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Description:	N/A
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Organization:	Dudek
Submitter Role:	Applicant Consultant
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Docketed Date:	6/27/2025

MEMORANDUM

To:	California Energy Commission Staff
From:	Compass Energy Storage LLC
Subject:	Geotechnical Evaluation Report (TN #255561-6) References
Date:	June 26, 2025

Compass Energy Storage LLC (applicant) prepared a Geotechnical Evaluation Report for the proposed Compass Energy Storage Project, dated April 2024, titled Appendix 4-4A Geotechnical Evaluation Report Part 1, and docketed as Tracking Number 255561-6. The Geotechnical Evaluation Report referenced several geotechnical studies performed by prior projects and other studies performed by the applicant. As per California Energy Commission staff request, the following Geotechnical Evaluation Report references are being filed to the project docket (24-OPT-02). Each reference can be navigated via the bookmarks with the document. Page numbers are also provided below for navigation purposes. Due to file size requirements, the referenced reports are provided in three parts.

Referenced Reports	Location within this Document (PDF page number)
Part 1	
NMG Geotechnical, 2001. Geotechnical Due Diligence Investigation for Proposed Middle School, Rancho Capistrano, San Juan Capistrano, California, Project No. 01012-02, dated September 28, 2001.	Page 2-99
Part 2	
Leighton and Associates, Inc., 2009. Preliminary Geotechnical Investigation, The Orchards at Capistrano, San Juan Capistrano, Project No. 012383-001, dated April 30, 2009.	Page 2-486
Lowney and Associates performed an evaluation in 2003 consisting of excavation, sampling, and logging of one small diameter hollow stem boring and six large diameter borings.	Boring logs are available within Leighton and Associates, Inc. 2009 (Page 75-161)
Part 3	
Terracon, 2021. Geotechnical Engineering Report, Broad Reach Power Compass BESS, San Juan Capistrano, CA, Terracon Project No. 60211570, dated November 3, 2021.	Page 2-157
Geosyntec Consultants, Inc., 2021. Geotechnical and Geomorphic Evaluations, Compass Energy Storage Project, San Juan Capistrano, California, dated June 29, 2021.	Page 158-199
Corrosivity Study: HDR, 2023, Soil Corrosivity Study, Saddleback Valley Compass Substation, San Juan Capistrano, California, HDR#23-0169LAB, dated March 16, 2023.	Page 200-211
Hydrology study: Chang Consultants, 2024, Sediment Transport Analysis for the Compass Energy Storage Project, dated March 21, 2024.	Page 212-367
Thermal Resistivity study: Geotherm USA, 2023, Thermal Analysis of Native Soil Samples, San Juan Capistrano, California, PO No. 22011-01, dated March 7, 2023.	Page 368-372

September 28, 2001

Project No. 01012-02

To: Capistrano Unified School District
32972 Calle Perfecto
San Juan Capistrano, California 92675

Attention: Mr. Dave Doomey

Subject: Geotechnical Due Diligence Investigation for Proposed Middle School, Rancho Capistrano, San Juan Capistrano, California

In accordance with your request and authorization, **NMG Geotechnical, Inc. (NMG)** has conducted a geotechnical due diligence investigation for the proposed middle school at the Rancho Capistrano property in San Juan Capistrano. The plan utilized as a base map for this investigation was the 100-scale aerial photograph provided by the City of San Juan Capistrano, overlaid with the conceptual design prepared by PJHM Architects. The purpose of our study was to evaluate the geotechnical site conditions in light of the proposed development with emphasis on existing landslide stability, seismic exposure, liquefaction potential, settlement considerations, and erosion potential of the unimproved creek banks (Oso Creek).

The proposed school site is approximately 25 acres in size and is located south of the Rancho Capistrano sports field area and immediately west of Oso Creek. The majority of the site is relatively flat ranging in elevation from 250 to 210 feet (from south to north). The western portion of the site consists of sloping ground, rising approximately 50 feet above the relatively flat portion; the slope continues offsite rising another 375 feet to an existing residential tract. The site is currently occupied by a combination of citrus groves, equestrian arenas, ranch houses and a network of dirt roads.

Based on our subsurface exploration and laboratory testing, the proposed improvements at the subject site are considered feasible, and the majority of the geotechnical constraints can be mitigated utilizing standard grading and/or design techniques. Assuming existing grades are not raised substantially, settlement of the underlying soils can be mitigated by remedial removals or by foundation design. A structural setback from the existing creek banks will be necessary. The most significant geotechnical constraint at the site is the presence of the existing landslides within the adjacent hillside. Further investigation is considered necessary to better define the extent and configuration of the landslide complex.

If you have any questions regarding this report, please contact our office. We appreciate the continued opportunity to serve the school district.

Respectfully submitted,

NMG GEOTECHNICAL, INC.

William Goodman, CEG 1577
Principal Geologist

R. A. Zinser, RCE 21948
Project Engineer

LY/RZ/WG/je

Distribution: (2) Addressee

CERTIFIED ENGINEERING GEOLOGIST
WILLIAM GOODMAN
No. 1577
EXP. 2/03
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
ROBERT A. ZINSER
No. 21948
EXP. 9/30/05
CIVIL
STATE OF CALIFORNIA

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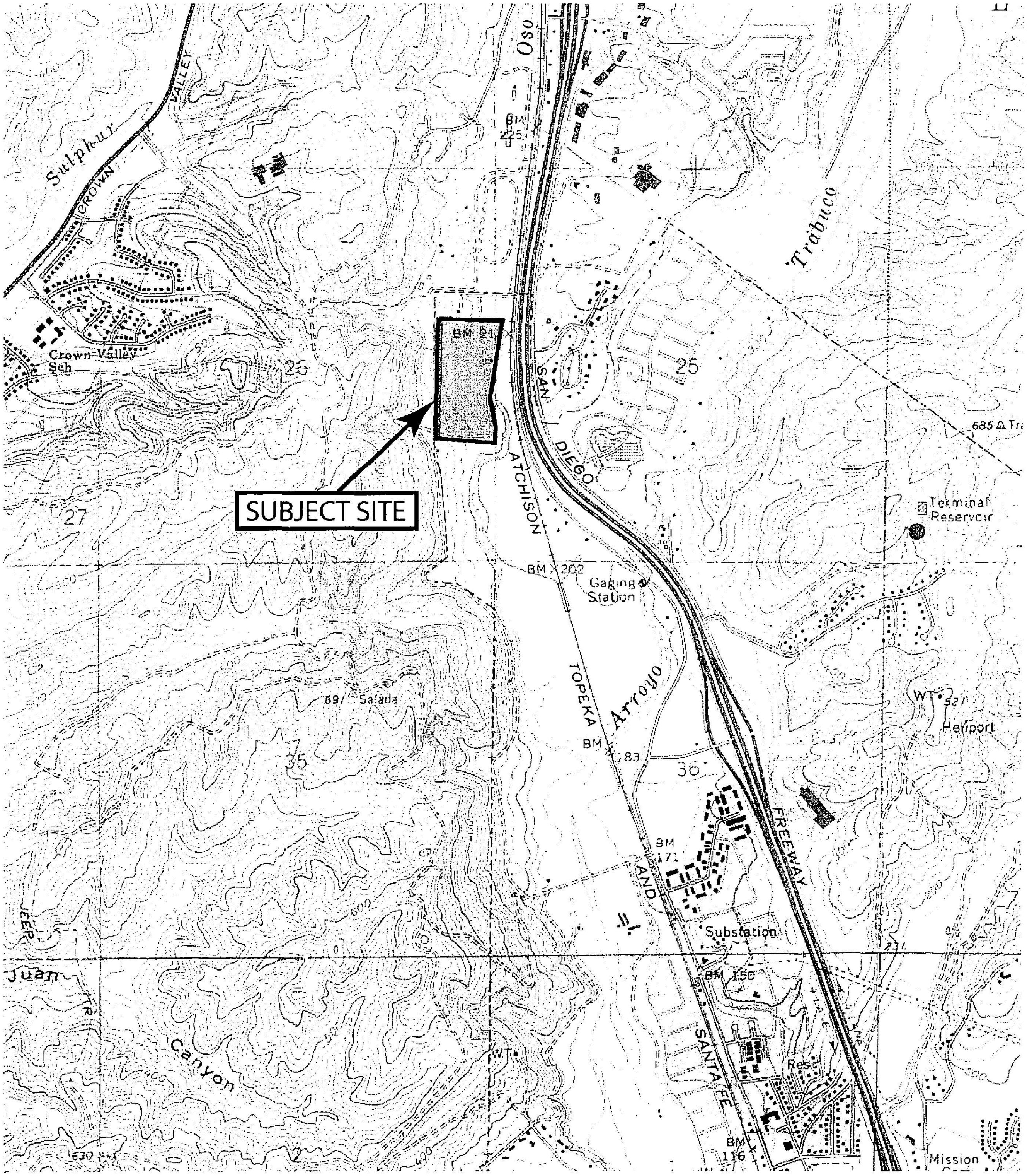
1.0 INTRODUCTION

1.1 Purpose and Scope of Work

The purpose of our due diligence study was to evaluate the existing geotechnical site conditions in light of the proposed development (with emphasis on slope stability, seismic exposure, liquefaction potential, settlement considerations and erosion potential of the unimproved creek banks) and provide preliminary recommendations for site development. Our report is based on: review of the 100-scale conceptual plan prepared by PJHM Architects; discussions with other geotechnical consultants representing the proposed church development; the results of our subsurface exploration and our findings to date; and our experience with similar sites. Our scope of work for this preliminary evaluation included the following:

- Site visits to observe and document existing conditions, coordinate with church personnel and coordinate with existing utilities regarding site access and subsurface exploration.
- Review of available historic aerial photographs dating back to 1952.
- Review of available geotechnical data (primarily geotechnical boring logs) by others.
- Advancement of 14 Cone Penetrometer Soundings (CPT) within the proposed building area (Appendix B).
- Limited subsurface investigation, which included drilling, sampling and logging of six hollow-stem borings to a maximum depth of 101.5 feet (H-1 through H-6) and drilling, sampling and down-hole logging of three bucket-auger borings to a maximum depth of 202 feet (B-1 through B-3). Geotechnical boring logs are included in Appendix B.
- Geotechnical evaluation and analysis of the compiled data pertinent to the proposed development, including analysis related to landslide stability, seismic exposure, liquefaction potential, settlement potential, and erosion of the existing creek banks. Seismic analysis is included in Appendix D.
- Laboratory testing of selected soil samples (included in Appendix C).
- Discussions with the current geotechnical consultant for the proposed church development and with the geotechnical consultant representing the City of San Juan Capistrano.
- Preparation of this report including our findings, conclusions, preliminary recommendations, and accompanying illustrations.



SITE LOCATION MAP

BASE: U.S.G.S. 7.5 MINUTE SAN JUAN CAPISTRANO QUADRANGLE,1968

PHOTOREVISED 1981.

SCALE: 1"=2000'

N

CUSD/RANCHO CAPISTRANO SAN JUAN CAPISTRANO, CALIFORNIA	Project Number: 01012-02 Project Name:CUSD/R. CAPISTRANO Date: 9/28/01 Figure No. 1	NMG Geotechnical, Inc.

1.2 Site Location and Description

The subject site is part of the Rancho Capistrano church property located south of the Rancho Capistrano sports field area and immediately west of Oso Creek. The approximately 25-acre site is located approximately 300 feet west of Camino Capistrano in the City of San Juan Capistrano. The subject property lies within the U. S. Geological Survey 7.5 minute San Juan Capistrano Quadrangle (Figure 1). The preliminary school plan consists of a building complex comprised of four buildings with parking and a student drop-off area to the north. Ball fields and paved courts are planned south and east of the proposed building area. A small slope is planned to the west of the building area, which ascends to a possible access road alignment at the base of an east-facing natural slope.

Recently, the subject site had been used as an equestrian center with stables and small arenas. The site is currently occupied by a combination of ranch houses, a network of dirt roads, and abandoned citrus groves and equestrian arenas. The eastern perimeter of the site descends along near-vertical banks to Oso Creek.

1.3 Site History

The site was historically used for citrus groves and minor row crop farming. The farm houses located in the southwestern portion of the site and the Atchison, Topeka and Santa Fe Railroad (offsite to the east) existed prior to 1952. Between 1952 and 1983 the only significant change impacting the subject site was the gradual deepening and incising of Oso Creek and the widening of its banks. In 1983, the housing development at the top of the slope offsite to the west was under construction. By 1987, the housing development was occupied and the Rancho Capistrano church complex existed north of the site. Near the northeast perimeter of the site, a portion of Oso Creek had been improved with a concrete channel. Between 1995 and 1997, stables and small equestrian arenas had been constructed onsite. Over time, Oso Creek continued to deepen and incise to its current configuration.

1.4 Proposed Development

The proposed school consists of a complex of four school buildings clustered in a roughly rectangular pattern. The buildings are interconnected with hardscape and will be surrounded by a parking lot, drop-off area, play courts and fields and a small slope ascending to the west (Plate 1). The main building area is situated at the west-central portion of the site. Access to the school will be from driveways located directly off the access road along the northern perimeter of the site. Two options for entry bridge alignments are shown crossing over both Oso Creek and the Metrolink railroad lines from Camino Capistrano to the site.

1.5 Previous Work

The California Division of Mines and Geology initially studied this property as part of their geologic evaluation of the San Juan Capistrano quadrangle (CDMG, 1974). This study included documentation of geologic units and discussion of constraints to land development (i.e. slope stability, expansive soils, erosion potential, etc.).

In 1980, Leighton and Associates, Inc. (Leighton) conducted a geotechnical analysis of the major landslides identified within the 94-acre Bathgate Ranch property. Their investigation included five bucket-auger borings, two rotary wash borings, seismic refraction, electrical resistivity and laboratory testing of the collected samples. The geometry and stability of the ancient landslides was determined and general recommendations for remediation were provided.

In April 1984, Medall, Aragon, Worswick and Associates (Medall) provided a preliminary evaluation of geotechnical hazards and possible mitigation measures for the 78-acre Bathgate Ranch property. The key geotechnical issues identified were landslides, compressible alluvial soils, shallow groundwater and relatively high seismic shaking potential. Subsurface exploration included five bucket-auger borings and six hollow-stem-auger borings and laboratory testing of the collected samples. Their recommendations included development setbacks from the toes of existing landslides, reducing the usable building area to approximately 49 acres.

In July 1984, Medall reported on evaluation of large postulated landslides west of Bathgate Ranch. This investigation included aerial photograph review, geomorphic evaluation, three dozer trenches, five backhoe trenches, six bucket-auger borings and laboratory testing of representative samples. Medall concluded that they found no evidence of deep-seated landsliding west of the property. The dramatic breaks in slope were interpreted to be related to remnants of ancient river terraces underlain by fluvial overbank sediments. Medall confirmed numerous smaller landslides existing along the lower flanks of the adjacent hillside. The results of this study concluded that the usable building area could be increased to 58 acres.

2.0 GEOLOGIC CONDITIONS

2.1 Geologic Summary

The site is predominately underlain by siltstone of the Capistrano Formation. Since original deposition, these sedimentary deposits have undergone episodes of subsidence, lithification, uplift, structural deformation and erosion. During Quaternary time periods, the hills and canyons were formed, and the landslides occurred on the east-facing slope offsite to the west. The geologic units at the site are discussed in the following sections.

2.2 Earth Units

2.2.1 Undocumented Fills

There are undocumented fills located throughout the site associated with prior ranch activities, equestrian usage and the dirt road network. The depth and extent of these fills was not included in our scope of work for this study and are not shown on the geotechnical map. This material is considered unsuitable to build on and should be removed during remedial grading.

2.2.2 Alluvium (Map Symbol: Qal)

The alluvium, which covers the majority of the subject site, generally consists of grayish brown and olive gray clays and silts with some sand. The sand lenses are thin and discontinuous. The alluvial materials are generally soft to medium stiff and exhibit highly expansive characteristics. The upper portion of the alluvium contains abundant caliche stringers and is slightly porous. The alluvium is generally very moist, likely due to the shallow depth of groundwater (approximately 5 to 25 feet below existing ground surface). Some charcoal fragments were observed in the samples retrieved from the hollow-stem borings.

2.2.3 River Terrace Deposits

River terrace deposits are located on the adjacent east-facing hillside. Where encountered in borings, they were observed to be primarily clayey silts and silts with some fine sand layers. The silts were generally very moist, loose to stiff, massive, porous and contained abundant caliche and charcoal fragments. Numerous paleosol horizons were observed throughout the deposits. In all borings, the terrace deposits were observed to be involved in landsliding.

2.2.4 Landslide Material (Map Symbol: Qls)

Ancient landslides exist on the adjacent hillside and extend beneath the western portion of the property. The landslide material is comprised of displaced terrace deposits and bedrock of the Capistrano Formation. Three bucket-auger borings were excavated through landslide material during this investigation. The landslide material consisted of gray and brown silts, clayey silts and minor sands, which were moist to very moist, soft to medium stiff, massive to locally bedded with occasional paleosols and carbon fragments. Basal rupture surfaces were observed in each boring at depths of 12 feet (B-2), 20 feet (B-1) and 70 feet (B-3).

2.2.5 Capistrano Formation (Map Symbol: Tc)

The bedrock unit at the site consists primarily of massive siltstone with minor horizons of sandy siltstone, clayey siltstone, and thin clay beds. The siltstone is generally unoxidized dark greenish-gray to black, clayey, moist, very stiff, petroliferous and typically highly expansive. Concretions, joints, and weathered foraminifera were locally observed in the siltstone.

2.3 Geologic Structure

The geologic structure in the vicinity of the site is dominated by a massive homoclinal sequence of sedimentary rocks with bedding generally dipping at shallow angles to the west.

2.4 Regional Faulting and Seismicity

Properties in southern California are subject to seismic hazards of varying degrees depending on the proximity, degree of activity, and capability of nearby faults. These hazards can be primary (i.e., directly related to the energy release of an earthquake such as surface rupture and ground shaking) or secondary (i.e., related to the effect of earthquake energy on the physical world which, in turn cause phenomena such as liquefaction and ground lurching).

There are no known active faults at the site, and the site is not located in an Alquist-Priolo Fault-Rupture Hazard zone (CDMG, 1992 and 1994). Therefore, the probability of primary surface rupture at the site is considered very low. The primary seismic hazard for the subject site is ground shaking due to the proximity of major active faults in the region. Known active faults capable of producing strong ground shaking at the site include the Newport-Inglewood Offshore, Whittier-Elsinore, Chino and many others. Significant ground shaking would most likely result from an earthquake on the offshore segment of the Newport-Inglewood fault. This fault has a maximum earthquake moment magnitude (Mw) of 6.9. The State of California requires school buildings to be designed based on the Upper Bound Earthquake, which is defined as the earthquake motion that has a 10 percent probability of being exceeded in a 100-year period or the maximum level of motion which may every be expected at the building site within the known geological framework. Based on this criteria, the peak horizontal ground acceleration anticipated at the site is approximately 0.48 g (Blake, 2000a). Adherence to the latest edition of the Uniform Building Code with regard to school building construction will mitigate the impact of ground shaking to within current design standards. The State Code requires that school structures shall be designed to sustain the upper bound earthquake, including the P delta effects, without forming a story collapse mechanism along any frameline. Every structure shall have sufficient ductility and strength to undergo the displacement caused by the upper bound earthquake motion without collapse.

2.5 Secondary Seismic Hazards

Secondary seismic hazards such as tsunami and seiche need not be considered since the site is located away from the ocean or any confined bodies of water.

2.6 Seismic Exposure and Liquefaction

The subject site lies within an area identified by the California Division of Mines and Geology (CDMG) as potentially liquefiable. Subsurface exploration was performed to assess the nature and lateral continuity of layered alluvium beneath the site and determine the exiting groundwater table. Approximately 14 Cone Penetrometer Soundings (CPT) and 6 hollow-stem-auger borings were excavated, logged and sampled (Appendix B). Laboratory testing was performed on selected soil samples to determine grain-size characteristics (Appendix C). Analysis of the collected data was performed based on the upper-bound earthquake.

Minor seismic settlement of the soil may occur during an upper-bound earthquake event. We estimate possible seismic settlements on the order of less than 1 inch within the subject site. Based on our analysis, lateral spread of the underlying soils is not likely to occur in a design seismic event, due to the generally fine-grained nature of the alluvium and the lack of lateral continuity of the minor lenses of coarse-grained material.

2.7 Groundwater

Groundwater was encountered during our subsurface exploration in the hollow-stem borings, the Cone Penetrometer Soundings and the bucket-auger borings. The groundwater table is somewhat irregular beneath the site, located approximately 5 to 25 feet deep within the flatter portions of the site, adjacent to Oso Creek. Seepage and standing water were observed in the bucket-auger borings at varying depths (Appendix B).

2.8 Mass Movements

The California Division of Mines and Geology (CDMG) originally mapped a landslide extending from the upper portion of the adjacent hillside (approximate elevation of 480 feet) toward the east beneath the subject site. As mapped by the CDMG, this landslide would be roughly 27.5 acres in size. Subsequent studies by various geotechnical consultants have yielded different interpretations for this hillside. Some have collected data that has been interpreted to support the large landslide scenario. Others have investigated the upper part of the hillside to the south that has similar geomorphic expression and have concluded that the dramatic break in slope is due to an old river terrace and not the head scarp of a large landslide.

Evidence of a deep landslide was not observed in our deepest boring (B-1; 202 feet). This data appears to support the scenario that a large, deep landslide as depicted by the CDMG does not exist. It is possible that the rupture surface was not encountered in this boring because the boring was not deep enough. However, if this were true, the rupture surface would be buried by alluvium in the adjacent canyon sufficiently thick to provide a natural buttress. Evidence of landsliding was encountered in our subsurface investigation, including two shallow landslides ranging in thickness from 12 feet (B-2) to 20 feet (B-1) and one moderately deep landslide, 70 feet thick (B-3) (Appendix B). The landslide encountered in B-3 appears to be confined to the hillside area below the major break in slope (approximate elevation of 440 feet). It is possible that the shallow rupture surfaces observed in Borings B-1 and B-2 represent the toe of a perched landslide that extends up the hill to the major break in slope (approximate elevation of 480 feet). Additional investigation in the upper slope area should be conducted to confirm this interpretation. Data collected by NMG and others from borings in the flatter portion of the site indicates a moderately deep landslide condition extends along the entire western perimeter of the site. The geometry of this landslide area is uncertain at this time due to insufficient data.

3.0 GEOTECHNICAL FINDINGS

3.1 Near Surface Earth Materials

The near-surface soils have been disturbed by prior ranch activities including the impact from the citrus groves. The upper 4 feet of the alluvium consists of silty and sandy material, which is dry to moist, loose, and relatively cohesionless with scattered pebbles.

3.2 Subsurface Soil Conditions

Based on our field investigation and laboratory testing, the majority of the onsite soils consist of clays and silts, with some sand. The soil sample descriptions, classification and Unified Soil Classification System (USCS) group symbol are presented on our boring logs (Appendix B). The layered clays and silts are relatively soft to medium stiff, and range in depth from 50 to 100± feet below the ground surface (within the proposed building areas).

The subsurface soil profiles are depicted on our geotechnical Cross-Sections A-A' through C-C' (Plates 2 through 4). The groundwater encountered throughout the subject site is relatively shallow and varies from approximately 5 to 25 feet below the existing ground surface.

3.3 Settlement and Consolidation

Due to the soft nature of the underlying earth materials, settlement due to fill and building loads will occur at the site. The extent of the settlement is dependant on the thickness of the planned fill and the magnitude of the building foundation loads. The conceptual plan does not show design elevations. However, it is our understanding that some amount of compacted fill will be placed throughout the site above existing grade.

3.4 Slope Stability

Preliminary slope stability analysis of the existing landslides to the west of the subject site indicates a relatively low safety factor for this area. Additional subsurface exploration and laboratory testing will need to be performed to verify the existing conditions and provide a design for mitigation measures.

3.5 Liquefaction

Our analysis of the collected data assumes removal of the upper 4 feet of loose, relatively cohesionless soil throughout the proposed building areas and replacement with compacted fill. Minor seismic settlement of the soil may occur during an upper-bound earthquake event. We estimate possible seismic settlements on the order of 1 inch or less, within the subject site. Based on our analysis, lateral spread of the underlying soils is not likely to occur during a design seismic event, due to the generally fine-grained nature of the alluvium and the lack of lateral continuity of the minor lenses of coarse-grained material.

3.6 Expansion Potential

Based on visual observations during our subsurface investigation and preliminary laboratory testing, the alluvial materials underlying the proposed development are anticipated to fall into the medium to very high expansion category. At or near the completion of site grading, additional laboratory testing will be performed to verify the anticipated expansive characteristics of the material exposed at or near finish grade.

3.7 Oso Creek Bank Erosion

The eastern and southern perimeter of the site is bounded by Oso Creek. The majority of the creek consists of a natural unimproved channel that ranges from 30 to 100 feet wide and has very steep to near-vertical banks up to 40 feet high. A portion of the east side of the channel adjacent to Camino Capistrano has some rip-rap protection. During our site reconnaissance, we observed a landslide repair operation in progress adjacent to the railroad tracks, east of the major meander bend in the creek. The rate of erosion and slumping appears to be relatively high in this area, as active slumping and numerous fresh erosional scarps up to 30 feet high were observed throughout the creek channel.

4.0 CONCLUSIONS AND PRELIMINARY RECOMMENDATIONS

4.1 General Conclusion

Based on our preliminary geotechnical evaluation, the proposed improvements at the site are considered feasible, provided additional subsurface exploration and subsequent laboratory testing and engineering analysis are performed and the recommendations in this report (and future reports) are implemented during grading and construction. Special building design considerations may be necessary due to potential consolidation and settlement of the underlying materials and shrinkage or heave of foundation elements due to drying-back or wetting of the site subgrade soils subsequent to development.

Based on our subsurface exploration and laboratory testing, the majority of the geotechnical constraints can be mitigated utilizing standard grading and/or design techniques. Assuming existing grades are not raised substantially, settlement of the underlying soils can be mitigated by remedial removals or by foundation design. A structural setback from the existing creek banks will be necessary. The most significant geotechnical constraint at the site is the presence of the existing landslides within the adjacent hillside. Further investigation is considered necessary to better define the extent and configuration of the landslide complex.

Our conclusions and recommendations are based on limited investigation and conceptual plan design. The following recommendations are considered preliminary and should be refined based on further investigation and updated site development plans.

4.2 Remedial Removals

As a minimum, based on our investigation, the upper 4 feet of the existing site soils should be removed and replaced with compacted fill in proposed structural areas of the site. The depth of removals should be further refined during subsequent site investigation. Within the building areas a minimum depth of approximately 5 feet below design finish grade should consist of engineered fill, compacted in accordance with general earthwork specifications, in order to provide for relatively uniform fill support for the building foundations.

4.3 Foundation and Slabs-on-Grade

Preliminary foundation recommendations will be provided upon review of grading and construction plans, and upon further investigation and laboratory testing to verify expected soil characteristics.

Based on visual observations during our subsurface investigation and limited laboratory testing, the alluvial materials underlying the proposed development are anticipated to fall into the medium to very high expansion category. The design of foundations and slabs for buildings will likely have to be in accordance with the requirements of the Uniform Building Code (UBC) for expansive soil. Such design can combine resistance to soil expansion and resistance to settlement. A somewhat lengthy subgrade presoaking process may be necessary for building slabs and for other concrete (hardscape) areas. Selective grading utilizing granular soils from offsite sources may reduce the requirements for mitigation of expansive soil conditions.

4.4 Settlement and Settlement Monitoring

Settlement of the underlying alluvial materials is likely to occur at the subject site due to anticipated building and fill loading, the extent of which is unknown at this time. Once the thickness of planned fill and the magnitude of the foundation loads are known, the extend of anticipated settlement can be determined.

In order to reduce potential settlements beneath the proposed buildings, removals deeper than the upper 4 feet may be necessary, or a combination of a minimum fill blanket and a monitored fill surcharge should be employed. The time duration of surcharging could be on the order of 6 to 12 months. Special foundations may be considered as an alternative once the magnitude of potential settlement is determined.

4.5 Seismic Design Parameters

Based on the site conditions, the 1997 UBC seismic parameters for the subject site are as follows:

• Seismic Zone from Figure 1.62	4
• Soil Profile Type from Table 16-Jun-00	S_D
• Seismic Source Type from Table 16-U	B
• Closest distance to known seismic source	6.5 miles
• Closest known seismic source	Newport-Inglewood Offshore

Seismic design should specifically comply with State of California requirements stated in Section 2.4

4.6 Landslide Mitigation

In order to provide adequate stability for the landslide to the west of the subject site, a substantial buttress may be necessary. A buttress on the order of 60 feet deep by 100 feet wide may be necessary along the westerly side of the site, with a backcut extending offsite to the west. Final buttress design will require additional borings, laboratory testing, and slope stability analysis. Alternatively, a structural setback away from the existing landslides may be feasible.

4.7 Oso Creek Bank Erosion

Because the rate of erosion and active slumping appears to be relatively high in the Oso Creek channel, a significant project setback should be anticipated for structural improvements.

Alternatively, channel improvements could be conducted to mitigate the unstable bank conditions. If this option is selected, the setback could be significantly reduced.

4.8 Groundwater

Existing groundwater is located at a depth of 5 to 25 feet below the existing site grades within the proposed building area; and may impact the proposed development. The extent of the impact should be assessed upon further investigation and review of the site grading and construction plans.

4.9 Additional Geotechnical Investigation and Review

The following additional geotechnical investigation and review should be conducted once preliminary and/or precise grading plans become complete and prior to grading of the subject site:

- Review of preliminary and site grading and construction plans.
- Review of any additional collected data and reports by other consultants.
- Additional subsurface exploration to determine lateral limits and depths of existing landslides.
- Collection of additional soil samples within the proposed building area.
- Laboratory testing of soil samples for consolidation, direct shear, expansion potential, soluble sulfate, soil corrosivity, and R-value testing.
- Slope stability analysis based on additional collected data and laboratory testing.
- Settlement analysis based on design fill thickness and building foundation loads.
- Evaluation of creek bank stability to establish the minimum structural setback.
- Investigation of subsurface conditions for design of the future bridge alignment.
- Recommendations for foundations and slabs-on-grade.

APPENDIX A

APPENDIX A

REFERENCES

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_______, 1984b, Evaluation of Large Postulated Landslides West of Bathgate Ranch, San Juan Capistrano, California, Project No. S2262A, dated July 6, 1984.

NMG Geotechnical, Inc., 2001, Summary of Geotechnical Conditions, Proposed Middle School Site, Rancho Capistrano, San Juan Capistrano, California, dated August 27, 2001.

APPENDIX B

Boring No. B- 1

DATE STARTED: 7/31/01 DATE ENDED: 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

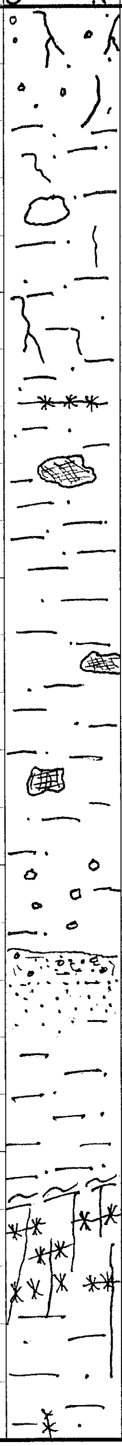
GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

DESCRIPTION

Logged By: KV/WG

Sampled By: KV

Graphic Log: S N



Elevation (ft.)	Depth (ft.)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	Description	Dry Density (pcf)	Moisture Content (%)	Remarks
						Colluvium (Qcol) Surface: Brown clayey silty fine to medium SAND, dry, loose to 3", abundant roots.			
						@ 2' Dark brown clayey fine to medium SAND, moist, porous, roots.			
						Landslide Materials (Qls) @ 3' Brown, yellow brown, and gray brown fine sandy SILT, moist, caliche nodules and stringers, FeO stain. @ 3.4'-3.8' Krotovina			
	5					@ 5' Clayey SILT, moist, firm, caliche pods and stringers, roots.			
						@ 7' Scattered gypsum.			
						@ 8' Concretion on west wall, MnO-stained fractures.			
						@ 9' Color changes to light gray, very moist, increase in clay.			
280	10		D-1	Push		@ 10' SAMPLE: Brown, yellow brown, and gray brown slightly clayey SILT, very moist, trace charcoal, caliche stringers, massive, scattered FeO stain, slightly plastic.	98.5	27.6	
						@ 11.5' Concretion			
						@ 12' Light brown gray clayey SILT, caliche stringers.			
						@ 13.5' Concretion			
	15					@ 15' Trace jarosite staining, scattered subangular to subrounded concretionary 1" pebbles.			
			SB-2			@ 16.5' Dark brown colluvial lens			
						@ 17.1' Mottled light gray and white fine sand with carbon fragments at base of colluvial lens, fades by 18 ft.			
270	20		D-2	Push		@ 20' SAMPLE: Gray silty CLAY/clayey SILT, very moist, massive, plastic, FeO and jarosite staining along joints/fractures.	92.3	31.5	
		RS: N80E 8SE				@ 21' Rupture surface. Yellow sand stringers and FeO-stained joints from below 21 ft. terminate at surface. Material above not coherent.			
						Capistrano Formation (Tc) @ 23' Patches of unoxidized material.			
						@ 24' Transitions into dark gray to black unoxidized clayey SILTSTONE, moist, stiff, massive, micaceous, weathered			
	25								

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Boring No. B- 1

DATE STARTED: 7/31/01 **DATE ENDED:** 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Elevation (ft.)	Depth (ft.)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION Logged By: KV/WG Sampled By: KV	Dry Density (pcf)	Moisture Content (%)	Remarks
		J: N15W 85 NE				foraminifera. @ 25' Near vertical fracture filled with gypsum, light gray clay on surface			
						@ 29' Oval-shaped 5" concretion.			
260	30		D-3	8		@ 30' SAMPLE: Green black unoxidized clayey SILTSTONE, massive, micaceous, some partings, weathered foraminifera.	95.2	26.5	
		J: N85W 82 SW							
		SH: N15E 31SE				@ 32' Shear surface. Below is massive, stiff, slightly clayey SILTSTONE.			
	35								
250	40		D-4	11		@ 40' SAMPLE: Same as at 30 ft.	95.1	27.7	
	45								
						@ 48.5' Occasional sand stringers.			
240	50								

Graphic Log: S N

Boring No. B- 1

DATE STARTED: 7/31/01 DATE ENDED: 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

DESCRIPTION

Logged By: KV/WG

Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (S N)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	Description	Dry Density (pcf)	Moisture Content (%)	Remarks
				D-5	13		@ 50' SAMPLE: Dark green black unoxidized SILTSTONE, massive, micaceous, weathered foraminifera, strongly odoriferous.	98.3	26.4	
	55						@ 54.5' Concretion.			
230	60			D-6	41		@ 60' SAMPLE: Same as at 50 ft. @ 60.4' Concretion.	97.5	26.3	
	65						@ 66.5' Slightly sandy.			
							@ 68.5' Phosphatic nodule.			
220	70			D-7	22		@ 70' SAMPLE: Same as at 60 ft.	95.4	27.5	
							@ 73.7' Pocket of sandy siltstone.			
	75									

Boring No. B- 1

DATE STARTED: 7/31/01 **DATE ENDED:** 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

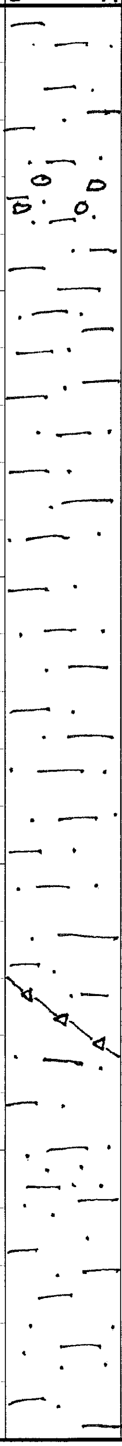
GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

DESCRIPTION

Logged By: KV/WG

Sampled By: KV

Graphic Log: S N



Elevation (ft.)	Depth (ft.)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	Description	Dry Density (pcf)	Moisture Content (%)	Remarks
						@ 78.5' Subrounded cobbles, 3" to 5".			
210	80								
			D-8	44		@ 80' SAMPLE: Dark green black unoxidized SILTSTONE, moist, hard, micaceous, massive, strongly odoriferous, weathered foraminifera.	97.4	26.4	
						@ 82' Increase in clay content.			
	85								
						@ 89' Slightly sandy.			
200	90								
			D-9	68/9"		@ 90' SAMPLE: Same as at 80 ft.	94.2	28.0	
		CS: N15W 38NE				@ 92' Planar surface with paper-thin clay, no disturbance above or below, not visible on down-dip side of boring.			
	95								
						@ 96' Slightly sandy.			
						@ 98' Slightly sandy.			
190	100								

Boring No. B- 1

DATE STARTED: 7/31/01 **DATE ENDED:** 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

DESCRIPTION

Logged By: KV/WG

Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (S N)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	Description	Dry Density (pcf)	Moisture Content (%)	Remarks
				D-10	69/10"		@ 100' SAMPLE: Same as at 90 ft., trace of oxidized fish scales.	90.5	32.0	
	105						@ 105' Black unoxidized SILTSTONE, damp to moist, hard, micaceous, massive, weathered foraminifera.			
180	110									
	115			D-11 SB-1	36/9"		@ 115' SAMPLE: Same as at 105 ft. Upper rings contain gray green SILTSTONE, dry, caliche-lined joints/fractures, high-angle contact in rings. @ 115.3' Phosphatic nodule.	97.0	26.8	
170	120						@ 120.1' Phosphatic nodule and sand stringers.			
	125									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Boring No. B- 1

DATE STARTED: 7/31/01 **DATE ENDED:** 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

DESCRIPTION

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (S N)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	Description	Dry Density (pcf)	Moisture Content (%)	Remarks
160	130			D-12	31/9"		@ 130' SAMPLE: Same as at 115 ft.	94.5	29.0	
	135									
							@ 139' Slightly polished surface around concretion, slight seep.			
150	140									
							@ 142.8' Concretion, 4" to 6", slight seep.			
	145			D-13	40/8"		@ 145' SAMPLE: Black unoxidized SILTSTONE, damp to moist, hard, micaceous, massive, weathered foraminifera.	99.7	25.3	
							Logged to 148 on 8-2-01, resumed drilling. Resumed downhole logging on 8-3-01.			
140	150									

Boring No. B- 1

DATE STARTED: 7/31/01 **DATE ENDED:** 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

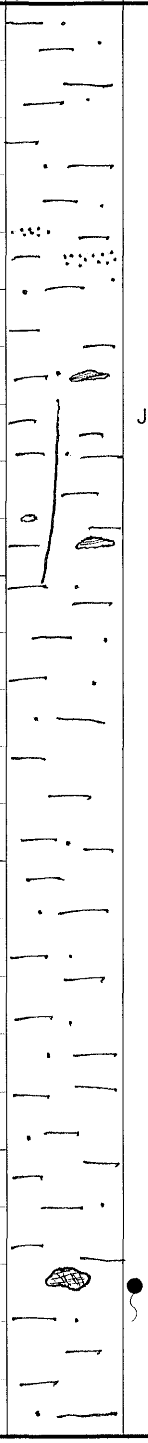
GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

DESCRIPTION

Logged By: KV/WG

Sampled By: KV

Graphic Log: S N



Elevation (ft.)	Depth (ft.)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	Description	Dry Density (pcf)	Moisture Content (%)	Remarks
						@ 154' Discontinuous light gray sand lenses.			
	155								
						@ 156.5' Coprolite; 3" long, 1/2" wide.			
		J: N30W 85SW				@ 157' Driller began using Crowds.			
						@ 159'-160' Coprolite; 1"-3" diameter.			
130	160		D-14	35/8"		@ 160' SAMPLE: Dark green black unoxidized clayey SILTSTONE, damp to moist, hard, massive, micaceous, weathered foraminifera, trace MnO stain.	93.5	29.7	
	165								
120	170								
						@ 172.5' Small oval-shaped concretion, slight seepage.			
	175								

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/5/01

Boring No. B- 1

DATE STARTED: 7/31/01 DATE ENDED: 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Elevation (ft.)	Depth (ft.)	Graphic Log W E	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION Logged By: KV/WG Sampled By: KV	Dry Density (pcf)	Moisture Content (%)	Remarks
	205						NOTES Total Depth 202 ft. Downhole Logged to 201 ft. Groundwater Not Encountered Seepage Encountered at 138', 143', 172.5', and 184' Backfilled with Cuttings and Tamped from 110'- surface Drive Weights: 0-28'/5952, 28-55'/3921, 55-84'/2531, 84-110/1407, 110-168'/1600, 168-195'/2200, 195-215'/2500			
80	210									
	215									
70	220									
	225									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Boring No. B- 2

DATE STARTED: 8/6/01 **DATE ENDED:** 8/8/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) 0-28'/5952, 28-55'/3921, 55-84'/2531

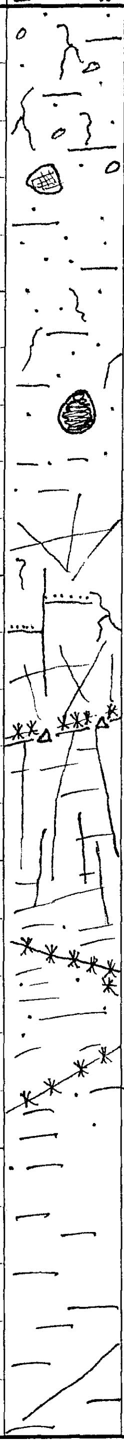
GROUND SURFACE ELEVATION: 287 ft
DATUM: MSL
LOCATION:
COORD/STATION:

DESCRIPTION

Logged By: KV/WG

Sampled By: KV/WG

Graphic Log: E W



Elevation (ft.)	Depth (ft.)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	Description	Dry Density (pcf)	Moisture Content (%)	Remarks
						Colluvium (Qcol) Surface: Brown silty fine to medium SAND, dry, loose to 3", scattered small cobbles. @ 1' Light brown to brown silty fine to medium SAND, moist, medium dense, abundant caliche.			
						@ 3' Krotovina			
	5		D-1	Push 1/6"		**Landslide Materials (Qls)** @ 4.5' Transitions into weathered bedrock. @ 5' SAMPLE: Yellow brown to dark yellow brown clayey silty fine to medium SAND, moist, slightly micaceous, abundant caliche stringers, porous, roots to 1/8", abundant FeO mottling.	101.4	15.8	
280						@ 7' Large Krotovina intersected by boring.			
			B-1						
	10	J: N24E 68NW	D-2	Push		@ 10' SAMPLE: Gray to gray brown slightly clayey SILT, moist, medium stiff to stiff, micaceous, FeO-lined joints/fractures, massive, root hairs, jarosite staining. Downhole: Sandstone bedding fragment cut off by near vertical joint.	95.6	25.3	
		RS: N80E 6SE				@ 12.6' Planar rupture surface, highlighted by gypsum; fractures below terminate at rupture surface. **Capistrano Formation (Tc)**			
	15		D-3	Push		@ 15' SAMPLE: Gray to gray brown slightly clayey SILTSTONE, gypsum, near vertical FeO-stained joint/fracture. @ 16' Color banding above jarosite-stained polished joint surfaces.	99.7	26.1	
270		J: N3W 22SW							
						@ 18' Abundant FeO stain; scattered gypsum; increase in clay, color change to dark. @ 18.5' Gypsum-lined joint.			
	20		D-4	3		@ 20' SAMPLE: Dark green black unoxidized clayey SILTSTONE, damp to moist, very stiff, micaceous, massive.	97.7	25.9	
		J: N9E 40-50SE				@ 22' Odoriferous.			
		J: N7E 35SE				@ 23.7' Very tight, planar joint.			
	25								

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Boring No. B- 2

DATE STARTED: 8/6/01 DATE ENDED: 8/8/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) 0-28'/5952, 28-55'/3921, 55-84'/2531

GROUND SURFACE ELEVATION: 287 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Graphic Log: E W

Elevation (ft.)	Depth (ft.)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
			D-5	3		@ 25' SAMPLE: Same as at 20 ft., weathered foraminifera.	97.1	26.3	
260									
	30		D-6	7		@ 30' SAMPLE: Same as at 25 ft.	98.0	26.2	
	35					@ 35.3' Thin wispy sand lenses; bedding is subhorizontal.			
250									
	40		D-7	8		@ 40' SAMPLE: Dark green black clayey unoxidized SILTSTONE, moist, hard, massive, micaceous, weathered foraminifera, strongly odoriferous.	99.5	24.7	
	45								
240						@ 46.3' Cemented material begins on north wall, no cemented material on south wall. Concentric joints on outside of concretion.			
		J: N20W 80SW				@ 48.7' Joint on west wall.			
	50								

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Boring No. B- 2

DATE STARTED: 8/6/01 **DATE ENDED:** 8/8/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) 0-28'/5952, 28-55'/3921, 55-84'/2531

GROUND SURFACE ELEVATION: 287 ft
DATUM: MSL
LOCATION:
COORD/STATION:

DESCRIPTION
Logged By: KV/WG
Sampled By: KV/WG

Elevation (ft.)	Depth (ft.)	Graphic Log	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	Description	Dry Density (pcf)	Moisture Content (%)	Remarks
		E W	J: N80W 70NE	D-8	9		@ 50' SAMPLE: Same as at 40 ft. Downhole: Joint on east wall. Water entering boring from around concretion. @ 51.2' Groundwater. End of logging.	94.8	28.4	
							@ 53' Coring to 58.5'.			
	55									
230										
	60									
	65						NOTES Total Depth 58.5 ft. Boring Terminated Due to Concretion Groundwater at 51.2' after 24 hours Downhole Logged to 51 ft. Backfilled and Tamped			
220										
	70									
	75									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Boring No. B- 3

DATE STARTED: 8/8/01 DATE ENDED: 8/9/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 292 ft
DATUM: MSL
LOCATION:
COORD/STATION:

DESCRIPTION

Logged By: KV/WG

Sampled By: KV

Graphic Log: W E

Elevation (ft.)	Depth (ft.)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	Description	Dry Density (pcf)	Moisture Content (%)	Remarks
						Colluvium (Qcol) Surface: Brown silty fine to medium SAND, dry, loose to 2", scattered cobbles. @ 1' Carbonate silt-lined pores; cobble.			
290									
	5		D-1	Push		@ 5' SAMPLE: Dark gray brown silty fine to medium SAND, dry to damp, pinhole porous, caliche stringers, abundant root hairs.	98.4	9.9	
						@ 8' Increase in moisture; color change to light gray brown to brown.			
	10		D-2	1		@ 10' SAMPLE: Yellow brown silty fine SAND, damp, porous, rootlets, minor caliche, 1" subangular siltstone fragments, abundant FeO stain. @ 11' Yellow brown silty fine SAND, moist, mottled with gray silty fine SAND and brown soil-like material, pinhole porous, FeO stain, caliche stringers.	98.4	10.3	
280									
						@ 14' Subrounded cobbles.			
	15		D-3	2		**Landslide/Terrace (?) Deposits (Qls/Qt?)** @ 14.8' Subhorizontal contact between Colluvium and Terrace Deposits. @ 15' SAMPLE: Gray brown silty fine SAND, damp to moist, pinhole porous, caliche stringers, sparse FeO stain, trace charcoal flecks. @ 15.5' Krotovina zone to 16'. @ 17' Increase in silt.	99.6	9.6	
			SB-1			@ 19' Increase in sand.			
	20	B: N28E 10SE	D-4	1		@ 20' SAMPLE: Gray brown to yellow brown silty fine SAND and fine sandy SILT, damp to moist, pinhole porous, trace caliche stringers, charcoal flecks. Downhole: Fine angular fragments of siltstone and organics lined with carbonate silt, mottled. Attitude on 1/2" white sandy layer.	100.4	9.3	
270									
						@ 24' Increase in clay, roots, and pores lined with carbonate silt.			
	25								

Boring No. B- 3

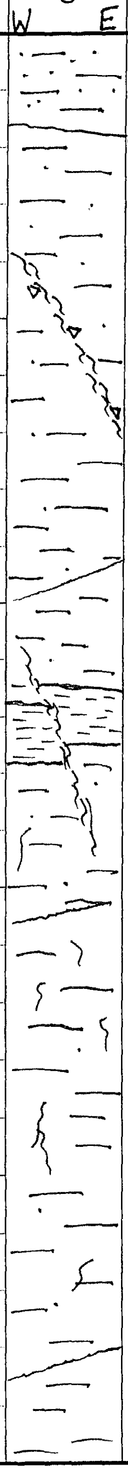
DATE STARTED: 8/8/01 **DATE ENDED:** 8/9/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 292 ft
DATUM: MSL
LOCATION:
COORD/STATION:

DESCRIPTION

Logged By: KV/WG

Sampled By: KV



Elevation (ft.)	Depth (ft.)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	Description	Dry Density (pcf)	Moisture Content (%)	Remarks
			D-5	3		@ 25' SAMPLE: Mottled dark gray brown, brown, and yellow brown, silty fine SAND, moist, very porous, roots, slightly clayey, sparse FeO stain and caliche.	107.6	15.6	
		C/B: N65W 7NE				@ 26.7' Contact between dark gray brown slightly clayey SILT above and medium gray brown below. Transitions to light gray brown and clayeyer below.			
		RS: N38E 53SE				@ 28.9' Rupture surface.			
	30		D-6	4		@ 30' SAMPLE: Mottled as above, silty to clayey fine SAND, moist, porous, sparse FeO stain and caliche.	107.9	18.0	
260		B: N50E 45SE				**Terrace Deposits (Qt)**			
	35	B: N20E 15NW				@ 34.6' Contact with light brown clayey SILT and dark silty CLAY.			
						@ 36.7' Soil horizon: dark brown silty CLAY, moist, plastic, caliche stringers, trace charcoal.			
		SH: N10E 40SE				@ 37.8' Base of soil horizon reverse offset 3.5"-4"; shear surface along offset; lose shear surface at 38.4'.			
	40		D-7	Push		@ 40' SAMPLE: Olive gray silty CLAY, very moist, plastic, abundant charcoal, slightly mottled. @ 40.6' Thin organic layer, discontinuous; dip direction N20W	102.1	23.2	
250						@ 41.5' Abundant carbonate silt to 41.8', fine roots, porous.			
						@ 44' Mottled brown gray, FeO stain, brown organic material lining pores.			
	45								
						@ 48.6' Organic horizon; dip is approximately 15NW			
	50								

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 8/20/01

NMG Geotechnical, Inc.

Boring No. B- 3

DATE STARTED: 8/8/01 **DATE ENDED:** 8/9/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

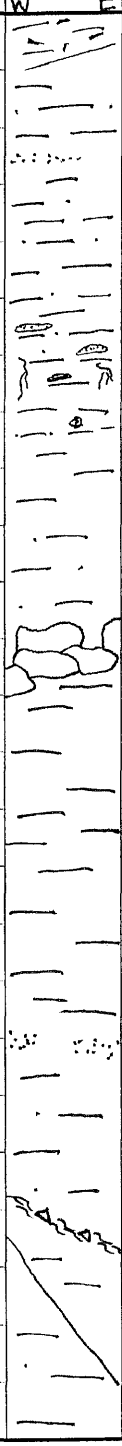
GROUND SURFACE ELEVATION: 292 ft
DATUM: MSL
LOCATION:
COORD/STATION:

DESCRIPTION

Logged By: KV/WG

Sampled By: KV

Graphic Log (W E):



Elevation (ft.)	Depth (ft.)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	Description	Dry Density (pcf)	Moisture Content (%)	Remarks
			D-8	1		@ 50' SAMPLE: Dark gray CLAY, very moist, medium stiff, abundant FeO and MnO stain, plastic, caliche. @ 50.3' Thin organic horizons, dipping northwest, carbon chips; below is medium gray clay.	95.7	28.5	
240						@ 52' Interbedded gray green SILT and dark gray to olive brown CLAYS, abundant caliche stringers and FeO stain, very plastic. @ 52.5' Discontinuous white SAND, 1/4" thick, west wall.			
	55								
			SB-2			@ 56' Green black to black unoxidized silty CLAY/clayey SILT, very moist, medium stiff, plastic, micaceous, trace organics (roots), light brown siltstone and sandstone fragments, strongly odoriferous, carbon chips.			
	60		D-9	1		@ 60' SAMPLE: Dark green gray to green black unoxidized clayey SILT, moist, slightly plastic, micaceous, trace organics, MnO stain. @ 60.6'-62' Pods and irregularly-shaped light yellow brown concretions.	88.7	33.5	
230									
	65								
						@ 67' Color changes to dark gray.			
						@ 68.2' White sandy zone, discontinuous.			
	70		D-10	1		@ 70' SAMPLE: Same as at 60 ft.	91.6	31.0	
220		RS: N5E 26SE J: N-S 39E	SB-3			@ 71.5' Rupture surface: planar surface at base of light gray CLAY, very plastic, possible striations down-dip. **Capistrano Formation (Tc)** @ 72' Low angle joint.			
	75								

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 8/20/01

Boring No. B- 3

DATE STARTED: 8/8/01 **DATE ENDED:** 8/9/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 292 ft
DATUM: MSL
LOCATION:
COORD/STATION:

DESCRIPTION

Logged By: KV/WG

Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (W E)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	Description	Dry Density (pcf)	Moisture Content (%)	Remarks
							@ 75' Material changes to hard clayey SILTSTONE.			
	80			D-11	28		@ 80' SAMPLE: Dark green black slightly clayey unoxidized SILTSTONE, damp to moist, hard, massive, micaceous, weathered foraminifera. @ 80.8' Discontinuous sand lenses.	96.8	27.1	
210										
							@ 83.8' Planar partings.			
	85									
	90			D-12	50		@ 90' SAMPLE: Same as at 80 ft.	92.3	29.7	
200										
	95									
							@ 99-101' Concretion, west and south walls, seepage at base.			
	100									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Boring No. B- 3

DATE STARTED: 8/8/01 **DATE ENDED:** 8/9/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 292 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
		W E								
				D-13	48		@ 101' SAMPLE: Same as at 90 ft., coprolite.	92.7	29.9	
190										
	105									
				D-14	43		@ 107.5' SAMPLE: Same as at 101 ft.	91.0	30.9	
	110									
180										
							@ 112.5' Concretion, slight seepage.			
	115			D-15	66		@ 115' SAMPLE: Same as at 107.5 ft.	97.0	26.4	
	120									
170										
				D-16	53		@ 123' SAMPLE: Same as at 115 ft.	100.8	24.1	
	125									

Boring No. B- 3

DATE STARTED: 8/8/01 DATE ENDED: 8/9/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 292 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Elevation (ft.)	Depth (ft.)	Graphic Log W E	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION Logged By: KV/WG Sampled By: KV	Dry Density (pcf)	Moisture Content (%)	Remarks
	130						NOTES Total Depth 127 ft. Groundwater Not Encountered Seepage Encountered at 101.5 ft. and 112 ft. Downhole Logged to 126 ft. Backfilled and Tamped 0-110 ft. Drive Weights: 0-28'/5952, 28-55'/3921, 55-84'/2531, 84-110/1407, 110-168'/1600			
160										
	135									
	140									
150										
	145									
	150									

Date(s) Drilled	5/30/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	6 feet		
Comments			

H- 1

Total Depth Drilled (ft)	95.5
Approximate Ground Surface Elevation (ft)	205.0 MSL

Elevation (ft)	Depth (ft)	SAMPLES Type	Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0					ML	**Alluvium (Qal)** @ 0' Yellowish brown silty fine SAND/fine sandy SILT, damp.			
200	5		D-1	9			@ 5' Mottled grayish brown and dark grayish brown clayey SILT, moist, medium stiff, occasional root hairs, plastic, occasional charcoal, sandy silt in upper rings.	24.5	93.9	
	10		D-2	5			@ 10' Dark grayish brown to brown clayey SILT, wet, soft, abundant caliche stringers, plastic; dark gray and grayish brown clay in tip.	31.3	90.5	
190	15		D-3	12		CL	@ 15' Dark grayish brown silty CLAY, moist, medium stiff to stiff, slightly to moderately porous, abundant caliche, plastic; sandy clay in tip.	29.7	93.0	
	20		D-4	13			@ 20' Dark grayish brown silty CLAY, moist, medium stiff, moderately porous, abundant caliche/gypsum, plastic.	27.2	98.2	
180	25		D-5	13		CL/ML	@ 25' Dark grayish brown silty CLAY/clayey SILT, moist, medium stiff, no visible porosity, abundant caliche veins/stringers, very plastic.	25.0	98.3	
	30									

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Date(s) Drilled	5/30/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	6 feet		
Comments			

H- 1

Total Depth Drilled (ft)	95.5
Approximate Ground Surface Elevation (ft)	205.0 MSL

Elevation (ft)	Depth (ft)	SAMPLES Type	Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0					ML	**Alluvium (Qal)** @ 0' Yellowish brown silty fine SAND/fine sandy SILT, damp.			
200	5	■	D-1	9			@ 5' Mottled grayish brown and dark grayish brown clayey SILT, moist, medium stiff, occasional root hairs, plastic, occasional charcoal, sandy silt in upper rings.	24.5	93.9	
	10	■	D-2	5			@ 10' Dark grayish brown to brown clayey SILT, wet, soft, abundant caliche stringers, plastic; dark gray and grayish brown clay in tip.	31.3	90.5	
190	15	■	D-3	12		CL	@ 15' Dark grayish brown silty CLAY, moist, medium stiff to stiff, slightly to moderately porous, abundant caliche, plastic; sandy clay in tip.	29.7	93.0	
	20	■	D-4	13			@ 20' Dark grayish brown silty CLAY, moist, medium stiff, moderately porous, abundant caliche/gypsum, plastic.	27.2	98.2	
180	25	■	D-5	13		CL/ML	@ 25' Dark grayish brown silty CLAY/clayey SILT, moist, medium stiff, no visible porosity, abundant caliche veins/stringers, very plastic.	25.0	98.3	
	30									

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Elevation (ft)	Depth (ft)	SAMPLES Type	Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	30		D-6	9		ML/CL	@ 30' Dark grayish brown clayey SILT/silty CLAY, moist, medium stiff, very plastic; very pale brown sandy silt in tip.	29.2	95.8	
170	35		D-7	14		ML	@ 35' Light brownish gray slightly clayey fine sandy SILT, very moist, stiff; dark gray silty clay/clayey silt in upper rings.	25.0	100.3	
	40		SB-1 D-8	12			@ 40' Top: Dark olive gray clayey SILT, very moist, medium stiff, very plastic, scattered organic fragments. Tip: Olive gray fine sandy SILT, very moist, medium stiff.	30.5	96.0	SB-1 @ 40'
160	45		D-9	13		CL	@ 45' Olive gray silty CLAY, moist, medium stiff, plastic, some FeO mottling.	29.3	95.7	GS, AL
	50		D-10	14		CH	@ 50' Dark olive gray silty CLAY, very moist, stiff, plastic, some FeO mottling, occasion gypsum crystals.	29.9	93.3	GS, AL
150	55		D-11	13			@ 55' Olive gray silty CLAY, very moist, stiff; dark gray clay with rock fragments and FeO mottling in tip.	28.1	95.2	
	60		D-12	17		CL	@ 60' Olive gray CLAY, very moist, stiff.	30.9	93.6	GS, AL
140	65									

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Elevation (ft)	Depth (ft)	SAMPLES Type	Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
140	65		D-13	16		ML	@ 65' Olive gray clayey SILT, very moist, stiff, scattered pale yellow bedrock fragments, slightly micaceous.	26.5	99.3	
	70		D-14	15			@ 70' Olive gray clayey SILT, very moist, stiff, slightly micaceous, occasional FeO-stained pockets.	30.6	93.1	
130	75		D-15	15		ML/CL	@ 75' Olive gray clayey SILT/silty CLAY, very moist, stiff, abundant siltstone fragments, occasional oxidized root fragment, fine sandy layer (1/8") in tip.	34.5	88.3	
	80		D-16	74		CL	@ 80' Top: Olive gray coarse sandy CLAY, saturated, soft.	22.5	105.4	
			SB-2			SP	Tip: Light brownish gray medium to coarse SAND with clay lenses, wet, dense. Note: Spacer broken in sampler.			SB-2 @ 81.5'
120	85		D-17	25		CL	@ 85' Top: Grayish brown coarse sandy CLAY, saturated, soft.	19.5	109.3	
						SC	Tip: Dark gray and brown clayey coarse SAND with pebbles, moist, medium dense.			
	90		D-18	38		SLST	**Capistrano Formation (Tc)** @ 90' Dark olive gray to black clayey SILTSTONE, moist, very stiff, weathered foraminifera and fish scales, strong petroliferous odor; clayey coarse sand with pebbles in upper rings.	38.6	84.8	
110	95		D-19	50/6"			@ 95' Same as at 90 ft., very stiff.	29.7	93.4	
							NOTES Total Depth 95.5 ft. Groundwater Encountered at 6 ft. Bedrock (Tc) Encountered at Approximately 90.5 ft. Backfilled with Cuttings			
	100									

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Date(s) Drilled	5/30/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	12 feet		
Comments			

H- 2

Sheet 1 of 3

Total Depth Drilled (ft)	71.5
Approximate Ground Surface Elevation (ft)	208.0 MSL

Elevation (ft)	Depth (ft)	Sample Type	Sample Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0					ML	**Alluvium (Qal)**			
	5	■	D-1	7			@ 5' Dark grayish brown to olive brown slightly clayey SILT, moist, medium stiff, slightly porous, occasional roots, scattered caliche.	25.0	95.1	
200										
	10	■	D-2	8			@ 10' Dark grayish brown slighty clayey SILT, very moist, medium stiff, trace porosity	26.9	98.4	GS, AL
	15	■	D-3	8			@ 15' Same as at 10 ft., slightly porous.	26.4	98.0	GS, AL
190										
	20	■	D-4	13		CL	@ 20' Dark grayish brown silty CLAY, very moist, medium stiff, very plastic, abundant caliche.	28.7	95.1	
	25	■	D-5	11			@ 25' Same as at 20 ft., olive gray.	30.9	93.5	
180										
	30									

Elevation (ft)	Depth (ft)	SAMPLES Type	Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	30		D-6	10		ML	@ 30' Olive gray clayey SILT, very moist, medium stiff, abundant caliche, plastic.	27.8	96.4	
	35		D-7	13		CL CL/ML	@ 35' Top: Olive gray medium to coarse sandy CLAY, very moist, stiff, FeO mottling, gray silt in upper rings. Tip: Grayish brown silty CLAY/clayey SILT, very moist, medium stiff, occasional silt pockets.	26.2	98.0	
170										
	40		D-8	10		ML CH	@ 40' Top: Olive gray clayey SILT, very moist, medium stiff, plastic, FeO mottling. Tip: Very dark gray silty CLAY, very moist, medium stiff, very plastic, scattered caliche.	28.4	96.1	GS, AL
	45		D-9	13		CL/ML CL	@ 45' Top: Dark olive gray silty CLAY/clayey SILT, very moist, medium stiff, scattered caliche, FeO mottling. Tip: Dark olive gray silty CLAY, very moist, medium stiff, very plastic, abundant caliche.	25.5	99.4	GS, AL
160										
	50		D-10	19			@ 50' Very dark gray CLAY, moist, medium stiff to stiff, scattered caliche, sparse rounded pebbles.	21.5	106.4	
	55		D-11	22		ML	@ 55' Dark gray clayey SILT, very moist, medium stiff to stiff, FeO mottling, micaceous, sparse caliche.	25.4	99.8	
150										
	60		D-12	23			@ 60' Dark olive gray clayey SILT, moist, stiff, abundant FeO mottling, micaceous, sub-vertical gypsum/caliche-lined fractures, possible weathered bedrock.	30.3	92.8	
	65									

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Elevation (ft)	Depth (ft)	Samples Type	Samples Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	65		D-13	20		ML/CL	@ 65' Dark olive gray silty CLAY/clayey SILT, moist, stiff, abundant MnO-stained joints/fractures, micaceous.	37.3	86.9	
140										
	70		SB-1 D-14 SB-2	33		ML SM	@ 70' Top: Olive gray fine sandy SILT, moist, stiff, organic-rich silt layer in upper rings. Tip: Dark gray clayey silty fine to medium SAND, moist, medium dense.	24.1	107.4	SB-1 @ 70' SB-2 @ 71.5'
	75						NOTES Total Depth 71.5 ft. Groundwater Encountered at 12.5 ft. Backfilled with Cuttings			
130										
	80									
	85									
120										
	90									
	95									
110										
	100									

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Date(s) Drilled	5/31/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	12 feet		
Comments			

H- 3

Sheet 1 of 4

Total Depth Drilled (ft)	101.5
Approximate Ground Surface Elevation (ft)	205.0 MSL

Elevation (ft)	Depth (ft)	SAMPLES Type	Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0					ML	**Alluvium (Qal)**			
200	5	■	D-1	6		CL	@ 5' Top: Dark grayish brown clayey SILT, very moist, medium stiff, plastic. Tip: Very dark gray silty CLAY, very moist, medium stiff, very plastic, abundant caliche stringers.	30.2	92.6	
	10	■	D-2	8			@ 10' Very dark grayish brown silty CLAY, very moist, medium stiff, very plastic, abundant caliche stringers.	27.1	96.6	
190	15	■	D-3	11			@ 15' Same as at 10 ft.	28.2	95.2	
	20	■	SB-1 D-4	8		ML CL	@ 20' Dark grayish brown CLAY, very moist, medium stiff, scattered caliche, slightly porous, grades dark gray and stiffer in tip; clayey silt in upper rings.	27.6	95.4	SB-1 @ 20'
180	25	■	D-5	9			@ 25' Olive gray CLAY, very moist, medium stiff, scattered caliche.	24.5	100.2	
	30									

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Elevation (ft)	Depth (ft)	SAMPLES Type	Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	30		D-6	9		CL ML	@ 30' Grayish brown clayey SILT, very moist, medium stiff, plastic, slightly micaceous, clay in upper rings.	28.5	95.3	
170	35		D-7	10			@ 35' Same as at 30 ft., wet, very plastic.	29.4	94.8	
	40		SB-2 D-8	12		CL	@ 40' Very dark gray silty CLAY and CLAY, very moist, medium stiff to stiff, scattered charcoal in upper rings; gray silt in upper rings.	36.2	87.7	SB-2 @ 40'
160	45		D-9	10		CL/ML	@ 45' Very dark gray brown silty CLAY/clayey SILT, very moist, medium stiff.	26.9	98.2	
	50		D-10	13		CL	@ 50' Dark grayish brown CLAY, very moist, stiff.	31.2	94.7	
150	55		D-11	15		ML	@ 55' Dark grayish brown clayey SILT, very moist, stiff, micaceous.	25.6	102.3	
	60		SB-3 D-12 SB-4	13		CL ML	@ 60' Top: Grayish brown slightly clayey SILT, very moist, stiff, micaceous; sandy silt with charcoal in upper rings. Tip: Very dark grayish brown silty CLAY, very moist, stiff, plastic; fine sandy silt in tip of sampler.	28.0	94.8	SB-3 @ 60' SB-4 @ 61.5'
140	65									

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Elevation (ft)	Depth (ft)	SAMPLES Type Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
140	65	SB-5 D-13	70		SM	@ 65' Grayish brown silty fine SAND, very moist, dense, micaceous; pale brown fine to medium sand with occasional pebbles in tip.	21.5	108.2	SB-5 @ 65'
	70	SB-6 D-14	30		SC SM	@ 70' Top: Grayish brown slightly clayey medium to very coarse SAND, very moist, medium dense; silty fine to coarse sand in upper rings. Tip: Grayish brown clayey silty fine to medium sand, very moist, medium dense.	14.2	119.1	SB-6 @ 70'
130	75	D-15	43		SC	@ 75' Gray to dark gray clayey medium to very coarse SAND, very moist, dense.	19.0	115.5	
	80	D-16	76		SP	@ 80' Gray to dark gray medium to very coarse SAND with pebbles, wet, very dense; sparse thin clay lenses/pods; clayey sand in upper rings.	10.9	128.6	
120	85	D-17	55/6"		CL	@ 85' Dark gray to dark grayish brown fine to medium sandy CLAY, wet to saturated, medium stiff, abundant pebbles, some cobbles.	19.6	111.6	
	90	D-18	55			@ 90' Dark gray sandy CLAY, wet to saturated, medium stiff, abundant pebbles.	28.1	96.4	
110	95	D-19	33			@ 95' Same as at 90 ft., grayish brown.	34.4	89.0	
	100								

LOG OF BORING
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San Juan Capistrano
PROJECT NO. 01012-02

NMG

Elevation (ft)	Depth (ft)	SAMPLES Type	Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
			D-20	40		SLST	**Capistrano Formation (Tc)** @ 100' Very dark gray to very dark grayish brown SILTSTONE, moist, very stiff, weathered foraminifera, micaceous, petroliferous odor, massive.	34.5	87.2	
100	105						NOTES Total Depth 101.5 ft. Groundwater Encountered at Approximately 12 ft. Bedrock Encountered at 100 ft. Backfilled with Cuttings			
	110									
90	115									
	120									
80	125									
	130									
70	135									

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Date(s) Drilled	5/31/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	24 feet		
Comments			

H- 4

Total Depth Drilled (ft)	71.5
Approximate Ground Surface Elevation (ft)	203.0 MSL

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0					SM	**Alluvium (Qal)** @ 0' Silty fine SAND with pebbles.			
200			B-1							
	5		SB-1 D-1	6		ML/CL CL	@ 5' Top: Interlayered light gray SILT and grayish brown CLAY, moist, medium stiff, micaceous, abundant organics, siltier in upper rings. Tip: Black CLAY, moist, medium stiff.	34.6	86.9	SB-1 @ 5'
	10		D-2	10			@ 10' Grayish brown silty CLAY, very moist, medium stiff, plastic; tip is dark to very dark gray.	29.1	91.2	
190										
	15		D-3	23			@ 14' Very dark gray CLAY, moist, stiff, occasional pebbles stringers.	22.6	102.9	
	20		SB-2 D-4	10			@ 20' Dark grayish brown CLAY, very moist, medium stiff; silty clay/clayey silt in upper rings.	26.9	97.9	SB-2 @ 20'
180										
	25		D-5	10		SP CL	@ 25' Dark gray to very dark gray CLAY, very moist, medium stiff, scattered caliche; thin sand layer (1") in upper rings.	31.0	93.7	
	30									

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Elevation (ft)	Depth (ft)	SAMPLES Type / Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	30	D-6	6		ML	@ 30' Dark grayish brown clayey SILT, very moist, soft to medium stiff, occasional gypsum, slightly porous.	29.3	94.8	
170									
	35	SB-3 D-7	10		CL ML CL	@ 35' Top: Dark grayish brown SILT, very moist, medium stiff; dark gray clay in upper rings. Tip: Dark gray silty CLAY, very moist, medium stiff.	30.2	90.3	SB-3 @ 35'
	40	SB-4 D-8	14		CL/ML ML	@ 40' Top: Grayish brown silty CLAY/clayey SILT, very moist, medium stiff, plastic, scattered gypsum. Tip: Gray clayey SILT, very moist, medium stiff, plastic.	29.1	96.4	SB-4 @ 40'
160									
	45	D-9	12		CL SM/ML	@ 45' Top: Dark gray CLAY, very moist, medium stiff to stiff; Tip: Gray to dark gray sandy SILT/silty SAND with clay, very moist, medium stiff to stiff/medium dense.	25.7	98.0	
	50	D-10	9			@ 50' No recovery.			
150									
	55	SB-5 & 6 D-11	11		SM ML CL	@ 55' Top: Olive brown clayey SILT, very moist, medium stiff, organic fragments in upper rings, silty sand in uppermost rings, dark gray sandy clay in tip.	28.7	95.1	SB-5&6 @ 55'-56.5'
	60	D-12	24		SC/CL SM ML	@ 60' Top: Very dark grayish brown silty fine SAND, very moist, medium dense; sandy clay/clayey sand in upper rings; Tip: Dark gray sandy SILT, very moist, stiff.	18.6	138.5	
140									
	65								

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Elevation (ft)	Depth (ft)	SAMPLES Type	Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	65		D-13 SB-7	20		ML	@ 65' Grayish brown fine sandy SILT, moist, stiff, scattered organics.	22.3	105.0	SB-7 @ 65.5'
	70		D-14	41		SM/ML SC	@ 70' Dark gray clayey coarse to very coarse SAND with occasional pebbles, wet, dense; dark gray clayey silty fine sand/fine sandy silt.			
130										
	75						NOTES Total Depth 71.5 ft. Groundwater Encountered at 24 ft. Backfilled with Cuttings			
	80									
120										
	85									
	90									
110										
	95									
	100									

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Date(s) Drilled	6/1/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	10.3 feet		
Comments			

H- 5

Total Depth Drilled (ft)	61.5
Approximate Ground Surface Elevation (ft)	208.0 MSL

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0					CL	**Alluvium (Qal)**			
	5		D-1	12			@ 5' Very dark grayish brown silty CLAY, moist, medium stiff to stiff, slightly porous, occasional organics (small charcoals and grass).	24.6	100.5	
200										
	10		D-2	10			@ 10' Dark grayish brown silty CLAY, moist, medium stiff, slightly porous, scattered caliche.	26.5	99.2	
	15		D-3	11			@ 16' Dark grayish brown silty CLAY, very moist, medium stiff, scattered caliche.	26.7	98.4	
190										
	20		D-4	14			@ 20' Dark grayish brown silty CLAY, very moist, stiff, scattered caliche.	25.3	100.3	
	25		D-5	8			@ 25' Brown CLAY, very moist to wet, medium stiff, very plastic.	27.0	96.5	
180										
	30									

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Elevation (ft)	Depth (ft)	SAMPLES Type / Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	30	D-6	12		CL	@ 30' Olive brown to yellowish brown CLAY, moist, medium stiff to stiff, slightly porous, scattered caliche.	26.0	99.0	
	35	D-7	11			@ 35' Very dark gray CLAY, very moist medium stiff.	26.4	98.5	
170									
	40	SB-1 D-8	19		ML CL	@ 40' Top: Light brownish gray and light gray clayey SILT, moist, stiff, organics in upper rings. Tip: Dark grayish brown CLAY, FeO mottling, organics, laminated.	25.4	99.2	SB-1 @ 40'
	45	SB-2 D-9	24			@ 45' Grayish brown CLAY, moist, stiff to very stiff, FeO mottled, abundant organics in upper rings.	23.1	103.3	SB-2 @ 45'
160									
	50	D-10	16		CL	@ 50' Dark grayish brown CLAY, moist, medium stiff to stiff, FeO and jarosite staining, weathered foraminifera, micaceous, gray in upper rings.	38.9	82.6	
	55	D-11	15			@ 55' Same as at 50 ft.	36.4	83.9	
150									
	60	SB-3 D-12	17		ML	@ 60' Olive brown clayey SILT, very moist, stiff, charcoal fragments.	28.2	98.2	SB-3 @ 60'
						NOTES Total Depth 61.5 ft. Groundwater Encountered at 10.3 ft. Backfilled with Cuttings			
	65								

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Date(s) Drilled	6/1/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	17 feet		
Comments			

H- 6

Total Depth Drilled (ft)	71.5
Approximate Ground Surface Elevation (ft)	209.0 MSL

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0		B-1			CL	**Alluvium (Qal)** @ 0' Dark brown silty CLAY, dry, scattered small gravel, dead grass and weeds.			Bag Sample from 0'-5'
	5		D-1	9			@ 5' Very dark grayish brown silty CLAY, wet, medium stiff, plastic, slightly porous, sparse charcoal, root hairs.	28.3	93.0	
200	10		D-2	13			@ 10' Mottled dark grayish brown, very dark brown, and dark yellowish brown silty CLAY, moist, stiff, plastic, slightly porous, caliche veins.	21.8	106.6	
	15		D-3	8			@ 15' Mottled yellowish brown, grayish brown, and dark brown silty CLAY, moist to wet, medium stiff, plastic, sparse caliche nodules, trace pinhole porosity, abundant FeO stain, charcoal.	25.6	99.2	
190	20		D-4	11		ML/CL	@ 20' Mottled grayish brown, dark yellowish brown, and dark brown interlayered SILT and silty CLAY, very moist, medium stiff, FeO stained, clay layers are plastic, FeO stained, scattered charcoal.	25.2	98.9	
	25		D-5	17		ML	@ 25' Mottled olive brown, olive gray, yellowish brown, and brown clayey SILT, very moist, stiff, slightly plastic, FeO stained, caliche stringers and sand-sized nodules.	22.3	106.3	
180	30									

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Elevation (ft)	Depth (ft)	SAMPLES Type	Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	30		D-6	21		CL	@ 30' Olive brown silty CLAY, very moist, stiff, plastic, caliche, charcoal, rock fragments in upper 2 rings.	24.6	101.5	
	35		SB-1 D-7	25		CL/ML	@ 35' Greenish black silty CLAY/clayey SILT, very moist, very stiff, slightly plastic, sparse caliche, moderate charcoal, sparse organics.	23.6	103.8	SB-1 @ 35'
170										
	40		SB-2 D-8	23		ML	@ 40' Greenish black clayey SILT, moist to very moist, very stiff, slightly plastic, sparse caliche nodules, charcoal, sparse organics.	26.6	98.2	SB-2 @ 40'
	45		SB-3 D-9	19		CL	@ 45' Dark greenish gray to greenish black silty CLAY, very moist, stiff, plastic, sparse charcoal, wood fragment; clayey silty in upper rings.	29.0	94.9	SB-3 @ 45'
160										
	50		SB-4 D-10	31		ML	@ 50' Greenish black, grayish green, and black clayey SILT, moist, very stiff, slightly plastic, abundant charcoal, petroliferous (unoxidized), laminated in tip.	28.4	94.4	SB-4 @ 50'
	55		D-11	31		CL	@ 55' Dark greenish gray silty CLAY, moist, very stiff, plastic, charcoal, sparse organics, petroliferous odor, caliche.	24.6	100.1	
150										
	60		D-12	37			@ 60' Same as at 55 ft., very stiff.	25.2	100.0	
	65									

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Elevation (ft)	Depth (ft)	Samples Type	Samples Number	Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	65		SB-5 D-13	36		CL	@ 65' Same as at 60 ft.	29.0	97.3	SB-5 @ 65'
140										
	70		D-14	44		SLST, CLST	**Capistrano Formation (Tc)** @ 70' Dark greenish gray clayey SILTSTONE/silty CLAYSTONE, moist, very stiff to hard, massive, very odoriferous, trace caliche.	26.5	98.6	
	75						NOTES Total Depth 71.5 ft. Groundwater Encountered at 17 ft. Bedrock Encountered at Approximately 70 ft. Backfilled with Cuttings			
130										
	80									
	85									
120										
	90									
	95									
110										
	100									

LOG OF BORING

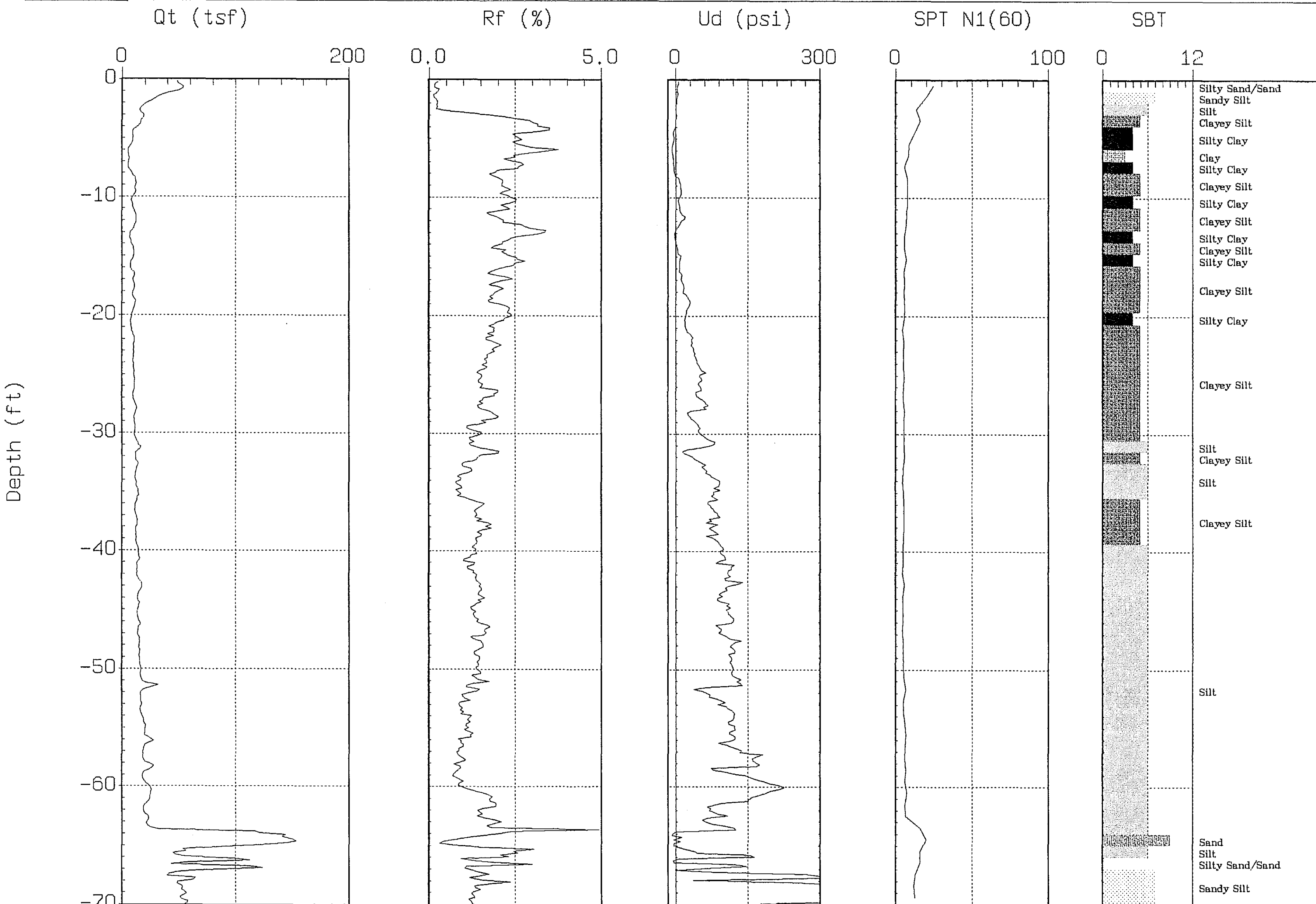
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-1

Engineer : L. GOSSETT
Date : 05:21:01 07:09



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

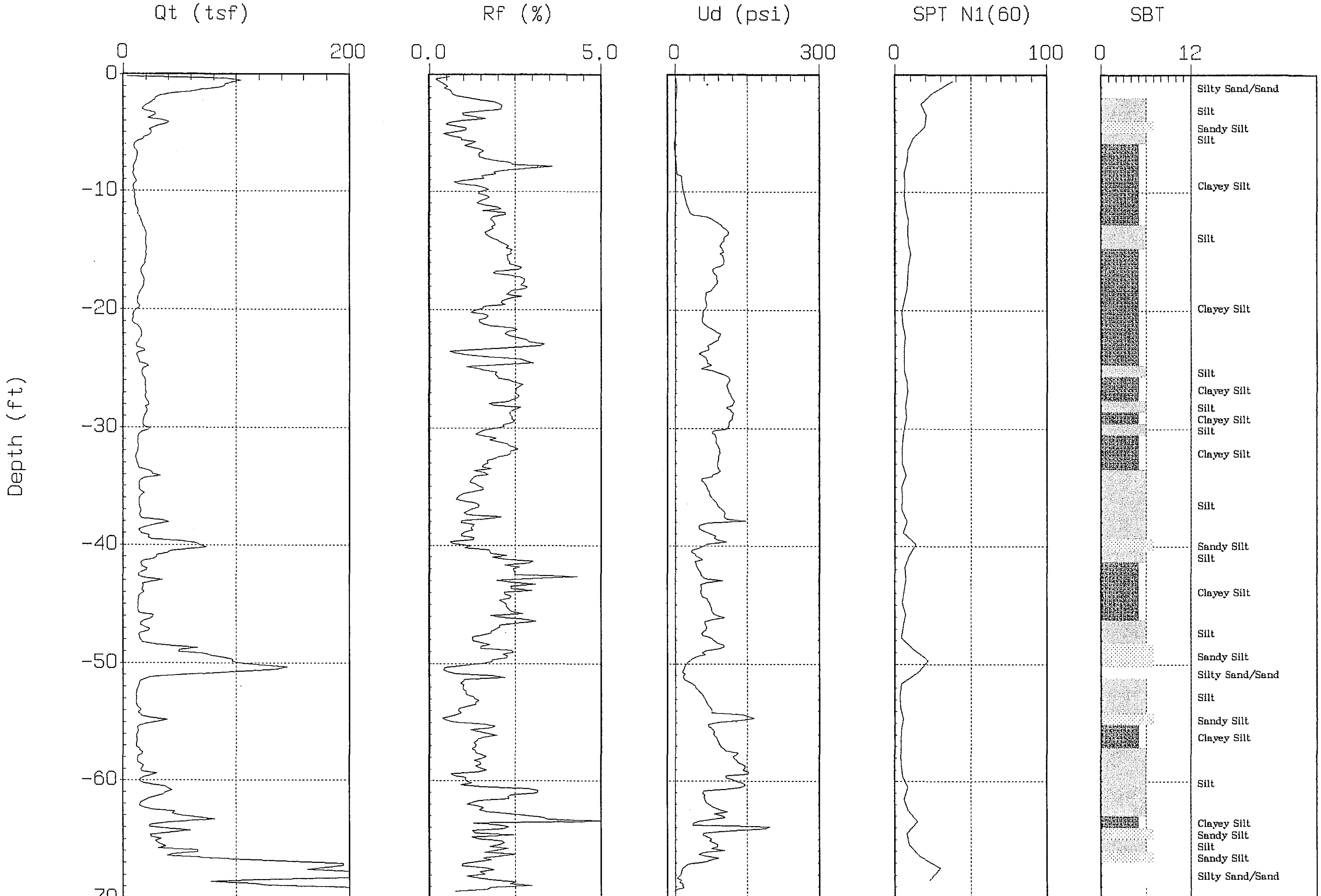
NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO

Location : CPT-2

Engineer : L. GOSSETT

Date : 05:21:01 08:12



Max. Depth: 69.39 (ft)

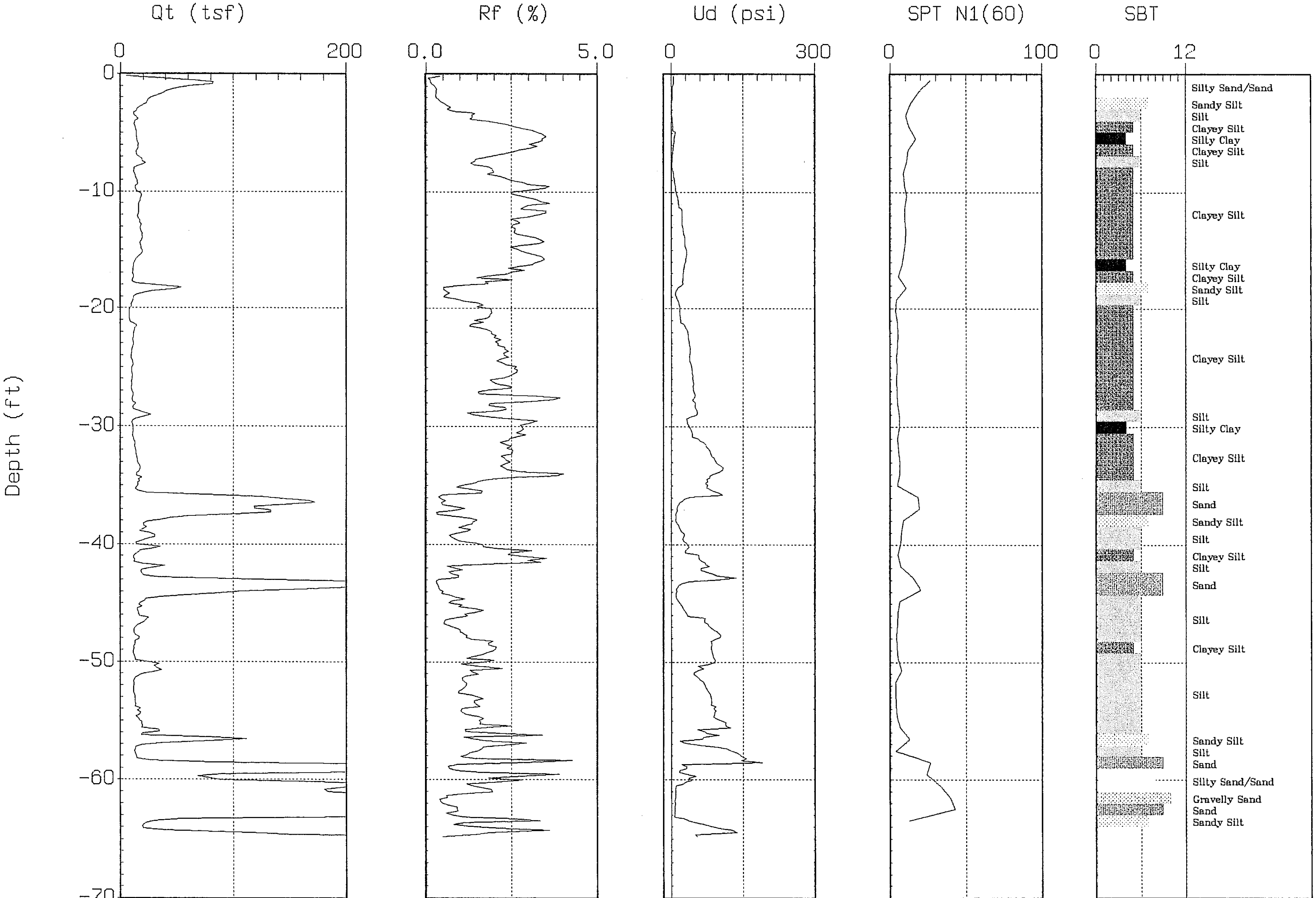
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-3

Engineer : L. GOSSETT
Date : 05:21:01 09:04



Max. Depth: 64.80 (ft)

Depth Inc.: 0.164 (ft)

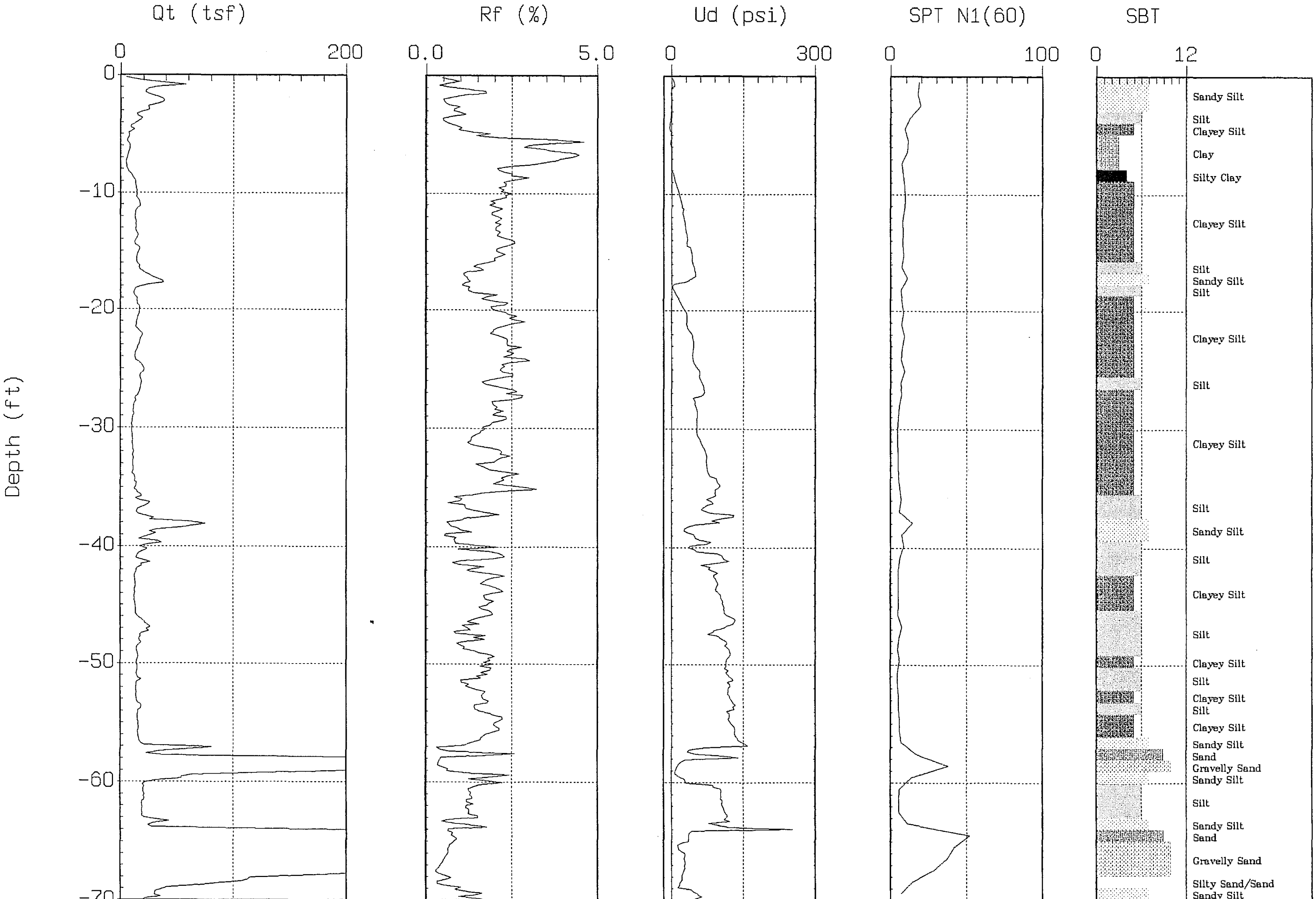
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-4

Engineer : L. GOSSETT
Date : 05:21:01 09:49



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

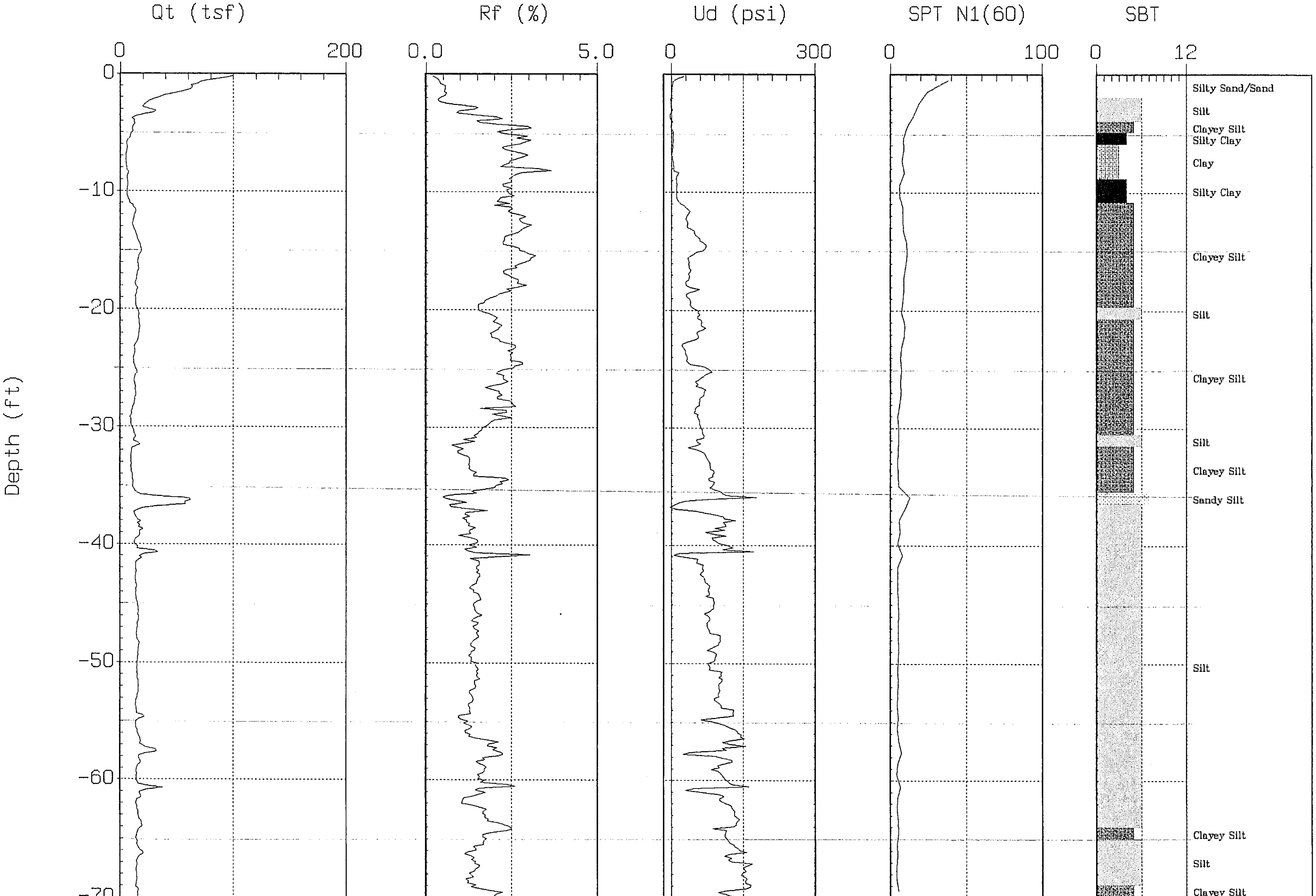
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-5

Engineer : L. GOSSETT
Date : 05:21:01 10:44



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

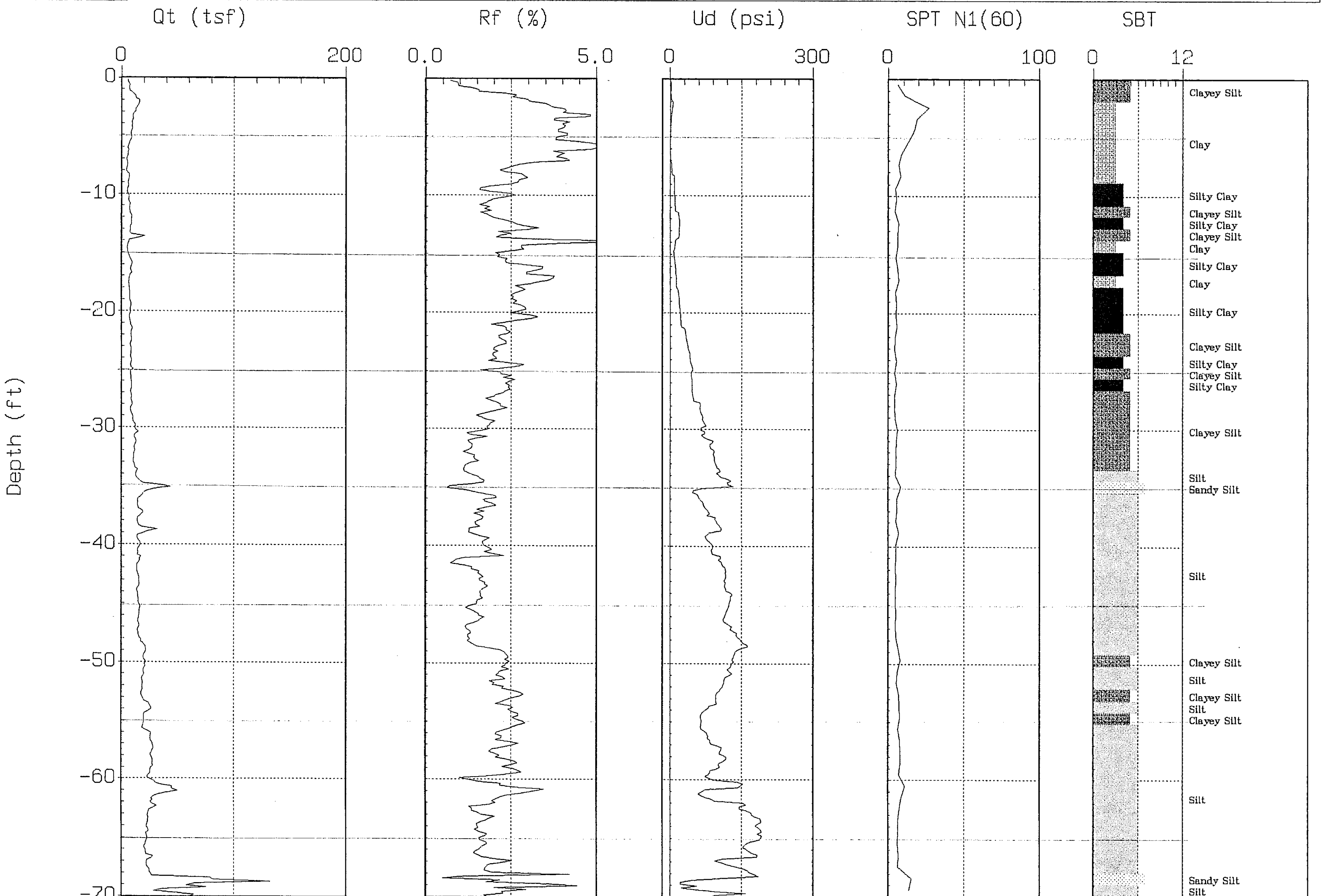
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-6

Engineer : L. GOSSETT
Date : 05:21:01 11:40



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

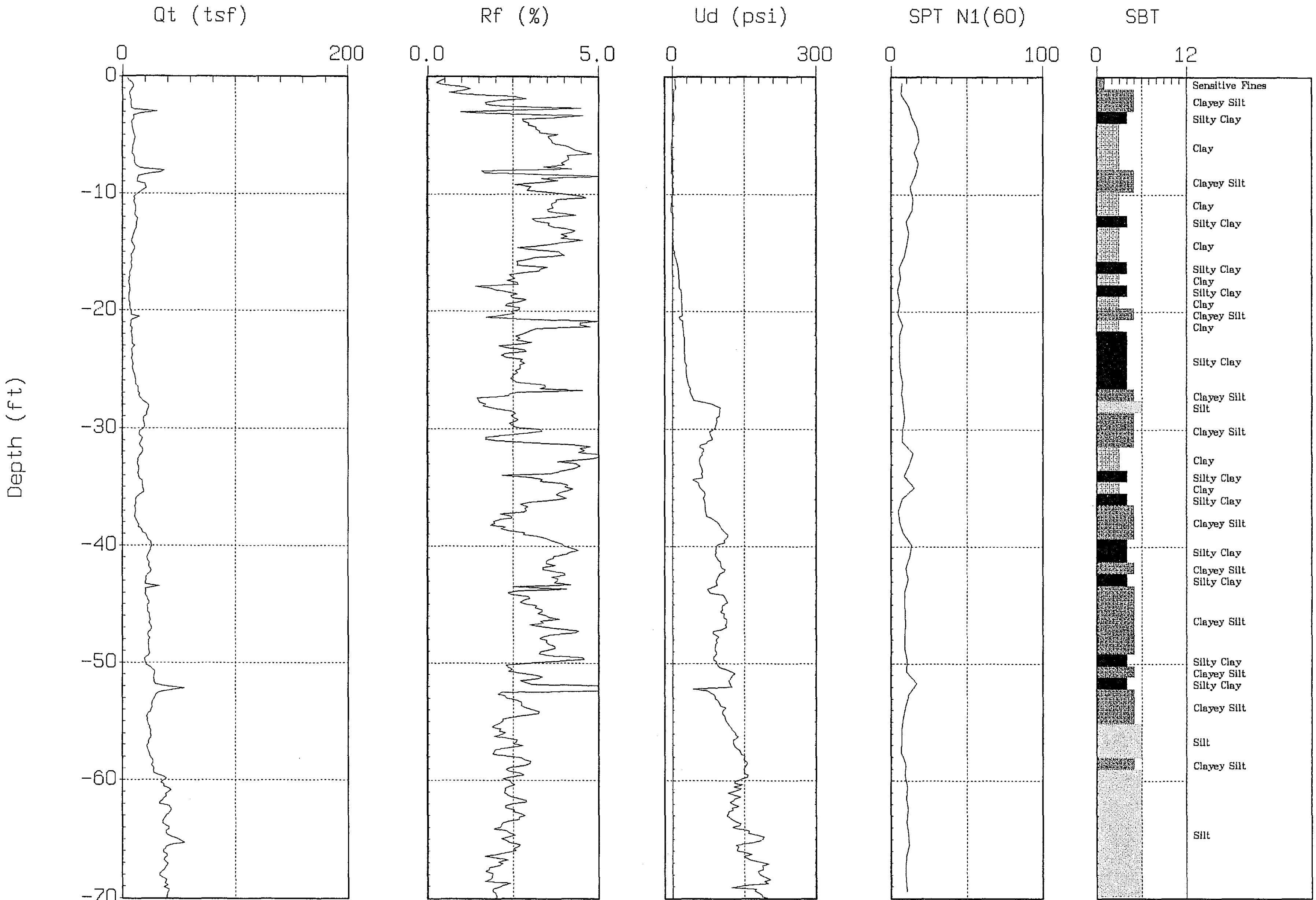
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-7

Engineer : L. GOSSETT
Date : 05:21:01 12:39



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

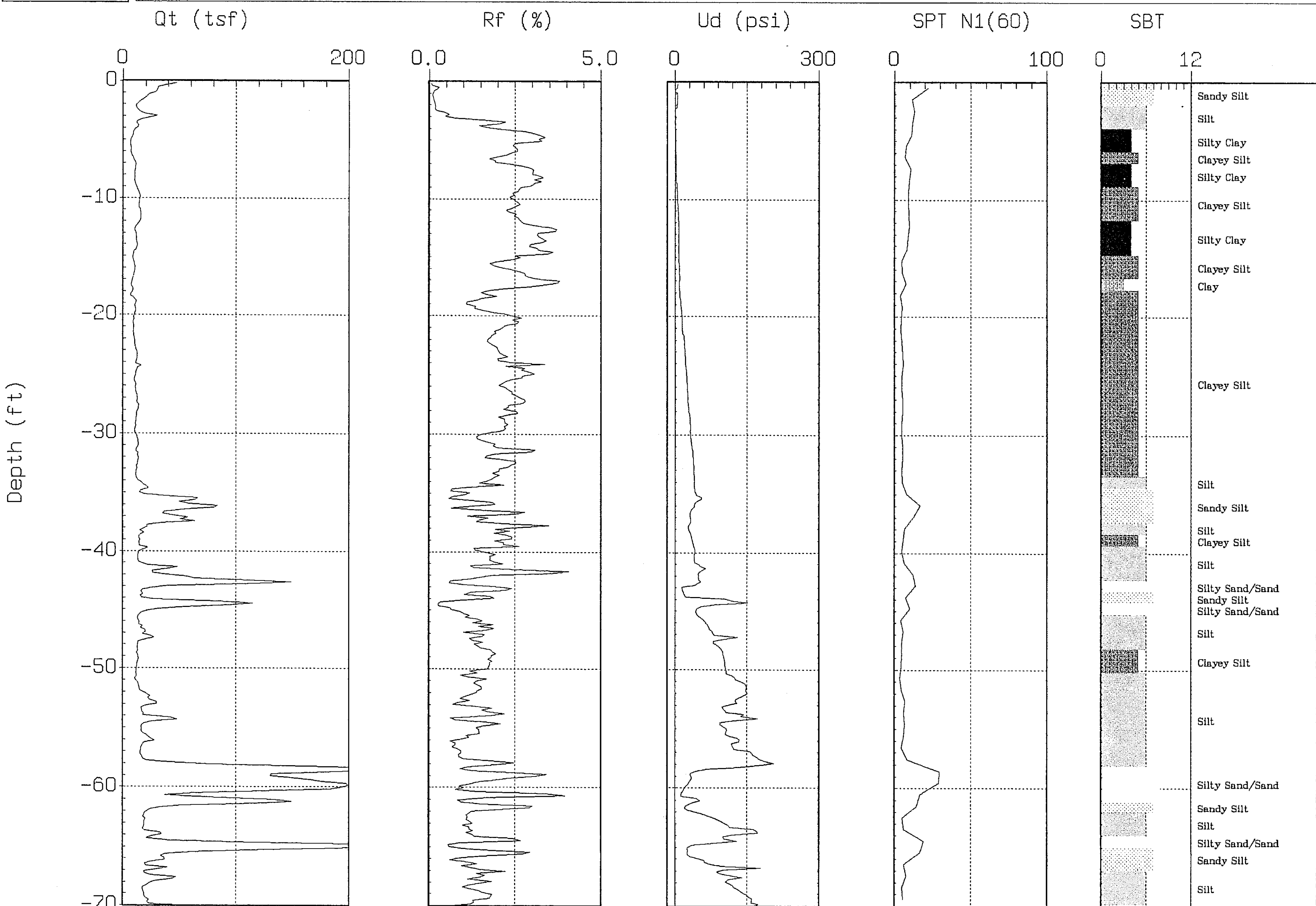
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-8

Engineer : L. GOSSETT
Date : 05:21:01 13:25



Max. Depth: 70.21 (ft)

Depth Inc.: 0.164 (ft)

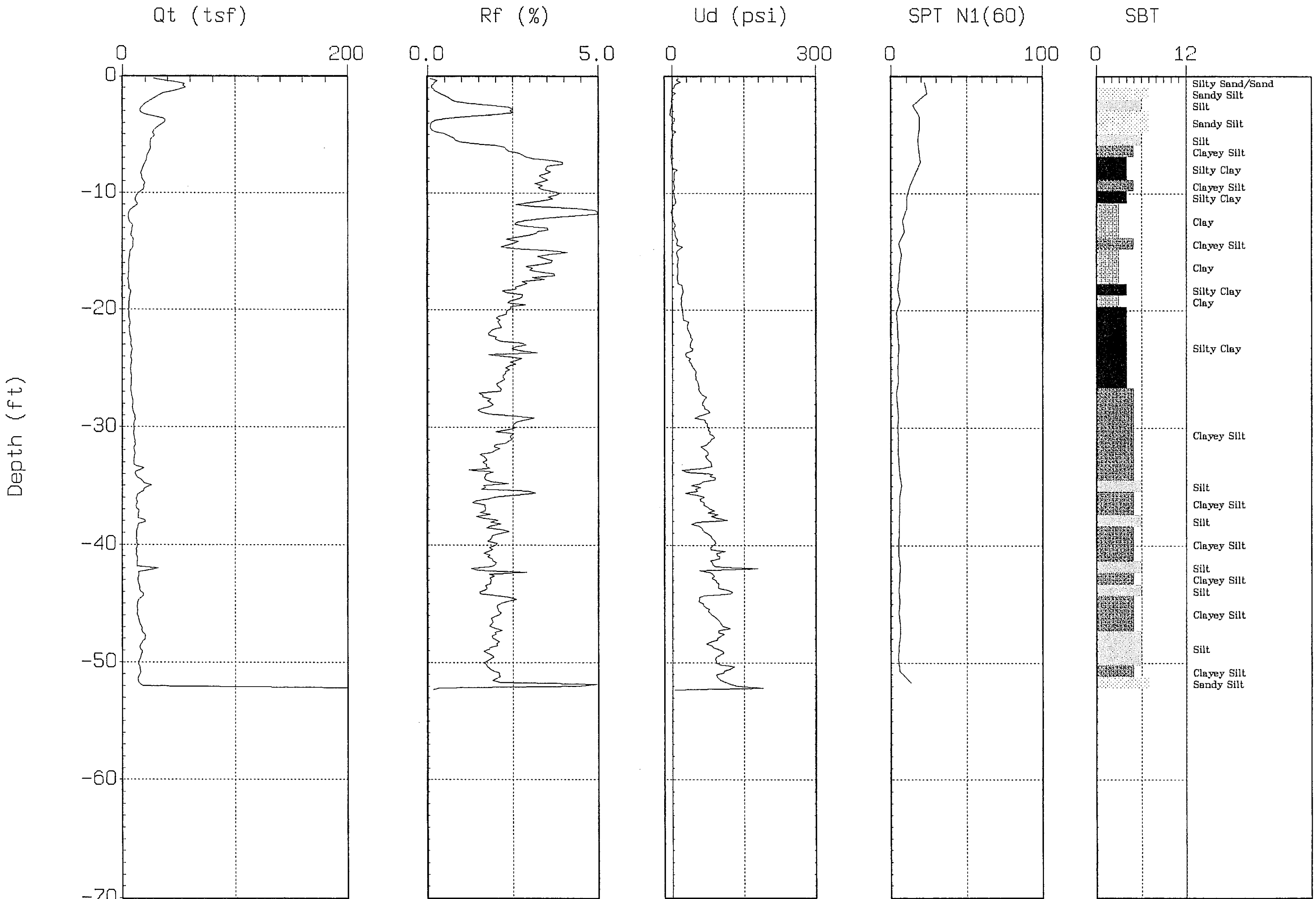
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-9

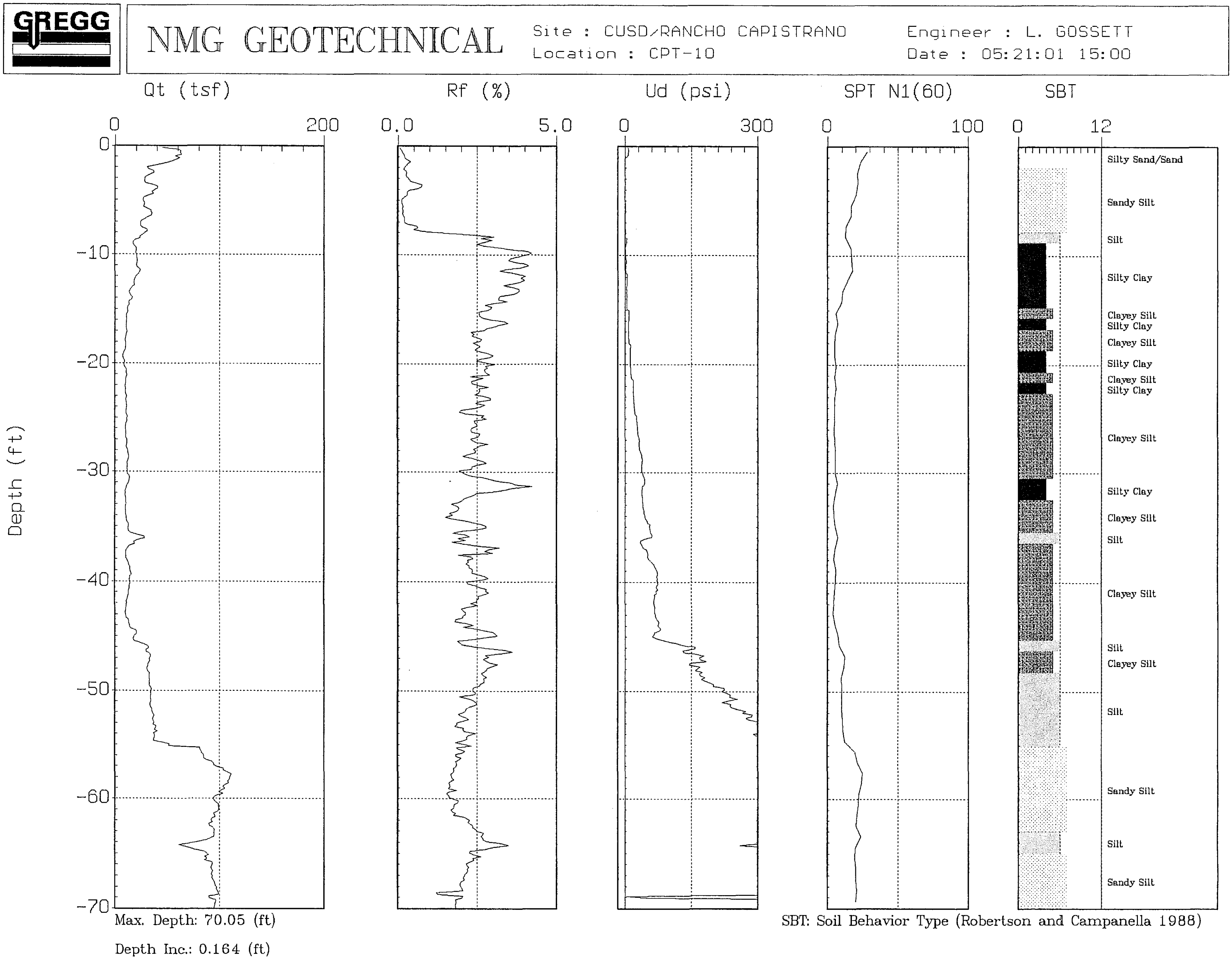
Engineer : L. GOSSETT
Date : 05:21:01 14:29



Max. Depth: 52.33 (ft)

Depth Inc.: 0.164 (ft)

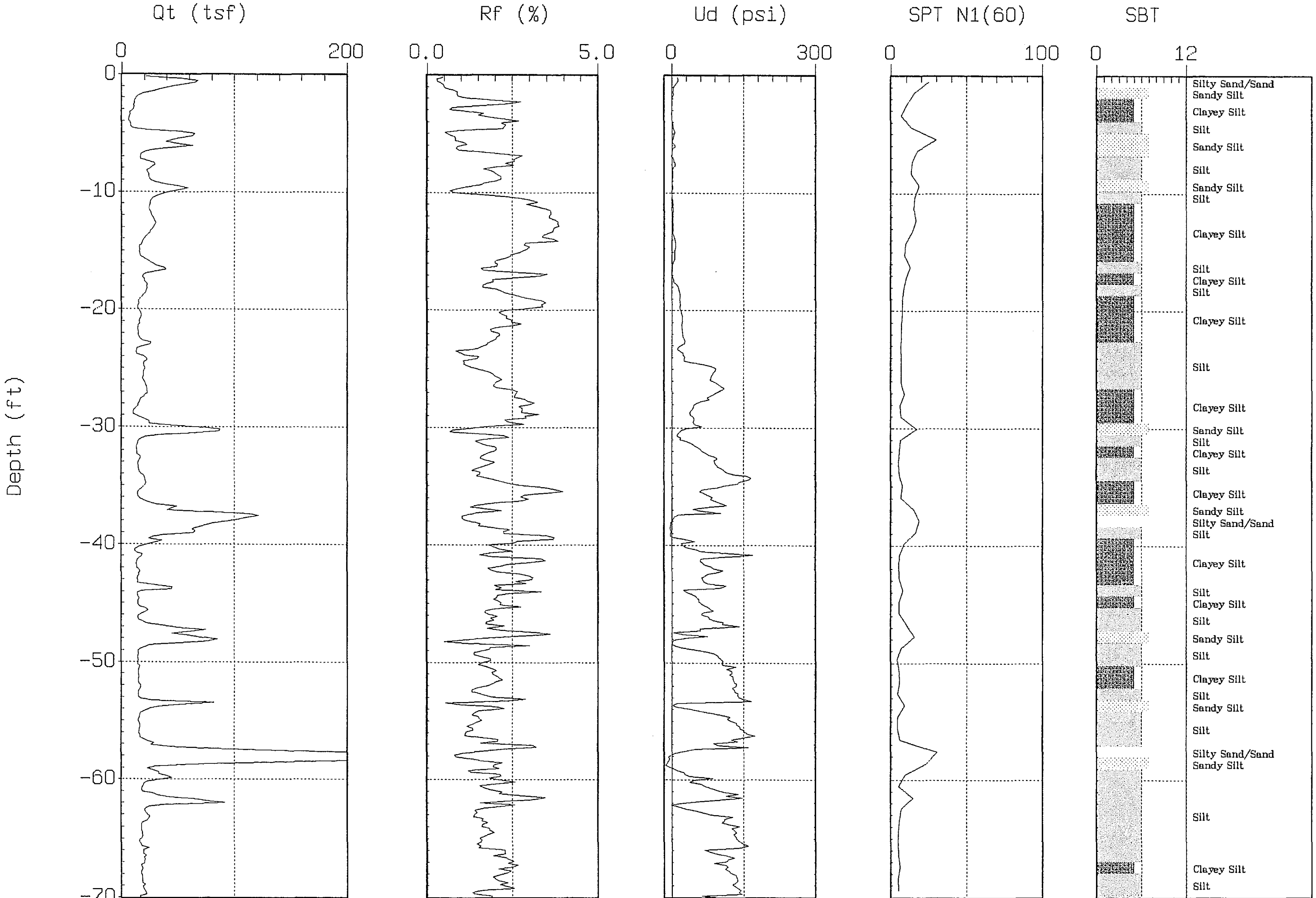
SBT: Soil Behavior Type (Robertson and Campanella 1988)


GREGG
NMG GEOTECHNICAL
Site : CUSD/RANCHO CAPISTRANO
Location : CPT-10
Engineer : L. GOSSETT
Date : 05:21:01 15:00
Qt (tsf)
Rf (%)
Ud (psi)
SPT N1(60)
SBT
0
200
0.0
5.0
0
300
0
100
0
12
Depth (ft)
0
-10
-20
-30
-40
-50
-60
-70
Silty Sand/Sand
Sandy Silt
Silt
Silty Clay
Clayey Silt
Silty Clay
Clayey Silt
Silty Clay
Clayey Silt
Silty Clay
Clayey Silt
Silty Clay
Clayey Silt
Silt
Clayey Silt
Silt
Clayey Silt
Silt
Sandy Silt
Silt
Sandy Silt
Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)
SBT: Soil Behavior Type (Robertson and Campanella 1988)

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-11

Engineer : L. GOSSETT
Date : 05:22:01 06:13



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

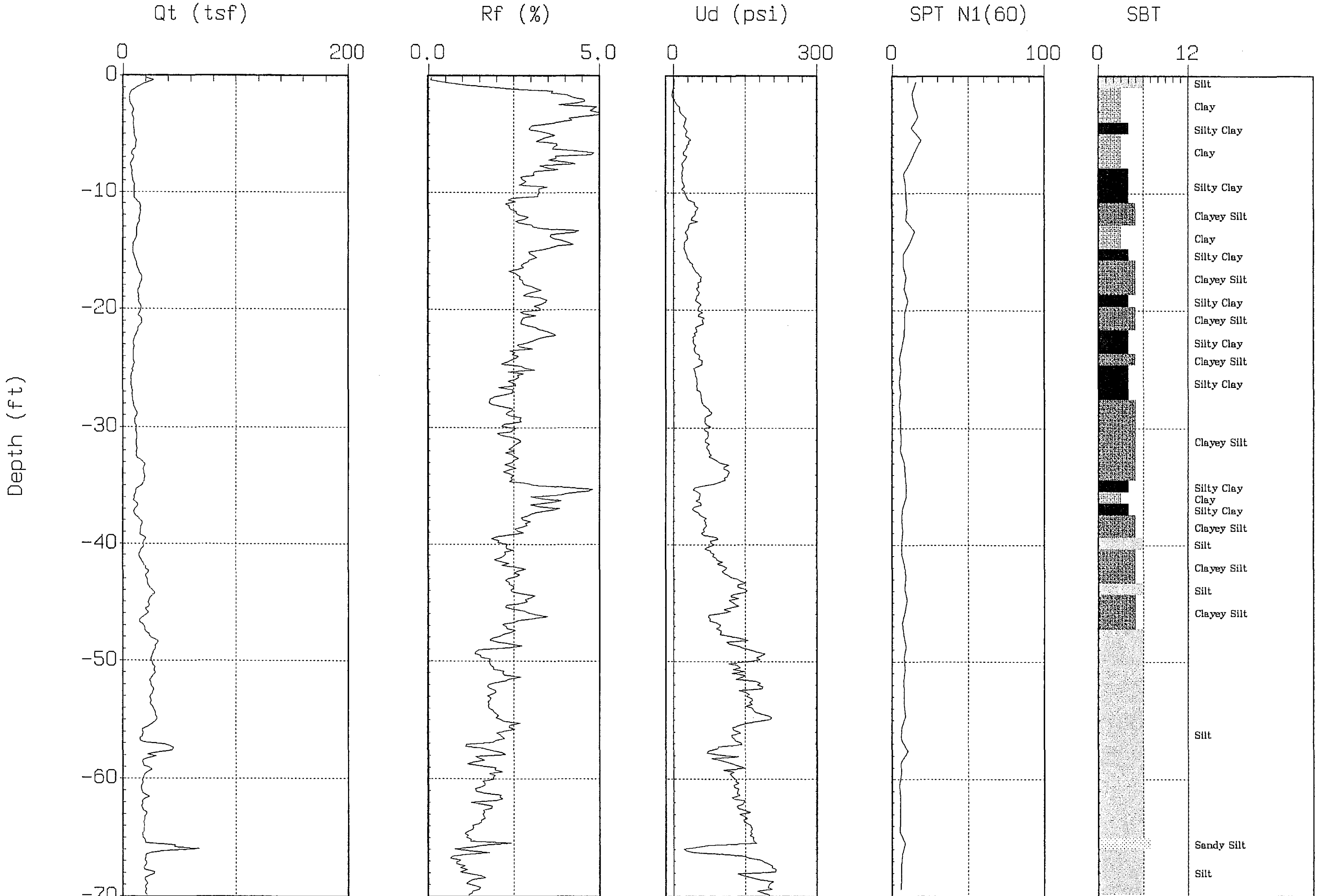
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-12

Engineer : L. GOSSETT
Date : 05:22:01 07:09



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

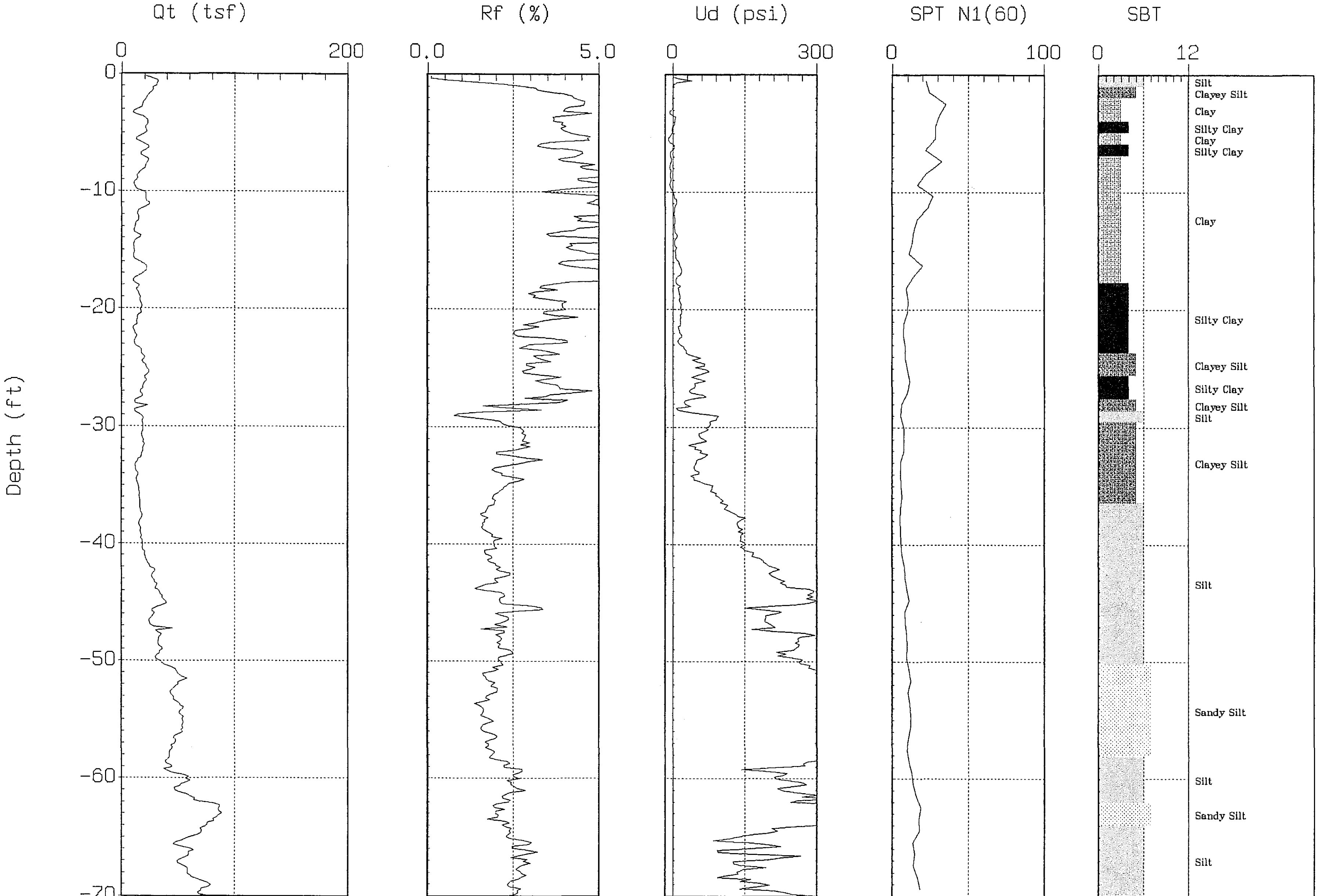
NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO

Location : CPT-13

Engineer : L. GOSSETT

Date : 05:22:01 07:53



Max. Depth: 70.05 (ft)

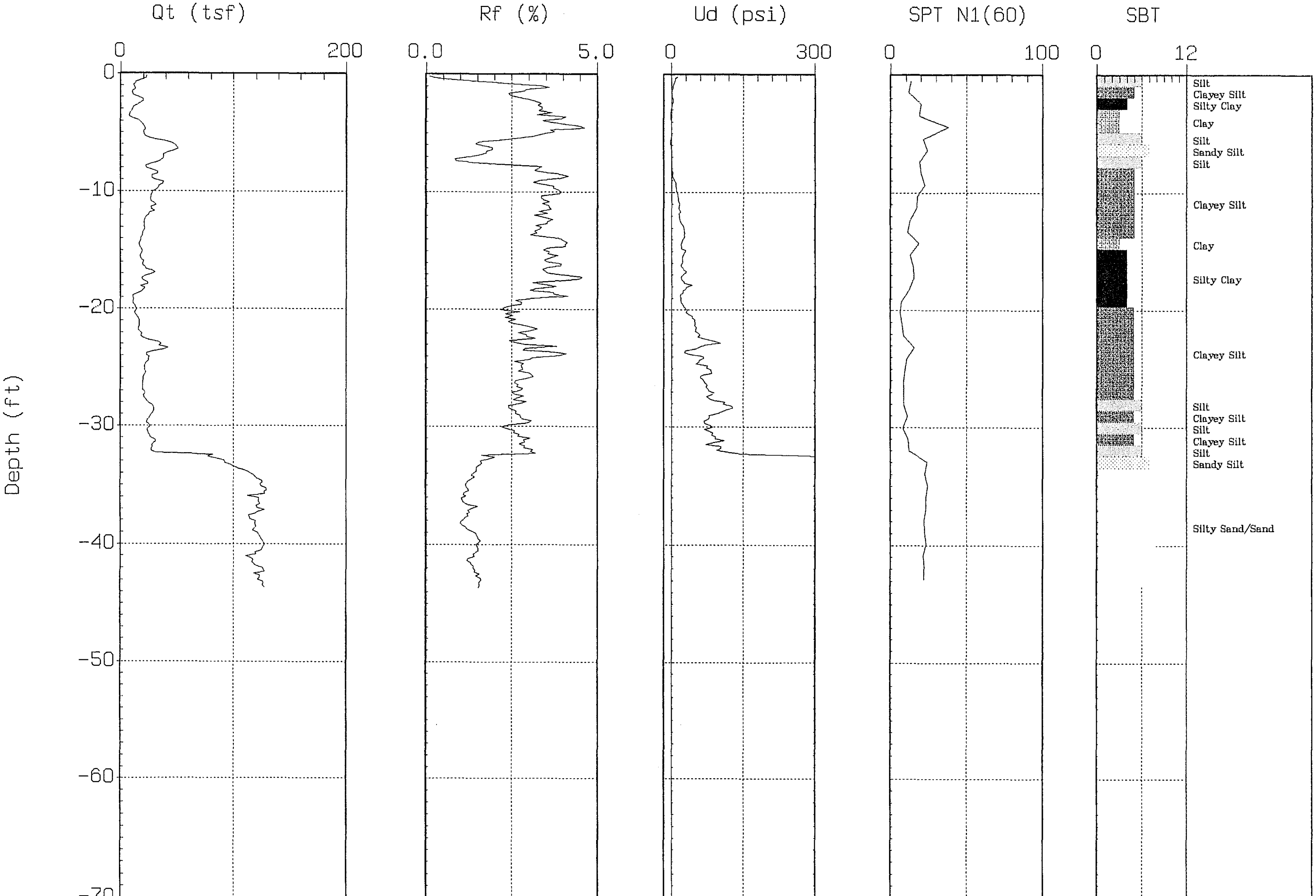
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-14

Engineer : L. GOSSETT
Date : 05:22:01 08:44

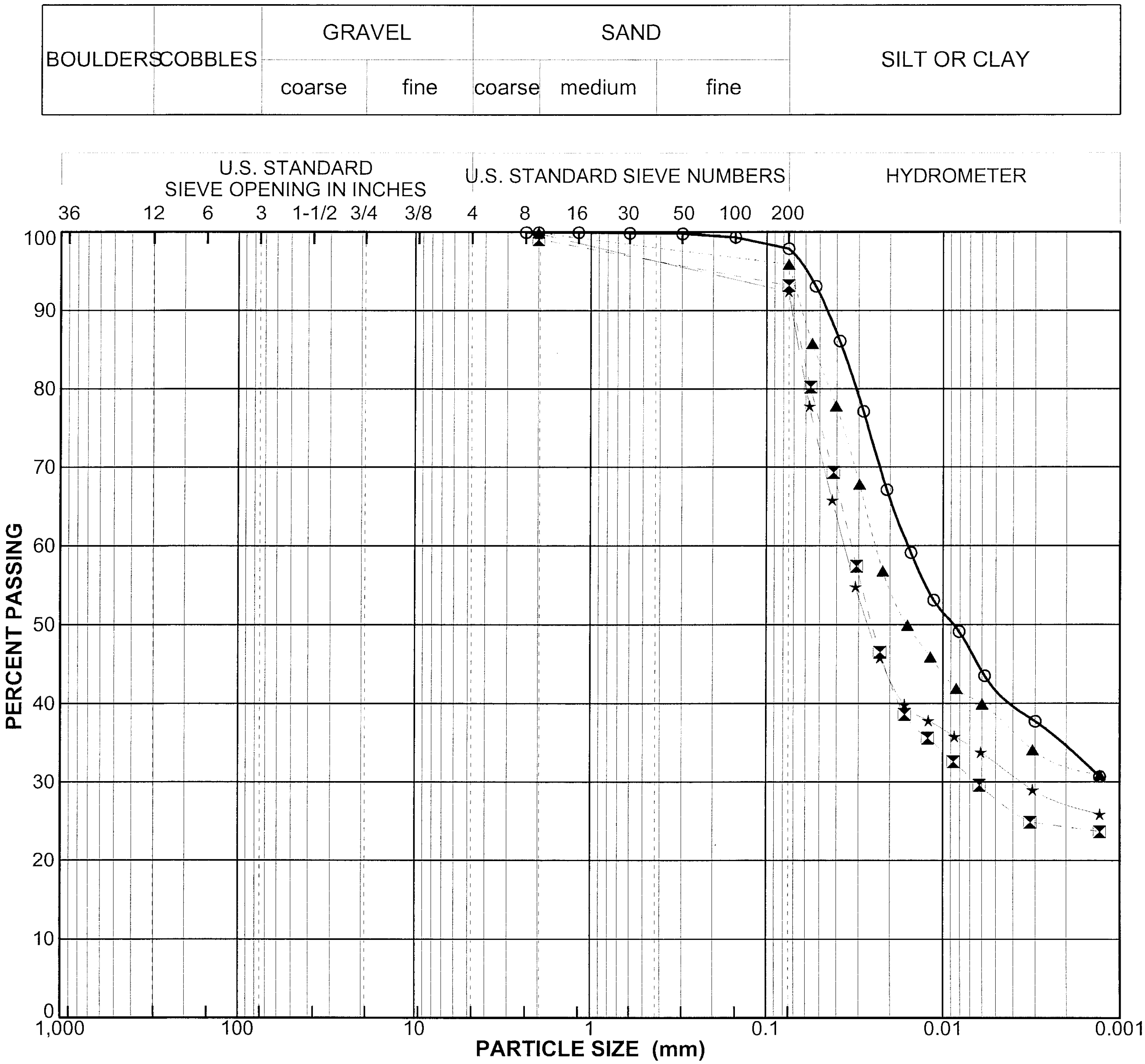


Max. Depth: 43.63 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

APPENDIX C

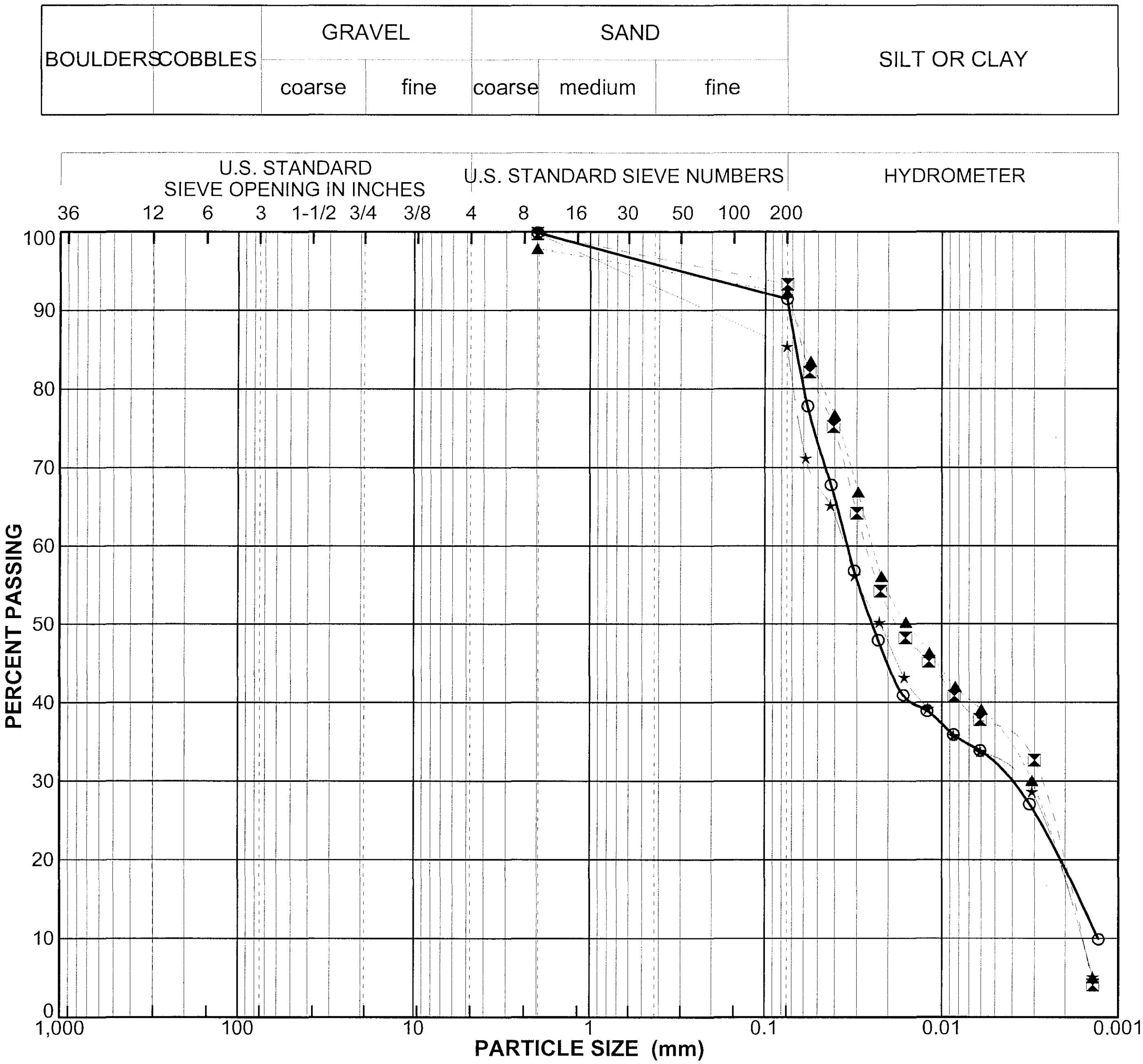


Symbol	Boring Number	Sample Number	Depth (feet)	Field Moisture (%)	LL	PI	Activity PI/-2μ	C_u	C_c	Passing No. 200 Sieve (%)	Passing 2μ (%)	USCS
○	B- 3	SB-3	71.5		56	30				98	34	CL
⧗	H- 1	D-9	45.0	29	44	24				93	24	CL
▲	H- 1	D-10	50.0	30	50	29				96	32	CH
★	H- 1	D-12	60.0	31	48	26				92	27	CL

PARTICLE SIZE DISTRIBUTION

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG Geotechnical, Inc.

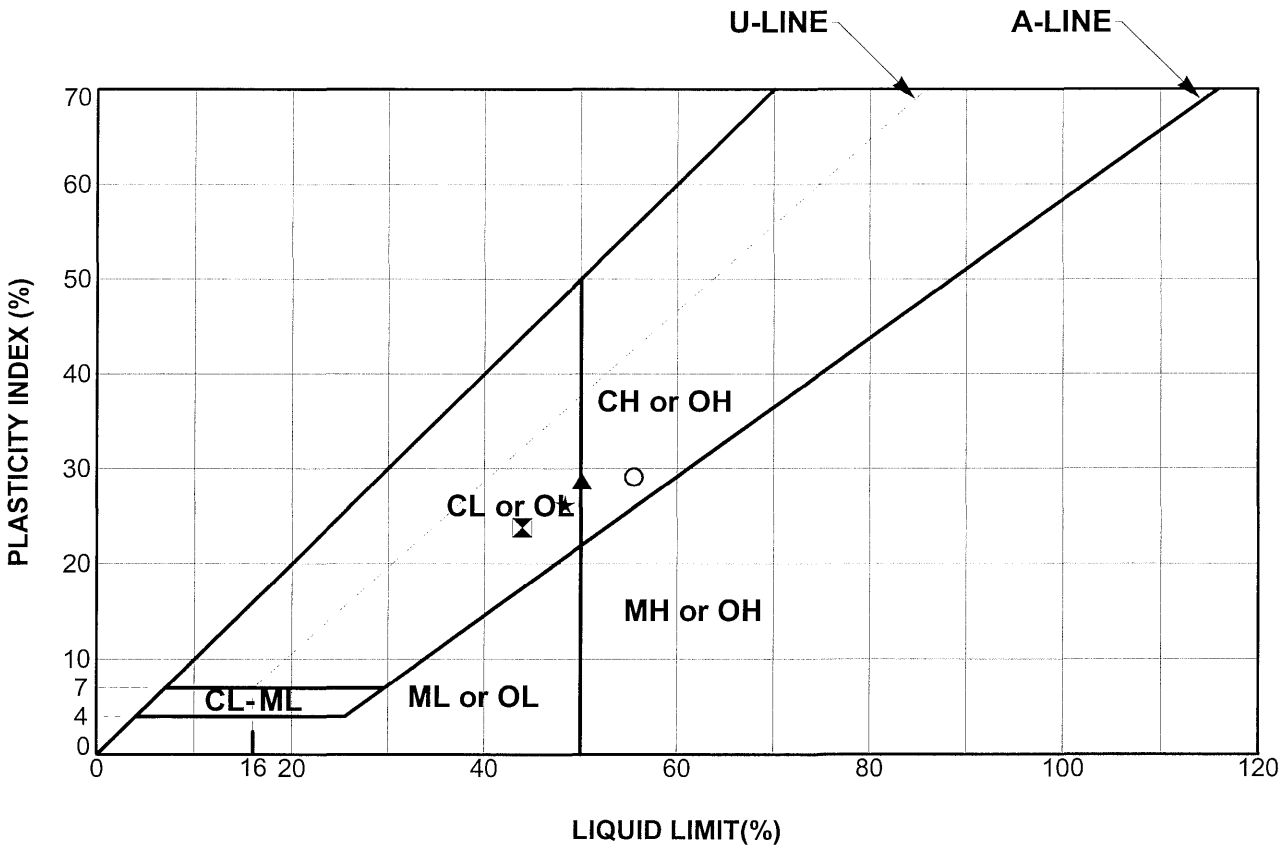


Symbol	Boring Number	Sample Number	Depth (feet)	Field Moisture (%)	LL	PI	Activity PI/-2μ	C_u	C_c	Passing No. 200 Sieve (%)	Passing 2μ (%)	USCS
○	H- 2	D-2	10.0	27	44	24		25.99	0.40	91	18	CL
⧗	H- 2	D-3	15.0	26	46	23		16.14	0.18	93	17	CL
▲	H- 2	D-8	40.0	28	51	28		14.84	0.24	92	16	CH
★	H- 2	D-9	45.0	26	48	26		21.43	0.23	85	16	CL

PARTICLE SIZE DISTRIBUTION

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG Geotechnical, Inc.

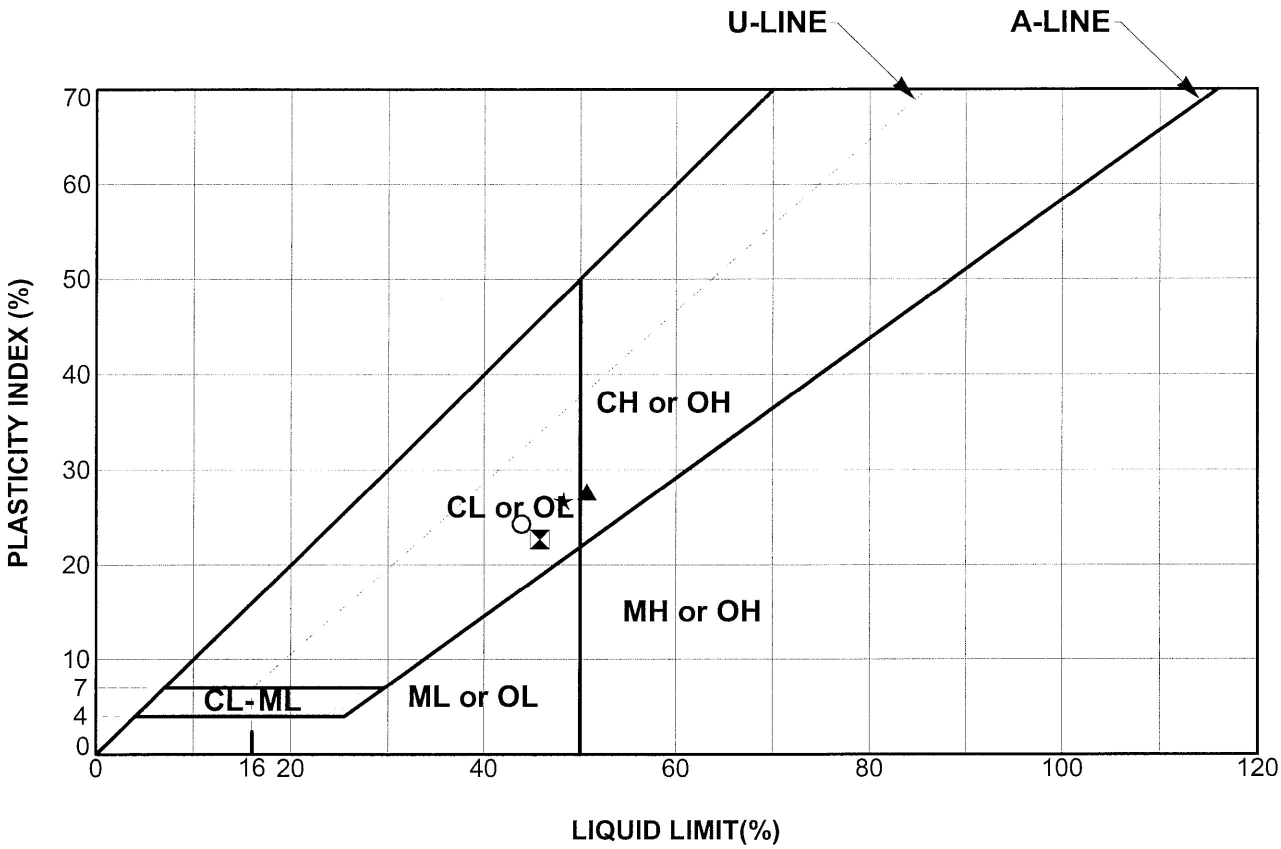


Symbol	Boring Number	Depth (feet)	Sample Number	Passing No. 200 Sieve (%)	LL	PI	USCS	Description
○	B- 3	71.5	SB-3	98	56	30	CL	CLAY
⧗	H- 1	45.0	D-9	93	44	24	CL	Silty CLAY
▲	H- 1	50.0	D-10	96	50	29	CH	Silty CLAY
★	H- 1	60.0	D-12	92	48	26	CL	CLAY

PLASTICITY CHART

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG Geotechnical, Inc.

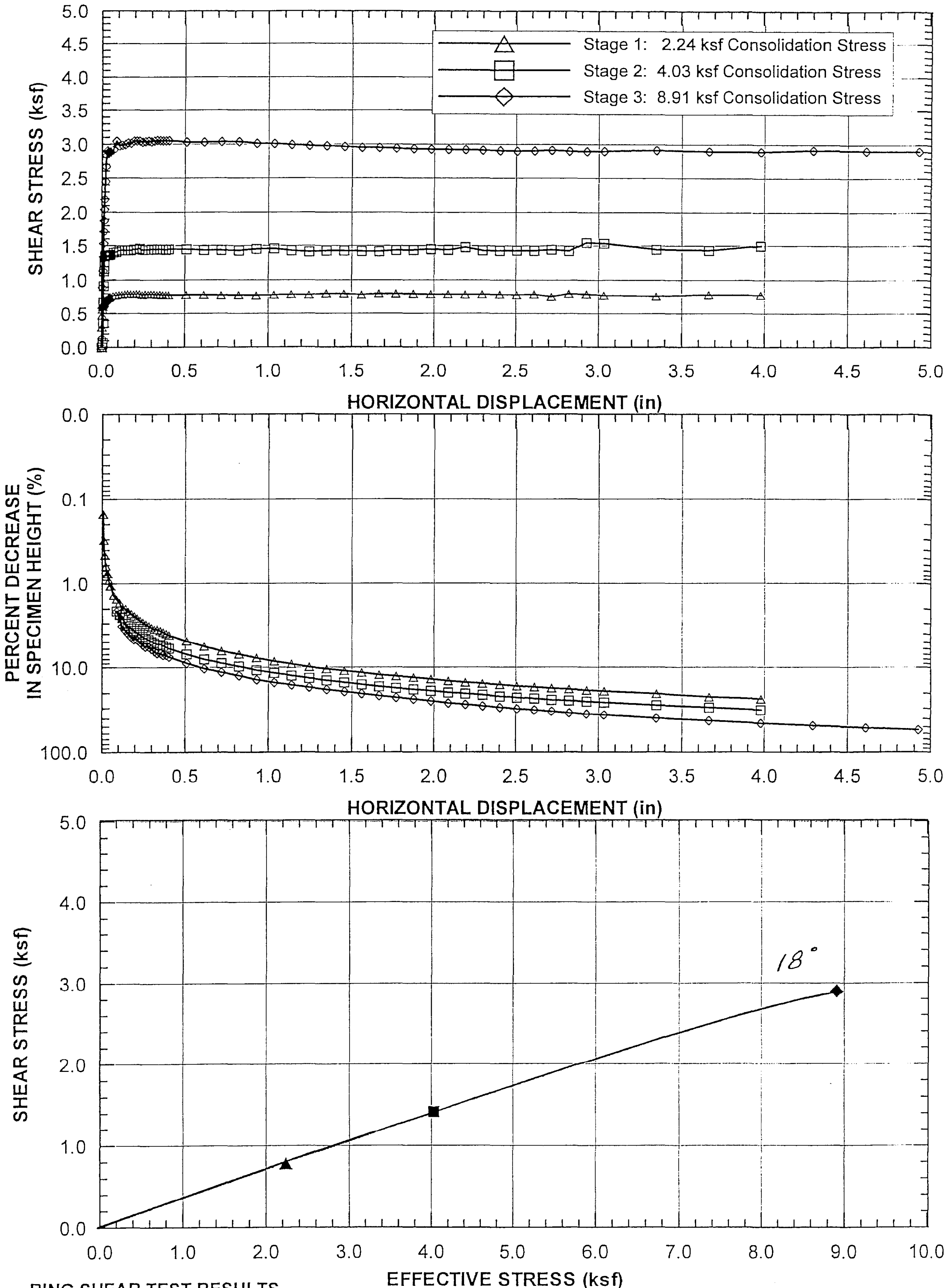


Symbol	Boring Number	Depth (feet)	Sample Number	Passing No. 200 Sieve (%)	LL	PI	USCS	Description
○	H- 2	10.0	D-2	91	44	24	CL	Silty CLAY
⧗	H- 2	15.0	D-3	93	46	23	CL	Silty CLAY
▲	H- 2	40.0	D-8	92	51	28	CH	CLAY
★	H- 2	45.0	D-9	85	48	26	CL	Silty CLAY

PLASTICITY CHART

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG Geotechnical, Inc.



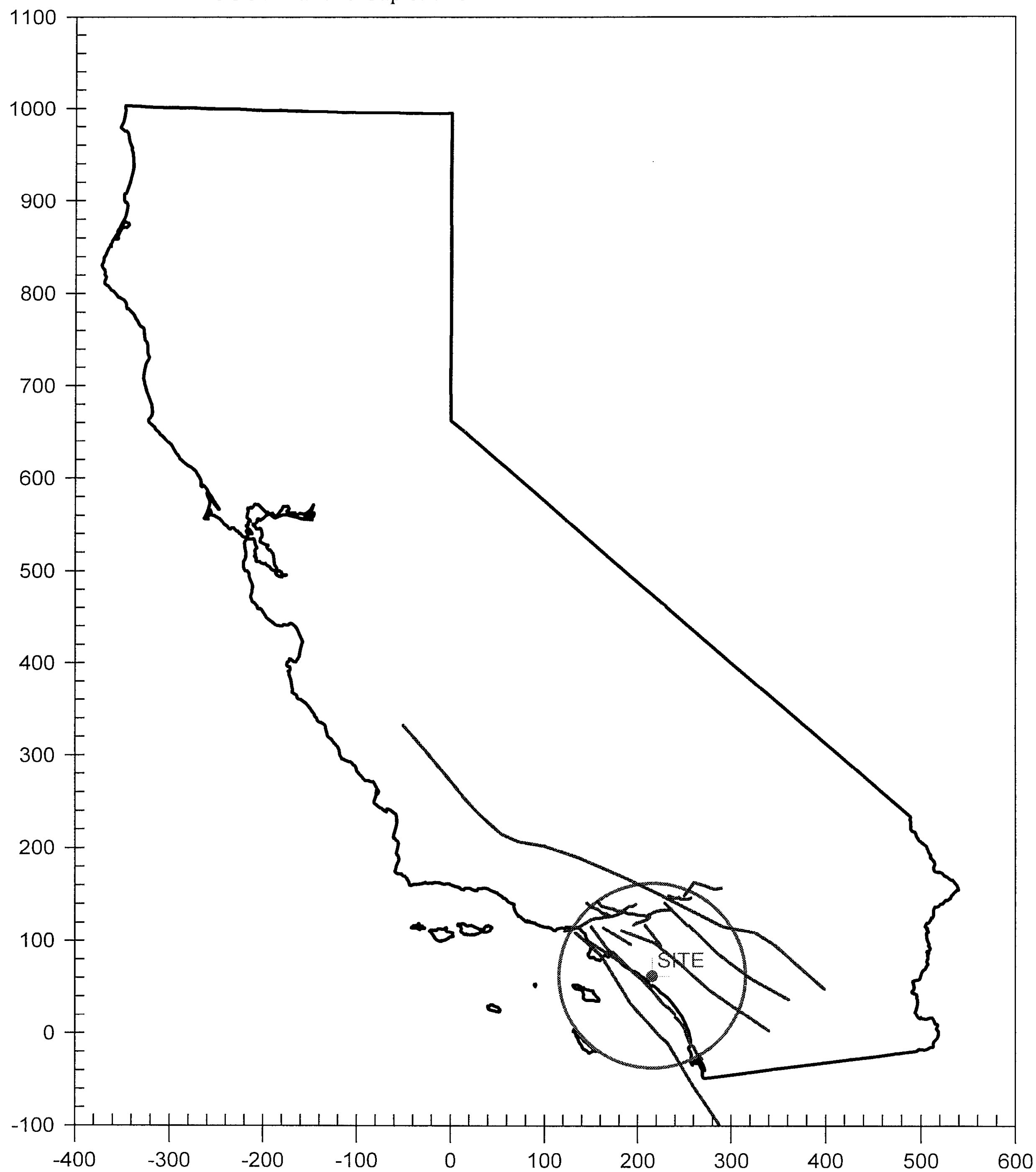
RING SHEAR TEST RESULTS
Project Name.: CUSD / Rancho Capistrano
Project Number: 01012-02
Exploration No.: B-3
Sample Number: SB-3 at 71.5 ft

Liquid Limit (%): 56
Clay Fraction (%): __
Test Number: RS20005r

APPENDIX D

CALIFORNIA FAULT MAP

CUSD Rancho Capistrano



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                    *************************
                    *                       *
                    *     E Q S E A R C H   *
                    *                       *
                    *      Version 3.00     *
                    *                       *
                    *************************

                          ESTIMATION OF
                       PEAK ACCELERATION FROM
                   CALIFORNIA EARTHQUAKE CATALOGS


JOB NUMBER: 01012-02
                                                     DATE: 09-28-2001

JOB NAME: CUSD/Rancho Capistrano

EARTHQUAKE-CATALOG-FILE NAME: ALLQUAKE.DAT


MAGNITUDE RANGE:
   MINIMUM MAGNITUDE:  4.50
   MAXIMUM MAGNITUDE:  9.00

SITE COORDINATES:
   SITE LATITUDE:  33.5349
   SITE LONGITUDE:  117.6764

SEARCH DATES:
           START DATE:   1800
           END DATE:   1999

SEARCH RADIUS:
           100.0 mi
           160.9 km

ATTENUATION RELATION:   3) Boore et al. (1993a) Horiz. - Random Class C
   UNCERTAINTY (M=Median, S=Sigma): M       Number of Sigmas:  0.0
   ASSUMED SOURCE TYPE:  DS [SS=Strike-slip, DS=Reverse-slip, BT=Blind-thrust]
   SCOND:   0  Depth Source:  A
   Basement Depth:  5.00 km     Campbell SSR:        Campbell SHR:
   COMPUTE PEAK HORIZONTAL ACCELERATION

MINIMUM DEPTH VALUE (km):  0.0
```

EARTHQUAKE SEARCH RESULTS

Page 1

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.5450	117.8070	10/27/1969	1316 2.3	6.5	4.50	0.096	VII	7.5(12.1)
DMG	33.6820	117.5530	07/05/1938	18 655.7	10.0	4.50	0.068	VI	12.4(19.9)
GSP	33.6200	117.9000	04/07/1989	200730.2	13.0	4.50	0.062	VI	14.1(22.7)
DMG	33.6990	117.5110	05/31/1938	83455.4	10.0	5.50	0.101	VII	14.8(23.8)
DMG	33.7250	117.4980	01/03/1956	02548.9	13.7	4.70	0.061	VI	16.7(26.8)
DMG	33.6170	117.9670	03/11/1933	154 7.8	0.0	6.30	0.135	VIII	17.6(28.4)
DMG	33.5750	117.9830	03/11/1933	518 4.0	0.0	5.20	0.075	VII	17.9(28.7)
MGI	33.8000	117.6000	04/22/1918	2115 0.0	0.0	5.00	0.065	VI	18.8(30.3)
DMG	33.6000	118.0000	03/11/1933	217 0.0	0.0	4.50	0.049	VI	19.1(30.8)
DMG	33.7000	117.4000	05/13/1910	620 0.0	0.0	5.00	0.063	VI	19.6(31.5)
DMG	33.7000	117.4000	04/11/1910	757 0.0	0.0	5.00	0.063	VI	19.6(31.5)
DMG	33.7000	117.4000	05/15/1910	1547 0.0	0.0	6.00	0.107	VII	19.6(31.5)
MGI	33.8000	117.8000	11/04/1926	2238 0.0	0.0	4.60	0.051	VI	19.6(31.6)
MGI	33.8000	117.8000	11/07/1926	1948 0.0	0.0	4.60	0.051	VI	19.6(31.6)
MGI	33.8000	117.8000	11/10/1926	1723 0.0	0.0	4.60	0.051	VI	19.6(31.6)
MGI	33.8000	117.8000	11/09/1926	1535 0.0	0.0	4.60	0.051	VI	19.6(31.6)
DMG	33.6000	118.0170	12/25/1935	1715 0.0	0.0	4.50	0.048	VI	20.1(32.3)
DMG	33.6170	118.0170	03/15/1933	111332.0	0.0	4.90	0.058	VI	20.4(32.8)
DMG	33.6170	118.0170	03/14/1933	19 150.0	0.0	5.10	0.065	VI	20.4(32.8)
PAS	33.5080	118.0710	11/20/1988	53928.7	6.0	4.50	0.043	VI	22.8(36.7)
DMG	33.6830	118.0500	03/11/1933	658 3.0	0.0	5.50	0.071	VI	23.8(38.3)
DMG	33.7000	118.0670	03/11/1933	51022.0	0.0	5.10	0.055	VI	25.2(40.5)
DMG	33.7000	118.0670	03/11/1933	85457.0	0.0	5.10	0.055	VI	25.2(40.5)
DMG	33.6170	118.1170	01/20/1934	2117 0.0	0.0	4.50	0.039	V	26.0(41.8)
DMG	33.7500	118.0830	03/11/1933	230 0.0	0.0	5.10	0.051	VI	27.7(44.6)
DMG	33.7500	118.0830	03/12/1933	2354 0.0	0.0	4.50	0.037	V	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	2 4 0.0	0.0	4.90	0.046	VI	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	323 0.0	0.0	5.00	0.048	VI	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	8 8 0.0	0.0	4.50	0.037	V	27.7(44.6)
DMG	33.7500	118.0830	03/13/1933	131828.0	0.0	5.30	0.057	VI	27.7(44.6)
DMG	33.7500	118.0830	03/12/1933	1738 0.0	0.0	4.50	0.037	V	27.7(44.6)

DMG	33.7500	118.0830	03/11/1933	210 0.0	0.0	4.60	0.039	V	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	1653 0.0	0.0	4.80	0.044	VI	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	259 0.0	0.0	4.60	0.039	V	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	910 0.0	0.0	5.10	0.051	VI	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	216 0.0	0.0	4.80	0.044	VI	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	513 0.0	0.0	4.70	0.041	V	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	227 0.0	0.0	4.60	0.039	V	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	436 0.0	0.0	4.60	0.039	V	27.7(44.6)
DMG	33.7500	118.0830	03/13/1933	432 0.0	0.0	4.70	0.041	V	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	440 0.0	0.0	4.70	0.041	V	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	2 9 0.0	0.0	5.00	0.048	VI	27.7(44.6)
DMG	33.7500	118.0830	03/12/1933	616 0.0	0.0	4.60	0.039	V	27.7(44.6)
DMG	33.7500	118.0830	03/11/1933	439 0.0	0.0	4.90	0.046	VI	27.7(44.6)
DMG	33.7500	118.0830	03/14/1933	1219 0.0	0.0	4.50	0.037	V	27.7(44.6)
DMG	33.7500	118.1330	03/11/1933	11 4 0.0	0.0	4.60	0.037	V	30.2(48.5)
DMG	33.7830	118.1330	10/02/1933	91017.6	0.0	5.40	0.054	VI	31.3(50.4)
DMG	33.5000	118.2500	06/18/1920	10 8 0.0	0.0	4.50	0.032	V	33.1(53.3)
MGI	34.0000	117.5000	12/16/1858	10 0 0.0	0.0	7.00	0.120	VII	33.7(54.2)
DMG	33.7830	118.2000	12/27/1939	192849.0	0.0	4.70	0.035	V	34.6(55.7)
DMG	33.9000	118.1000	07/08/1929	1646 6.7	13.0	4.70	0.035	V	35.0(56.4)
DMG	33.7000	117.1000	06/11/1902	245 0.0	0.0	4.50	0.031	V	35.0(56.4)
MGI	34.0000	117.4000	05/22/1907	652 0.0	0.0	4.60	0.032	V	35.8(57.6)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.7590	118.2530	08/31/1938	31814.2	10.0	4.50	0.030	V	36.6(58.9)
DMG	33.8170	118.2170	10/22/1941	65718.5	0.0	4.90	0.037	V	36.7(59.0)
MGI	34.0000	118.0000	12/25/1903	1745 0.0	0.0	5.00	0.039	V	37.1(59.7)
MGI	34.0000	118.0000	05/05/1929	1 7 0.0	0.0	4.60	0.031	V	37.1(59.7)
DMG	33.7830	118.2500	11/14/1941	84136.3	0.0	5.40	0.048	VI	37.1(59.8)
DMG	33.9000	117.2000	12/19/1880	0 0 0.0	0.0	6.00	0.065	VI	37.2(59.9)
DMG	33.8670	118.2170	06/19/1944	0 333.0	0.0	4.50	0.029	V	38.6(62.1)
PAS	32.9900	117.8490	07/13/1986	14 133.0	12.0	4.60	0.030	V	38.9(62.6)
DMG	33.5000	117.0000	08/08/1925	1013 0.0	0.0	4.50	0.029	V	39.0(62.8)
DMG	34.1000	117.6830	01/09/1934	1410 0.0	0.0	4.50	0.029	V	39.0(62.8)
MGI	33.9000	118.2000	10/08/1927	1914 0.0	0.0	4.60	0.030	V	39.2(63.1)
DMG	34.0000	117.2830	11/07/1939	1852 8.4	0.0	4.70	0.032	V	39.3(63.2)
DMG	33.9960	117.2700	02/17/1952	123658.3	16.0	4.50	0.028	V	39.5(63.5)
GSP	34.1100	117.7200	04/17/1990	223227.2	4.0	4.60	0.030	V	39.8(64.0)
DMG	34.0330	117.3170	09/03/1935	647 0.0	0.0	4.50	0.028	V	40.1(64.5)
DMG	33.8500	118.2670	03/11/1933	1425 0.0	0.0	5.00	0.036	V	40.3(64.9)
DMG	34.0000	117.2500	07/23/1923	73026.0	0.0	6.25	0.070	VI	40.4(65.0)
PAS	32.9710	117.8700	07/13/1986	1347 8.2	6.0	5.30	0.042	VI	40.5(65.2)
PAS	34.1360	117.7090	06/26/1988	15 458.5	7.9	4.60	0.029	V	41.5(66.9)
DMG	33.7500	117.0000	04/21/1918	223225.0	0.0	6.80	0.092	VII	41.6(67.0)
DMG	33.7500	117.0000	06/06/1918	2232 0.0	0.0	5.00	0.035	V	41.6(67.0)

GSP	34.1400	117.6900	03/02/1990	172625.4	6.0	4.60	0.029	V	41.8(67.2)
GSP	34.1400	117.7000	02/28/1990	234336.6	5.0	5.20	0.039	V	41.8(67.3)
PAS	34.0230	117.2450	10/02/1985	234412.4	15.2	4.80	0.032	V	41.8(67.3)
GSP	34.0240	117.2300	03/11/1998	121851.8	14.0	4.50	0.027	V	42.4(68.2)
GSP	34.1500	117.7200	03/01/1990	032303.0	11.0	4.70	0.030	V	42.5(68.5)
DMG	33.0000	117.3000	11/22/1800	2130 0.0	0.0	6.50	0.076	VII	42.8(69.0)
PAS	34.0520	118.0900	10/01/1987	151231.8	10.8	4.70	0.030	V	42.9(69.0)
DMG	33.8000	117.0000	12/25/1899	1225 0.0	0.0	6.40	0.072	VII	43.0(69.1)
PAS	34.0770	118.0470	02/11/1988	152555.7	12.5	4.70	0.029	V	43.0(69.3)
PAS	34.0610	118.0790	10/01/1987	144220.0	9.5	5.90	0.055	VI	43.0(69.3)
PAS	34.0490	118.1010	10/01/1987	144541.5	13.6	4.70	0.029	V	43.0(69.3)
MGI	34.1000	118.0000	01/27/1930	2026 0.0	0.0	4.60	0.028	V	43.2(69.5)
PAS	34.0600	118.1000	10/01/1987	1449 5.9	11.7	4.70	0.029	V	43.6(70.2)
DMG	34.1320	117.4260	04/15/1965	20 833.3	5.5	4.50	0.026	V	43.7(70.2)
DMG	33.5000	116.9170	11/04/1935	355 0.0	0.0	4.50	0.026	V	43.8(70.4)
DMG	33.8830	118.3170	03/11/1933	1457 0.0	0.0	4.90	0.032	V	43.9(70.7)
MGI	34.0000	118.2000	06/26/1917	2130 0.0	0.0	4.60	0.027	V	44.0(70.8)
MGI	34.0000	118.2000	06/26/1917	2120 0.0	0.0	4.60	0.027	V	44.0(70.8)
MGI	34.0000	118.2000	02/13/1917	13 5 0.0	0.0	4.60	0.027	V	44.0(70.8)
MGI	34.0000	118.2000	06/26/1917	2115 0.0	0.0	4.60	0.027	V	44.0(70.8)
PAS	34.0730	118.0980	10/04/1987	105938.2	8.2	5.30	0.040	V	44.3(71.3)
DMG	34.1670	117.5330	03/01/1948	81213.0	0.0	4.70	0.029	V	44.4(71.5)
MGI	34.1000	117.3000	12/27/1901	11 0 0.0	0.0	4.60	0.027	V	44.6(71.8)
MGI	34.1000	117.3000	07/15/1905	2041 0.0	0.0	5.30	0.039	V	44.6(71.8)
DMG	33.7100	116.9250	09/23/1963	144152.6	16.5	5.00	0.033	V	44.9(72.2)
DMG	34.1270	117.3380	02/23/1936	222042.7	10.0	4.50	0.026	V	45.3(72.8)
DMG	34.1830	117.5480	09/01/1937	163533.5	10.0	4.50	0.025	V	45.3(73.0)
MGI	34.1000	118.1000	07/11/1855	415 0.0	0.0	6.30	0.065	VI	46.0(74.0)
T-A	34.0000	118.2500	03/26/1860	0 0 0.0	0.0	5.00	0.033	V	46.0(74.0)
T-A	34.0000	118.2500	09/23/1827	0 0 0.0	0.0	5.00	0.033	V	46.0(74.0)
T-A	34.0000	118.2500	01/10/1856	0 0 0.0	0.0	5.00	0.033	V	46.0(74.0)
DMG	34.2000	117.5000	06/14/1892	1325 0.0	0.0	4.90	0.031	V	47.0(75.7)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.7670	118.4500	10/11/1940	55712.3	0.0	4.70	0.027	V	47.3(76.1)
DMG	34.2110	117.5300	09/01/1937	1348 8.2	10.0	4.50	0.025	V	47.4(76.3)
DMG	34.2000	117.9000	08/28/1889	215 0.0	0.0	5.50	0.042	V	47.7(76.7)
DMG	34.2000	117.9000	07/13/1935	105416.5	0.0	4.70	0.027	V	47.7(76.7)
MGI	34.0000	118.3000	09/03/1905	540 0.0	0.0	5.30	0.037	V	48.1(77.4)
GSP	34.1900	117.3900	12/28/1989	094108.1	15.0	4.50	0.024	V	48.1(77.4)
DMG	34.2000	117.4000	07/22/1899	046 0.0	0.0	5.50	0.041	V	48.6(78.2)
DMG	34.0170	117.0500	02/19/1940	12 655.7	0.0	4.60	0.025	V	49.0(78.8)
MGI	34.2000	118.0000	01/09/1921	530 0.0	0.0	4.60	0.025	V	49.5(79.7)
PAS	34.1490	118.1350	12/03/1988	113826.4	13.3	4.90	0.029	V	49.9(80.3)
MGI	34.0800	118.2600	07/16/1920	18 8 0.0	0.0	5.00	0.031	V	50.4(81.1)

DMG	34.0000	117.0000	06/30/1923	022 0.0	0.0	4.50	0.023	IV	50.4(81.1)
MGI	33.5000	116.8000	03/30/1918	16 5 0.0	0.0	4.60	0.025	V	50.5(81.3)
DMG	34.2700	117.5400	09/12/1970	143053.0	8.0	5.40	0.037	V	51.3(82.6)
MGI	34.0000	118.4000	10/01/1930	040 0.0	0.0	4.60	0.024	V	52.5(84.5)
MGI	34.0000	118.4000	02/07/1927	429 0.0	0.0	4.60	0.024	V	52.5(84.5)
MGI	34.0000	118.4000	02/22/1920	1610 0.0	0.0	4.60	0.024	V	52.5(84.5)
MGI	34.1000	118.3000	07/16/1920	2127 0.0	0.0	4.60	0.024	IV	52.9(85.2)
MGI	34.1000	118.3000	07/16/1920	2022 0.0	0.0	4.60	0.024	IV	52.9(85.2)
MGI	34.1000	118.3000	07/16/1920	2130 0.0	0.0	4.60	0.024	IV	52.9(85.2)
DMG	34.3000	117.6000	07/30/1894	512 0.0	0.0	6.00	0.050	VI	53.0(85.3)
GSP	34.2620	118.0020	06/28/1991	144354.5	11.0	5.40	0.036	V	53.6(86.2)
DMG	33.0000	117.0000	03/03/1906	2025 0.0	0.0	4.50	0.022	IV	53.7(86.5)
MGI	33.0000	117.0000	09/21/1856	730 0.0	0.0	5.00	0.029	V	53.7(86.5)
DMG	34.3000	117.5000	07/22/1899	2032 0.0	0.0	6.50	0.064	VI	53.8(86.5)
DMG	33.6500	116.7500	09/05/1950	191956.0	0.0	4.80	0.026	V	53.9(86.7)
DMG	33.9500	116.8500	09/28/1946	719 9.0	0.0	5.00	0.028	V	55.4(89.2)
GSP	34.1920	117.0950	04/06/1994	190104.1	7.0	4.80	0.025	V	56.3(90.6)
DMG	34.2000	117.1000	09/20/1907	154 0.0	0.0	6.00	0.047	VI	56.6(91.0)
PAS	32.7560	117.9880	01/12/1975	212214.8	15.3	4.80	0.025	V	56.7(91.3)
DMG	32.8670	118.2500	02/13/1952	151337.0	0.0	4.70	0.024	IV	56.8(91.4)
DMG	34.0000	118.5000	11/08/1914	1140 0.0	0.0	4.50	0.021	IV	57.1(92.0)
DMG	34.0000	118.5000	08/04/1927	1224 0.0	0.0	5.00	0.028	V	57.1(92.0)
DMG	34.0000	118.5000	06/22/1920	248 0.0	0.0	4.90	0.026	V	57.1(92.0)
MGI	34.0000	118.5000	11/19/1918	2018 0.0	0.0	5.00	0.028	V	57.1(92.0)
DMG	34.3700	117.6500	12/08/1812	15 0 0.0	0.0	7.00	0.079	VII	57.7(92.8)
PAS	33.5580	116.6670	06/15/1982	234921.3	12.2	4.80	0.025	V	58.1(93.5)
GSP	34.1120	116.9200	10/01/1998	181816.0	4.0	4.70	0.023	IV	58.9(94.8)
GSP	34.1210	116.9280	08/16/1998	133440.2	6.0	4.70	0.023	IV	59.0(94.9)
DMG	33.8000	116.7000	08/11/1911	2340 0.0	0.0	4.50	0.021	IV	59.0(95.0)
DMG	34.1000	116.8830	10/24/1935	1451 0.0	0.0	4.50	0.021	IV	59.9(96.5)
DMG	34.1000	116.8830	10/24/1935	1452 0.0	0.0	4.50	0.021	IV	59.9(96.5)
DMG	33.9760	116.7750	10/17/1965	94519.0	17.0	4.90	0.025	V	60.0(96.6)
PAS	33.9190	118.6270	01/19/1989	65328.8	11.9	5.00	0.026	V	60.7(97.7)
MGI	32.8000	117.1000	05/25/1803	0 0 0.0	0.0	5.00	0.026	V	60.7(97.7)
DMG	33.2000	116.7000	01/01/1920	235 0.0	0.0	5.00	0.026	V	60.9(97.9)
DMG	34.0140	116.7710	06/10/1944	111150.5	10.0	4.50	0.020	IV	61.6(99.1)
DMG	33.9500	118.6320	08/31/1930	04036.0	0.0	5.20	0.029	V	61.9(99.6)
DMG	33.9170	116.7000	11/17/1943	112841.0	0.0	4.50	0.020	IV	62.0(99.7)
GSP	34.1780	116.9220	06/28/1992	170131.9	13.0	4.70	0.022	IV	62.0(99.8)
DMG	32.7500	118.2000	06/25/1939	149 0.0	0.0	4.50	0.020	IV	62.1(99.9)
DMG	34.1800	116.9200	01/16/1930	034 3.6	0.0	5.10	0.027	V	62.2(100.0)
DMG	34.1800	116.9200	01/16/1930	02433.9	0.0	5.20	0.029	V	62.2(100.0)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.9760	116.7210	06/12/1944	104534.7	10.0	5.10	0.027	V	62.7(100.9)

DMG	33.5060	116.5850	05/21/1967	144234.4	19.4	4.70	0.022	IV	62.9(101.1)
DMG	32.8170	118.3500	12/26/1951	04654.0	0.0	5.90	0.041	V	63.0(101.4)
DMG	33.4670	116.5830	01/04/1938	029 0.0	0.0	4.50	0.020	IV	63.1(101.6)
DMG	33.4670	116.5830	03/27/1937	742 0.0	0.0	4.50	0.020	IV	63.1(101.6)
DMG	32.7180	118.1720	04/28/1938	6 728.0	10.0	4.50	0.020	IV	63.3(101.8)
DMG	32.6800	118.0770	10/28/1973	22 0 2.7	8.0	4.50	0.020	IV	63.4(102.0)
DMG	34.1000	116.8000	10/24/1935	1448 7.6	0.0	5.10	0.027	V	63.6(102.4)
DMG	33.9940	116.7120	06/12/1944	111636.0	10.0	5.30	0.030	V	63.8(102.6)
DMG	32.7000	117.2000	05/27/1862	20 0 0.0	0.0	5.90	0.041	V	63.9(102.8)
GSP	34.1630	116.8550	06/28/1992	144321.0	6.0	5.30	0.030	V	64.0(103.0)
GSP	32.6810	118.1090	06/20/1997	043540.5	6.0	4.70	0.022	IV	64.0(103.1)
PAS	33.9440	118.6810	01/01/1979	231438.9	11.3	5.00	0.025	V	64.2(103.3)
PAS	33.5200	116.5580	08/02/1975	014 7.7	13.4	4.70	0.022	IV	64.4(103.6)
PAS	33.9790	116.6810	12/16/1988	553 5.0	8.1	4.80	0.023	IV	64.8(104.4)
DMG	34.2670	116.9670	08/29/1943	34513.0	0.0	5.50	0.033	V	64.9(104.4)
PAS	32.6270	117.3770	06/29/1983	8 836.4	5.0	4.60	0.020	IV	65.0(104.7)
GSP	34.1950	116.8620	08/17/1992	204152.1	11.0	5.30	0.029	V	65.2(105.0)
DMG	32.5830	117.8000	04/19/1939	741 0.0	0.0	4.50	0.019	IV	66.1(106.4)
PAS	34.2460	116.9010	06/29/1979	55320.5	5.7	4.60	0.020	IV	66.2(106.6)
MGI	33.2000	116.6000	10/12/1920	1748 0.0	0.0	5.30	0.029	V	66.2(106.6)
PAS	34.2430	116.8960	06/30/1979	03411.6	5.8	4.90	0.023	IV	66.3(106.6)
GSP	34.2560	116.9120	06/28/1992	170557.5	8.0	4.60	0.020	IV	66.3(106.7)
GSP	34.2310	118.4750	03/20/1994	212012.3	13.0	5.30	0.029	V	66.4(106.8)
GSP	34.2930	118.3890	12/06/1994	034834.5	9.0	4.50	0.019	IV	66.4(106.8)
PAS	34.2490	116.9000	06/30/1979	7 353.0	5.6	4.50	0.019	IV	66.4(106.9)
T-A	32.6700	117.1700	12/00/1856	0 0 0.0	0.0	5.00	0.025	V	66.5(107.0)
T-A	32.6700	117.1700	05/24/1865	0 0 0.0	0.0	5.00	0.025	V	66.5(107.0)
T-A	32.6700	117.1700	10/21/1862	0 0 0.0	0.0	5.00	0.025	V	66.5(107.0)
DMG	34.3350	118.3310	02/09/1971	155820.7	14.2	4.80	0.022	IV	66.8(107.4)
GSP	34.2150	118.5100	01/19/1994	140914.8	17.0	4.50	0.019	IV	67.0(107.8)
PAS	33.5010	116.5130	02/25/1980	104738.5	13.6	5.50	0.032	V	67.0(107.8)
GSN	34.2030	116.8270	06/28/1992	150530.7	5.0	6.70	0.060	VI	67.1(107.9)
DMG	34.3610	118.3060	02/09/1971	141021.5	5.0	4.70	0.021	IV	67.5(108.6)
DMG	33.5000	116.5000	09/30/1916	211 0.0	0.0	5.00	0.024	V	67.8(109.0)
DMG	33.4830	116.5000	02/15/1951	104957.0	0.0	4.80	0.022	IV	67.8(109.1)
DMG	33.4830	116.5000	02/15/1951	104759.0	0.0	4.80	0.022	IV	67.8(109.1)
GSP	34.1300	116.7340	06/30/1992	212254.4	12.0	4.80	0.022	IV	67.9(109.3)
GSP	34.2130	118.5370	01/17/1994	123055.4	18.0	6.70	0.059	VI	68.0(109.4)
DMG	34.1000	116.7000	02/07/1889	520 0.0	0.0	5.30	0.028	V	68.3(109.8)
GSP	34.2390	116.8370	07/09/1992	014357.6	0.0	5.30	0.028	V	68.4(110.1)
GSP	32.6260	118.1510	06/20/1997	080413.6	6.0	4.60	0.020	IV	68.5(110.2)
DMG	33.5000	116.4830	02/23/1941	183614.0	0.0	4.50	0.018	IV	68.7(110.6)
PAS	33.9980	116.6060	07/08/1986	92044.5	11.7	5.60	0.033	V	69.3(111.5)
DMG	34.3080	118.4540	02/09/1971	144346.7	6.2	5.20	0.026	V	69.5(111.9)
GSB	34.3000	118.4660	01/21/1994	183915.3	10.0	4.70	0.020	IV	69.5(111.9)
DMG	34.2290	116.7950	05/11/1956	163050.5	13.3	4.70	0.020	IV	69.6(112.1)
PAS	33.9530	116.5720	10/15/1986	22847.8	8.7	4.70	0.020	IV	69.7(112.1)
GSP	34.3170	118.4550	01/17/1994	132644.7	2.0	4.70	0.020	IV	70.0(112.7)
GSP	34.2610	118.5340	01/17/1994	123939.8	14.0	4.50	0.018	IV	70.2(113.0)
GSP	34.2280	118.5730	01/17/1994	175608.2	19.0	4.60	0.019	IV	70.2(113.0)
GSP	34.2110	116.7600	06/28/1992	152429.3	6.0	4.50	0.018	IV	70.3(113.1)
GSP	34.2540	118.5450	01/17/1994	130627.9	0.0	4.60	0.019	IV	70.3(113.1)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
GSP	34.3310	118.4420	01/17/1994	141430.3	1.0	4.50	0.018	IV	70.3(113.2)
DMG	34.2860	118.5150	03/31/1971	145222.5	2.1	4.60	0.019	IV	70.7(113.8)
GSP	34.3400	116.9000	11/27/1992	160057.5	1.0	5.30	0.027	V	71.2(114.6)
DMG	34.3330	116.8830	10/14/1943	142844.0	0.0	4.50	0.018	IV	71.4(114.9)
DMG	34.3250	116.8650	10/29/1962	24253.9	8.6	4.80	0.021	IV	71.7(115.3)
DMG	32.8000	116.8000	10/23/1894	23 3 0.0	0.0	5.70	0.034	V	71.7(115.4)
MGI	32.8000	116.8000	08/14/1927	1448 0.0	0.0	4.60	0.019	IV	71.7(115.4)
DMG	33.4670	116.4330	05/12/1939	1925 2.2	0.0	4.50	0.018	IV	71.7(115.4)
DMG	34.3530	118.4560	03/07/1971	13340.5	3.3	4.50	0.018	IV	72.0(115.9)
GSP	34.2740	118.5630	01/27/1994	171958.8	14.0	4.60	0.019	IV	72.0(115.9)
GSP	34.3230	116.8440	10/27/1998	010840.7	5.0	4.90	0.022	IV	72.3(116.4)
GSP	34.3770	116.9180	12/04/1992	052511.2	2.0	4.80	0.021	IV	72.6(116.8)
DMG	33.1100	116.5230	01/24/1957	205449.9	3.9	4.60	0.019	IV	72.7(117.0)
GSP	34.3690	116.8970	12/04/1992	020857.5	3.0	5.30	0.027	V	72.9(117.3)
DMG	34.3500	116.8670	10/15/1943	1650 1.0	0.0	4.50	0.018	IV	72.9(117.3)
DMG	33.4170	116.4170	01/02/1943	141118.0	0.0	4.50	0.018	IV	73.0(117.4)
DMG	33.3330	116.4330	02/12/1954	94428.0	0.0	4.50	0.018	IV	73.0(117.5)
PAS	33.1380	116.5010	10/10/1984	212258.9	11.6	4.50	0.018	IV	73.1(117.7)
DMG	34.3920	118.4270	02/21/1971	71511.7	7.2	4.50	0.018	IV	73.1(117.7)
DMG	34.4110	118.4010	02/09/1971	14 1 8.0	8.0	5.80	0.035	V	73.3(118.0)
DMG	34.4110	118.4010	02/09/1971	14 041.8	8.4	6.40	0.048	VI	73.3(118.0)
DMG	34.4110	118.4010	02/09/1971	14 244.0	8.0	5.80	0.035	V	73.3(118.0)
DMG	34.4110	118.4010	02/09/1971	14 853.0	8.0	4.60	0.018	IV	73.3(118.0)
DMG	34.4110	118.4010	02/09/1971	14 231.0	8.0	4.70	0.019	IV	73.3(118.0)
DMG	34.4110	118.4010	02/09/1971	141028.0	8.0	5.30	0.027	V	73.3(118.0)
DMG	34.4110	118.4010	02/09/1971	14 150.0	8.0	4.50	0.018	IV	73.3(118.0)
DMG	34.4110	118.4010	02/09/1971	14 838.0	8.0	4.50	0.018	IV	73.3(118.0)
DMG	34.4110	118.4010	02/09/1971	14 745.0	8.0	4.50	0.018	IV	73.3(118.0)
GSB	34.3010	118.5650	01/17/1994	204602.4	9.0	5.20	0.025	V	73.4(118.1)
PAS	34.3800	118.4590	08/12/1977	21926.1	9.5	4.50	0.018	IV	73.6(118.4)
GSP	34.2500	116.7190	06/29/1992	164141.9	1.0	4.90	0.022	IV	73.8(118.8)
DMG	34.3970	118.4390	02/21/1971	55052.6	6.9	4.70	0.019	IV	73.8(118.8)
DMG	34.4000	116.9170	02/01/1942	16 334.0	0.0	4.50	0.017	IV	73.9(118.9)
DMG	34.4000	116.9170	02/01/1942	151828.0	0.0	4.50	0.017	IV	73.9(118.9)
GSB	34.3190	118.5580	01/18/1994	132444.1	1.0	4.50	0.017	IV	74.0(119.1)
GSP	34.3050	118.5790	01/29/1994	112036.0	1.0	5.10	0.024	IV	74.2(119.4)
DMG	34.5190	118.1980	08/23/1952	10 9 7.1	13.1	5.00	0.023	IV	74.2(119.4)
DMG	34.4260	118.4140	02/10/1971	518 7.2	5.8	4.50	0.017	IV	74.6(120.1)
DMG	34.3000	118.6000	04/04/1893	1940 0.0	0.0	6.00	0.038	V	74.8(120.3)
DMG	34.3060	116.7590	03/16/1956	202933.6	1.3	4.80	0.020	IV	74.8(120.4)
GSB	34.2850	118.6240	01/17/1994	135602.4	19.0	4.70	0.019	IV	75.0(120.7)
DMG	34.3990	118.4730	03/09/1974	05431.9	24.4	4.70	0.019	IV	75.1(120.9)
GSB	34.3450	118.5520	01/24/1994	041518.8	6.0	4.80	0.020	IV	75.1(120.9)
DMG	34.0170	116.5000	07/25/1947	61949.0	0.0	5.20	0.025	V	75.3(121.1)
DMG	34.0170	116.5000	07/25/1947	04631.0	0.0	5.00	0.022	IV	75.3(121.1)
DMG	34.0170	116.5000	07/25/1947	15647.0	0.0	4.60	0.018	IV	75.3(121.1)
DMG	34.0170	116.5000	07/24/1947	225426.0	0.0	4.90	0.021	IV	75.3(121.1)
DMG	34.0170	116.5000	07/26/1947	24941.0	0.0	5.10	0.024	IV	75.3(121.1)

DMG	34.0170	116.5000	07/26/1947	23 425.0	0.0	4.50	0.017	IV	75.3(121.1)
DMG	34.0170	116.5000	07/24/1947	221046.0	0.0	5.50	0.029	V	75.3(121.1)
DMG	34.0170	116.5000	07/25/1947	161453.0	0.0	4.50	0.017	IV	75.3(121.1)
DMG	33.9670	116.4500	12/11/1948	161220.0	0.0	4.50	0.017	IV	76.5(123.0)
GSB	34.3600	118.5710	01/19/1994	044048.0	2.0	4.50	0.017	IV	76.6(123.3)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
GSP	33.3990	116.3540	07/26/1997	031456.0	11.0	4.80	0.020	IV	76.7(123.5)
GSP	34.3790	118.5610	01/18/1994	152346.9	7.0	4.80	0.020	IV	77.2(124.3)
DMG	33.9670	116.4330	12/05/1948	04235.0	0.0	4.60	0.018	IV	77.4(124.5)
PAS	33.6300	119.0200	10/23/1981	172816.9	12.0	4.60	0.018	IV	77.6(124.8)
DMG	33.3430	116.3460	04/28/1969	232042.9	20.0	5.80	0.033	V	77.8(125.2)
DMG	33.1170	116.4170	10/21/1940	64933.0	0.0	4.50	0.017	IV	78.2(125.8)
DMG	34.3440	118.6360	02/09/1971	143436.1	-2.0	4.90	0.021	IV	78.4(126.1)
GSB	34.3580	118.6220	01/18/1994	040126.8	1.0	4.50	0.017	IV	78.5(126.3)
DMG	34.4360	116.8340	07/14/1973	8 020.1	8.0	4.80	0.019	IV	78.7(126.7)
DMG	33.9330	116.3830	12/04/1948	234317.0	0.0	6.50	0.047	VI	79.2(127.4)
GSP	34.3740	118.6220	01/17/1994	155410.8	12.0	4.80	0.019	IV	79.3(127.6)
PAS	34.3470	118.6560	04/08/1976	152138.1	14.5	4.60	0.017	IV	79.3(127.6)
GSP	34.3780	118.6180	01/19/1994	211144.9	11.0	5.10	0.023	IV	79.3(127.7)
PAS	33.6370	119.0560	10/23/1981	191552.5	6.3	4.60	0.017	IV	79.7(128.2)
DMG	33.4000	116.3000	02/09/1890	12 6 0.0	0.0	6.30	0.042	VI	79.8(128.4)
DMG	33.9330	116.3670	12/05/1948	0 721.0	0.0	4.90	0.020	IV	80.0(128.8)
GSP	34.3260	118.6980	01/17/1994	233330.7	9.0	5.60	0.029	V	80.1(128.8)
DMG	33.3150	116.3050	04/09/1968	1831 3.8	12.6	4.70	0.018	IV	80.5(129.5)
GSP	34.3770	118.6490	04/27/1997	110928.4	15.0	4.80	0.019	IV	80.5(129.6)
DMG	33.3330	116.3000	08/06/1933	332 0.0	0.0	4.70	0.018	IV	80.5(129.6)
DMG	33.0000	116.4330	06/04/1940	1035 8.3	0.0	5.10	0.022	IV	80.7(129.9)
GSP	34.3690	118.6720	04/26/1997	103730.7	16.0	5.10	0.022	IV	81.0(130.4)
DMG	34.0170	118.9670	04/16/1948	222624.0	0.0	4.70	0.018	IV	81.2(130.7)
GSP	34.0950	116.4270	06/28/1992	211316.5	3.0	4.60	0.017	IV	81.4(131.1)
DMG	33.4080	116.2610	03/25/1937	1649 1.8	10.0	6.00	0.035	V	82.0(131.9)
GSP	33.9510	116.3380	05/18/1992	154418.0	7.0	4.90	0.020	IV	82.0(132.0)
DMG	33.4300	119.0960	10/31/1969	103929.0	7.3	4.80	0.019	IV	82.1(132.1)
GSP	34.0040	116.3610	06/30/1992	143811.6	0.0	4.80	0.019	IV	82.1(132.2)
GSP	34.3940	118.6690	06/26/1995	084028.9	13.0	5.00	0.021	IV	82.2(132.2)
PAS	34.0160	118.9880	10/26/1984	172043.5	13.3	4.60	0.017	IV	82.3(132.4)
DMG	34.0000	119.0000	09/24/1827	4 0 0.0	0.0	7.00	0.060	VI	82.5(132.7)
MGI	34.0000	119.0000	12/14/1912	0 0 0.0	0.0	5.70	0.030	V	82.5(132.7)
GSP	34.0880	116.4020	08/15/1992	082414.7	0.0	4.80	0.019	IV	82.5(132.7)
GSP	34.3770	118.6980	01/18/1994	004308.9	11.0	5.20	0.023	IV	82.5(132.7)
GSP	34.1120	116.4150	07/28/1992	182703.9	0.0	4.60	0.017	IV	82.6(132.9)
GSP	34.1390	116.4310	06/28/1992	123640.6	10.0	5.10	0.022	IV	82.7(133.1)
DMG	33.9850	116.3400	02/01/1957	75215.4	11.0	4.60	0.017	IV	82.8(133.2)
GSP	34.1110	116.4100	06/28/1992	135045.7	0.0	4.90	0.020	IV	82.8(133.3)

GSP	34.1080	116.4040	06/29/1992	141338.8	9.0	5.40	0.026	V	83.0(133.6)
PAS	33.6710	119.1110	09/04/1981	155050.3	5.0	5.30	0.024	V	83.0(133.6)
GSP	34.1060	116.4020	06/29/1992	140837.7	11.0	4.90	0.020	IV	83.1(133.7)
GSP	33.9430	116.3150	05/06/1992	023843.3	7.0	4.50	0.016	IV	83.1(133.7)
GSB	34.3790	118.7110	01/19/1994	210928.6	14.0	5.50	0.027	V	83.1(133.7)
GSP	33.9570	116.3170	04/23/1992	022529.9	11.0	4.60	0.017	IV	83.3(134.1)
GSP	33.9610	116.3180	04/23/1992	045023.0	12.0	6.10	0.037	V	83.3(134.1)
DMG	33.3390	119.1040	10/24/1969	202642.5	-1.8	4.70	0.018	IV	83.4(134.1)
PDP	33.9370	116.3060	07/25/1992	043160.0	5.0	4.90	0.020	IV	83.4(134.3)
GSP	34.0620	116.3660	05/14/1999	075403.2	1.0	4.90	0.020	IV	83.5(134.4)
GSP	33.9420	116.3040	05/04/1992	161949.7	12.0	4.80	0.019	IV	83.7(134.6)
GSP	33.9050	116.2880	05/07/1995	110333.0	10.0	4.80	0.019	IV	83.7(134.7)
GSP	34.0640	116.3610	09/15/1992	084711.3	9.0	5.20	0.023	IV	83.8(134.9)
GSP	33.9020	116.2840	07/24/1992	181436.2	9.0	5.00	0.021	IV	83.9(135.0)
GSG	34.0120	116.3250	04/23/1992	051009.4	3.0	4.60	0.017	IV	84.3(135.6)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
GSP	34.0920	116.3690	07/06/1992	120059.2	1.0	4.50	0.016	IV	84.3(135.6)
GSP	33.8760	116.2670	06/29/1992	160142.8	1.0	5.20	0.023	IV	84.3(135.7)
GSN	34.2010	116.4360	06/28/1992	115734.1	1.0	7.60	0.080	VII	84.7(136.3)
GSP	34.1620	116.4050	06/28/1992	132605.1	6.0	4.90	0.019	IV	84.8(136.4)
GSP	34.0290	116.3210	08/21/1993	014638.4	9.0	5.00	0.020	IV	84.9(136.7)
DMG	34.0670	116.3330	05/18/1940	55120.2	0.0	5.20	0.023	IV	85.4(137.4)
DMG	34.0670	116.3330	05/18/1940	72132.7	0.0	5.00	0.020	IV	85.4(137.4)
DMG	34.0830	116.3330	06/01/1940	527 1.2	0.0	4.70	0.017	IV	85.9(138.2)
DMG	34.0830	116.3330	06/02/1940	61310.2	0.0	4.50	0.016	IV	85.9(138.2)
DMG	34.0650	119.0350	02/21/1973	144557.3	8.0	5.90	0.032	V	86.1(138.6)
GSP	34.3410	116.5290	06/28/1992	124053.5	6.0	5.20	0.022	IV	86.1(138.6)
DMG	34.0670	116.3170	05/18/1940	6 430.6	0.0	4.60	0.016	IV	86.2(138.7)
DMG	33.7830	116.2000	10/31/1943	131210.0	0.0	4.50	0.015	IV	86.6(139.3)
DMG	33.3490	116.1880	05/19/1969	144033.0	8.6	4.50	0.015	IV	86.7(139.5)
DMG	34.0500	116.2830	05/19/1940	226 2.0	0.0	4.50	0.015	IV	87.5(140.8)
DMG	34.0500	116.2830	05/19/1940	22730.0	0.0	4.50	0.015	IV	87.5(140.8)
DMG	34.0500	116.2830	05/18/1940	134719.0	0.0	4.50	0.015	IV	87.5(140.8)
DMG	32.5000	118.5500	02/24/1948	81510.0	0.0	5.30	0.023	IV	87.5(140.9)
DMG	34.0830	116.3000	05/18/1940	5 358.5	0.0	5.40	0.025	V	87.6(140.9)
GSP	34.6000	116.8400	06/04/1989	213358.1	2.0	4.50	0.015	IV	87.7(141.2)
DMG	33.2830	116.1830	03/19/1954	101957.0	0.0	4.50	0.015	IV	87.8(141.3)
DMG	33.2830	116.1830	03/19/1954	957 7.0	0.0	4.60	0.016	IV	87.8(141.3)
DMG	33.2830	116.1830	03/19/1954	101522.0	0.0	4.50	0.015	IV	87.8(141.3)
DMG	33.2830	116.1830	03/19/1954	95556.0	0.0	5.00	0.020	IV	87.8(141.3)
DMG	33.2830	116.1830	03/19/1954	102117.0	0.0	5.50	0.026	V	87.8(141.3)
DMG	33.2830	116.1830	03/19/1954	95429.0	0.0	6.20	0.037	V	87.8(141.3)
DMG	33.2830	116.1830	03/23/1954	41450.0	0.0	5.10	0.021	IV	87.8(141.3)
DMG	33.2830	116.1830	03/20/1954	41919.0	0.0	4.90	0.019	IV	87.8(141.3)

DMG	33.2000	116.2000	05/28/1892	1115 0.0	0.0	6.30	0.039	V	88.2(142.0)
GSP	34.3320	116.4620	07/01/1992	074029.9	9.0	5.40	0.024	V	88.7(142.7)
PAS	34.3090	116.4400	03/15/1979	201749.9	2.0	4.90	0.019	IV	88.7(142.8)
GSP	34.2680	116.4020	06/16/1994	162427.5	3.0	5.00	0.020	IV	88.9(143.0)
DMG	33.2910	119.1930	10/24/1969	82912.1	10.0	5.10	0.021	IV	89.0(143.2)
DMG	34.7000	117.0000	07/16/1916	1150 0.0	0.0	4.50	0.015	IV	89.2(143.6)
PAS	34.3270	116.4450	03/15/1979	21 716.5	2.5	5.20	0.022	IV	89.3(143.6)
T-A	32.2500	117.5000	01/13/1877	20 0 0.0	0.0	5.00	0.020	IV	89.3(143.7)
DMG	34.3000	116.4170	08/07/1942	11533.0	0.0	4.50	0.015	IV	89.4(143.9)
PAS	34.3300	116.4430	03/15/1979	23 758.2	2.8	4.80	0.018	IV	89.5(144.0)
DMG	33.0500	116.2380	08/23/1961	1 047.8	11.9	4.70	0.017	IV	89.5(144.0)
PAS	34.3480	116.4530	03/15/1979	213425.6	1.5	4.50	0.015	IV	89.8(144.5)
DMG	32.9520	116.2790	09/13/1973	173039.8	8.0	4.80	0.018	IV	90.2(145.1)
DMG	34.5860	118.6130	02/07/1956	31638.6	2.6	4.60	0.016	IV	90.2(145.2)
DMG	34.3810	116.4740	01/06/1964	234712.8	12.3	4.50	0.015	IV	90.3(145.3)
PAS	33.0580	116.2110	03/22/1982	85328.6	4.6	4.50	0.015	IV	90.7(146.0)
DMG	34.2330	116.3330	05/11/1947	5 620.0	0.0	4.90	0.018	IV	90.8(146.2)
DMG	32.9230	116.2720	10/14/1969	131842.7	10.0	4.50	0.015	IV	91.5(147.2)
DMG	33.2170	116.1330	08/15/1945	175624.0	0.0	5.70	0.028	V	91.7(147.5)
GSP	34.4140	116.4610	06/28/1992	131050.5	10.0	4.80	0.017	IV	92.3(148.6)
DMG	33.1900	116.1290	04/09/1968	22859.1	11.1	6.40	0.040	V	92.4(148.6)
DMG	34.1740	116.2570	02/15/1938	74539.8	10.0	4.50	0.015	IV	92.6(149.0)
PAS	34.3040	116.3410	11/15/1975	61327.6	5.8	4.60	0.015	IV	93.1(149.9)
PAS	34.2900	116.3220	12/14/1975	181620.1	1.8	4.70	0.016	IV	93.5(150.4)
DMG	34.4000	116.4170	11/10/1947	22255.0	0.0	4.50	0.015	IV	93.6(150.7)

EARTHQUAKE SEARCH RESULTS

Page 8

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.2330	116.0860	08/26/1965	133814.0	-2.0	4.50	0.014	IV	94.0(151.3)
DMG	34.1540	116.2100	07/30/1963	63457.3	12.9	4.70	0.016	IV	94.3(151.8)
DMG	32.1670	117.6670	10/29/1935	1017 0.0	0.0	4.50	0.014	IV	94.4(152.0)
DMG	33.1170	116.1170	06/18/1943	161546.0	0.0	4.50	0.014	IV	94.5(152.0)
PAS	34.5160	116.4950	06/01/1975	13849.2	4.5	5.20	0.021	IV	95.7(154.0)
DMG	33.1330	116.0830	05/07/1936	1147 0.0	0.0	4.50	0.014	IV	96.0(154.5)
DMG	33.1330	116.0830	02/28/1940	1728 7.0	0.0	4.50	0.014	IV	96.0(154.5)
DMG	33.8870	116.0400	01/23/1969	23 1 1.0	17.7	4.80	0.017	IV	97.1(156.2)
DMG	34.1180	119.2200	03/18/1957	185628.0	13.8	4.70	0.016	IV	97.3(156.5)
DMG	32.7000	116.3000	02/24/1892	720 0.0	0.0	6.70	0.045	VI	98.3(158.1)
DMG	33.2310	116.0040	05/26/1957	155933.6	15.1	5.00	0.018	IV	98.7(158.8)
MGI	34.2000	119.2000	06/16/1914	1052 0.0	0.0	4.60	0.015	IV	98.7(158.8)
DMG	33.1130	116.0370	04/09/1968	3 353.5	5.0	5.20	0.020	IV	99.0(159.3)
DMG	33.1040	116.0360	04/09/1968	34810.3	4.8	4.70	0.015	IV	99.2(159.6)
DMG	34.4830	118.9830	09/04/1942	63433.0	0.0	4.50	0.014	IV	99.4(159.9)
DMG	34.4830	118.9830	09/03/1942	14 6 1.0	0.0	4.50	0.014	IV	99.4(159.9)
DMG	34.2500	116.1670	03/20/1945	2155 7.0	0.0	5.00	0.018	IV	99.6(160.3)

****
-END OF SEARCH- 388 EARTHQUAKES FOUND WITHIN THE SPECIFIED SEARCH AREA.

TIME PERIOD OF SEARCH: 1800 TO 1999

LENGTH OF SEARCH TIME: 200 years

THE EARTHQUAKE CLOSEST TO THE SITE IS ABOUT 7.5 MILES (12.1 km) AWAY.

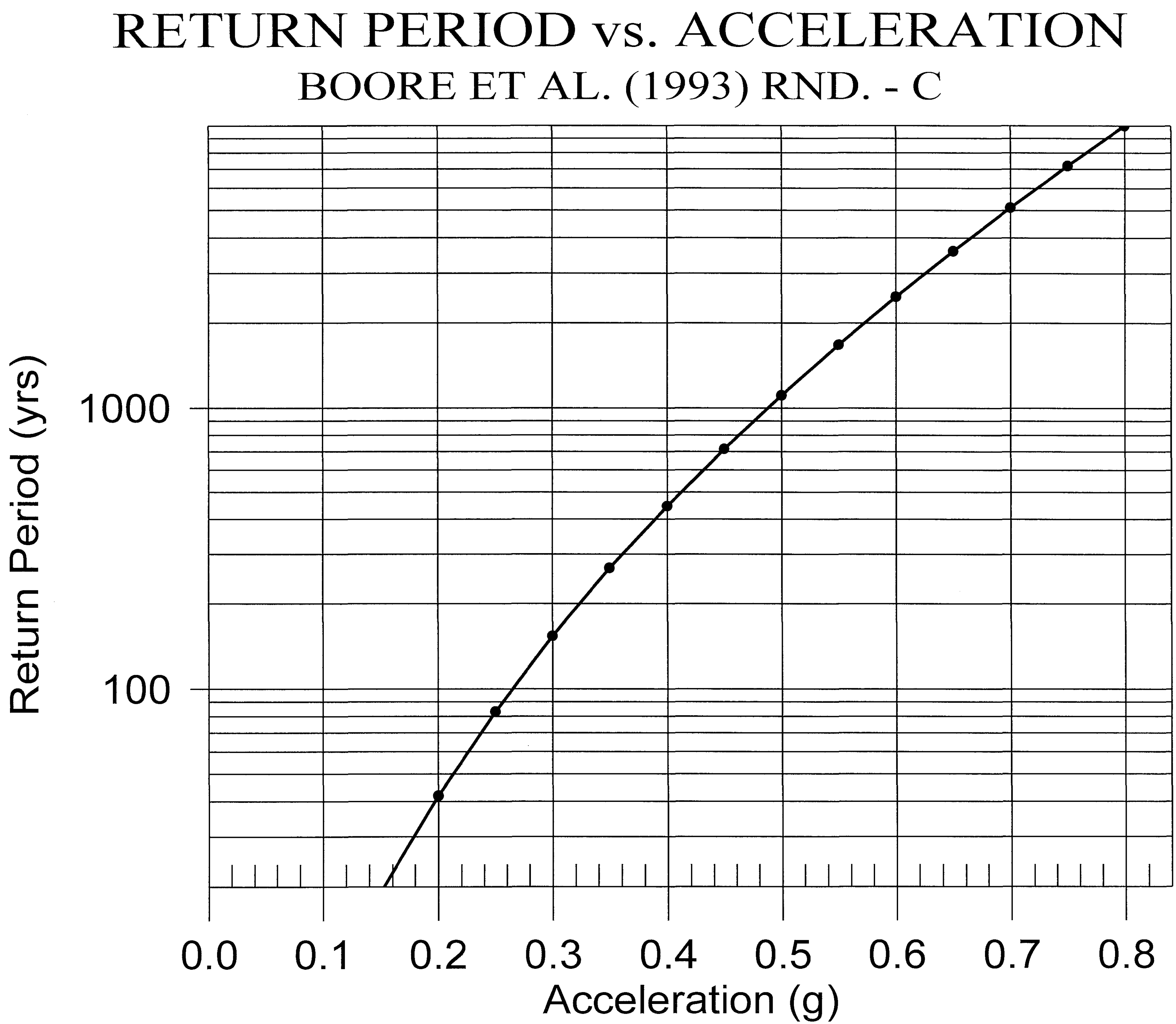
LARGEST EARTHQUAKE MAGNITUDE FOUND IN THE SEARCH RADIUS: 7.6

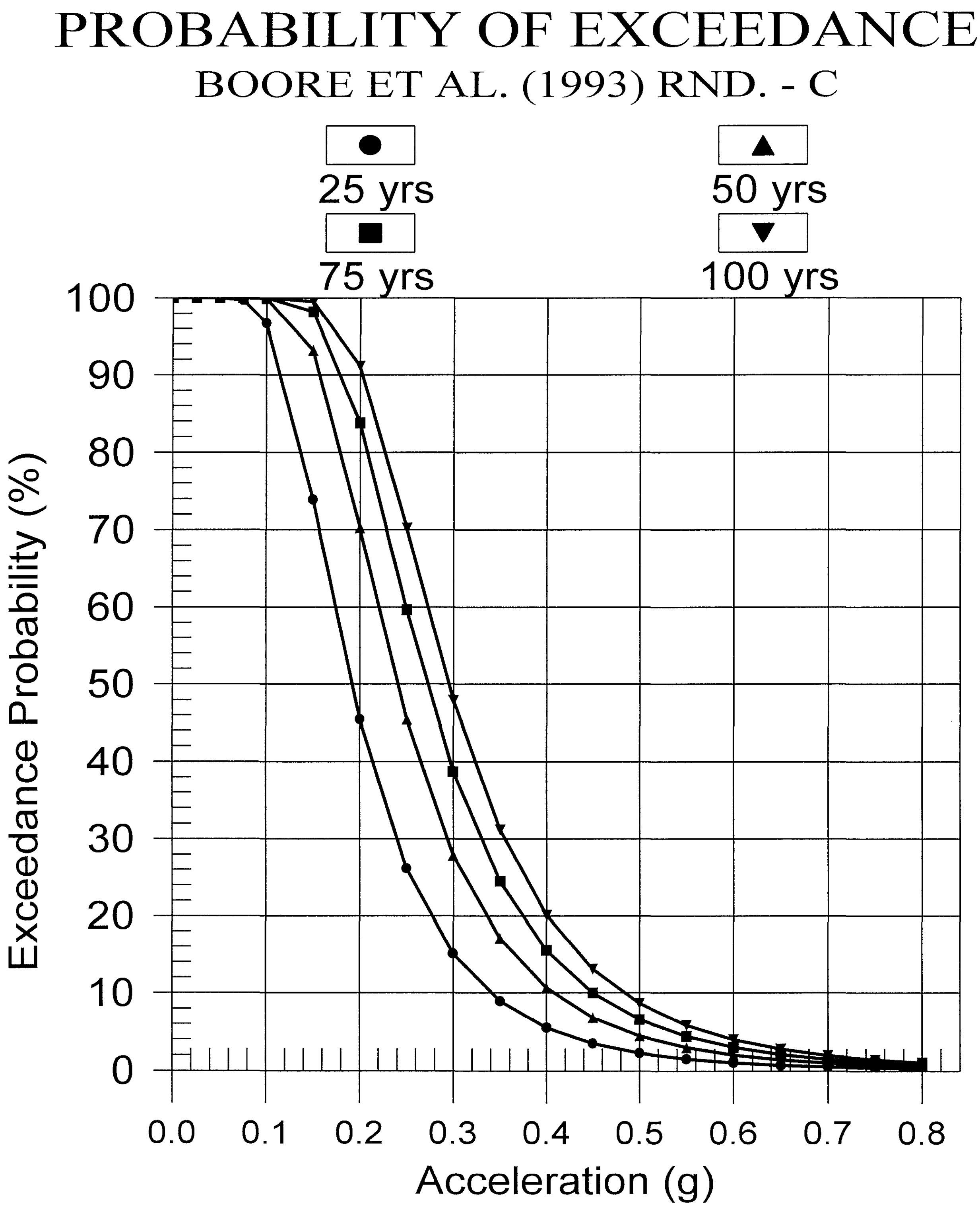
LARGEST EARTHQUAKE SITE ACCELERATION FROM THIS SEARCH: 0.135 g

COEFFICIENTS FOR GUTENBERG & RICHTER RECURRENCE RELATION:
a-value= 3.008
b-value= 0.645
beta-value= 1.484

TABLE OF MAGNITUDES AND EXCEEDANCES:

Earthquake Magnitude	Number of Times Exceeded	Cumulative No. / Year
4.0	388	1.94000
4.5	388	1.94000
5.0	139	0.69500
5.5	48	0.24000
6.0	27	0.13500
6.5	11	0.05500
7.0	4	0.02000
7.5	1	0.00500


RETURN PERIOD vs. ACCELERATION
BOORE ET AL. (1993) RND. - C
Return Period (yrs)
1000
100
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Acceleration (g)


PROBABILITY OF EXCEEDANCE
BOORE ET AL. (1993) RND. - C
25 yrs
50 yrs
75 yrs
100 yrs
Exceedance Probability (%)
100
90
80
70
60
50
40
30
20
10
0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Acceleration (g)

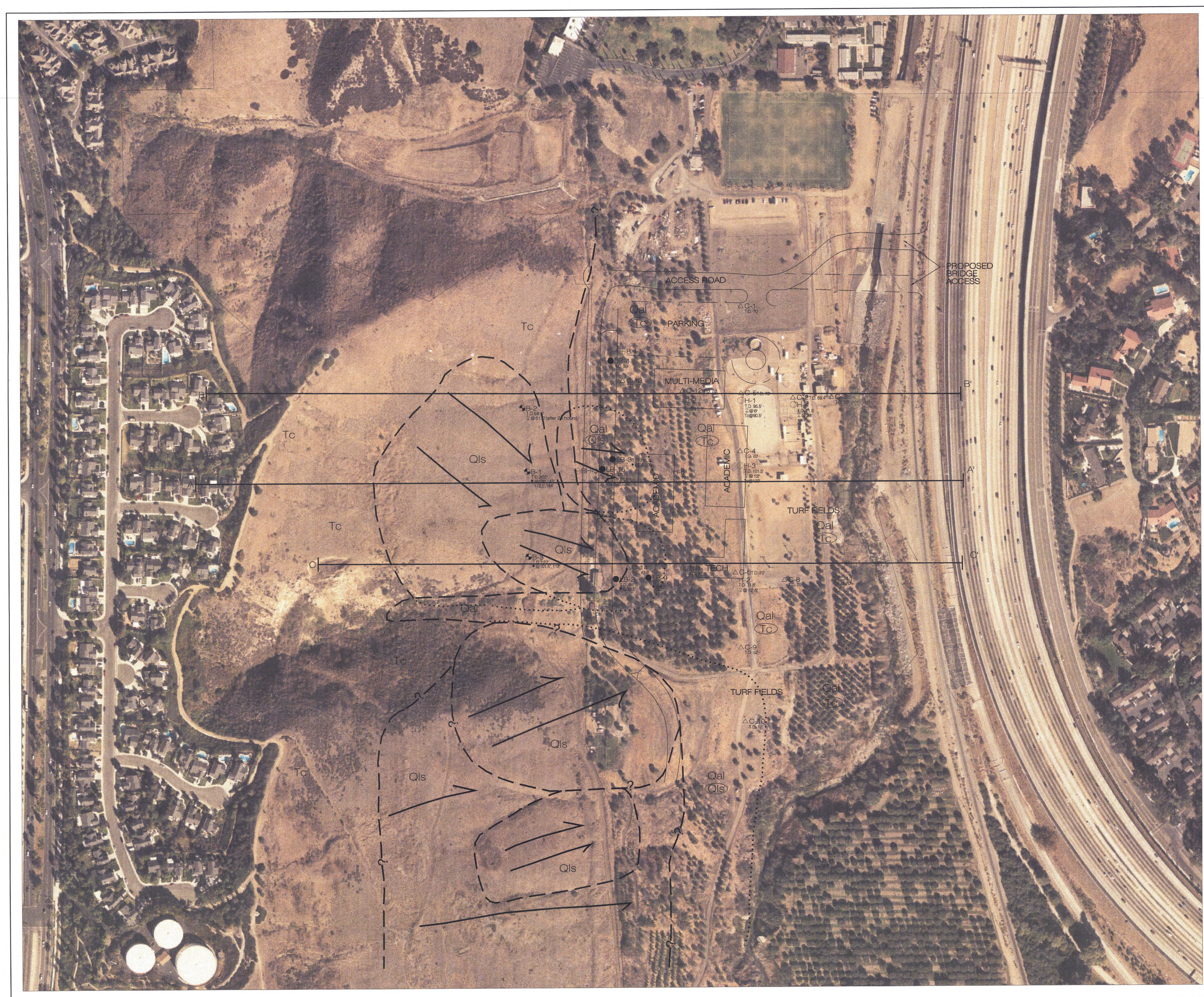


PLATE 1

GEOTECHNICAL MAP
PROPOSED MIDDLE SCHOOL,
RANCHO CAPISTRANO,
SAN JUAN CAPISTRANO, CALIFORNIA

Project No.: 01012-02 By: WG/RZ
Project Name: CUSD/RANCHO CAPISTRANO
Date: 9-28-01

NMG Geotechnical, Inc.

PLATE 1

LEGEND

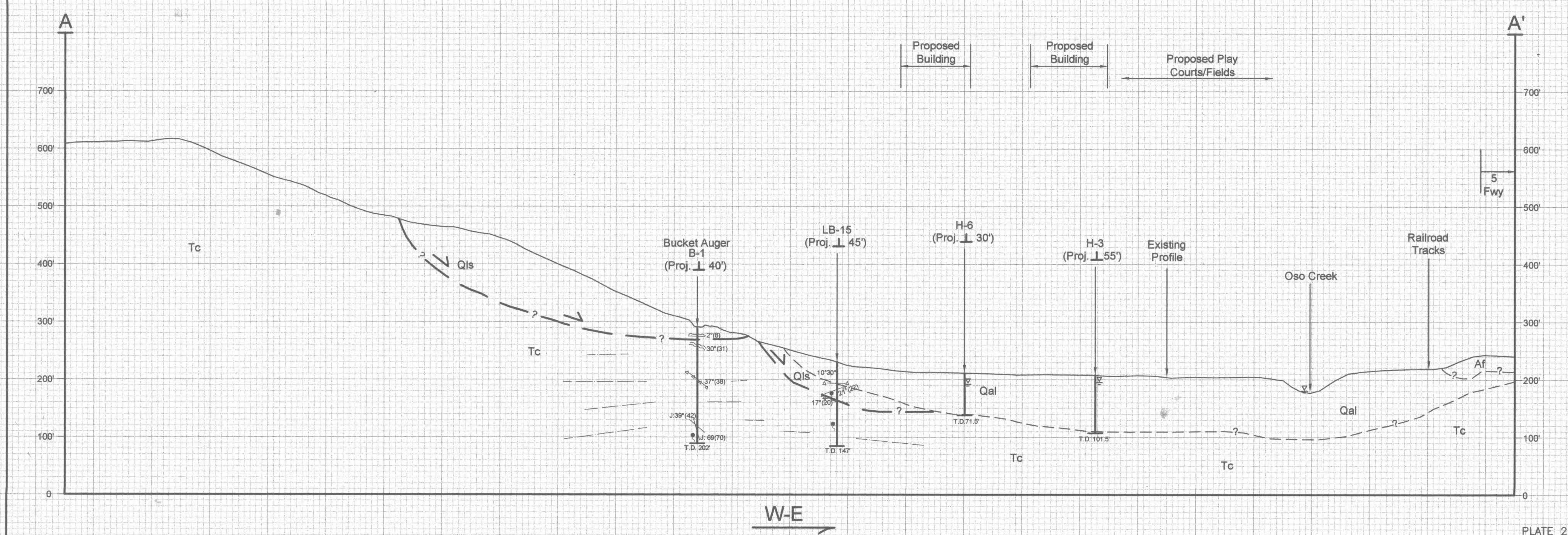
EARTH UNITS - CIRCLED WHERE BURIED

Qal	ALLUVIUM
Qls	LANDSLIDE MATERIAL
Tc	CAPISTRANO FORMATION

SYMBOLS - ALL LOCATIONS ARE APPROXIMATE & QUERIED WHERE UNCERTAIN

— — — · · ·	GEOLOGICAL CONTACT, DOTTED WHERE BURIED
	LANDSLIDE BOUNDARY
B-3 T.D.127' @101.5', 112'	BUCKET AUGER BORING BY NMG SHOWING TOTAL DEPTH, DEPTH OF SEEPAGE, AND DEPTH TO GROUNDWATER (TOTAL 3)
H-6 T.D. 71.5' @17'	HOLLOW STEM AUGER BORING BY NMG SHOWING TOTAL DEPTH, DEPTH TO GROUNDWATER, AND DEPTH TO BEDROCK (TOTAL 6)
C-14 T.D. 43.6'	CONE PENTROMETER SOUNDING BY NMG SHOWING TOTAL DEPTH (TOTAL 14)
LB-15 T.D. 147' @56',58',68', 94',98',120'	BUCKET AUGER BORING BY OTHERS, SHOWING TOTAL DEPTH, AND DEPTH OF SEEPAGE (TOTAL 5)
BH-5	BUCKET AUGER BORING BY OTHERS
C — C'	GEOLOGIC CROSS-SECTION

CUSD / Rancho Capistrano 9-28-01



CROSS–SECTION A–A'	Project No.: 01012-02 By: RZ/WG Project Name: CUSD/RANCHO CAPISTRANO Date: 9-28-01 Scale: 1" = 100'	PLATE 2 NMG Geotechnical, Inc.

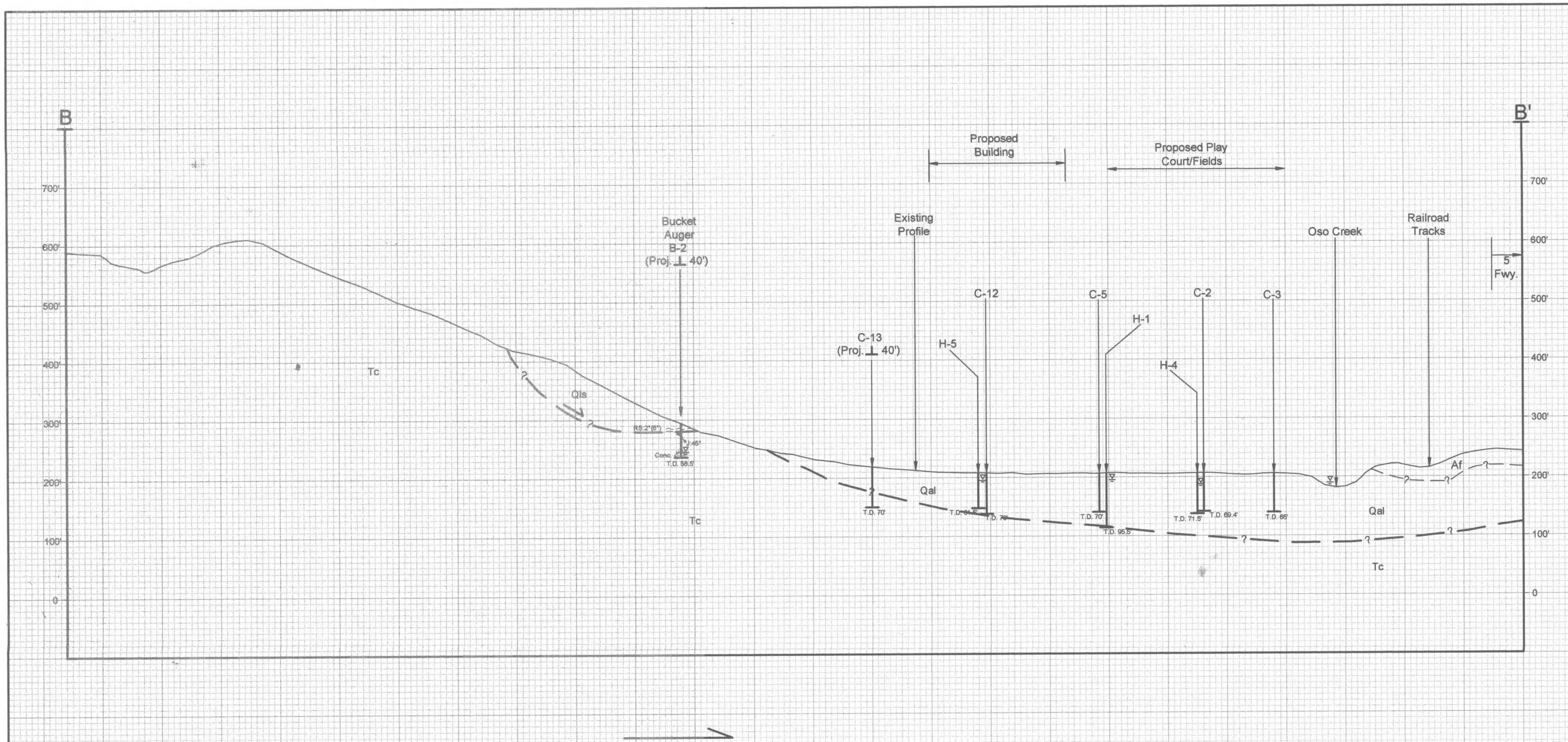


PLATE 3

CROSS–SECTION B–B'	Project No.: 01012-02 By: RZ/WG Project Name: CUSD/RANCHO CAPISTRANO Date: 9-28-01 Scale: 1" = 100'	NMG Geotechnical, Inc.

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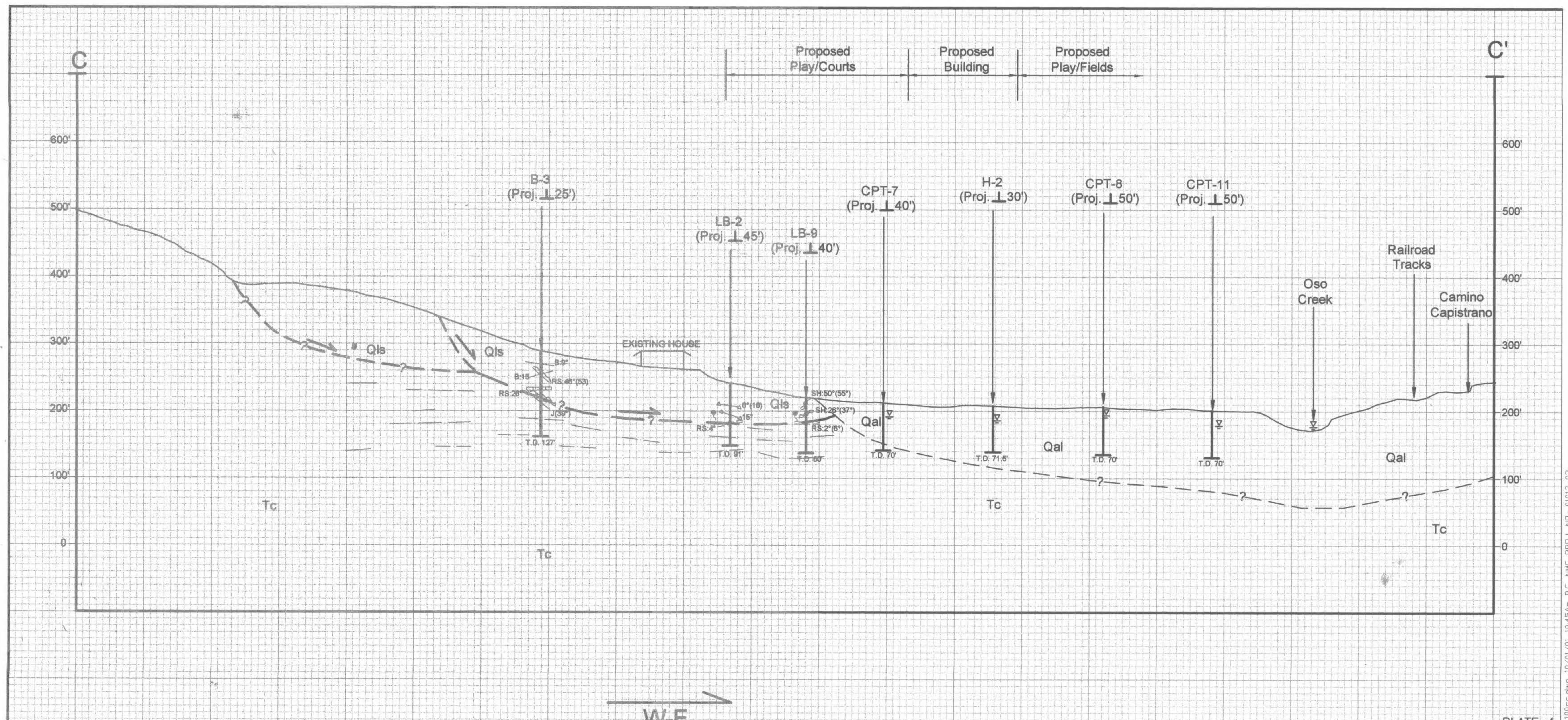

PLATE 4

CROSS–SECTION C–C'	Project No.: 01012-02 By: RZ/WG Project Name: CUSD/RANCHO CAPISTRANO Date: 9-28-01 Scale: 1" = 100'	NMG Geotechnical, Inc.

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