	0.000
33.47	2.47	40.21	2.62	105.43	0	0	0.66	0.000	0.00	14.60	0.00	0.000
33.56	2.52	37.33	2.85	106.28	0	0	0.66	0.000	0.00	14.60	0.00	0.000
33.61	2.60	32.52	3.32	107.95	0	0	0.66	0.000	0.00	14.60	0.00	0.000
33.70	2.70	27.65	3.96	109.56	0	0	0.66	0.000	0.00	0.00	0.00	0.000
33.77	2.81	22.77	4.86	110.74	0	0	0.66	0.000	0.00	0.00	0.00	0.000
33.82	2.90	19.44	5.69	110.56	0	0	0.66	0.000	0.00	0.00	0.00	0.000
33.86	2.97	16.88	6.43	108.63	0	0	0.66	0.000	0.00	0.00	0.00	0.000
33.95	3.02	15.23	6.96	106.05	0	0	0.66	0.000	0.00	0.00	0.00	0.000
34.01	3.06	13.91	7.47	103.86	0	0	0.66	0.000	0.00	0.00	0.00	0.000
34.10	3.09	13.19	7.83	103.26	0	0	0.66	0.000	0.00	0.00	0.00	0.000
34.17	3.11	12.84	8.08	103.73	0	0	0.66	0.000	0.00	0.00	0.00	0.000
34.21	3.10	13.11	7.97	104.57	0	0	0.66	0.000	0.00	0.00	0.00	0.000
34.26	3.04	14.55	7.25	105.51	0	0	0.66	0.000	0.00	0.00	0.00	0.000
34.35	2.96	16.70	6.33	105.69	0	0	0.66	0.000	0.00	0.00	0.00	0.000
34.40	2.85	20.30	5.20	105.53	0	0	0.66	0.000	0.00	0.00	0.00	0.000
34.45	2.69	26.48	3.93	104.14	0	0	0.66	0.000	0.00	0.00	0.00	0.000
34.56	2.51	35.32	2.82	99.63	0	0	0.66	0.000	0.00	14.60	0.00	0.000
34.61	2.33	46.40	2.06	95.43	0	0	0.66	0.000	0.00	14.60	0.00	0.000
34.65	2.17	58.90	1.61	94.69	0	0	0.66	0.000	0.00	14.60	0.00	0.000
34.74	2.07	69.74	1.40	97.78	0	0	0.66	0.000	0.00	14.60	0.00	0.000
34.79	2.00	79.18	1.30	102.57	0	0	0.66	0.000	0.00	14.60	0.00	0.000
34.89	1.97	83.09	1.26	104.56	0	0	0.66	0.000	0.00	14.60	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
34.92	1.95	85.09	1.24	105.48	0	0	0.66	0.000	0.00	14.60	0.00	0.000
34.99	1.96	84.72	1.25	105.62	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.08	1.97	83.59	1.27	105.89	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.13	2.00	81.69	1.31	106.65	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.18	2.05	78.12	1.37	107.20	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.27	2.11	73.92	1.47	108.36	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.33	2.17	69.48	1.59	110.42	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.39	2.22	65.75	1.72	113.01	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.43	2.29	60.72	1.93	116.95	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.52	2.37	55.46	2.19	121.46	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.57	2.44	50.46	2.49	125.86	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.63	2.50	46.13	2.77	127.97	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.74	2.55	42.50	3.03	128.82	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.78	2.59	39.67	3.26	129.14	0	0	0.66	0.000	0.00	14.60	0.00	0.000
35.83	2.61	38.48	3.37	129.52	0	0	0.66	0.000	0.00	0.00	0.00	0.000
35.92	2.62	37.92	3.43	129.99	0	0	0.66	0.000	0.00	0.00	0.00	0.000
35.98	2.65	35.84	3.62	129.75	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.11	2.69	32.60	3.94	128.44	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.18	2.76	28.31	4.48	126.84	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.22	2.82	25.32	4.97	125.83	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.27	2.86	23.37	5.35	125.12	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.32	2.88	22.46	5.54	124.37	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.36	2.88	22.55	5.50	124.09	0	0	0.66	0.000	0.00	0.00	0.00	0.000
36.42	2.83	24.44	5.08	124.04	0	0	0.65	0.000	0.00	0.00	0.00	0.000
36.51	2.77	27.53	4.50	123.94	0	0	0.65	0.000	0.00	0.00	0.00	0.000
36.57	2.66	32.76	3.72	122.01	0	0	0.65	0.000	0.00	0.00	0.00	0.000
36.66	2.58	37.71	3.18	119.85	0	0	0.65	0.000	0.00	14.60	0.00	0.000
36.70	2.50	42.65	2.76	117.55	0	0	0.65	0.000	0.00	14.60	0.00	0.000
36.75	2.44	47.06	2.47	116.31	0	0	0.65	0.000	0.00	14.60	0.00	0.000
36.84	2.37	52.08	2.21	115.20	0	0	0.65	0.000	0.00	14.60	0.00	0.000
36.92	2.31	57.70	1.99	114.70	0	0	0.65	0.000	0.00	14.60	0.00	0.000
36.96	2.26	62.56	1.83	114.76	0	0	0.65	0.000	0.00	14.60	0.00	0.000
37.01	2.22	67.39	1.71	114.98	0	0	0.65	0.000	0.00	14.60	0.00	0.000
37.10	2.18	71.13	1.62	114.95	0	0	0.65	0.000	0.00	14.60	0.00	0.000
37.15	2.15	73.75	1.56	114.89	0	0	0.65	0.000	0.00	14.60	0.00	0.000
37.25	2.16	73.57	1.57	115.27	0	0	0.65	0.000	0.00	14.60	0.00	0.000
37.31	2.21	69.78	1.69	117.92	0	0	0.65	0.000	0.00	14.60	0.00	0.000
37.41	2.29	63.88	1.91	122.30	0	0	0.65	0.000	0.00	14.60	0.00	0.000
37.45	2.39	56.52	2.27	128.19	0	0	0.65	0.000	0.00	14.60	0.00	0.000
37.49	2.48	49.52	2.66	131.75	0	0	0.65	0.000	0.00	14.60	0.00	0.000
37.54	2.55	42.84	3.03	129.92	0	0	0.65	0.000	0.00	14.60	0.00	0.000
37.61	2.62	36.47	3.45	125.75	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.71	2.67	31.92	3.81	121.66	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.75	2.74	28.93	4.27	123.47	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.84	2.79	27.11	4.67	126.64	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.89	2.75	30.15	4.34	130.86	0	0	0.65	0.000	0.00	0.00	0.00	0.000
37.97	2.69	33.92	3.95	133.95	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.03	2.62	39.33	3.46	135.92	0	0	0.65	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
38.07	2.60	41.27	3.31	136.49	37	2043	0.65	0.184	0.09	14.60	0.03	0.000
38.13	2.56	44.75	3.09	138.17	37	2093	0.65	0.172	0.08	14.60	0.03	0.000
38.22	2.53	48.19	2.92	140.86	37	2157	0.65	0.159	0.08	14.60	0.03	0.001
38.27	2.52	50.83	2.85	145.05	38	2231	0.65	0.146	0.07	14.60	0.02	0.000
38.36	2.53	50.79	2.91	147.69	39	2271	0.65	0.140	0.06	14.60	0.02	0.000
38.42	2.55	49.12	3.04	149.32	39	2284	0.65	0.138	0.06	14.60	0.02	0.000
38.48	2.58	46.44	3.22	149.64	40	2272	0.65	0.140	0.06	14.60	0.02	0.000
38.53	2.63	42.43	3.53	149.77	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.62	2.68	38.48	3.89	149.52	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.66	2.75	33.91	4.38	148.40	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.75	2.80	30.38	4.80	145.93	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.80	2.86	26.31	5.32	140.07	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.88	2.90	23.31	5.73	133.69	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.93	2.94	20.62	6.15	126.86	0	0	0.65	0.000	0.00	0.00	0.00	0.000
38.98	2.98	18.67	6.49	121.16	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.08	2.97	18.01	6.40	115.18	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.17	2.96	17.47	6.35	110.89	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.21	2.94	18.19	6.05	110.10	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.24	2.92	18.64	5.92	110.35	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.33	2.90	19.60	5.71	111.91	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.42	2.89	20.42	5.59	114.18	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.46	2.88	21.46	5.54	118.89	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.54	2.87	22.87	5.37	122.93	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.58	2.84	24.80	5.13	127.13	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.66	2.82	26.25	4.94	129.67	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.72	2.79	27.92	4.73	132.15	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.84	2.78	28.70	4.65	133.53	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.89	2.78	29.13	4.62	134.57	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.93	2.78	28.96	4.65	134.77	0	0	0.65	0.000	0.00	0.00	0.00	0.000
39.97	2.79	28.50	4.71	134.14	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.06	2.80	27.66	4.80	132.82	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.11	2.82	26.15	4.98	130.24	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.21	2.85	24.63	5.19	127.77	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.27	2.87	23.14	5.42	125.46	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.32	2.90	21.84	5.67	123.88	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.37	2.94	19.89	6.11	121.51	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.46	2.98	18.16	6.53	118.56	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.51	3.02	16.60	6.92	114.90	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.56	3.04	15.61	7.15	111.69	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.62	3.05	14.64	7.36	107.71	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.72	3.06	13.70	7.49	102.70	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.81	3.07	13.02	7.54	98.09	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.85	3.07	12.62	7.59	95.76	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.90	3.07	12.70	7.54	95.82	0	0	0.65	0.000	0.00	0.00	0.00	0.000
40.99	3.07	12.79	7.50	95.88	0	0	0.65	0.000	0.00	0.00	0.00	0.000
41.03	3.04	13.70	7.15	97.87	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.12	3.01	14.50	6.88	99.75	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.15	2.99	15.23	6.67	101.50	0	0	0.64	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
41.24	3.00	14.99	6.77	101.42	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.28	3.03	14.35	7.08	101.58	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.38	3.06	13.68	7.46	102.12	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.42	3.09	13.32	7.77	103.51	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.47	3.06	14.21	7.44	105.78	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.59	3.01	15.59	6.87	107.12	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.64	2.94	17.59	6.12	107.71	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.70	2.90	19.13	5.67	108.40	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.74	2.86	20.80	5.31	110.51	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.82	2.82	22.63	4.99	112.87	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.90	2.78	24.64	4.65	114.70	0	0	0.64	0.000	0.00	0.00	0.00	0.000
41.96	2.76	26.10	4.42	115.30	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.01	2.75	26.57	4.35	115.52	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.06	2.74	26.96	4.29	115.73	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.16	2.73	27.26	4.25	115.91	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.20	2.75	26.58	4.38	116.46	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.34	2.78	25.13	4.63	116.37	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.39	2.82	23.15	4.99	115.49	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.46	2.86	21.34	5.36	114.32	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.51	2.92	19.37	5.86	113.42	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.56	2.96	17.66	6.33	111.77	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.65	2.98	16.72	6.54	109.32	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.70	2.97	16.37	6.45	105.55	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.77	2.94	16.91	6.10	103.12	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.80	2.86	19.61	5.31	104.08	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.90	2.77	23.60	4.52	106.75	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.95	2.69	28.26	3.90	110.15	0	0	0.64	0.000	0.00	0.00	0.00	0.000
42.99	2.65	30.82	3.63	111.78	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.08	2.65	31.01	3.63	112.53	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.14	2.65	30.82	3.65	112.50	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.20	2.68	29.32	3.86	113.15	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.25	2.68	29.80	3.87	115.33	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.34	2.69	30.30	3.90	118.13	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.39	2.68	31.69	3.85	122.07	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.48	2.70	31.43	3.96	124.59	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.53	2.73	29.88	4.23	126.38	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.58	2.74	28.80	4.28	123.41	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.64	2.71	29.53	4.09	120.87	0	0	0.64	0.000	0.00	0.00	0.00	0.000
43.74	2.66	31.79	3.75	119.14	0	0	0.63	0.000	0.00	0.00	0.00	0.000
43.78	2.63	34.85	3.49	121.54	0	0	0.63	0.000	0.00	0.00	0.00	0.000
43.84	2.61	36.71	3.38	123.96	0	0	0.63	0.000	0.00	0.00	0.00	0.000
43.93	2.61	36.95	3.41	126.00	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.00	2.62	36.94	3.44	127.17	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.03	2.65	34.92	3.66	127.96	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.13	2.70	32.41	3.96	128.40	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.17	2.78	27.80	4.63	128.57	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.26	2.86	24.16	5.29	127.90	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.31	2.94	20.80	6.07	126.24	0	0	0.63	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
44.41	2.98	19.14	6.53	125.08	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.48	3.01	18.07	6.85	123.85	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.52	3.02	17.64	6.95	122.68	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.57	3.02	17.36	6.99	121.41	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.65	3.02	17.17	7.00	120.10	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.70	3.02	16.89	7.01	118.38	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.81	3.03	16.57	7.05	116.85	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.86	3.03	16.28	7.08	115.33	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.91	3.03	16.16	7.06	114.14	0	0	0.63	0.000	0.00	0.00	0.00	0.000
44.96	3.02	16.09	7.02	112.97	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.05	3.02	16.04	7.01	112.35	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.10	3.02	16.04	7.01	112.46	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.16	3.02	16.13	7.00	113.00	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.22	3.02	16.46	6.92	113.85	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.31	3.00	16.91	6.78	114.73	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.36	2.99	17.39	6.65	115.59	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.45	2.99	17.60	6.58	115.80	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.49	2.98	17.61	6.56	115.55	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.55	2.99	17.48	6.59	115.18	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.61	2.99	17.38	6.64	115.35	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.70	3.00	17.31	6.70	115.94	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.75	2.97	17.95	6.44	115.66	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.85	2.92	19.63	5.87	115.18	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.88	2.82	23.00	4.99	114.73	0	0	0.63	0.000	0.00	0.00	0.00	0.000
45.95	2.72	27.39	4.18	114.37	0	0	0.63	0.000	0.00	0.00	0.00	0.000
46.01	2.61	33.80	3.36	113.64	0	0	0.63	0.000	0.00	0.00	0.00	0.000
46.10	2.51	39.81	2.84	113.11	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.15	2.45	44.52	2.54	113.02	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.20	2.43	46.28	2.46	113.88	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.30	2.44	46.58	2.47	115.09	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.35	2.46	45.72	2.55	116.69	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.41	2.48	44.60	2.65	118.01	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.49	2.49	43.77	2.71	118.74	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.54	2.49	43.63	2.71	118.34	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.59	2.43	47.14	2.44	115.16	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.69	2.35	52.68	2.14	112.62	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.76	2.25	61.23	1.81	110.89	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.84	2.19	67.02	1.65	110.85	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.88	2.14	71.53	1.54	110.23	0	0	0.62	0.000	0.00	14.60	0.00	0.000
46.93	2.12	73.11	1.50	109.72	0	0	0.62	0.000	0.00	14.60	0.00	0.000
47.00	2.12	73.67	1.49	109.49	0	0	0.62	0.000	0.00	14.60	0.00	0.000
47.08	2.12	73.71	1.48	109.45	0	0	0.62	0.000	0.00	14.60	0.00	0.000
47.13	2.12	73.74	1.49	109.86	24	2024	0.62	0.220	0.18	14.60	0.04	0.000
47.18	2.13	74.15	1.50	111.41	24	2058	0.62	0.210	0.17	14.60	0.03	0.000
47.26	2.14	74.64	1.52	113.81	25	2113	0.62	0.195	0.15	14.60	0.03	0.001
47.32	2.15	75.51	1.55	116.69	26	2175	0.62	0.181	0.13	14.60	0.03	0.000
47.39	2.16	76.98	1.57	120.77	27	2261	0.62	0.164	0.12	14.60	0.02	0.000
47.48	2.16	78.99	1.58	124.64	28	2339	0.62	0.150	0.10	14.60	0.02	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
47.53	2.16	82.40	1.57	129.28	29	2425	0.62	0.138	0.09	14.60	0.02	0.000
47.62	2.15	85.07	1.55	131.95	29	2473	0.62	0.132	0.08	14.60	0.02	0.000
47.66	2.14	88.59	1.52	134.83	30	2518	0.62	0.127	0.08	14.60	0.02	0.000
47.74	2.12	91.81	1.49	136.86	30	2545	0.62	0.124	0.08	14.60	0.01	0.000
47.79	2.10	96.39	1.45	139.55	30	2574	0.62	0.121	0.07	14.60	0.01	0.000
47.84	2.07	101.84	1.40	142.56	30	2599	0.62	0.118	0.07	14.60	0.01	0.000
47.92	2.03	108.49	1.35	146.04	31	2618	0.62	0.116	0.07	14.60	0.01	0.000
47.98	2.00	115.64	1.29	149.75	31	2626	0.62	0.116	0.07	14.60	0.01	0.000
48.05	1.96	121.79	1.25	152.73	31	2619	0.62	0.116	0.07	14.60	0.01	0.000
48.11	1.94	126.33	1.22	154.74	31	2603	0.61	0.118	0.07	14.60	0.01	0.000
48.18	1.92	129.44	1.20	155.89	31	2583	0.61	0.120	0.07	14.60	0.01	0.000
48.25	1.90	131.55	1.19	156.60	31	2565	0.61	0.122	0.07	14.60	0.01	0.000
48.30	1.89	133.26	1.18	157.23	31	2552	0.61	0.124	0.07	14.60	0.01	0.000
48.39	1.88	134.30	1.17	157.56	31	2544	0.61	0.125	0.07	14.60	0.01	0.000
48.45	1.88	135.12	1.17	157.86	31	2538	0.61	0.125	0.07	14.60	0.01	0.000
48.52	1.87	135.52	1.17	157.92	31	2534	0.61	0.126	0.07	14.60	0.01	0.000
48.58	1.87	136.13	1.16	158.21	31	2532	0.61	0.126	0.07	14.60	0.01	0.000
48.67	1.87	136.77	1.16	158.59	31	2534	0.61	0.126	0.07	14.60	0.01	0.000
48.69	1.86	138.12	1.16	159.81	32	2547	0.61	0.125	0.07	14.60	0.01	0.000
48.78	1.86	139.18	1.16	160.98	32	2568	0.61	0.122	0.07	14.60	0.01	0.000
48.84	1.87	140.08	1.16	162.20	32	2593	0.61	0.120	0.07	14.60	0.01	0.000
48.93	1.87	139.80	1.16	162.36	32	2608	0.61	0.118	0.07	14.60	0.01	0.000
48.97	1.87	138.99	1.17	161.97	32	2615	0.61	0.118	0.07	14.60	0.01	0.000
49.06	1.88	137.76	1.17	161.28	32	2621	0.61	0.117	0.07	14.60	0.01	0.000
49.11	1.89	136.89	1.18	160.93	32	2630	0.61	0.116	0.07	14.60	0.01	0.000
49.17	1.89	136.70	1.18	161.08	32	2641	0.61	0.115	0.07	14.60	0.01	0.000
49.25	1.89	137.04	1.18	161.38	32	2647	0.61	0.115	0.06	14.60	0.01	0.000
49.31	1.88	138.68	1.17	162.32	32	2646	0.61	0.115	0.06	14.60	0.01	0.000
49.41	1.87	140.49	1.16	163.25	32	2641	0.61	0.116	0.06	14.60	0.01	0.000
49.45	1.86	142.64	1.15	164.39	32	2633	0.61	0.116	0.07	14.60	0.01	0.000
49.50	1.84	144.49	1.14	164.76	32	2604	0.61	0.119	0.07	14.60	0.01	0.000
49.58	1.83	146.19	1.13	164.96	32	2572	0.61	0.123	0.07	14.60	0.01	0.000
49.63	1.81	147.84	1.12	165.10	32	2537	0.61	0.127	0.07	14.60	0.01	0.000
49.72	1.80	149.06	1.11	165.42	32	2521	0.61	0.129	0.07	14.60	0.01	0.000
49.77	1.79	151.83	1.10	166.59	32	2496	0.61	0.131	0.07	14.60	0.01	0.000
49.88	1.78	152.78	1.09	166.58	32	2474	0.61	0.134	0.08	14.60	0.01	0.000
49.89	1.76	154.71	1.08	167.32	32	2454	0.61	0.137	0.08	14.60	0.01	0.000
49.95	1.76	154.62	1.08	166.98	32	2444	0.61	0.138	0.08	14.60	0.01	0.000
50.00	1.75	156.42	1.07	168.03	32	2440	0.61	0.139	0.08	14.60	0.01	0.000
50.11	1.75	156.63	1.07	168.19	32	2444	0.60	0.138	0.08	14.60	0.01	0.000
50.16	1.75	157.01	1.07	168.65	32	2454	0.60	0.137	0.08	14.60	0.01	0.000
50.20	1.76	156.75	1.08	168.74	32	2465	0.60	0.136	0.08	14.60	0.01	0.000
50.29	1.76	156.48	1.08	168.73	32	2474	0.60	0.135	0.08	14.60	0.01	0.000
50.33	1.77	156.12	1.08	169.08	32	2498	0.60	0.132	0.07	14.60	0.01	0.000
50.40	1.77	155.64	1.09	169.44	32	2527	0.60	0.128	0.07	14.60	0.01	0.000
50.47	1.78	154.80	1.10	169.52	33	2553	0.60	0.125	0.07	14.60	0.01	0.000
50.55	1.79	153.49	1.10	168.86	33	2565	0.60	0.124	0.07	14.60	0.01	0.000
50.60	1.81	150.51	1.11	167.63	33	2596	0.60	0.121	0.07	14.60	0.01	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
50.68	1.84	145.61	1.14	165.28	32	2634	0.60	0.117	0.07	14.60	0.01	0.000
50.73	1.87	139.20	1.17	162.32	32	2682	0.60	0.113	0.06	14.60	0.01	0.000
50.81	1.91	133.36	1.20	159.43	32	2714	0.60	0.110	0.06	14.60	0.01	0.000
50.86	1.94	128.69	1.23	157.66	32	2753	0.60	0.107	0.06	14.60	0.01	0.000
50.94	1.96	125.15	1.25	156.42	32	2784	0.60	0.105	0.06	14.60	0.01	0.000
50.99	1.98	121.86	1.28	155.60	32	2818	0.60	0.102	0.06	14.60	0.01	0.000
51.07	2.00	118.83	1.30	154.89	32	2849	0.60	0.100	0.06	14.60	0.01	0.000
51.12	2.02	116.81	1.33	154.78	32	2879	0.60	0.098	0.05	14.60	0.01	0.000
51.21	2.03	115.74	1.34	154.68	33	2895	0.60	0.097	0.05	14.60	0.01	0.000
51.25	2.03	115.48	1.34	155.13	33	2913	0.60	0.096	0.05	14.60	0.01	0.000
51.34	2.15	79.27	1.56	123.34	27	3409	0.60	0.072	0.05	14.60	0.01	0.000
51.38	2.15	80.06	1.56	124.77	28	3452	0.60	0.070	0.05	14.60	0.01	0.000
51.44	2.15	81.33	1.55	126.29	28	3500	0.60	0.068	0.05	14.60	0.01	0.000
51.51	2.15	82.59	1.55	127.88	28	3550	0.60	0.067	0.04	14.60	0.01	0.000
51.58	2.15	83.58	1.55	129.34	29	3596	0.60	0.065	0.04	14.60	0.01	0.000
51.64	2.15	84.12	1.55	130.53	29	3633	0.60	0.064	0.04	14.60	0.01	0.000
51.71	2.15	84.35	1.56	131.22	29	3657	0.60	0.064	0.04	14.60	0.00	0.000
51.78	2.15	84.48	1.55	131.28	29	3664	0.60	0.064	0.04	14.60	0.00	0.000
51.86	2.15	84.56	1.55	130.95	29	3662	0.60	0.064	0.04	14.60	0.00	0.000
51.91	2.14	84.84	1.54	130.51	29	3655	0.60	0.064	0.04	14.60	0.00	0.000
51.99	2.14	85.00	1.53	130.14	29	3652	0.59	0.064	0.04	14.60	0.00	0.000
52.04	2.14	85.20	1.52	129.92	29	3651	0.59	0.064	0.04	14.60	0.00	0.000
52.12	2.14	85.23	1.52	129.76	28	3653	0.59	0.064	0.04	14.60	0.00	0.000
52.17	2.14	85.24	1.52	129.73	28	3655	0.59	0.064	0.04	14.60	0.00	0.000
52.26	2.14	84.96	1.53	129.58	28	3658	0.59	0.064	0.04	14.60	0.00	0.000
52.30	2.14	84.51	1.53	129.46	28	3657	0.59	0.064	0.04	14.60	0.00	0.000
52.39	2.14	83.91	1.54	129.21	28	3656	0.59	0.064	0.04	14.60	0.00	0.000
52.44	2.14	83.48	1.54	128.53	28	3640	0.59	0.065	0.04	14.60	0.00	0.000
52.52	2.14	83.22	1.53	127.41	28	3616	0.59	0.065	0.04	14.60	0.00	0.000
52.56	2.13	83.43	1.52	126.49	28	3595	0.59	0.066	0.04	14.60	0.00	0.000
52.65	2.13	83.80	1.50	126.10	28	3591	0.59	0.066	0.04	14.60	0.00	0.000
52.71	2.12	84.25	1.50	126.20	28	3599	0.59	0.066	0.04	14.60	0.00	0.000
52.81	2.12	84.31	1.50	126.21	28	3607	0.59	0.066	0.04	14.60	0.00	0.000
52.85	2.14	82.57	1.52	125.85	28	3597	0.59	0.066	0.04	14.60	0.00	0.000
52.90	2.14	81.65	1.54	125.70	28	3595	0.59	0.066	0.04	14.60	0.00	0.000
52.97	2.15	80.71	1.55	125.28	28	3586	0.59	0.066	0.05	14.60	0.00	0.000
53.02	2.14	81.39	1.53	124.82	27	3579	0.59	0.067	0.05	14.60	0.00	0.000
53.09	2.14	81.04	1.53	123.75	27	3554	0.59	0.067	0.05	14.60	0.00	0.000
53.16	2.14	79.89	1.52	121.62	27	3499	0.59	0.069	0.05	14.60	0.00	0.000
53.24	2.13	78.50	1.52	119.25	26	3437	0.59	0.072	0.05	14.60	0.00	0.000
53.29	2.13	76.83	1.52	116.45	26	3360	0.59	0.074	0.06	14.60	0.01	0.000
53.35	2.13	75.68	1.51	114.09	25	3296	0.59	0.077	0.06	14.60	0.01	0.000
53.42	2.12	74.56	1.50	111.60	24	3230	0.59	0.080	0.06	14.60	0.01	0.000
53.51	2.12	73.60	1.49	109.72	24	3181	0.59	0.082	0.07	14.60	0.01	0.000
53.55	2.12	72.73	1.49	108.16	24	3139	0.59	0.084	0.07	14.60	0.01	0.000
53.64	2.11	72.20	1.48	106.60	23	3099	0.59	0.086	0.07	14.60	0.01	0.000
53.73	2.10	71.90	1.46	104.98	23	3058	0.59	0.089	0.08	14.60	0.01	0.000
53.76	2.10	71.71	1.45	103.68	0	0	0.59	0.000	0.00	14.60	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
53.82	2.10	71.11	1.45	102.94	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.87	2.11	69.78	1.47	102.23	0	0	0.59	0.000	0.00	14.60	0.00	0.000
53.94	2.14	66.39	1.54	102.30	0	0	0.58	0.000	0.00	14.60	0.00	0.000
54.04	2.21	61.19	1.68	102.91	0	0	0.58	0.000	0.00	14.60	0.00	0.000
54.08	2.29	54.35	1.93	104.98	0	0	0.58	0.000	0.00	14.60	0.00	0.000
54.14	2.39	47.59	2.26	107.40	0	0	0.58	0.000	0.00	14.60	0.00	0.000
54.21	2.49	40.87	2.71	110.56	0	0	0.58	0.000	0.00	14.60	0.00	0.000
54.30	2.57	36.08	3.14	113.42	0	0	0.58	0.000	0.00	14.60	0.00	0.000
54.35	2.63	32.94	3.52	116.05	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.42	2.67	31.31	3.78	118.38	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.47	2.73	29.10	4.19	121.99	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.56	2.78	27.18	4.61	125.33	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.60	2.83	25.49	5.01	127.60	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.68	2.84	24.65	5.18	127.58	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.73	2.86	23.85	5.29	126.07	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.80	2.86	23.36	5.31	124.15	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.86	2.85	23.22	5.24	121.67	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.95	2.84	23.30	5.14	119.74	0	0	0.58	0.000	0.00	0.00	0.00	0.000
54.99	2.83	23.55	5.03	118.35	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.08	2.82	23.88	4.93	117.86	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.14	2.81	24.35	4.83	117.71	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.22	2.80	24.72	4.76	117.63	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.27	2.79	24.88	4.73	117.59	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.34	2.79	24.82	4.74	117.68	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.39	2.80	24.33	4.79	116.42	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.45	2.80	23.33	4.79	111.63	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.52	2.81	21.81	4.90	106.88	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.61	2.83	20.43	5.07	103.56	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.65	2.87	19.07	5.45	104.00	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.71	2.92	17.57	5.89	103.51	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.78	2.94	16.69	6.13	102.33	0	0	0.58	0.000	0.00	0.00	0.00	0.000
55.84	2.96	16.14	6.26	100.99	0	0	0.57	0.000	0.00	0.00	0.00	0.000
55.93	2.95	15.94	6.23	99.31	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.02	2.97	15.28	6.36	97.24	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.06	2.97	14.69	6.44	94.58	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.11	2.97	14.37	6.39	91.79	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.19	2.96	14.20	6.30	89.42	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.24	2.94	14.27	6.15	87.71	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.33	2.93	14.43	6.03	87.07	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.37	2.93	14.59	6.03	87.93	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.45	2.95	14.60	6.17	90.04	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.52	2.97	14.56	6.40	93.13	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.61	2.98	14.65	6.50	95.25	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.67	2.97	15.22	6.38	97.04	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.71	2.91	16.82	5.84	98.29	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.76	2.79	21.06	4.73	99.65	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.85	2.69	25.62	3.92	100.46	0	0	0.57	0.000	0.00	0.00	0.00	0.000
56.89	2.57	32.03	3.13	100.35	0	0	0.57	0.000	0.00	14.60	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)
56.96	2.48	37.34	2.68	100.09	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.02	2.38	44.56	2.24	99.74	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.11	2.32	49.75	2.01	99.92	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.15	2.25	55.26	1.80	99.29	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.26	2.20	58.69	1.66	97.20	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.33	2.15	61.24	1.54	94.45	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.37	2.12	61.05	1.49	91.21	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.42	2.12	58.26	1.50	87.17	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.51	2.14	54.67	1.52	83.21	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.55	2.17	50.27	1.59	79.95	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.63	2.23	45.92	1.74	80.00	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.72	2.30	41.87	1.96	82.15	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.76	2.39	38.20	2.26	86.33	0	0	0.57	0.000	0.00	14.60	0.00	0.000
57.82	2.47	34.39	2.62	90.17	0	0	0.56	0.000	0.00	14.60	0.00	0.000
57.90	2.61	28.05	3.36	94.26	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.01	2.75	22.28	4.35	96.94	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.05	2.87	18.04	5.42	97.74	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.08	2.91	16.84	5.77	97.21	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.16	2.92	16.37	5.91	96.74	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.20	2.92	16.37	5.87	96.04	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.28	2.91	16.50	5.76	95.09	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.34	2.91	16.22	5.78	93.68	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.42	2.92	15.51	5.90	91.54	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.51	2.94	14.48	6.12	88.56	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.54	2.95	13.48	6.23	83.93	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.60	2.96	12.55	6.35	79.66	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.69	2.98	11.56	6.51	75.29	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.77	2.99	10.89	6.66	72.59	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.81	3.02	10.06	6.95	69.91	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.86	3.02	9.75	6.96	67.84	0	0	0.56	0.000	0.00	0.00	0.00	0.000
58.94	3.02	9.42	6.99	65.83	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.03	3.00	9.55	6.73	64.26	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.07	3.00	9.34	6.78	63.33	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.12	3.01	9.19	6.84	62.90	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.20	3.02	9.07	6.92	62.73	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.29	3.02	8.98	6.96	62.51	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.33	3.02	8.90	6.96	61.94	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.39	3.02	8.79	6.94	61.04	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.46	3.00	9.01	6.74	60.71	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.55	2.97	9.45	6.46	61.06	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.59	2.94	10.11	6.15	62.13	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.65	2.94	10.55	6.14	64.72	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.73	2.95	10.86	6.23	67.64	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.78	2.96	11.18	6.31	70.59	0	0	0.56	0.000	0.00	0.00	0.00	0.000
59.86	2.96	11.40	6.30	71.78	0	0	0.55	0.000	0.00	0.00	0.00	0.000

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

Depth (ft)	Ic	Q_{tn}	Kc	$Q_{tn,cs}$	$N_{1,60}$ (blows)	G_{max} (tsf)	CSR	Shear, γ (%)	$e_{vol(15)}$ (%)	N_c	e_v (%)	Settle. (in)

Total estimated settlement: 1.31

Abbreviations

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

APPENDIX E

GENERAL GRADING GUIDELINES

APNs 432-130-006 and -007

City of San Jacinto, Riverside County, California

Project No. 2298-CR

GEOTEK

GENERAL GRADING GUIDELINES

Guidelines presented herein are intended to address general construction procedures for earthwork construction. Specific situations and conditions often arise which cannot reasonably be discussed in general guidelines, when anticipated these are discussed in the text of the report. Often unanticipated conditions are encountered which may necessitate modification or changes to these guidelines. It is our hope that these will assist the contractor to more efficiently complete the project by providing a reasonable understanding of the procedures that would be expected during earthwork and the testing and observation used to evaluate those procedures.

General

Grading should be performed to at least the minimum requirements of governing agencies, Chapters 18 and 33 of the Uniform Building Code, CBC (2019) and the guidelines presented below.

Preconstruction Meeting

A preconstruction meeting should be held prior to site earthwork. Any questions the contractor has regarding our recommendations, general site conditions, apparent discrepancies between reported and actual conditions and/or differences in procedures the contractor intends to use should be brought up at that meeting. The contractor (including the main onsite representative) should review our report and these guidelines in advance of the meeting. Any comments the contractor may have regarding these guidelines should be brought up at that meeting.

Grading Observation and Testing

1. Observation of the fill placement should be provided by our representative during grading. Verbal communication during the course of each day will be used to inform the contractor of test results. The contractor should receive a copy of the "Daily Field Report" indicating results of field density tests that day. If our representative does not provide the contractor with these reports, our office should be notified.
2. Testing and observation procedures are, by their nature, specific to the work or area observed and location of the tests taken, variability may occur in other locations. The contractor is responsible for the uniformity of the grading operations; our observations and test results are intended to evaluate the contractor's overall level of efforts during grading. The contractor's personnel are the only individuals participating in all aspect of site work. Compaction testing and observation should not be considered as relieving the contractor's responsibility to properly compact the fill.
3. Cleanouts, processed ground to receive fill, key excavations, and subdrains should be observed by our representative prior to placing any fill. It will be the contractor's responsibility to notify our representative or office when such areas are ready for observation.

4. Density tests may be made on the surface material to receive fill, as considered warranted by this firm.
5. In general, density tests would be made at maximum intervals of two feet of fill height or every 1,000 cubic yards of fill placed. Criteria will vary depending on soil conditions and size of the fill. More frequent testing may be performed. In any case, an adequate number of field density tests should be made to evaluate the required compaction and moisture content is generally being obtained.
6. Laboratory testing to support field test procedures will be performed, as considered warranted, based on conditions encountered (e.g. change of material sources, types, etc.) Every effort will be made to process samples in the laboratory as quickly as possible and in progress construction projects are our first priority. However, laboratory workloads may cause in delays and some soils may require a **minimum of 48 to 72 hours to complete test procedures**. Whenever possible, our representative(s) should be informed in advance of operational changes that might result in different source areas for materials.
7. Procedures for testing of fill slopes are as follows:
    a) Density tests should be taken periodically during grading on the flat surface of the fill, three to five feet horizontally from the face of the slope.
    b) If a method other than over building and cutting back to the compacted core is to be employed, slope compaction testing during construction should include testing the outer six inches to three feet in the slope face to determine if the required compaction is being achieved.
8. Finish grade testing of slopes and pad surfaces should be performed after construction is complete.

Site Clearing

1. All vegetation, and other deleterious materials, should be removed from the site. If material is not immediately removed from the site it should be stockpiled in a designated area(s) well outside of all current work areas and delineated with flagging or other means. Site clearing should be performed in advance of any grading in a specific area.
2. Efforts should be made by the contractor to remove all organic or other deleterious material from the fill, as even the most diligent efforts may result in the incorporation of some materials. This is especially important when grading is occurring near the natural grade. All equipment operators should be aware of these efforts. Laborers may be required as root pickers.
3. Nonorganic debris or concrete may be placed in deeper fill areas provided the procedures used are observed and found acceptable by our representative.

Treatment of Existing Ground

1. Following site clearing, all surficial deposits of alluvium and colluvium as well as weathered or creep effected bedrock, should be removed unless otherwise specifically indicated in the text of this report.
2. In some cases, removal may be recommended to a specified depth (e.g. flat sites where partial alluvial removals may be sufficient). The contractor should not exceed these depths unless directed otherwise by our representative.
3. Groundwater existing in alluvial areas may make excavation difficult. Deeper removals than indicated in the text of the report may be necessary due to saturation during winter months.
4. Subsequent to removals, the natural ground should be processed to a depth of six inches, moistened to near optimum moisture conditions and compacted to fill standards.
5. Exploratory back hoe or dozer trenches still remaining after site removal should be excavated and filled with compacted fill if they can be located.

Fill Placement

1. Unless otherwise indicated, all site soil and bedrock may be reused for compacted fill; however, some special processing or handling may be required (see text of report).
2. Material used in the compacting process should be evenly spread, moisture conditioned, processed, and compacted in thin lifts six (6) to eight (8) inches in compacted thickness to obtain a uniformly dense layer. The fill should be placed and compacted on a nearly horizontal plane, unless otherwise found acceptable by our representative.
3. If the moisture content or relative density varies from that recommended by this firm, the contractor should rework the fill until it is in accordance with the following:
    a) Moisture content of the fill should be at or above optimum moisture. Moisture should be evenly distributed without wet and dry pockets. Pre-watering of cut or removal areas should be considered in addition to watering during fill placement, particularly in clay or dry surficial soils. The ability of the contractor to obtain the proper moisture content will control production rates.
    b) Each six-inch layer should be compacted to at least 90 percent of the maximum dry density in compliance with the testing method specified by the controlling governmental agency. In most cases, the testing method is ASTM Test Designation D 1557.
4. Rock fragments less than eight inches in diameter may be utilized in the fill, provided:
    a) They are not placed in concentrated pockets;
    b) There is a sufficient percentage of fine-grained material to surround the rocks;
    c) The distribution of the rocks is observed by, and acceptable to, our representative.

5. Rocks exceeding eight (8) inches in diameter should be taken off site, broken into smaller fragments, or placed in accordance with recommendations of this firm in areas designated suitable for rock disposal. On projects where significant large quantities of oversized materials are anticipated, alternate guidelines for placement may be included. If significant oversize materials are encountered during construction, these guidelines should be requested.
6. In clay soil, dry or large chunks or blocks are common. If in excess of eight (8) inches minimum dimension, then they are considered as oversized. Sheepsfoot compactors or other suitable methods should be used to break up blocks. When dry, they should be moisture conditioned to provide a uniform condition with the surrounding fill.

Slope Construction

1. The contractor should obtain a minimum relative compaction of 90 percent out to the finished slope face of fill slopes. This may be achieved by either overbuilding the slope and cutting back to the compacted core, or by direct compaction of the slope face with suitable equipment.
2. Slopes trimmed to the compacted core should be overbuilt by at least three (3) feet with compaction efforts out to the edge of the false slope. Failure to properly compact the outer edge results in trimming not exposing the compacted core and additional compaction after trimming may be necessary.
3. If fill slopes are built "at grade" using direct compaction methods, then the slope construction should be performed so that a constant gradient is maintained throughout construction. Soil should not be "spilled" over the slope face nor should slopes be "pushed out" to obtain grades. Compaction equipment should compact each lift along the immediate top of slope. Slopes should be back rolled or otherwise compacted at approximately every 4 feet vertically as the slope is built.
4. Corners and bends in slopes should have special attention during construction as these are the most difficult areas to obtain proper compaction.
5. Cut slopes should be cut to the finished surface. Excessive undercutting and smoothing of the face with fill may necessitate stabilization.

UTILITY TRENCH CONSTRUCTION AND BACKFILL

Utility trench excavation and backfill is the contractors responsibility. The geotechnical consultant typically provides periodic observation and testing of these operations. While efforts are made to make sufficient observations and tests to verify that the contractors' methods and procedures are adequate to achieve proper compaction, it is typically impractical to observe all backfill procedures. As such, it is critical that the contractor use consistent backfill procedures.

Compaction methods vary for trench compaction and experience indicates many methods can be successful. However, procedures that "worked" on previous projects may or may not prove effective on a given site. The contractor(s) should outline the procedures proposed, so that we may discuss them **prior** to construction. We will offer comments based on our knowledge of site conditions and experience.

1. Utility trench backfill in slopes, structural areas, in streets and beneath flat work or hardscape should be brought to at least optimum moisture and compacted to at least 90 percent of the laboratory standard. Soil should be moisture conditioned prior to placing in the trench.
2. Flooding and jetting are not typically recommended or acceptable for native soils. Flooding or jetting may be used with select sand having a Sand Equivalent (SE) of 30 or higher. This is typically limited to the following uses:
   a) shallow (12 + inches) under slab interior trenches and,
   b) as bedding in pipe zone.

   The water should be allowed to dissipate prior to pouring slabs or completing trench compaction.
3. Care should be taken not to place soils at high moisture content within the upper three feet of the trench backfill in street areas, as overly wet soils may impact subgrade preparation. Moisture may be reduced to 2% below optimum moisture in areas to be paved within the upper three feet below sub grade.
4. Sand backfill should not be allowed in exterior trenches adjacent to and within an area extending below a 1:1 projection from the outside bottom edge of a footing, unless it is similar to the surrounding soil.
5. Trench compaction testing is generally at the discretion of the geotechnical consultant. Testing frequency will be based on trench depth and the contractors procedures. A probing rod would be used to assess the consistency of compaction between tested areas and untested areas. If zones are found that are considered less compact than other areas, this would be brought to the contractors attention.

JOB SAFETY

General

Personnel safety is a primary concern on all job sites. The following summaries are safety considerations for use by all our employees on multi-employer construction sites. On ground personnel are at highest risk of injury and possible fatality on grading construction projects. The company recognizes that construction activities will vary on each site and that job site safety is the contractor's responsibility. However, it is, imperative that all personnel be safety conscious to avoid accidents and potential injury.

In an effort to minimize risks associated with geotechnical testing and observation, the following precautions are to be implemented for the safety of our field personnel on grading and construction projects.

1. Safety Meetings: Our field personnel are directed to attend the contractor's regularly scheduled safety meetings.
2. Safety Vests: Safety vests are provided for and are to be worn by our personnel while on the job site.
3. Safety Flags: Safety flags are provided to our field technicians; one is to be affixed to the vehicle when on site, the other is to be placed atop the spoil pile on all test pits.

In the event that the contractor's representative observes any of our personnel not following the above, we request that it be brought to the attention of our office.

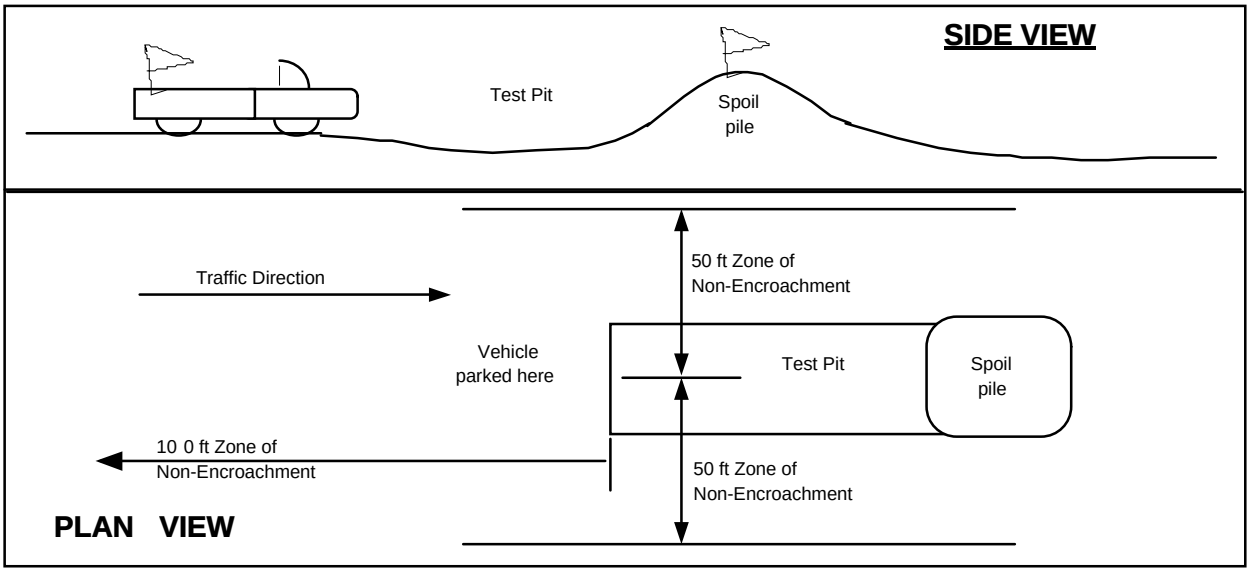
Test Pits Location, Orientation and Clearance

The technician is responsible for selecting test pit locations. The primary concern is the technician's safety. However, it is necessary to take sufficient tests at various locations to obtain a representative sampling of the fill. As such, efforts will be made to coordinate locations with the grading contractors authorized representatives (e.g. dump man, operator, supervisor, grade checker, etc.), and to select locations following or behind the established traffic pattern, preferably outside of current traffic. The contractors authorized representative should direct excavation of the pit and safety during the test period. Again, safety is the paramount concern.

Test pits should be excavated so that the spoil pile is placed away from oncoming traffic. The technician's vehicle is to be placed next to the test pit, opposite the spoil pile. This necessitates that the fill be maintained in a drivable condition. Alternatively, the contractor may opt to park a piece of equipment in front of test pits, particularly in small fill areas or those with limited access.

A zone of non-encroachment should be established for all test pits (see diagram below). No grading equipment should enter this zone during the test procedure. The zone should extend outward to the sides approximately 50 feet from the center of the test pit and 100 feet in the direction of traffic flow. This zone is established both for safety and to avoid excessive ground vibration, which typically decreases test results.

TEST PIT SAFETY PLAN



Slope Tests

When taking slope tests, the technician should park their vehicle directly above or below the test location on the slope. The contractor's representative should effectively keep all equipment at a safe operation distance (e.g. 50 feet) away from the slope during testing.

The technician is directed to withdraw from the active portion of the fill as soon as possible following testing. The technician's vehicle should be parked at the perimeter of the fill in a highly visible location.

Trench Safety

It is the contractor's responsibility to provide safe access into trenches where compaction testing is needed. Trenches for all utilities should be excavated in accordance with CAL-OSHA and any other applicable safety standards. Safe conditions will be required to enable compaction testing of the trench backfill.

All utility trench excavations in excess of 5 feet deep, which a person enters, are to be shored or laid back. Trench access should be provided in accordance with OSHA standards. Our personnel are directed not to enter any trench by being lowered or "riding down" on the equipment.

Our personnel are directed not to enter any excavation which;

1. is 5 feet or deeper unless shored or laid back,
2. exit points or ladders are not provided,
3. displays any evidence of instability, has any loose rock or other debris which could fall into the trench, or
4. displays any other evidence of any unsafe conditions regardless of depth.

If the contractor fails to provide safe access to trenches for compaction testing, our company policy requires that the soil technician withdraws and notifies their supervisor. The contractors representative will then be contacted in an effort to effect a solution. All backfill not tested due to safety concerns or other reasons is subject to reprocessing and/or removal.

Procedures

In the event that the technician's safety is jeopardized or compromised as a result of the contractor's failure to comply with any of the above, the technician is directed to inform both the developer's and contractor's representatives. If the condition is not rectified, the technician is required, by company policy, to immediately withdraw and notify their supervisor. The contractor's representative will then be contacted in an effort to effect a solution. No further testing will be performed until the situation is rectified. Any fill placed in the interim can be considered unacceptable and subject to reprocessing, recompaction or removal.

In the event that the soil technician does not comply with the above or other established safety guidelines, we request that the contractor bring this to technicians attention and notify our project manager or office. Effective communication and coordination between the contractors' representative and the field technician(s) is strongly encouraged in order to implement the above safety program and safety in general.

The safety procedures outlined above should be discussed at the contractor's safety meetings. This will serve to inform and remind equipment operators of these safety procedures particularly the zone of non-encroachment.

The safety procedures outlined above should be discussed at the contractor's safety meetings. This will serve to inform and remind equipment operators of these safety procedures particularly the zone of non-encroachment.