APPENDIX F:
Geotechnical Studies

GEOTECHNICAL INVESTIGATION
PROPOSED WEDDING AND BANQUET FACILITY

Santa Ana Canyon Road
Anaheim, California
for
Ms. Lisa Waddell

THIS PAGE LEFT BLANK INTENTIONALLY

Ms. Lisa Waddell
801 North Beach Boulevard
La Habra, California 90631

January 8, 2001
Project No. 00G224-1

Subject: Geotechnical Investigation
Proposed Wedding and Banquet Facility
Santa Ana Canyon Road
Anaheim, California

Dear Ms. Waddell:

In accordance with your request, we have conducted a geotechnical investigation of the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

Southern California Geotechnical, Inc.

REGISTERED GEOLOGIST
JOHN A. SEMINARA
No. 2125
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

John A. Seminara, CEG 2125
Engineering Geologist

REGISTERED PROFESSIONAL ENGINEER
GREGORY K. MITCHELL
No. 2364
Exp. 09/30/04
GEOTECHNICAL
STATE OF CALIFORNIA

Gregory K. Mitchell, GE 2364
Principal Engineer

Distribution: (6) Addressee

THIS PAGE LEFT BLANK INTENTIONALLY

TABLE OF CONTENTS

THIS PAGE LEFT BLANK INTENTIONALLY

1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Site Preparation

- Moderate stripping of existing vegetation in development areas.
- Stabilization fills are recommended for cut slopes due to adversely oriented bedding planes within the underlying siltstone and sandstone bedrock.
- Geogrid reinforcement is necessary for all slopes steeper than 2h:1v in order to obtain adequate surficial stability.
- Canyon subdrains should be installed in both of the proposed canyon fills on the south side of the site.
- Overexcavation of the cut portion of the building pad is recommended due to a cut/fill transition.

Building Foundations

- Conventional Shallow Foundations supported entirely within newly placed compacted fill soils.
- 2,500 psf maximum allowable soil bearing pressure.
- Foundations are recommended to extend a minimum of 18 inches into underlying soils. The suitability of the foundation bearing grade should be verified by the geotechnical engineer prior to steel or concrete placement.
- Reinforcement consisting of at least four (4) No. 5 rebars in strip footings.

Building Floor Slabs

- Conventional Slab-on-Grade, supported on newly compacted fill soils.
- Reinforcement consisting of at least No. 3 bars on 18 inch centers in both directions for conventional slabs.

Pavements

- Asphaltic Concrete
  - Auto Parking Stalls: 3 inches asphaltic concrete over 3 inches aggregate base.
  - Auto Drive Lanes: 3 inches asphaltic concrete over 5 inches aggregate base.
  - Light Truck Traffic Areas: 3.5 inches asphaltic concrete over 6.5 inches aggregate base.
- Portland Cement Concrete (PCC):
  - Autos Only: 5 inches PCC over compacted subgrade.
  - Light Truck Traffic Areas: 6 inches PCC over compacted subgrade.

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 00P227 dated October 18, 2000. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations and building floor slabs, design of the new pavements, along with site preparation recommendations and construction considerations for the proposed development. The evaluation of environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is a hillside parcel approximately 36± acres in size and is located south of Santa Ana Canyon Road and west of a Southern California Edison easement near Festival Drive in the City of Anaheim, California. The approximate location of the site is illustrated on the Site Location Map, included as Plate 1 in Appendix A.

The site is currently vacant, and no signs of previous development were observed. The only structures observed on the site were irrigation stand pipes located in the northern one-third of the project, in an area which was reportedly previously used as lemon orchards. An unimproved road to the central portion of the site provides access off of Santa Ana Canyon near the northeast property corner and extends onto the site to near the approximate center of the site. This road is highly eroded and overgrown. Vegetation on the site consists of a moderate growth of shrubs, weeds and grasses. The vegetation is generally heavier on the lower elevation portions of the site where the slope gradients are lesser.

Topography of the site consists predominantly of an east-west trending ridgeline with descending slopes to the north and south. The on-site slopes generally have inclinations ranging from 3h:1v to 1½h:1v. Based on topographic information contained on the conceptual grading plan, maximum topographic relief is on the order of 300± feet. The highest elevation on the site is located near the southeast property corner at the eastern end of the east-west trending ridge and is a peak with an elevation of 673 feet MSL. The topographic low on-site is located near the northwest property corner near Santa Ana Canyon Road and is at an elevation of 350± feet MSL. The property is bounded by vacant property on the south, east and west sides with similar topography. The northern boundary of the site is formed by Santa Ana Canyon Road.

3.2 Proposed Development

It is understood that development of the subject site will consist of construction of a wedding chapel and banquet facility located within the higher elevations of the site. Access to the buildings would be provided by a driveway from Santa Ana Canyon Road. Based on our review of the preliminary grading plan prepared by Danjon Engineering, it is understood that significant cut/fill grading will be necessary to develop the site. Cut and fill slopes are proposed at inclinations of ranging from 3h:1v to 1.5h:1v

Site plans and project data are not currently available. However, based on discussions with the client, the proposed development is anticipated to consist of a one or two story building which will serve as the wedding chapel and banquet facility. Due to the preliminary nature of the site development plans, the type of construction is not yet known. However, it is anticipated that the structure would be a wood-frame building with maximum column and wall loads on the order of 30 to 60 kips and 2 to 3 kips per lineal foot, respectively.

Based on a review of the conceptual grading plan prepared by Danjon Engineering, Inc., the proposed grading for the wedding chapel and banquet facility and surrounding parking areas will consist of cuts of up to 65± feet along the existing east-west trending ridgeline. Grading will consist of cuts along the north and west sides of the project and a combination of cuts and fills along the south side of the project. The maximum height of the proposed cut slopes will be on the order of 100± feet, and the maximum fill slope height will be 130± feet. Two significant fill areas are proposed on the south side of the project in southerly draining canyons. Inclinations of the fill slopes are proposed at varying gradients, ranging from 1½h:1v to 2h:1v. As previous discussed, most of the relatively level parking and building areas are in cut areas, however it appears a cut-fill transition will be created in the proposed building footprint. The maximum depth of fill proposed within the building pad area would be at the south end of the proposed structure and would be on the order of 20± feet.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of four (4) borings and six (6) trenches advanced to depths of up to 41± feet below currently existing site grades. The borings were advanced with a 30-inch diameter limited access bucket auger rig and the trenches were excavated with a rubber tire mounted backhoe. The borings and trenches were logged during excavation by a member of our staff. In addition, the bucket auger borings were downhole logged by a certified engineering geologist. Representative bulk and in-situ soil samples were taken during drilling and trenching. Relatively undisturbed in-situ samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. However, within bucket auger borings, the sampler was driven with the Kelly bar.

Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings and trenches are indicated on the Geotechnical Map, included as Plate 3 in Appendix A of this report. The Boring and Trench Logs, which illustrate the conditions encountered at the boring and trench locations and the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Several of the borings and trenches encountered surficial soils comprised of topsoil, alluvium, and/or colluvium. The soils range from 1 to 10± feet in thickness. The thickness of the residual or surficial soils increased in the lower elevations of the site to a maximum of 10± feet in Trench No. T-5. Topsoil, where encountered, consisted of a relatively thin, less than 1± foot thick, layer of brown silty fine to medium sand with trace to some organic materials. Topsoil materials were generally in a very loose condition and possess moisture contents of dry to damp. The alluvial soils, which were primarily observed in the lower elevations of the site, were generally comprised of light brown to brown silty fine sand, fine sand, and silty fine to coarse sand. Alluvial soils were generally medium dense to dense and possessed moisture contents ranging from dry to damp. Colluvium or slopewash was encountered in Borings B-3 and B-4. At Boring No. B-3 the colluvium consisted of a 4± foot thick layer of stiff to very stiff dark brown silty clay in a damp to moist condition. At Boring B-4, the colluvium consisted of 2± feet

of brown silty fine to medium sand in a loose and dry condition. Bedrock of the Puente formation was encountered in all of the exploratory borings and trenches, and generally consists of interbedded sandstone and siltstone. The sandstone was generally thickly to massively bedded and is generally comprised of silty fine to medium sand with trace gravel. The siltstone portion of the bedrock was relatively thinly bedded and is primarily composed of fine sandy silt. Bedrock materials were observed to possess relative densities ranging from dense to very dense, and moisture contents ranging from dry to moist.

Free water was not encountered within the borings during drilling. In addition, delayed readings taken within the borings and trenches did not identify any free water. Based on these readings, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 41 feet at the time of our subsurface exploration.

4.3 Geologic Conditions

Based on a review of the California Department of Mines and Geology Open File Report 79-8 LA, *"Environmental Geology of Orange County, California, 1976"* the subject site is underlain by the Sycamore Canyon Member of the Puente formation. A portion of the geologic map contained in this report is included herein as Plate 2, the Site Geologic Map. The Sycamore Canyon Member of the Puente formation is described in the referenced report as a marine, light yellow brown to light gray sandstone with sandy siltstone interbeds. Conglomerate lenses are indicated to be common within this unit as well. Regional bedding orientations indicated on the geologic map indicate a relatively uniform dip to the northwest with dip angles varying from 20 to 30 degrees.

The bedrock materials observed in the exploratory borings and trenches on the subject site appear to be characteristic of the Sycamore Canyon Member of the Puente formation. Bedding orientations observed within the exploratory borings and trenches are consistent with the trends indicated on the published geologic maps. The sandstone was generally massively bedded with occasional siltstone interbeds. Some cross bedding within the sandstone was also observed. Bedding orientations across the site were observed to be relatively uniform with a general strike bearing from north 50 degrees east to north 60 degrees east, with dips to the northwest ranging from 30 to 40 degrees. Significant discontinuities such as shear features or slide planes were not observed within any of the exploratory borings or trenches.

Plate 4 in Appendix A present geologic cross sections drawn through the subject site illustrating both the existing and proposed topography. The location of the cross sections are illustrated on Plate 3, the Geotechnical Map.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. Field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

In-situ Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Maximum Dry Density and Optimum Moisture Content

Representative bulk samples have been tested for their maximum dry density and optimum moisture content. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557. These tests are generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date. The results of this testing are presented on Plates C-5 and C-6.

Direct Shear

Direct shear tests were performed on selected soil samples to determine their shear strength parameters. These tests were performed in accordance with ASTM D-3080. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Three samples of the same soil are prepared by either remolding them to 90± percent compaction and near optimum moisture, or trimming them to fit the apparatus, depending on the test method. Each of the three samples are then loaded with different normal loads and the resulting shear strength is determined for that particular normal load. The shearing of the

samples is performed at a rate slow enough to permit the dissipation of excess pore water pressure. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The results of the direct shear tests are presented on Plates C-1 through C-4.

Soluble Sulfates

Representative samples of the near-surface soils have been submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The results of the soluble sulfate testing are presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	Sulfate Classification
B-1 at 5 to 7 feet	0.005%	Negligible
B-2 at 10 to 12 feet	0.013%	Negligible

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered suitable from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations. The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The Grading Guide Specifications, included as Appendix C, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions which differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. Therefore, the possibility of significant fault rupture on the site is considered to be low.

Seismic Design Parameters

The proposed development must be designed in accordance with the requirements of the latest edition of the Uniform Building Code (UBC). The 1997 UBC Design Parameters have been generated using UBCSEIS, a computer program published by Thomas F. Blake (January 1998). A copy of the output generated from this program is included in Appendix E of this report. Based on this output, the following parameters may be utilized for the subject site:

- Nearest Type A Fault: Cucamonga (29 km)
- Nearest Type B Fault: Elsinore-Whittier (3 km)
- Site Factor: S_C
- Seismic Zone Factor (Z): 0.40
- Seismic Coefficient (C_a): 0.49
- Seismic Coefficient (C_v): 0.83
- Near-Source Factor (N_a) 1.2
- Near-Source Factor (N_v) 1.5

A copy of the Design Response Spectrum, as generated by UBCSEIS is also included in Appendix E.

Liquefaction

Liquefaction is the loss of strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and grain size characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 40 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Clayey (cohesive) soils or soils which possess clay particles (d<0.005mm) in excess of 20 percent (Seed and Idriss, 1982) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The encountered soil conditions are not considered to be conducive to liquefaction. These conditions consist of relatively shallow surifical fill soils underlain by dense to very dense sandstone and siltstone bedrock. Furthermore, groundwater was not encountered within 41 feet of existing site grades and is considered to exist at depths in excess of 50 feet within this area. Therefore, liquefaction is not considered to be a significant design concern for this project.

6.2 Geotechnical Design Considerations

General

The proposed development will require a significant amount of cut and fill/hillside grading in order to create a relatively level pad area within the higher elevations of the site. Significant grading will also be necessary in order to create the access road which will connect the site to Santa Ana Canyon Road. Due to the complexity of the project and the proposed grading, several cross sections have been created in order to illustrate the proposed versus existing topographic and geologic conditions.

The proposed building pad and parking areas will be underlain by sandstone and siltstone bedrock as well as newly placed compacted structural fill. The proposed cut-fill grading will create a transition which will traverse the proposed building pad. Remedial grading will be necessary in order to reduce the potential for differential settlement across such a cut-fill transition. The bedrock materials and compacted fill materials which are anticipated to exist at the proposed building grade subsequent to the proposed grading, are anticipated to consist of very low to non-expansive soils.

Selective or remedial grading, and/or additional foundation design with respect to expansive soils is therefore not considered necessary.

Several of the proposed slopes (both cut and fill), are planned at inclinations steeper than 2:1 horizontal to vertical. With respect to the orientation of the bedding planes of the siltstone and sandstone bedrock, portions of the planned cut slopes may expose out of slope bedding which represent potential planes of weakness for slope failure. Stability analyses and fill recommendations have therefore been presented with respect to these conditions. Additional reinforcement consisting of geogrids spaced at selected vertical intervals will be necessary in order to obtain adequate surficial stability for any slopes steeper than to 2 horizontal to 1 vertical.

Settlement

Consolidation/collapse testing was not performed due to the fact that the majority of the site is underlain by dense siltstone and sandstone bedrock. Any surficial alluvial or colluvial soils will be removed and recompacted as engineered fill during grading. Following completion of the recommended grading, the post-construction settlements are expected to be within tolerable limits.

Slope Stability

Six cross sections have been constructed to illustrate the relationships between the proposed topography, the existing topography, the subsurface geology, and the recommended grading procedures. These cross sections are presented on Plate No. 4. The locations of the cross sections are indicated on Plate 3, the Geotechnical Map. Sections A-A', B-B', C-C', have been located in order to illustrate worst-case conditions through the maximum height of the proposed slopes as well as the out of slope component of the subsurface sandstone and siltstone bedding. Sections D-D' and E-E' have been placed in order to illustrate the two proposed maximum height fill slopes located within southwest facing canyons. Section F-F' has been located in area to illustrate the proposed cut slope southeast of the proposed building pad. Stability analyses have been performed on all of the included geologic cross sections for both static and psuedostatic conditions.

These analyses were performed utilizing the computer program PCSTABL6H developed by Purdue University and the FHA. The strength parameters used in the analyses are based on the results of direct shear testing of both undisturbed bedrock and remolded samples. Anisotropic strengths have been used for the bedrock in order to model the out of slope component which would represent a lower strength than the surrounding bedrock mass. The analyses indicate adequate factors of safety for gross stability for both static and pseudostatic (seismic) conditions. The output files and graphs are included in Appendix F.

A surficial stability analysis for the proposed 1½:1 horizontal to vertical fill slopes has also been performed. The results of this analysis, also included in Appendix F, indicate that adequate factors of safety will not be obtained with the use of the on-site soils in the steepened slopes. It is therefore recommended that geogrid reinforcement including Miragrid 8XT geogrid spaced at approximately 5-foot vertical intervals be utilized in order to obtain the required surficial stability. A surficial analysis including the geogrids has also been performed in order to demonstrate the additional slope stability achieved by the use of the geogrids.

The results of these analyses indicate that factors of safety in excess of those required by the Uniform Building Code will be achieved by complying with the recommendations contained in this report.

Expansion

The on-site soils consist of sands and silty sands. These materials have been visually classified as very low to non-expansive. No design considerations relative to expansive soils are therefore considered necessary for this project. However, due to the amount of proposed grading involved with this project, it is recommended that additional testing be performed on representative samples at the finished building pad elevation.

Sulfates

The results of the soluble sulfate testing, as discussed in Section 5.0 of this report, indicate soluble sulfate concentrations of 0.005 to 0.013 percent. These concentrations are negligible with respect to UBC guidelines. Therefore, specialized concrete mix designs are not expected to be necessary, for sulfate protection purposes. However, due to the amount of proposed grading involved with this project, it is recommended that additional testing be performed on representative samples at the finished building pad elevation.

Shrinkage/Subsidence

Based on the results of the laboratory testing, removal and recompaction of the near surface alluvial/colluvial soils is estimated to result in an average shrinkage of 10 to 12 percent.

Removal and recompaction of the siltstone and sandstone bedrock is anticipated to result in a positive volume change due to the in-situ density of the bedrock. This volume change, or bulking, is expected to be on the order of 5 to 8 percent.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring and trench locations and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site specific recommendations presented below.

Site Stripping

Initial site stripping should include removal of any significant vegetation within the proposed development area. Based on site conditions observed at the time of our field reconnaissance, stripping is expected to be moderate. Deeper removals may be required in areas where large trees or shrubs are located.

Access Road/Driveway

The proposed access road/driveway, which will provide site access from the northeast corner of the subject site at Santa Ana Canyon Road, will rise in elevation from approximately 390± feet MSL to the proposed building pad grade of 571 feet MSL. The proposed grading to create this access road will primarily consist of a north and northwest facing cut slope on the north half of the property. It is anticipated that the subgrade soils which will be exposed at the design elevations of the access road will consist of siltstone and sandstone bedrock which are considered suitable for support of the anticipated traffic. However, remedial grading consisting of construction of a stabilization fill for the cut slope is recommended due to potential instability related to the out of slope component of the siltstone/sandstone bedding and the orientation of the proposed slope face.

These stabilization fills should be at least 15 feet in width at the bottom and at the top of the slope. The portions of the proposed slope which will have inclinations steeper than 2h:1v will require geosynthetic reinforcement consisting of Miragrid 8XT geogrids 15 feet in length spaced at 5-foot vertical intervals within the stabilization fill. Any areas to receive fill along the proposed access road/driveway should be overexcavated to expose competent bedrock material prior to fill placement. Subgrade preparation for the access road/driveway should consist of scarification to a minimum depth of 12 inches below proposed grade and recompaction to at least 90 percent of ASTM 1557 maximum dry density. The recommended stabilization fill should be constructed in accordance with Plate G-5 contained in the Appendix D Grading Guide Specifications. Subdrains are also recommended to be installed within the stabilization fill and are illustrated on Plate G-6 of the Grading Guide Specifications.

Parcel A

An intermediate pad area identified as Parcel A is indicated on the grading plan with a proposed pad elevation of 490.0 feet MSL. Grading to create this level pad area will consist of fills of up to 40± feet. Remedial grading in this area should consist of removal of all surficial soils to expose competent bedrock. A keyway is recommended at the toe of the proposed fill slope with minimum dimensions of 2 feet in depth below competent material and 15 feet in width. A detail for the keyway is also contained in the Grading Guide Specifications as Plate G-4. The proposed fill slopes for Parcel A, which are indicated to be constructed at gradients steeper than 2h:1v, should also be reinforced with 15-foot long Miragrid 8XT geogrids at 5-foot vertical intervals.

Canyon Fills

Two significant canyon fills are proposed on the south-southwest side of the property. Fills of up to 30 to 40± feet are proposed within these canyons. Remedial grading within these canyons should consist of removal of all surficial soils to expose competent siltstone/sandstone bedrock. Keyway excavations are also recommended at the base of the proposed fill slope and should have minimum dimensions of 2 foot into competent material with a width of 15 feet. Details for construction of the fill slopes are contained on Plate G-4 in the Grading Guide Specifications. Canyon subdrains are also recommended along the center line of the existing drainages within the proposed canyon fills. Details for construction of canyon subdrains are provided on Plate G-3 in the Grading Guide Specifications. The approximate locations of the canyon subdrains are shown on Plate 3. Portions of these proposed canyon fills are also proposed at inclinations steeper than 2h:1v. These areas should be reinforced with Miragrid 8XT geogrid at 5 foot intervals with geogrid lengths of 15 feet.

Building Pad Area

The grading plan indicates that much of the proposed parking areas and building pads will be cut to expose siltstone and sandstone bedrock. However, the south and southwest portions of the proposed building pad will be in a fill area with a maximum depth of fill on the order of 20± feet. These proposed grading activities will create a cut/fill transition which will traverse through the proposed building pad. In order to reduce the potential for differential settlement due to the varying support provided by these differing conditions, it is recommended that the cut portion of the building pad be overexcavated to a depth of at least 5 feet below the proposed building pad grade. The horizontal limits of the overexcavation should extend at least 5 feet outside the proposed structure. The remaining parking and drive areas surrounding the proposed building pad should be cut to the proposed grade and scarified to depth of at least 12 inches and recompacted to at least 90 percent of maximum dry density.

The proposed 60± foot high cut slope to be located east of the proposed building pad is also recommended to include a minimum 15-foot wide stabilization fill due to the out of

slope component of the siltstone/sandstone bedrock. This cut slope is proposed at an inclination of 1.5h:1v and should therefore also be reinforced with Miragrid 8XT geogrids at 5-foot intervals with 15-foot lengths of geogrids within the stabilization fill. Details for construction of both the stabilization fill and the required stabilization fill subdrains are presented on Plates G-5 and G-6 within the Grading Guide Specifications.

Following completion of overexcavations, the subgrade soils should be evaluated by the geotechnical engineer to verify their suitability to serve as the structural fill subgrade, as well as to support the foundation loads of the new structure. This evaluation should include proofrolling with a heavy rubber-tired vehicle to identify any soft, loose or otherwise unstable soils that must be removed. Overexcavation subgrade soils should consist of competent bedrock.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 2 to 4 percent above optimum moisture content, and compacted.
- On-site soils may be used for compaction provided they are cleaned of debris (including excessive organic material) to the satisfaction of the geotechnical engineer.
- Benching into competent bedrock should be performed during grading in accordance with details provided in Appendix D.
- All grading and fill placement activities should be completed in accordance with the requirements of the Uniform Building Code and the grading code of the City of Anaheim.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Fill soils should be well mixed.
- All finished fill slope surfaces must be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. It is recommended that the slopes be overbuilt during grading and cut back to expose the compacted core. Alternatively, frequent grid rolling during construction of the slopes could be performed. Track rolling of finished slopes is not recommended.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of low to very low (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix C.

Utility Trench Backfill

In general, all utility trench backfill should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. As an alternative, a clean sand (minimum Sand Equivalent of 30) may be placed within trenches and flooded in place. Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by The County of Orange and/or the City of Anaheim. All utility trench backfills should be witnessed by the geotechnical engineer.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Sand or pea gravel backfill, should not be used for these trenches. Density testing and probing should be conducted to verify adequate compaction.

6.4 Construction Considerations

Excavation Considerations

The sandstone/siltstone bedrock encountered at the site is anticipated to be excavatable with conventional grading equipment. However, isolated areas of very dense or cemented bedrock may exist, which would require deep ripping with a large track mounted bulldozer, excavation, or the use of hoe ram. Blasting to facilitate excavation is not anticipated to be necessary. It should also be noted that the conditions may vary and difficulty in extending deep excavations into the bedrock should be expected. Temporary side slopes of overexcavations in bedrock may be at inclination of 0.5 to 1 horizontal to vertical to a maximum height of 12 feet.

All excavation activities on the site should be conducted in accordance with Cal-OSHA regulations.

Groundwater

Based on the conditions encountered within the borings and trenches, the water table is not present within 41± feet of existing site grades. Based on the lack of groundwater and the proposed remedial grading, groundwater is not expected to interfere with the proposed development.

Slope Planting and Maintenance

The natural slopes and any manufactured slopes located on site should be planted immediately after construction is completed, to achieve well-established and deep-rooted vegetation. The slopes should be planted with shrubs that will develop root systems to depths of 5 feet or more, such as ground acacia. Intervening areas should be planted with lightweight surface plantings with shallower root systems. Wherever possible, the selected plantings should be lightweight and drought tolerant. Due to its high weight, the use of iceplant is not recommended. It is recommended that a landscape architect be consulted to determine the actual planting materials.

All reasonable precautions should be taken to minimize deep soil moisture penetration within the slope soils. The volume of slope irrigation should be the minimum that is required to maintain plant growth. All surface water runoff from the slopes should be diverted away from the top of the proposed retaining walls.

The condition of the slopes must be continually maintained to reduce the potential for surficial failures. This includes maintenance of the drainage pathways, any diversion structures, maintenance of the vegetation, and repair of rodent damage.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pad will be underlain by newly placed very low to low expansive compacted fill, extending to a depth of at least 5 feet below proposed building pad grade. Based on this subsurface profile, the proposed structure may be supported on a conventional shallow foundation system supported in the new compacted fill.

Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 2,500 lbs/ft^2
- Minimum wall/column footing width: 12 inches/24 inches

- Minimum longitudinal steel reinforcement within strip footings: Four (4) No. 5 rebars (2 top and 2 bottom)

- Minimum perimeter foundation embedment: 18 inches below exterior grade into new structural fill.

- Minimum interior foundation embedment: 12 inches into new structural fill.

General

Isolated column footings are not recommended. Column footings should be tied to perimeter foundation elements in two perpendicular directions with grade beams.

The allowable bearing pressures presented above may be increased by one-third when considering short duration wind or seismic loads. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

It is recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed compacted fill. Any unsuitable materials should be removed to a depth of suitable bearing soils with the resulting excavations backfilled with additional concrete or, lean concrete slurry (500 to 1,500 psi).

The foundation subgrade soils should also be properly moisture conditioned to 2 to 4 percent above the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. The moisture content of the foundation subgrade soils should be verified by the geotechnical engineer within 24 hours prior to placement of concrete.

Estimated Foundation Settlements

Post-construction total and differential movements (settlement and/or heave) of a shallow foundation system designed and constructed in accordance with the recommendations provided in this report are estimated to be less than 1.5 and 1.0 inches, respectively. Differential movements are expected to occur over a 20-foot span, thereby resulting in an angular distortion on the order of 0.004 inches per inch, which is considered within tolerable limits for the proposed structure, provided that the structural design adequately considers this distortion.

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 300 lbs/ft^3
- Friction Coefficient: 0.35

A one-third increase in these values may be used for short duration wind or seismic loads. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against suitable compacted very low to low expansive structural fill. The maximum allowable passive pressure is 2500 lbs/ft^2.

6.6 Conventional Floor Slab Design and Construction

Subgrades which will support new floor slabs should be prepared in accordance with the recommendations contained in the ***Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floor of the new structure may be constructed as a conventional slab-on-grade supported on newly placed structural fill soils extending to at least 5 feet. Based on geotechnical considerations, the floor slab may be designed as follows:

- Minimum slab thickness: 5 inches

- Minimum slab reinforcement: No. 3 bars at 18 inches on center, in both directions.

- Slab underlayment: Where moisture sensitive floor coverings are anticipated, a 10-mil vapor barrier, overlain by 2 inches of clean sand should be provided.

- Moisture condition the floor slab subgrade soils to at least 2± percent of optimum moisture content, to a depth of 12 inches. Adequate moisture conditioning should be verified by the geotechnical engineer 24 hours prior to concrete placement.

- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

The actual design of the floor slabs should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Exterior Flatwork Design and Construction

Subgrades which will support new exterior slabs on grade for patios and sidewalks and driveways should be prepared in accordance with the recommendations contained in the ***Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, subgrade soils are anticipated to consist of newly placed low to very low expansive structural fill soils, extending to a depth of at least 1 foot. Based on geotechnical considerations, exterior slabs on grade may be designed as follows:

- Minimum slab thickness: 4 inches
- Minimum slab reinforcement: Concrete flatwork and driveway slabs should include No. 3 bars on 18 inch centers.
- Moisture condition the subgrade soils to 2± percent above optimum moisture content, to a depth of 12 inches.
- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.
- Control joints should be provided at a maximum spacing of 8 feet on center in two directions for slabs and at 4 feet on center for sidewalks. Control joints are intended to direct cracking. Minor cracking of exterior concrete slabs on grade should be expected.
- Expansion or felt joints should be used at the interface of exterior slabs on grade and any fixed structures to permit relative movement.

6.8 Retaining Wall Design and Construction

The proposed development may necessitate the use of some low retaining walls. These walls are anticipated to be of cantilever reinforced concrete construction. The parameters recommended for use in design of cantilever reinforced concrete retaining walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the boring and trench locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters for two different types of wall backfill: on-site silty sands, and imported select granular material. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the base of the retaining wall upwards at an

angle of approximately 1 horizontal to 2 vertical (63.5 degree angle of inclination from the heel of the retaining wall).

RETAINING WALL DESIGN PARAMETERS

Design Parameter		Soil Type	
		Imported Aggregate Base	On-Site Silty Sands
Internal Friction Angle (ϕ)		38°	32°
Unit Weight		130 lbs/ft^3	125 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	32 lbs/ft^3	38 lbs/ft^3
	Active Condition (2h:1v backfill)	42 lbs/ft^3	50 lbs/ft^3
	At-Rest Condition (level backfill)	48 lbs/ft^3	59 lbs/ft^3

Regardless of the backfill type, the walls should be designed using a soil-footing coefficient of friction of 0.35 and an equivalent passive pressure of 300 lbs/ft^3.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils which in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls which will not be allowed to deflect such as the basement walls, walls that will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Retaining Wall Foundation Design

Foundations to support new retaining walls should be designed in accordance with the general foundation design parameters presented in a previous section of this report, and should be supported in newly placed compacted fill soils.

Backfill Material

It is recommended that a minimum 1 foot thick layer of free-draining granular material (less than 5 percent passing the No. 200 sieve) should be placed against the face of the retaining walls. This material should be approved by the geotechnical engineer. If

the layer of free-draining material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils.

All retaining wall backfill should be placed and compacted under engineering controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557-91). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage should consist of a 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system.

6.9 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be supported on the existing soils that consist of silty sands, or similar imported materials. These soils are considered to possess fair to good pavement support characteristics, with estimated R-values of 35 to 45. Since R-value testing was not included in the scope of services for this project, the subsequent pavement design is based upon an assumed R-value of 35. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering controlled conditions. It is recommended that R-value testing be performed after the completion of rough grading to verify the R-value of the as-graded parking subgrade.

Asphaltic Concrete

The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed those recommended herein, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20-year design life, assuming 5 operational traffic days per week:

Traffic Index (TI)	Number of Heavy Trucks Per Day
5.0	1
6.0	4
7.0	14

For the purposes of the traffic volumes above, a truck is defined as a 5-axle tractor-trailer unit, with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 500 automobiles per day.

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. It should be noted that the TI = 6.0 section only allows for 4 trucks per day. Therefore, all significant truck traffic must be excluded from areas where this thinner pavement section is used; otherwise premature pavement distress may occur.

ASPHALT PAVEMENTS			
Materials	**Thickness (inches)**		
	Auto Parking Areas TI = 4.0	Auto Drive Lanes TI = 5.0	Light Truck Traffic TI = 6.0
Asphalt Concrete	3	3	3.5
Aggregate Base	3	5	6.5
Aggregate Subbase	---	---	---
Compacted Subgrade	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-155 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

- Automobile Parking and Drive Areas
  5 inches Portland Cement Concrete over
  12 inches compacted subgrade (95% minimum compaction)

- Light Truck Traffic Areas (TI = 6.0)
  6 inches Portland Cement Concrete over
  12 inches compacted subgrade (95% minimum compaction)

The concrete should have a 28-day compressive strength of at least 3,000 psi. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness.

7.0 GENERAL COMMENTS

This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants with to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

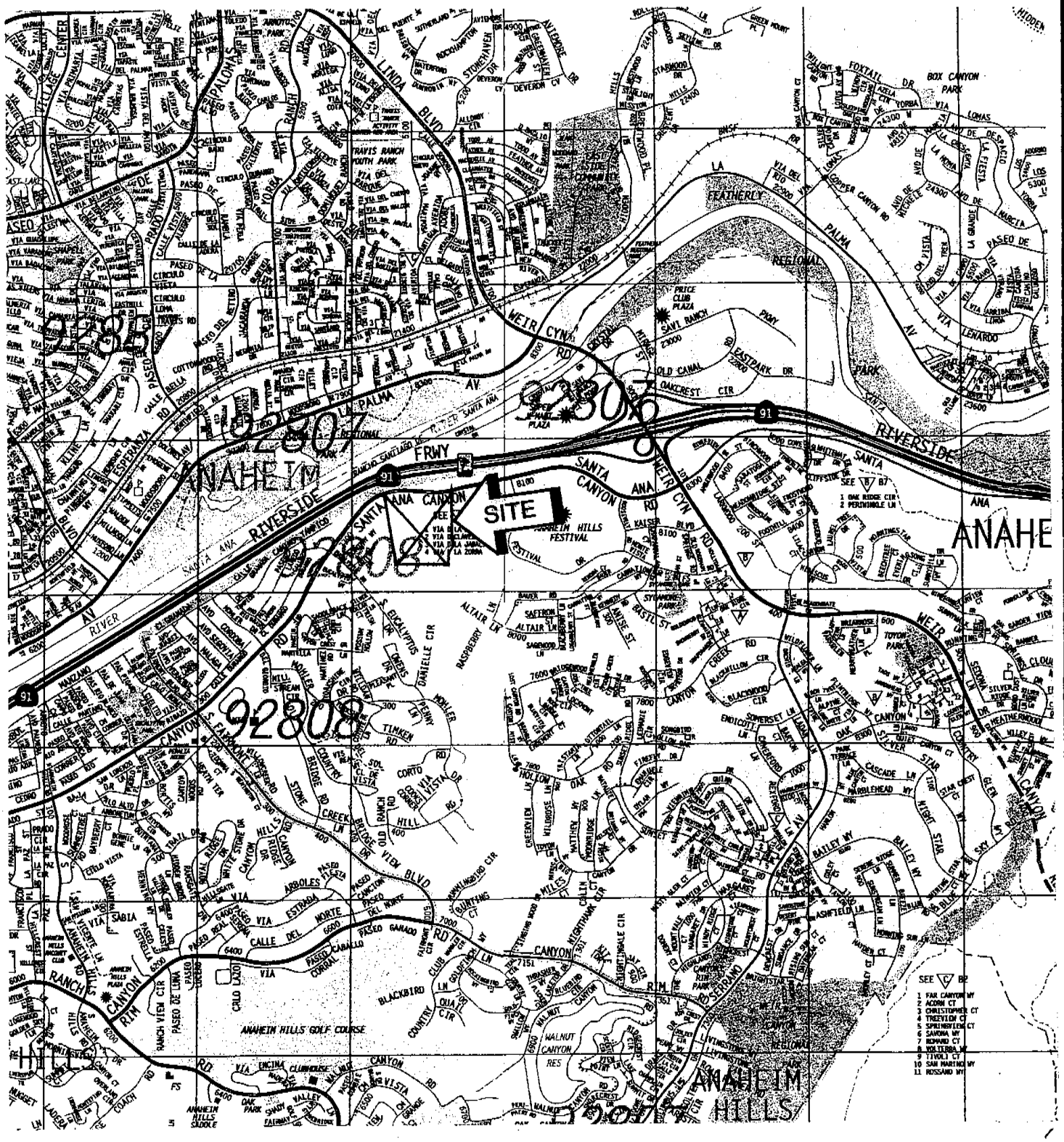
The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

THIS PAGE LEFT BLANK INTENTIONALLY

APPENDIX A

SITE LOCATION MAP
SITE GEOLOGIC MAP
GEOTECHNICAL MAP
GEOLOGIC CROSS SECTIONS

THIS PAGE LEFT BLANK INTENTIONALLY



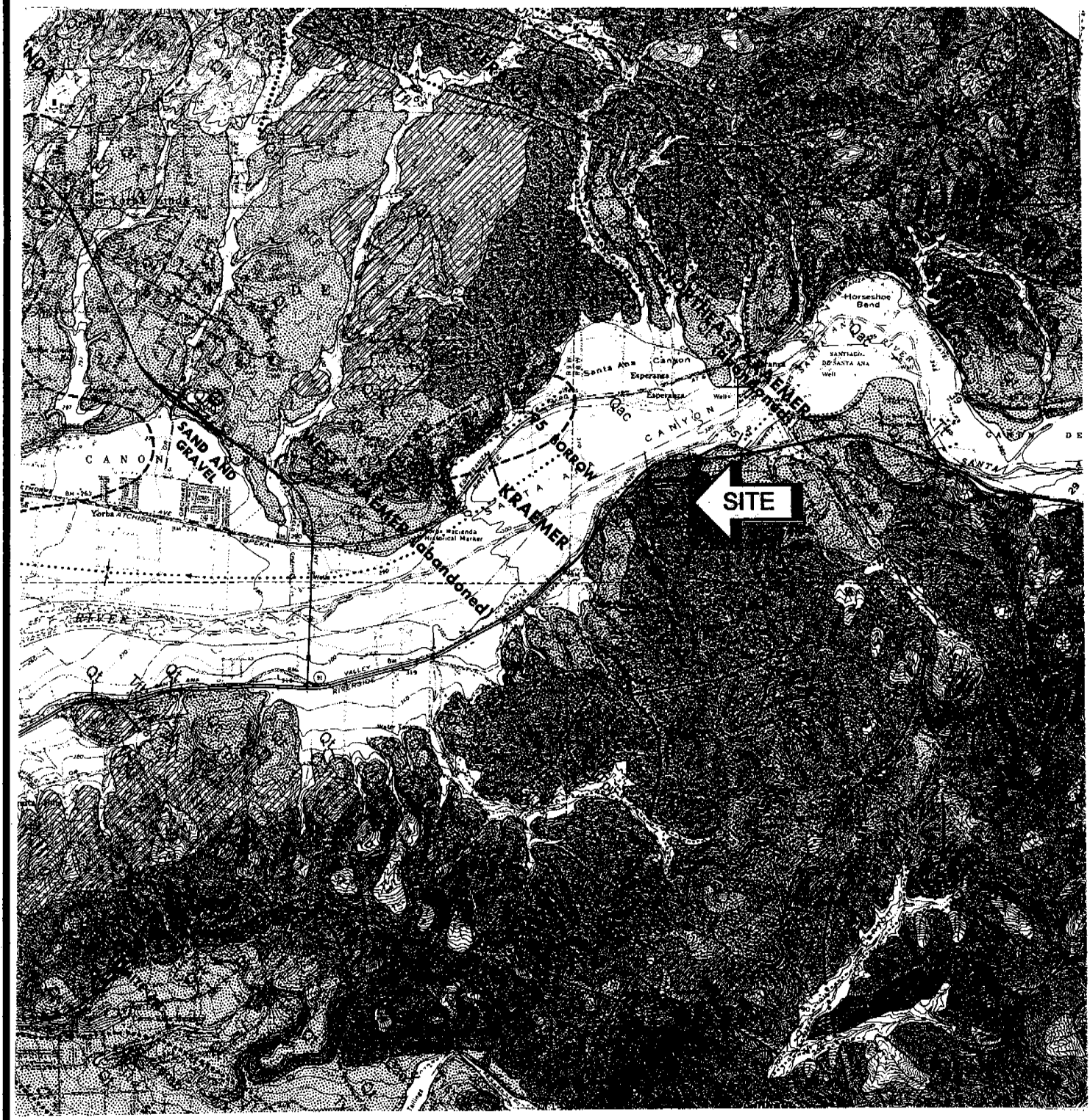
SITE LOCATION MAP

WEDDING CHAPEL AND BANQUET FACILITY

ANAHEIM HILLS, CALIFORNIA

1" = 2400'	
DRAWN: RB CHKD: JAS	**Southern California Geotechnical**
SCG PROJECT 00G224-1	1260 North Hancock Street, Suite 101 Anaheim, California 92807 Phone: (714) 777-0333 Fax: (714) 777-0398
PLATE 1	

THIS PAGE LEFT BLANK INTENTIONALLY



SOURCE: GEOLOGIC MAP OF ORANGE COUNTY CALIFORNIA, SHOWING MINES AND MINERAL DEPOSITS, 1981

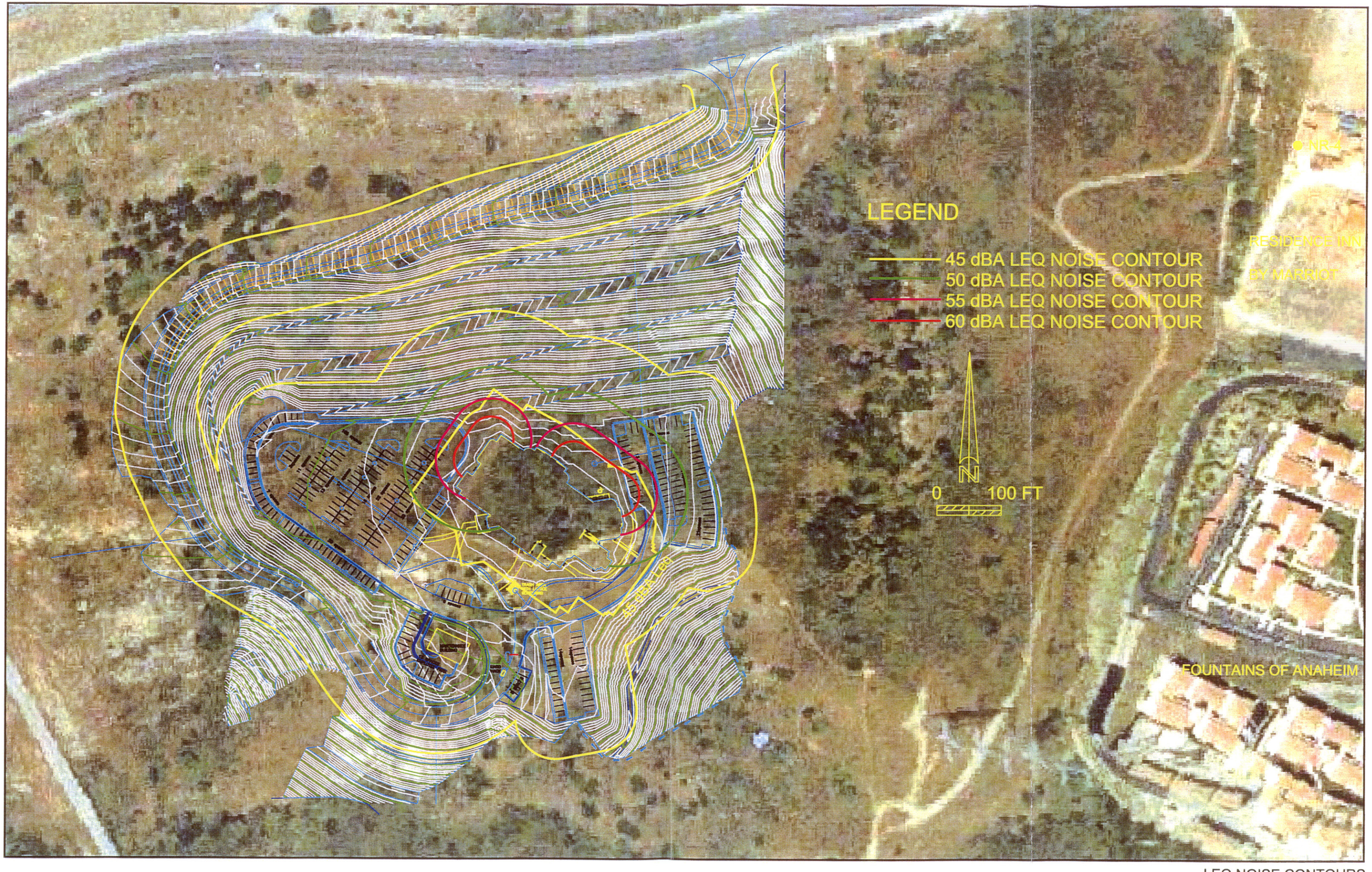
SITE GEOLOGIC MAP

WEDDING CHAPEL AND BANQUET FACILITY

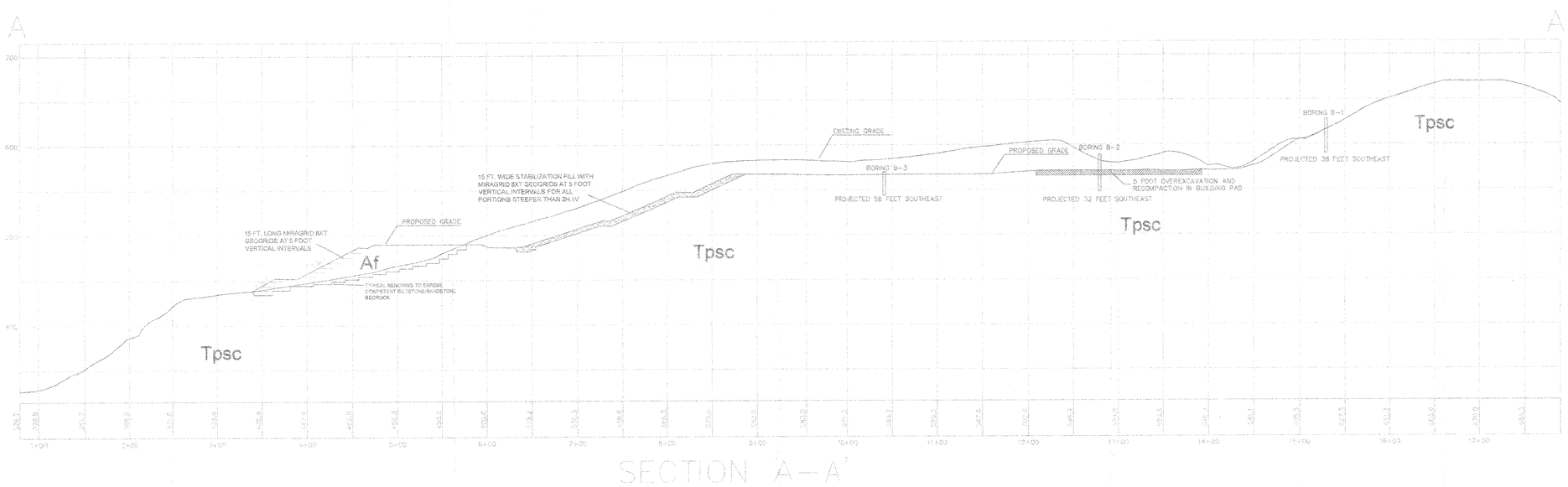
ANAHEIM HILLS, CALIFORNIA

1" = 4000'	**Southern California Geotechnical**
DRAWN: RB CHKD: JAS	
SCG PROJECT 00G224-1	
PLATE 2	

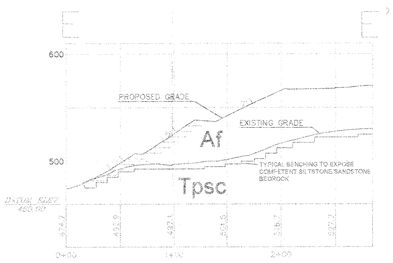
1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398



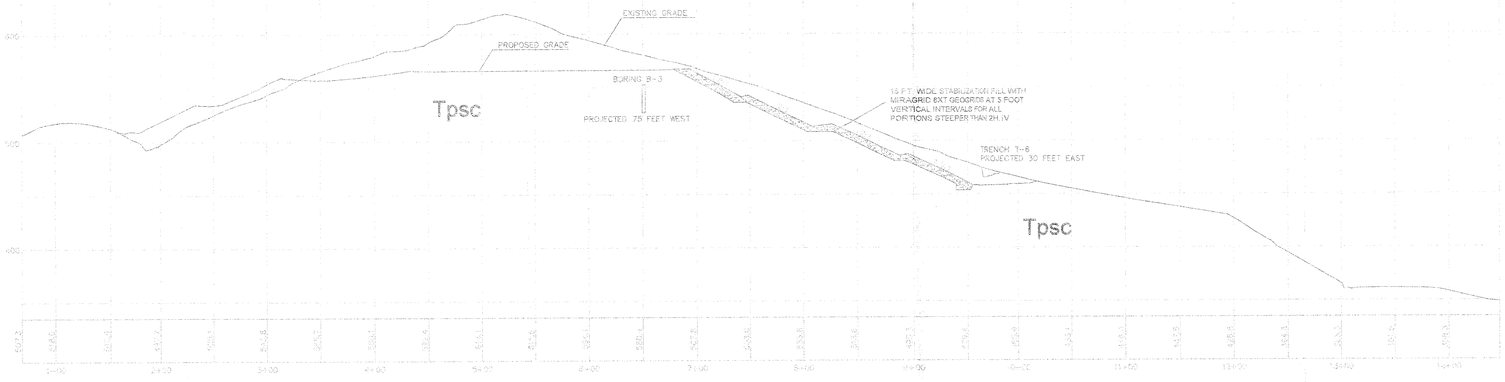
LEQ NOISE CONTOURS
Figure 4



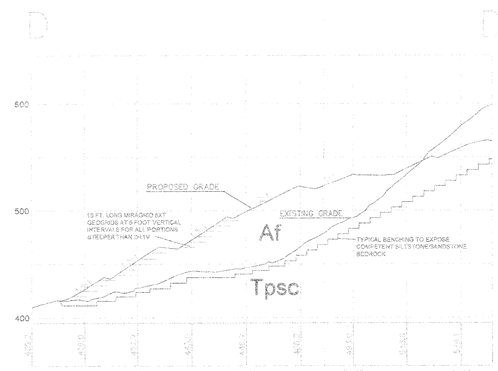
SECTION A–A'



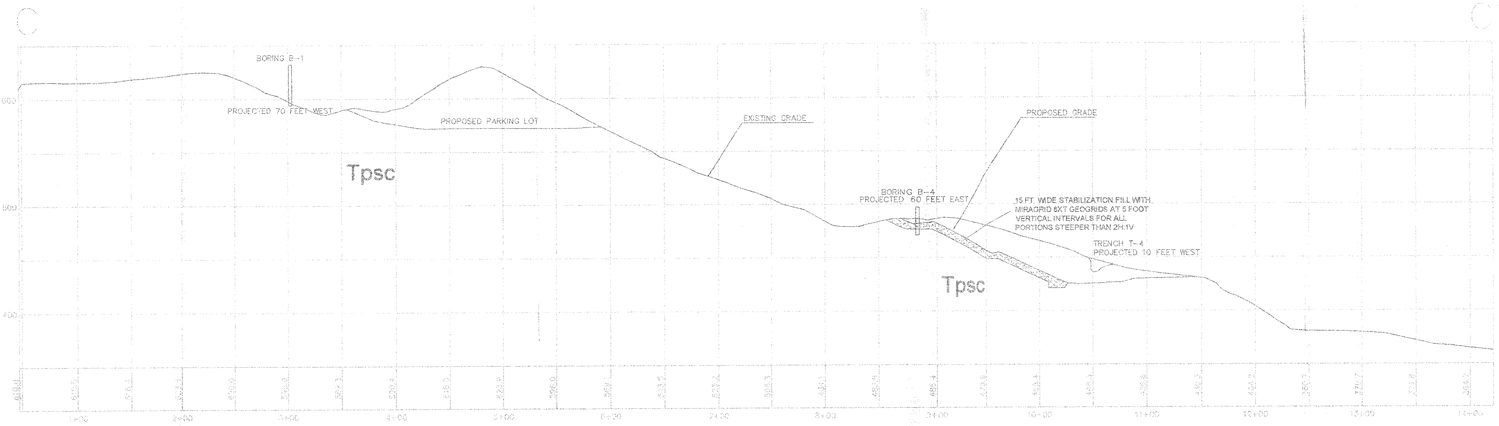
SECTION E–E'



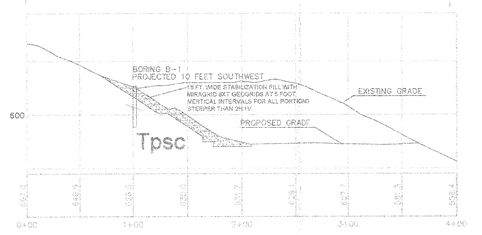
SECTION B–B'



SECTION D–D'



SECTION C–C'



SECTION F–F'

GEOTECHNICAL LEGEND

	MIRAGRID 8XT GEOGRID (SPACED AT 5 FT. VERT. INTERVALS)
	APPROXIMATE BORING LOCATION (PROJECTION INDICATED)
Af	PROPOSED COMPACTED FILL
Tpsc	PUENTE FORMATION–SYCAMORE CANYON MEMBER SILTSTONE AND SANDSTONE

NOTE: BASE MAP AND SECTIONS PROVIDED BY DANJON ENGINEERING

GEOLOGIC CROSS SECTIONS A-A' THROUGH F-F'
PROPOSED WEDDING CHAPEL
ANAHEIM, CA.

SCALE: 1" = 50'
DRAWN: JMK
CHKD: JAS
SCG PROJECT 090224-1
PLATE 4

Southern California Geotechnical
1280 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0396

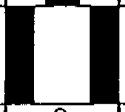
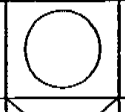
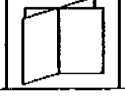
THIS PAGE LEFT BLANK INTENTIONALLY

APPENDIX B

BORING AND TRENCH LOGS

THIS PAGE LEFT BLANK INTENTIONALLY

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENTS OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS--NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKEN PEN.: Approximate shear strength of a cohesive soil sample as measured by the pocket penetrometer.

GRAPHIC LOG: Graphic soil symbol, as depicted on the following page.

DRY DENSITY: Dry Density of an undisturbed or relatively undisturbed sample.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

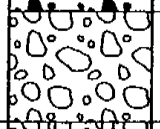
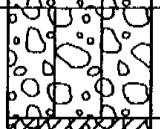
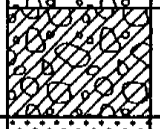
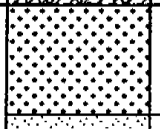
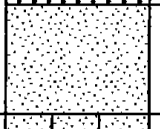
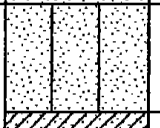
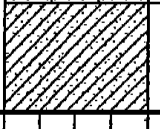
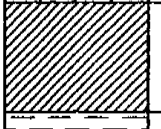
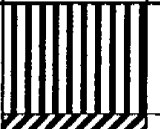
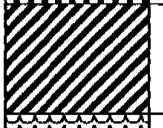
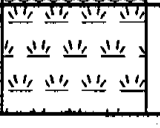
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of material finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

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

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

Southern California Geotechnical INC.

BORING NO. B-1

JOB NO.: 00G224 | DRILLING DATE: 11/16/00 | WATER DEPTH: Dry
PROJECT: Wedding & Banquet Facility | DRILLING METHOD: Bucket Auger | CAVE DEPTH: None
LOCATION: Anaheim Hills, CA | LOGGED BY: Romeo Balbas | READING TAKEN: at Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 627+/- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					TOPSOIL/ALLUVIUM: Brown Silty fine to medium Sand, trace Gravel, loose to medium dense - dry							
					PUENTE FORMATION: Light Brown Silty fine to medium Sandstone, very dense to dense, massively bedded - dry to damp							
5												
10												
15												
20					- at 20 feet Fracture or Cross Bedding 1/4" thick Iron Oxide Staining N 50-60 W, 20 N							
25					Gray Black concretion comprised of micaceous Sand, 12-inch diameter							

TBL 00G224.GPJ SOCALGEO.GDT 1/5/01

TEST BORING LOG **PLATE B-1a**

Southern California Geotechnical INC.

BORING NO. B-1

JOB NO.: 00G224 | DRILLING DATE: 11/16/00 | WATER DEPTH: Dry
PROJECT: Wedding & Banquet Facility | DRILLING METHOD: Bucket Auger | CAVE DEPTH: None
LOCATION: Anaheim Hills, CA | LOGGED BY: Romeo Balbas | READING TAKEN: at Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
		82/9"				106	8					
35		85/9"				109	8					
					Boring Terminated at 38'							

TBL 00G224.GPJ SOCALGEO.GDT 1/5/01

TEST BORING LOG **PLATE B-1b**

Southern California Geotechnical INC.

BORING NO. B-2

JOB NO.: 00G224 | DRILLING DATE: 11/17/00 | WATER DEPTH: Dry
PROJECT: Wedding & Banquet Facility | DRILLING METHOD: Bucket Auger | CAVE DEPTH: None
LOCATION: Anaheim Hills, CA | LOGGED BY: Romeo Balbas | READING TAKEN: at Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 593+/- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					PUENTE FORMATION: Light Gray Brown Sandstone and Siltstone, thinly interbedded, medium dense to medium stiff - dry N 50 E, 35-40 N Light Brown Sandstone (Sand Beds), very dense - damp							
5					- 3 to 4 inch thick Dark Gray Siltstone Bed - 8 inch thick Dark Gray Siltstone Bed, Iron Staining N 50 W, 40 N - Interbedded Light Brown Silty fine Sandstone and Gray fine Sandy Siltstone							
10					- Light Brown Silty fine to medium Sandstone, trace coarse Sand - Light Gray Siltstone and Light Brown Sandstone, thinly interbedded, approximately 1/4-inch							
15					- Light Brown fine to medium Sandstone, massive - Dark Gray Siltstone Clasts, 2 to 4 inch diameter, interbedded with Light Brown micaceous Sandstone Bedrock - Light Brown Silty fine to medium Sandstone, some fine Gravel, massively bedded - increasing fine Gravel content							
20					- interbedded Siltstone and Sandstone, some cross bedding N 60 E, 35 N							
25					- Light Brown medium fine Sandy Siltstone and medium Sandstone, trace fine Gravel with 1-inch thick Iron Oxide stained lens, coarse grained Sandstone lens with some Crystals N 55 E, 35 N - Gray Siltstone to Sandy Siltstone - Light Brown Silty fine Sandstone - Interbedded Light Brown Silty fine Sandstone and Gray							

TBL 00G224.GPJ SOCALGEO.GDT 1/5/01

TEST BORING LOG **PLATE B-2a**

Southern California Geotechnical INC.

BORING NO. B-2

JOB NO.: 00G224 | DRILLING DATE: 11/17/00 | WATER DEPTH: Dry
PROJECT: Wedding & Banquet Facility | DRILLING METHOD: Bucket Auger | CAVE DEPTH: None
LOCATION: Anaheim Hills, CA | LOGGED BY: Romeo Balbas | READING TAKEN: at Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					Brown Siltstone, thinly bedded, iron oxide staining along bedding N 55 E, 35-40 N							
35		78/10"				110	10					
40		55				95	23					
					Boring Terminated at 41'							

TBL 00G224.GPJ SOCALGEO.GDT 1/5/01

TEST BORING LOG **PLATE B-2b**

Southern California Geotechnical INC.

BORING NO. B-3

JOB NO.: 00G224 | DRILLING DATE: 11/17/00 | WATER DEPTH: Dry
PROJECT: Wedding & Banquet Facility | DRILLING METHOD: Bucket Auger | CAVE DEPTH: None
LOCATION: Anaheim Hills, CA | LOGGED BY: Romeo Balbas | READING TAKEN: at Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 555+/- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					COLLUVIUM: Dark Brown Silty Clay, some fine Sand, stiff to very stiff - damp							
5		25			PUENTE FORMATION: Brown Clayey fine Sandstone, trace Gravel, medium dense to dense - moist	104	12					
					Light Brown Silty fine to medium Sandstone, massive - moist							
10		65/11"			- weathered at 10', iron stained lenses, trace Rootlets	103	15					
					Light Brown Silty fine Sandstone with some interbedded fine Sandy Siltstone, iron oxide staining N 40 E, 30 N - Roots - Brown fine Sandy Siltstone/Sandstone N 40 E, 30 N Light Brown Silty fine to medium Sandstone, very dense, massively bedded - damp							
15					- Orange Brown Silty fine to medium Sandstone, very dense - damp							
		51				113	5					
					- iron oxide stained siltstone bed N 50 E, 30 N - 1/4-inch thick White Siltstone bed, iron oxide staining N 20 E, 30 N							
20												
25		45				91	20					
					Boring Terminated at 26'							

TBL 00G224.GPJ SOCALGEO.GDT 1/5/01

TEST BORING LOG **PLATE B-3**

Southern California Geotechnical INC.

BORING NO. B-4

JOB NO.: 00G224 | DRILLING DATE: 11/20/00 | WATER DEPTH: Dry
PROJECT: Wedding & Banquet Facility | DRILLING METHOD: Bucket Auger | CAVE DEPTH: None
LOCATION: Anaheim Hills, CA | LOGGED BY: Romeo Balbas | READING TAKEN: at Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 497+/- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	UNCONFINED SHEAR (TSF)	COMMENTS
					COLLUVIUM: Brown Silty fine to medium Sand, loose - dry							
					PUENTE FORMATION: Light Brown fine to medium Sandstone, medium dense, weathered - dry to damp							
5		25			Light Brown Silty fine Sandstone, very dense - damp - 1-inch thick fine Sandy Siltstone bed N 55 E, 40 N	107	7					
10		45			Light Brown Sandstone, fine to coarse Grained, massive - damp - ½ to 1 inch Silty Sandstone Bed N 40 W, 40 N Gray Brown fine Sandy Siltstone, very stiff - damp Light Brown Silty fine to medium Sandstone, very dense - damp - Gray Brown fine Sandy Silt/Siltstone N 60 E, 35 N	109	5					
15		50			Gray Brown fine Sandy Siltstone, very stiff to hard - damp	104	20					
20		70			- 2 to 3 inch thick Siltstone Bed with White Calcareous coatings along bedding N 50 E, 35 N Light Brown fine to medium Sandstone, very dense - damp N 50 E, 35 N Gray Brown fine Sandy Siltstone, Sandstone Bed contact N 45 E, 35 N	101	11					
25		78/9"			Light Brown Silty fine to medium Sandstone, very dense - damp	103	15					
					Boring Terminated at 26'							

TBL 00G224.GPJ SOCALGEO.GDT 1/5/01

TEST BORING LOG **PLATE B-4**

Southern California Geotechnical

TRENCH NO. T-1

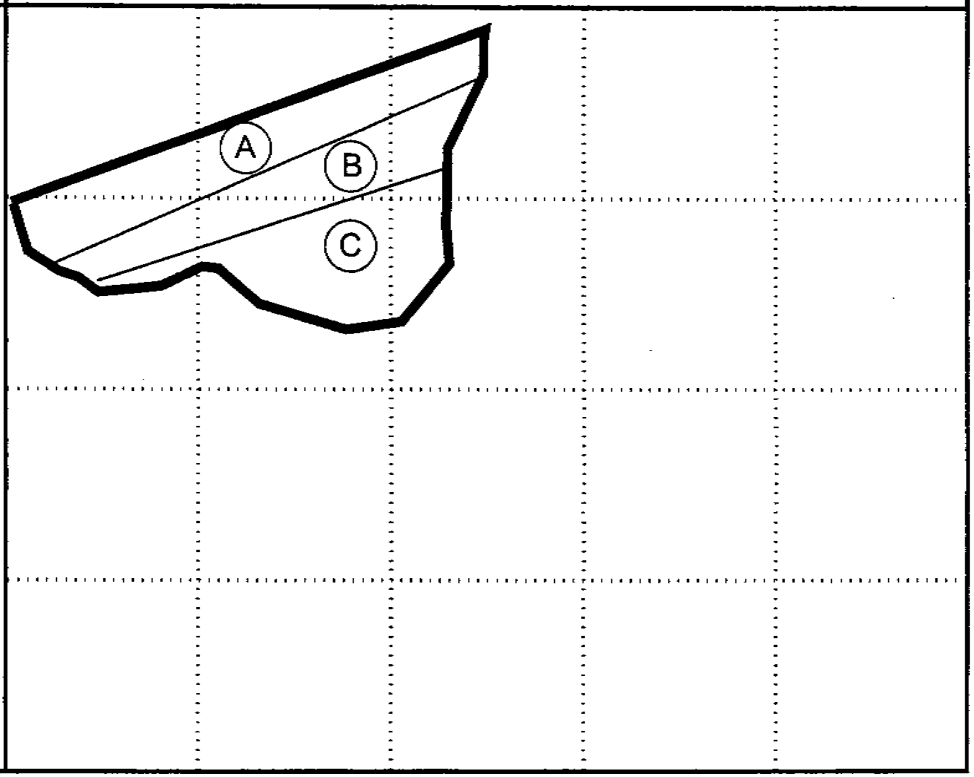
JOB NO.: 00G224
PROJECT: Wedding and Banquet Facility
LOCATION: Anaheim Hills
DATE: 11-20-00

EQUIPMENT USED: Rubber Tired Backhoe
LOGGED BY: Romeo Balbas
ORIENTATION: N 35 W
ELEVATION: 410+/-

WATER DEPTH: None
SEEPAGE DEPTH: None
READINGS TAKEN: at Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: TOPSOIL: Light Brown Silty fine to medium Sand, trace coarse Sand, abundant Roots, very loose - dry
				B: COLLUVIUM: Brown to Gray Brown Silty fine Sand, loose to medium dense, slightly porous - dry
5				C: BEDROCK: Light Brown Sandstone, fine Grained, Iron staining, dense to very dense - dry to damp
				Bottom of Trench at 8'
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-5

Southern California Geotechnical

TRENCH NO. T-2

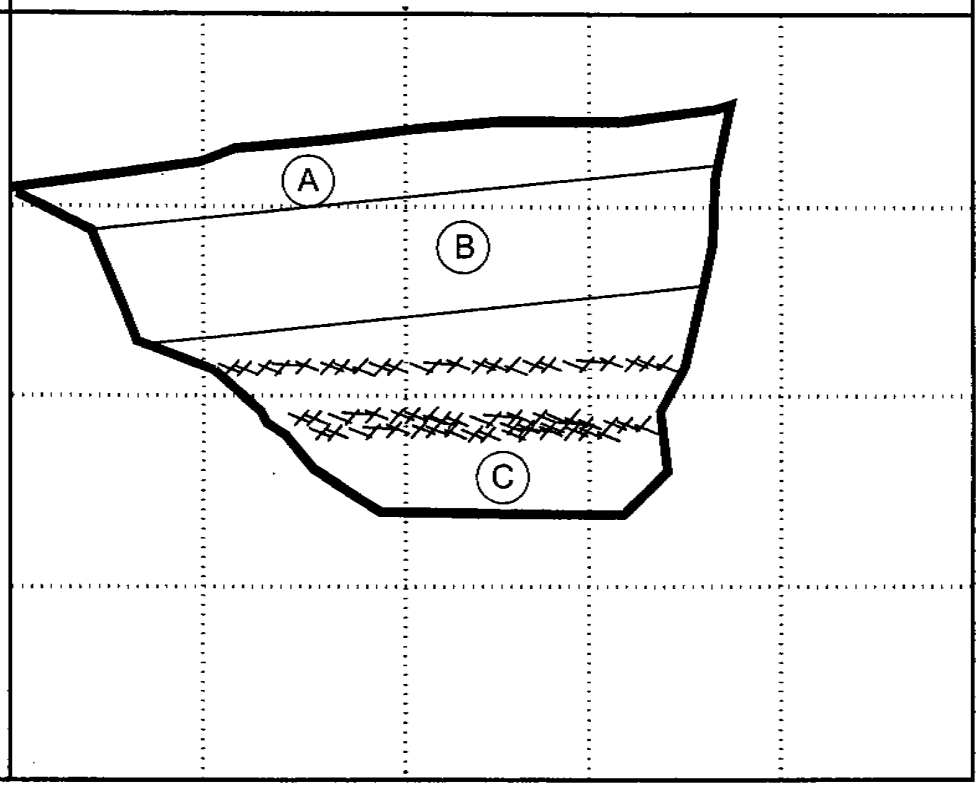
JOB NO.: 00G224
PROJECT: Wedding and Banquet Facility
LOCATION: Anaheim Hills
DATE: 11-20-00

EQUIPMENT USED: Rubber Tired Backhoe
LOGGED BY: Romeo Balbas
ORIENTATION: N 35 W
ELEVATION: 430+/-

WATER DEPTH: None
SEEPAGE DEPTH: None
READINGS TAKEN: at Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
5				A: TOPSOIL: Light Brown Silty fine to medium Sand, abundant Roots/Rootlets, very loose - dry B: ALLUVIUM: Light Brown fine Sand, some Silt, medium dense - dry C: BEDROCK: Light Brown to Light Gray Brown Sandstone, fine grained, dense to very dense - dry to damp; seams of Gray Silty Clay 1" to 6" thick, stiff - moist
10				Bottom of Trench at 9'
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-6

Southern California Geotechnical

TRENCH NO. T-3

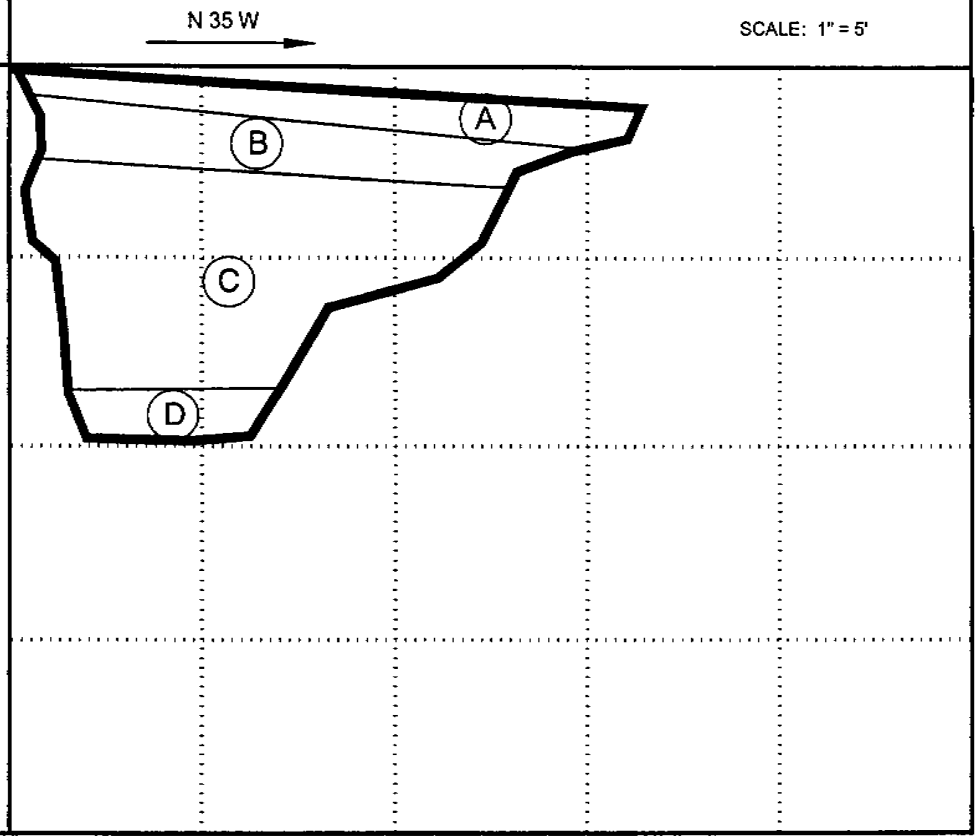
JOB NO.: 00G224
PROJECT: Wedding and Banquet Facility
LOCATION: Anaheim Hills
DATE: 11-20-00

EQUIPMENT USED: Rubber Tired Backhoe
LOGGED BY: Romeo Balbas
ORIENTATION: N 35 W
ELEVATION: 445+/-

WATER DEPTH: None
SEEPAGE DEPTH: None
READINGS TAKEN: at Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: TOPSOIL: Red Brown Silty fine to medium Sand, some coarse Sand and Gravel, trace Cobbles, abundant Roots, loose - dry
				B: ALLUVIUM: Red Brown Silty fine to medium Sand, some Clay, dense - damp
				C: ALLUVIUM: Brown to Gray Brown Silty fine to medium Sand, dense - damp
5				D: BEDROCK: Light Brown Sandstone, fine to medium Grained, very dense - damp
10				Bottom of Trench at 10'
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-7

Southern California Geotechnical

TRENCH NO. T-4

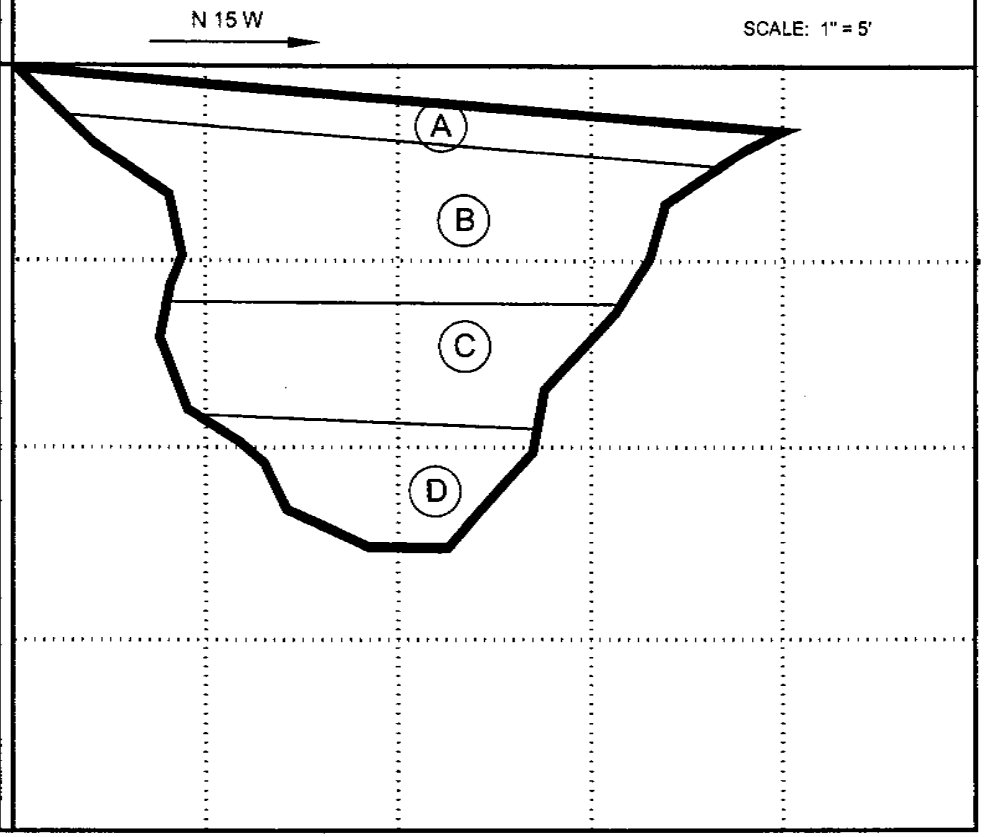
JOB NO.: 00G224
PROJECT: Wedding and Banquet Facility
LOCATION: Anaheim Hills
DATE: 11-20-00

EQUIPMENT USED: Rubber Tired Backhoe
LOGGED BY: Romeo Balbas
ORIENTATION: N 15 W
ELEVATION: 450+/-

WATER DEPTH: None
SEEPAGE DEPTH: None
READINGS TAKEN: at Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
5				A: TOPSOIL: Brown Silty fine to medium Sand, some coarse Sand and Gravel, trace Cobbles, abundant Roots, loose - dry B: ALLUVIUM: Brown Silty fine to coarse Sand with some Gravel, Cobbles, dense to very dense - damp C: ALLUVIUM: Brown to Light Brown Silty fine to medium Sand, some coarse Sand, very dense - damp D: BEDROCK: Brown Sandstone, fine grained, trace Silt, massive - damp
10				Bottom of Trench at 12'
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-8

Southern California Geotechnical

TRENCH NO. T-5

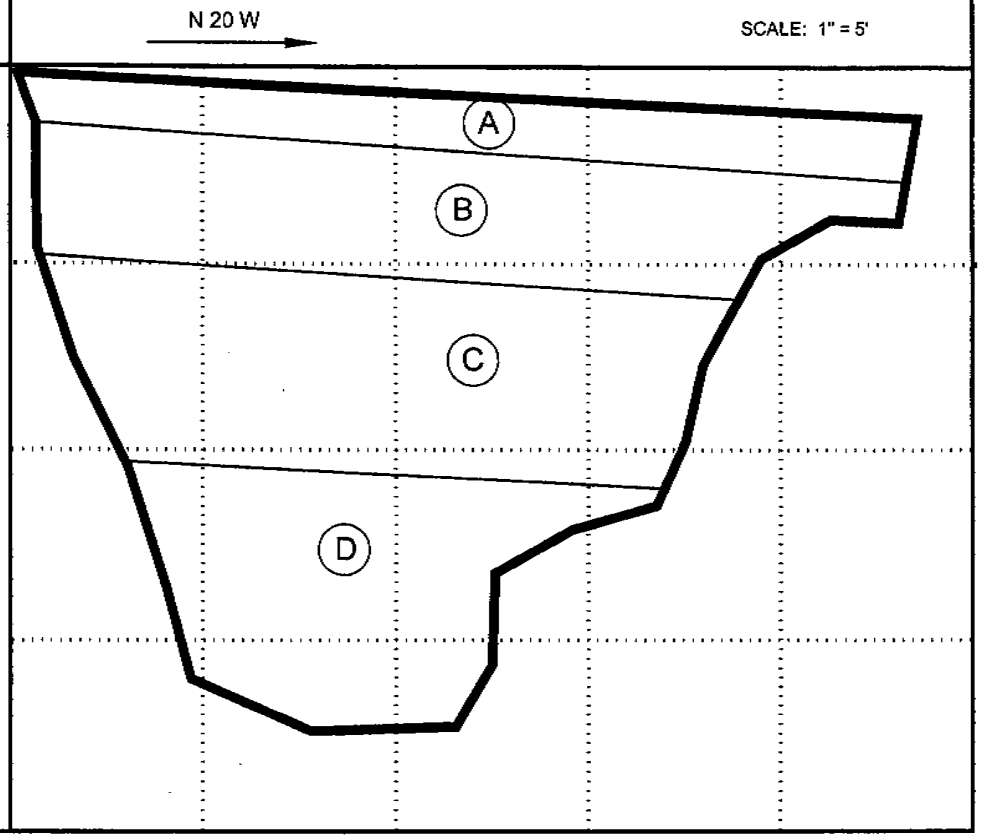
JOB NO.: 00G224
PROJECT: Wedding and Banquet Facility
LOCATION: Anaheim Hills
DATE: 11-20-00

EQUIPMENT USED: Rubber Tired Backhoe
LOGGED BY: Romeo Balbas
ORIENTATION: N 20 W
ELEVATION: 455+/-

WATER DEPTH: None
SEEPAGE DEPTH: None
READINGS TAKEN: at Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: TOPSOIL/FILL: Brown Silty fine to coarse Sand, some Gravel, abundant roots, irrigation concrete pipe, loose - dry
				B: ALLUVIUM: Brown to Dark Brown Silty fine to medium Sand, trace Gravel, Cobbles, dense - Damp
5				C: ALLUVIUM: Brown Silty fine to coarse Sand with some Gravel, trace Cobbles, dense - damp
				D: BEDROCK: Brown to Light Gray Brown Clayey fine to coarse grained Sandstone, some Gravel, dense to very dense - damp
10				
15				Bottom of Trench at 14'

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-9

Southern California Geotechnical

TRENCH NO. T-6

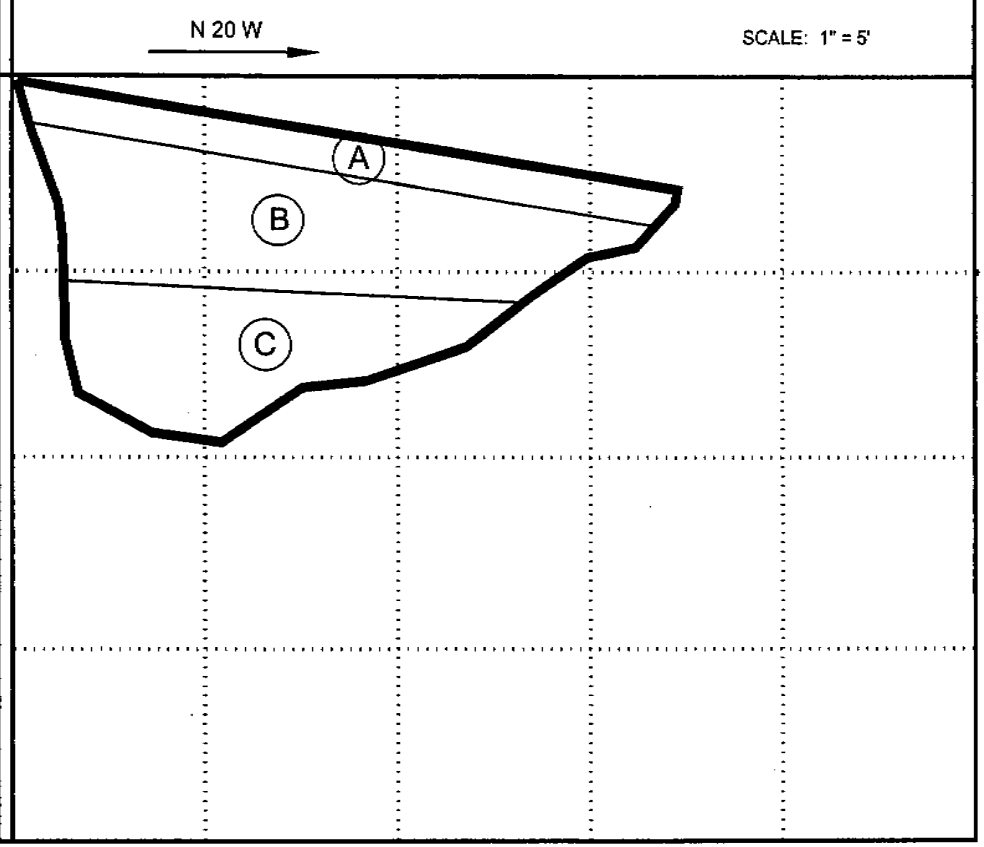
JOB NO.: 00G224
PROJECT: Wedding and Banquet Facility
LOCATION: Anaheim Hills
DATE: 11-20-00

EQUIPMENT USED: Rubber Tired Backhoe
LOGGED BY: Romeo Balbas
ORIENTATION: N 20 W
ELEVATION: 475+/-

WATER DEPTH: None
SEEPAGE DEPTH: None
READINGS TAKEN: at Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
5				A: TOPSOIL: Dark Brown Silty fine to medium Sand, trace coarse Sand and Gravel, loose - dry B: ALLUVIUM: Brown Silty fine to medium Sand, some Roots to 1-inch diameter, medium dense - damp C: BEDROCK: Light Brown to Gray Sandstone, fine grained, trace Silt, trace Roots, iron oxide staining, very dense to massive N 70 E, 35 degrees N
10				Bottom of Trench at 9'
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

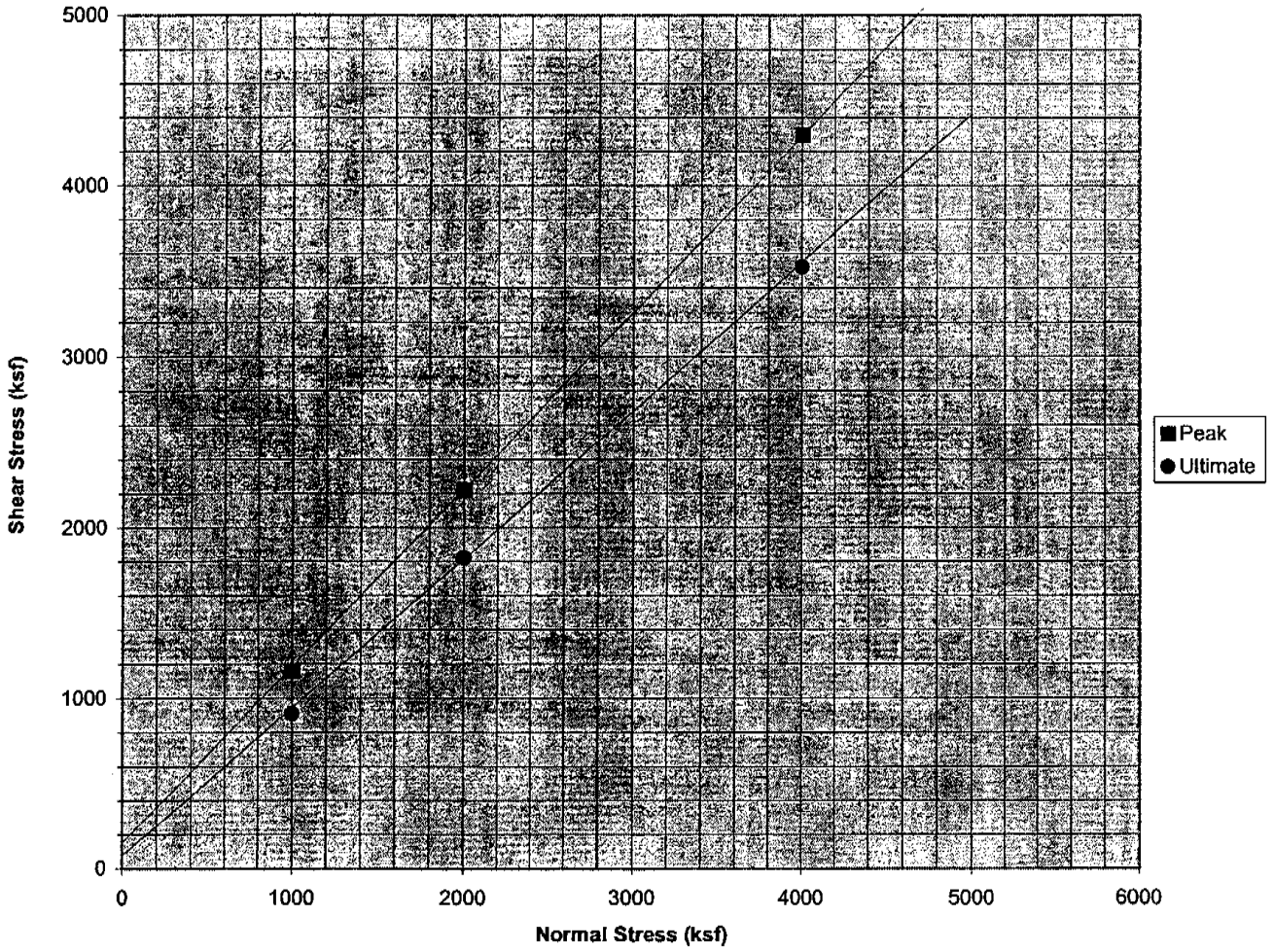
PLATE B-10

APPENDIX C

LABORATORY TESTING

THIS PAGE LEFT BLANK INTENTIONALLY

Direct Shear Test Results



Classification: B-4@15-16 ft.

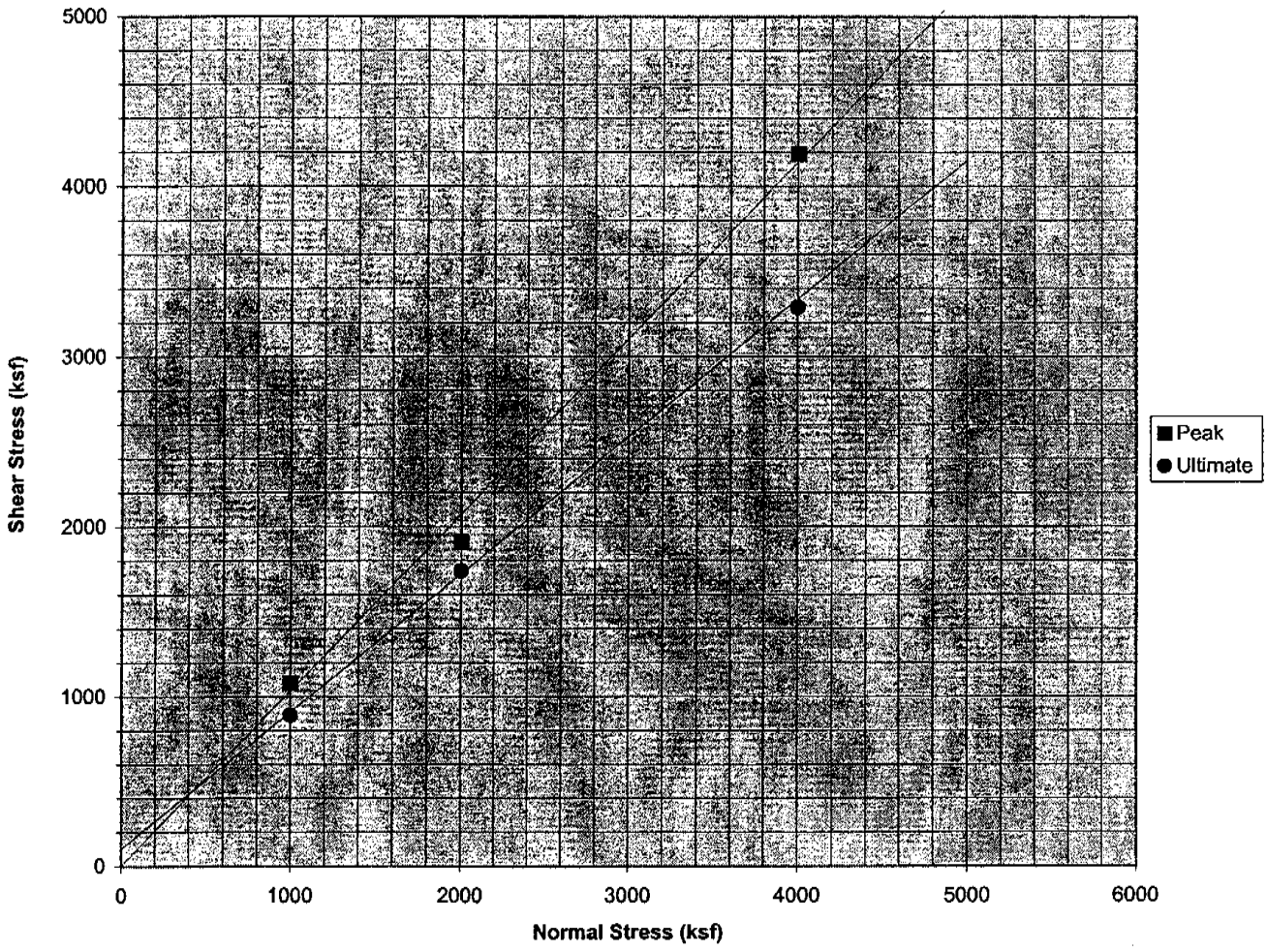
Sample Description: Fine to medium Sandy Siltstone

Sample Data		Test Results		
Initial Moisture Content	0			
Final Moisture Content	0		Peak	Ultimate
Initial Dry Density	0.0	ϕ (°)	46.0	41.0
Final Dry Density	0.0	C (psf)	150	75
Specimen Diameter (in)	2.4			
Specimen Thickness (in)	1.0			

Wedding Chapel
Anahiem Hills, CA
Project No. 00G224
PLATE C-1

Southern California Geotechnical
Inc.
1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398

Direct Shear Test Results



Classification: B-4@17-18 ft.

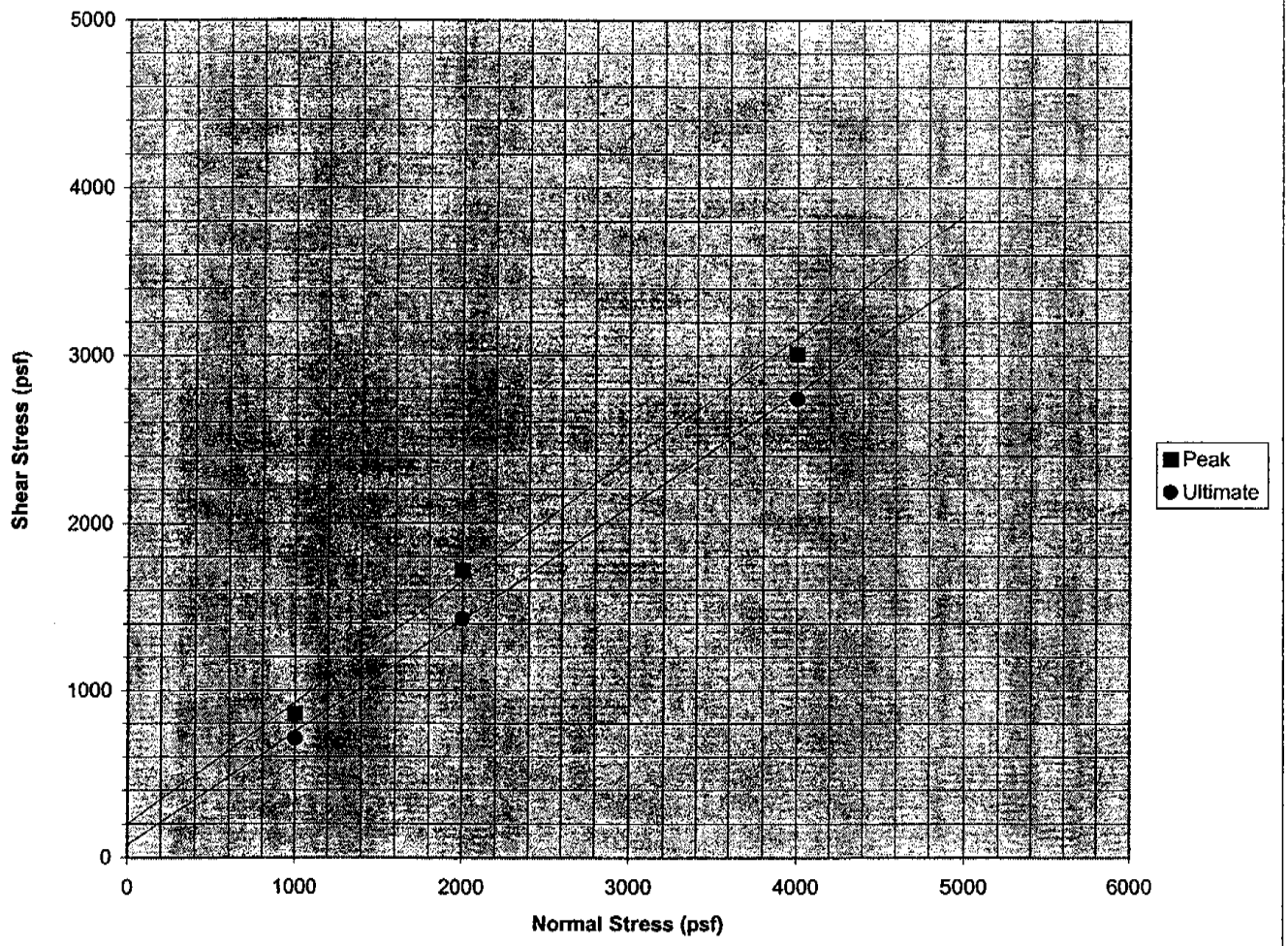
Sample Description: Silty fine to medium Sandstone

Sample Data		Test Results		
Initial Moisture Content	0			
Final Moisture Content	0		Peak	Ultimate
Initial Dry Density	0.0	ϕ (°)	46.0	39.0
Final Dry Density	0.0	C (psf)	0	100
Specimen Diameter (in)	2.4			
Specimen Thickness (in)	1.0			

Wedding Chapel
Anahiem Hills, CA
Project No. 00G224
PLATE C-2

Southern California Geotechnical
INC.
1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398

Direct Shear Test Results



Classification: B-1@5-7 ft.

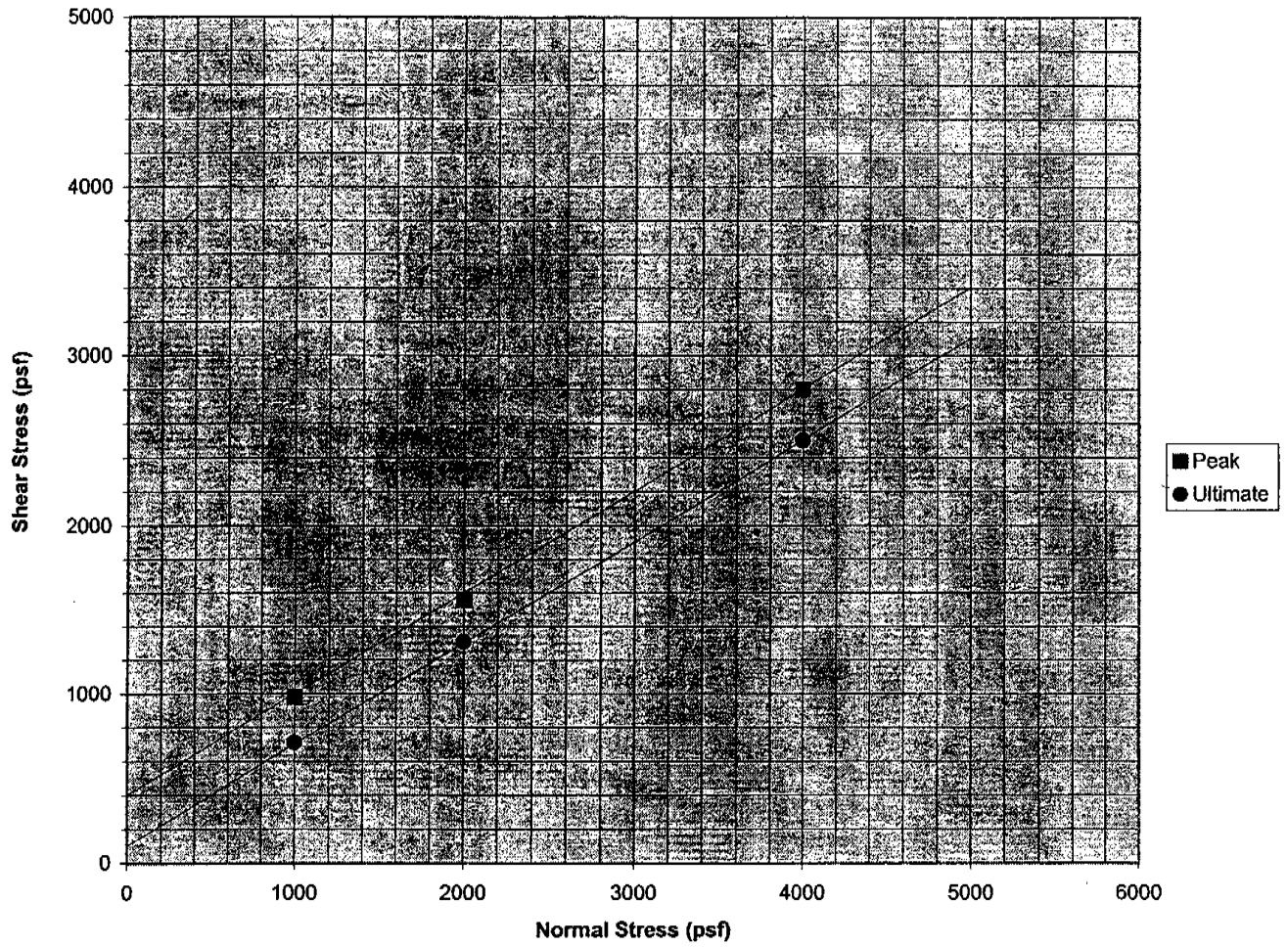
Sample Description: Silty fine to medium Sand

Sample Data		Test Results		
Remolded Moisture Content	11			
Final Moisture Content	0		Peak	Ultimate
Remolded Dry Density	108.0	ϕ (°)	36.0	34.0
Percent Compaction	0	**C** (psf)	200	75
Final Dry Density	0.0			
Specimen Diameter (in)	2.4			
Specimen Thickness (in)	1.0			

Wedding Chapel
Anahiem Hills, CA
Project No. 00G224
PLATE C-3

Southern California Geotechnical
INC.
1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398

Direct Shear Test Results



Classification: B-1@10-12 ft.

Sample Description:Silty fine to medium Sand, trace Clay

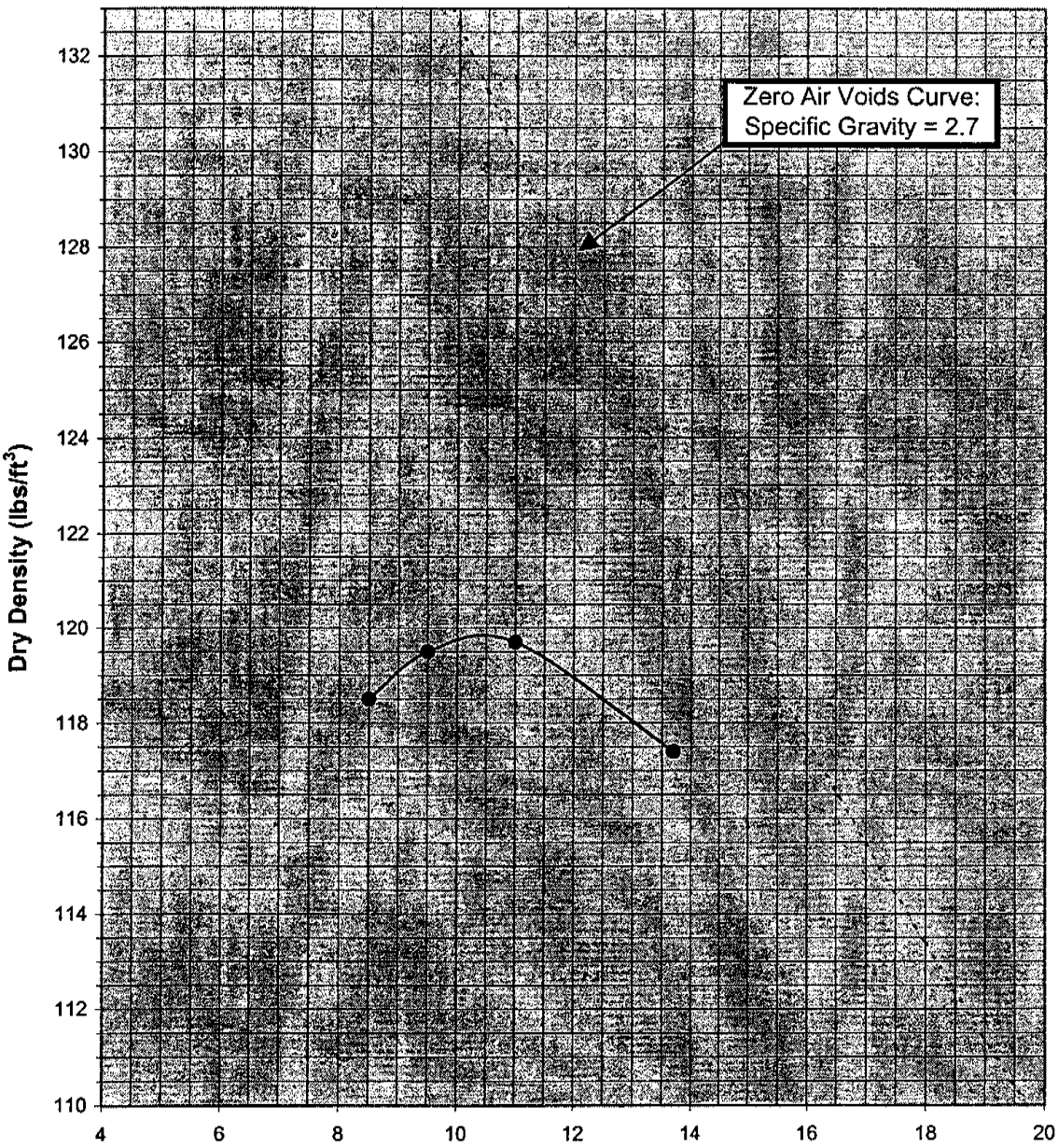
Sample Data	
Remolded Moisture Content	12
Final Moisture Content	0
Remolded Dry Density	108.9
Percent Compaction	0
Final Dry Density	0.0
Specimen Diameter (in)	2.4
Specimen Thickness (in)	1.0

Test Results	Peak	Ultimate
ϕ (°)	31.0	31.0
C (psf)	400	100

Wedding Chapel
Anahiem Hills, CA
Project No. 00G224
PLATE C-4

Southern California Geotechnical
1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398

Moisture/Density Relationship
ASTM D-1557

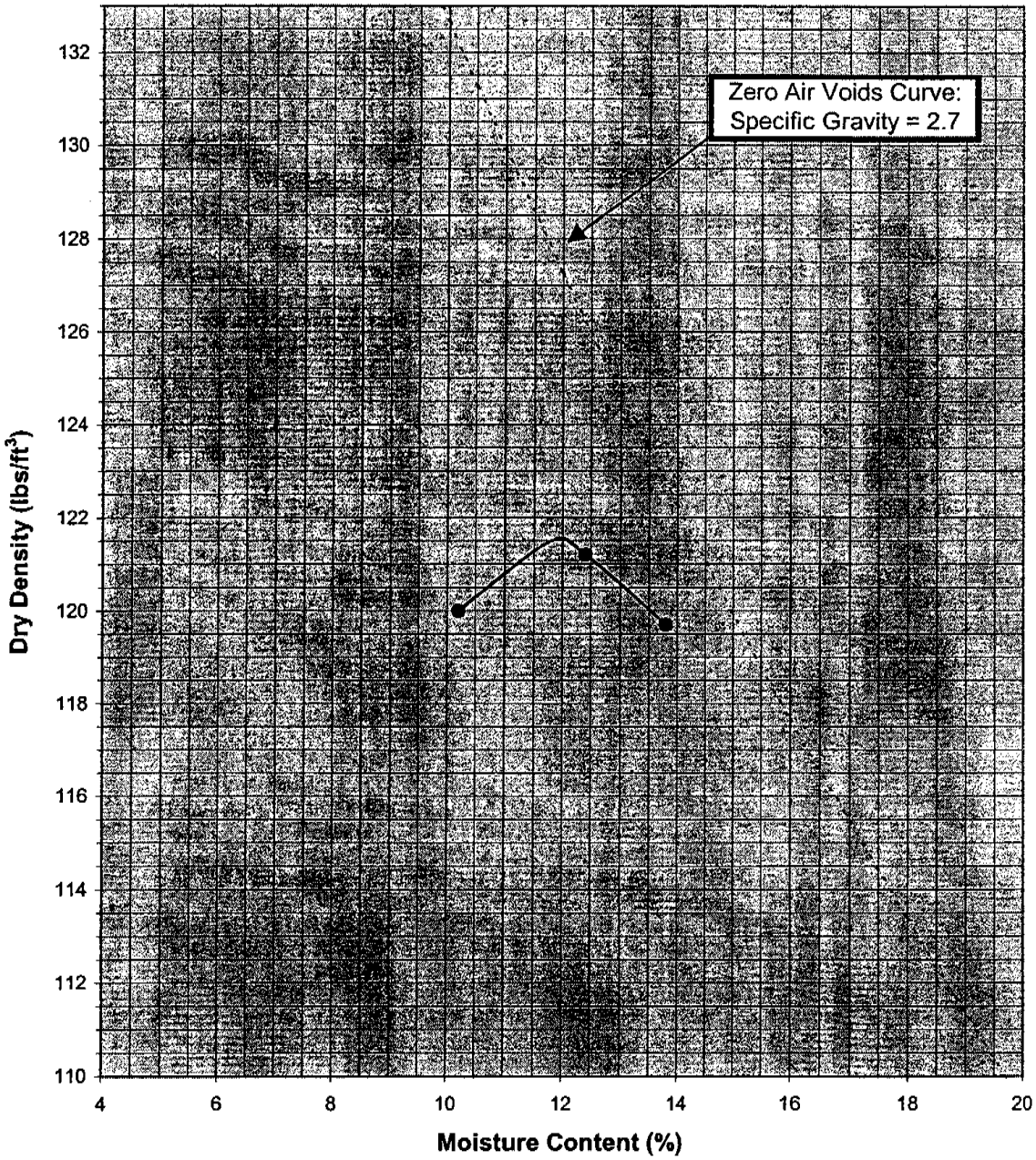


Soil ID Number		B-1 @ 5-7'
Optimum Moisture (%)		11
Maximum Dry Density (pcf)		120
Soil Classification	Yellow Brown Silty fine to medium Sand	

Wedding & Banquet Facility
Anaheim, California
Project No. 00G224
PLATE C-5

Southern California Geotechnical
INC.
1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398

Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-2 @ 10-12'
Optimum Moisture (%)	11.5
Maximum Dry Density (pcf)	121.5
Soil Classification	Yellow Brown Silty fine to medium Sand, trace fine Gravel

Wedding & Banquet Facility
Anaheim, California
Project No. 00G224
PLATE C-6

Southern California Geotechnical
INC.
1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398

APPENDIX D

GRADING GUIDE SPECIFICATIONS

THIS PAGE LEFT BLANK INTENTIONALLY

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and Uniform Building Codes.
- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.
- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.
- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the specified compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.
- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.
- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.
- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.
- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as "contaminated," and shall be low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks greater than 6 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. Acceptable methods typically include windrows. Oversize materials should not be placed within the range of excavation for foundations, utilities, or pools to facilitate excavations. Rock placement should be kept away from slopes (minimum distance: 15 feet) to facilitate compaction near the slope.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship,

equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- After compacted fills have been tested and approved by the geotechnical engineer, the contractor should moisture condition the soils as necessary to maintain the compacted moisture content. Compacted fill soils that are allowed to become overly dry or desiccated may require removal and/or scarification, moisture conditioning and replacement. Soils with medium to high expansion indices are especially susceptible to desiccation. Sandy soils that are allowed to dry can also lose density

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates G-2, G-4, and G-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate G-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and then proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core.

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the

slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate G-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate G-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate G-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates G-6.

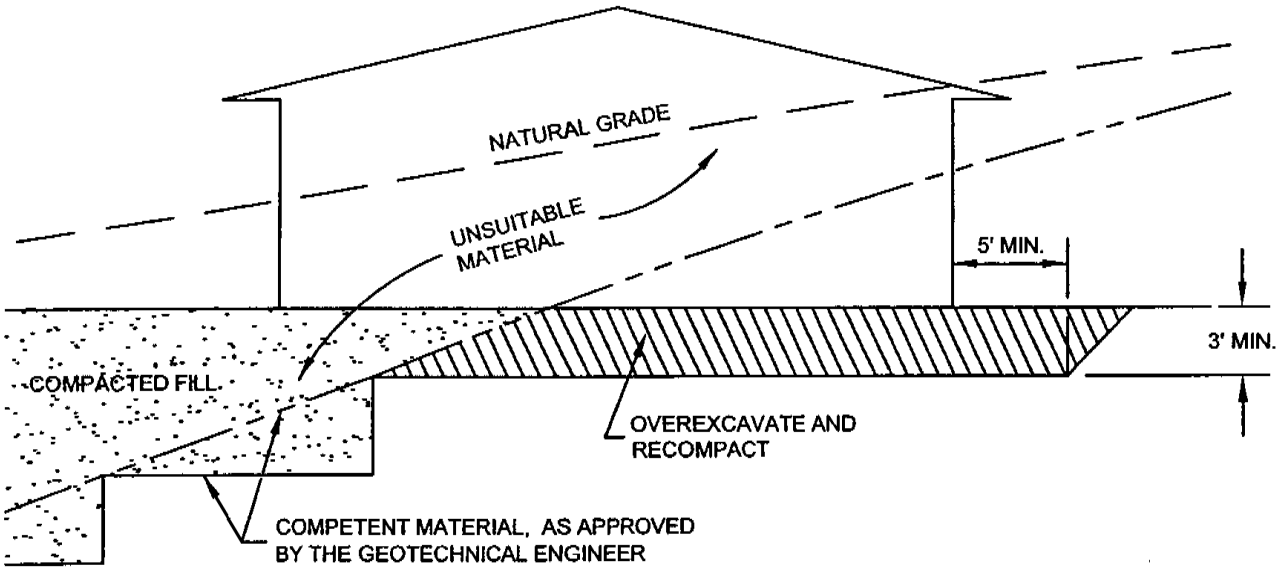
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate G-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

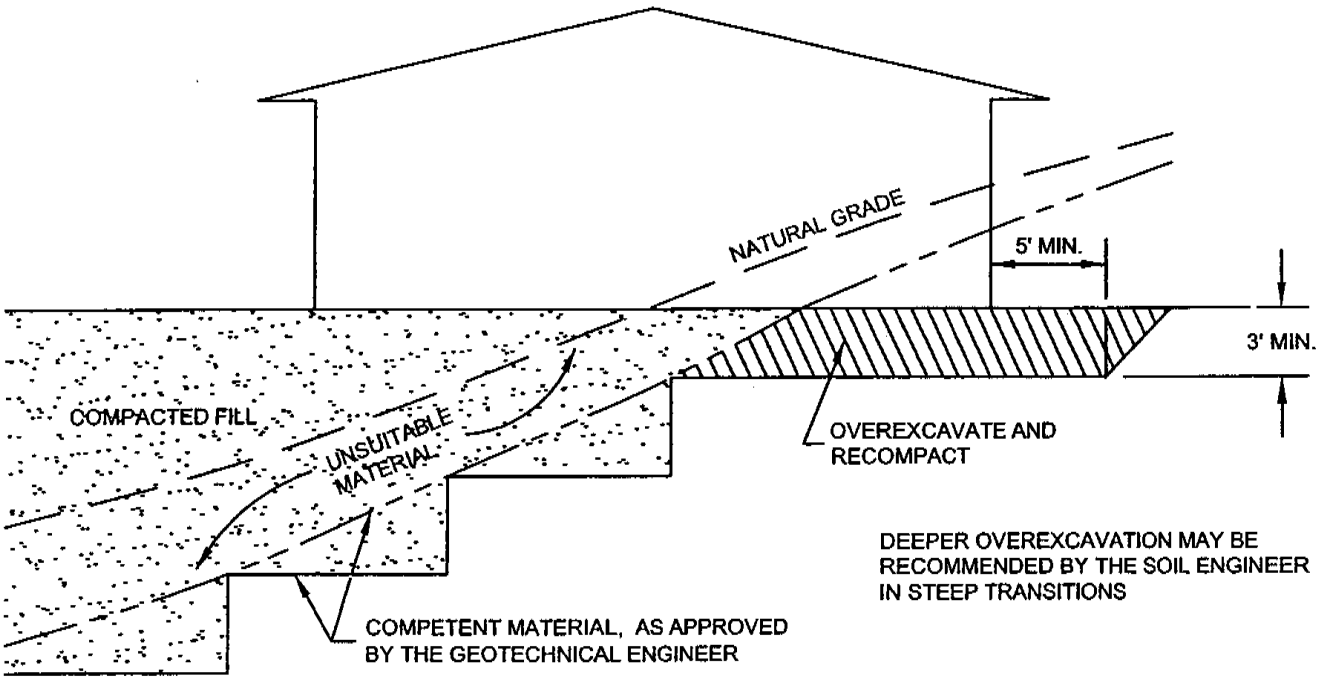
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



DEEPER OVEREXCAVATION MAY BE RECOMMENDED BY THE SOIL ENGINEER IN STEEP TRANSITIONS

TRANSITION LOT DETAIL

GRADING GUIDE SPECIFICATIONS

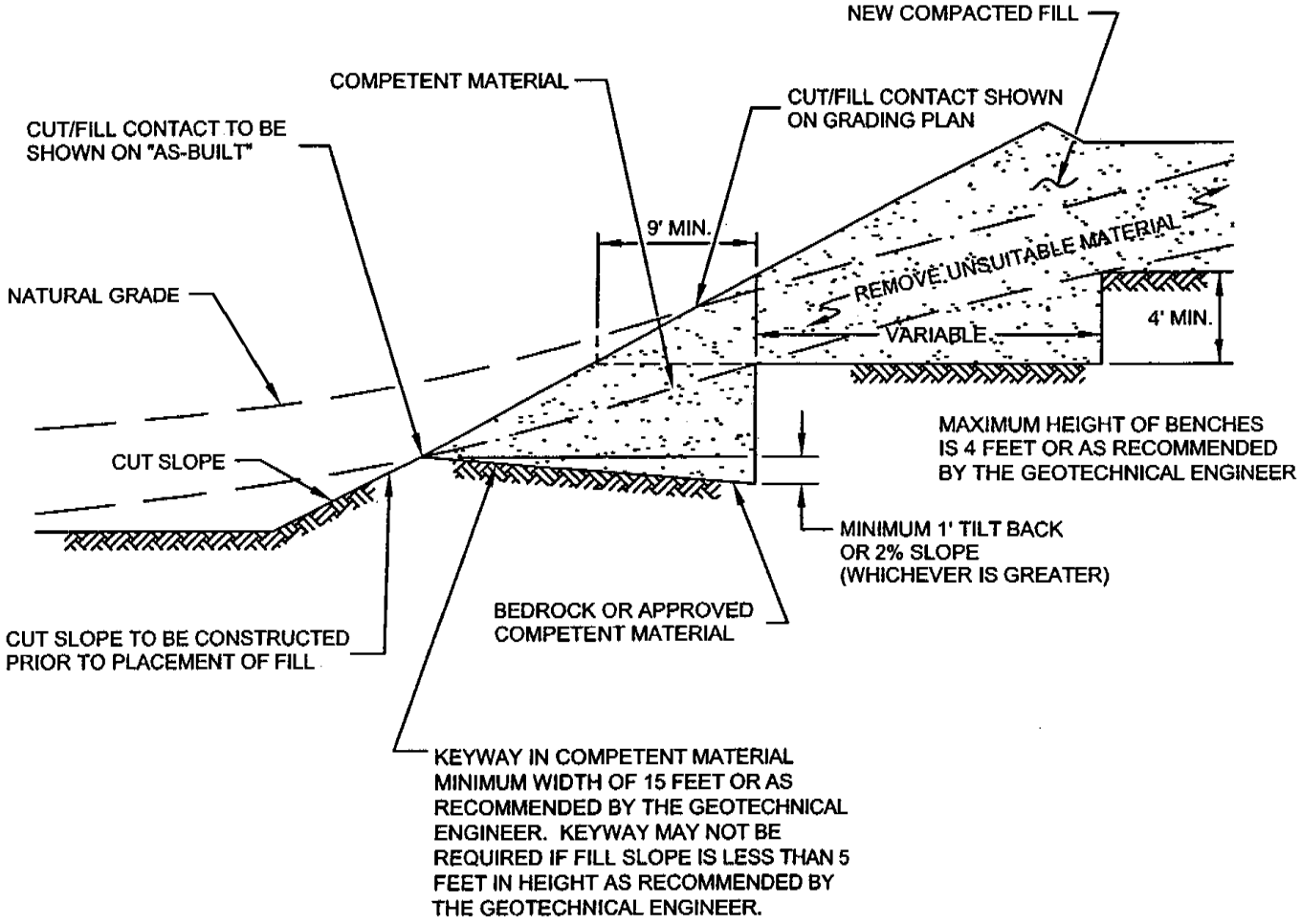
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE G-1

Southern California Geotechnical Inc.

1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398



FILL ABOVE CUT SLOPE DETAIL

GRADING GUIDE SPECIFICATIONS

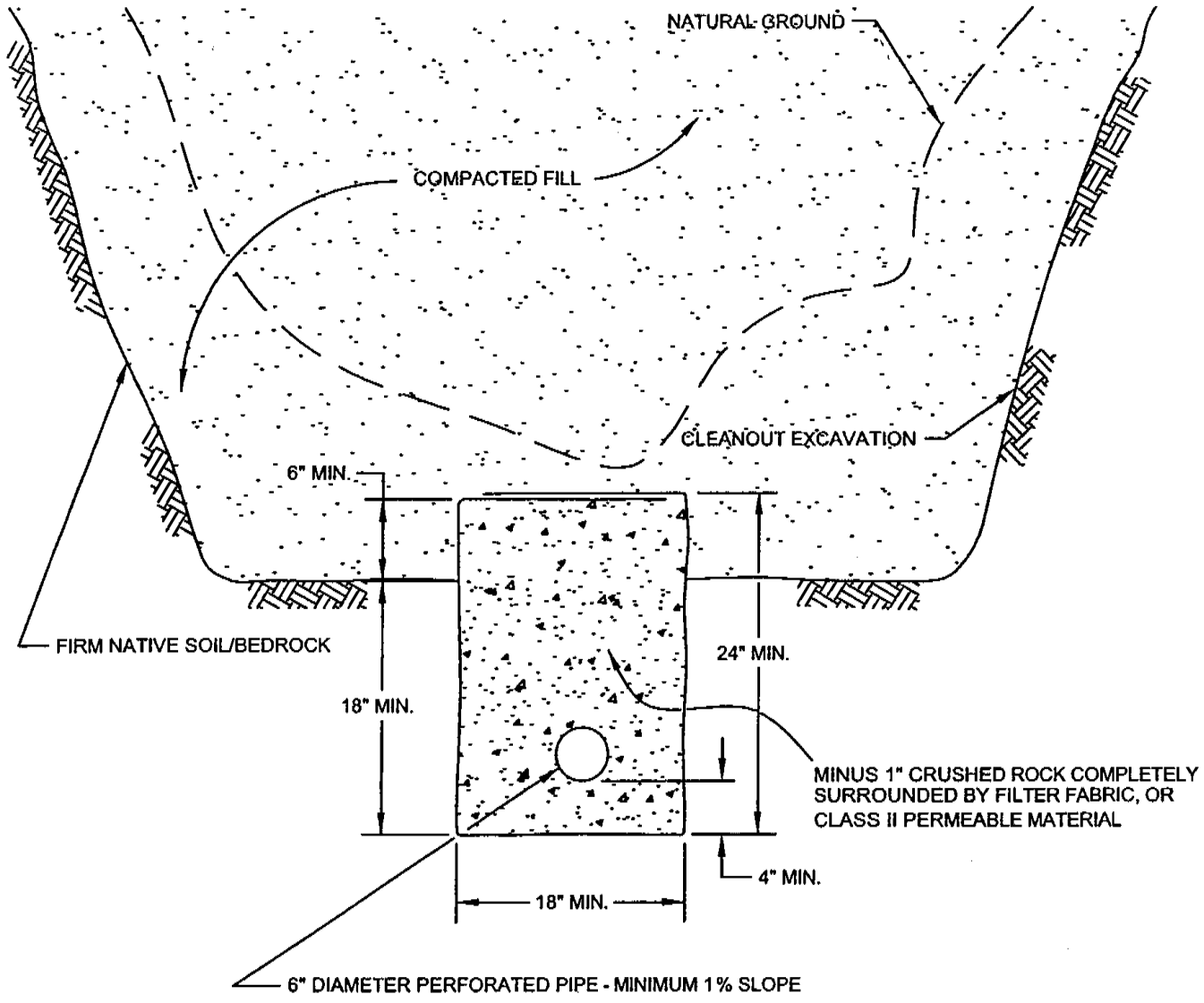
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE G-2

Southern California Geotechnical
INC.

1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398



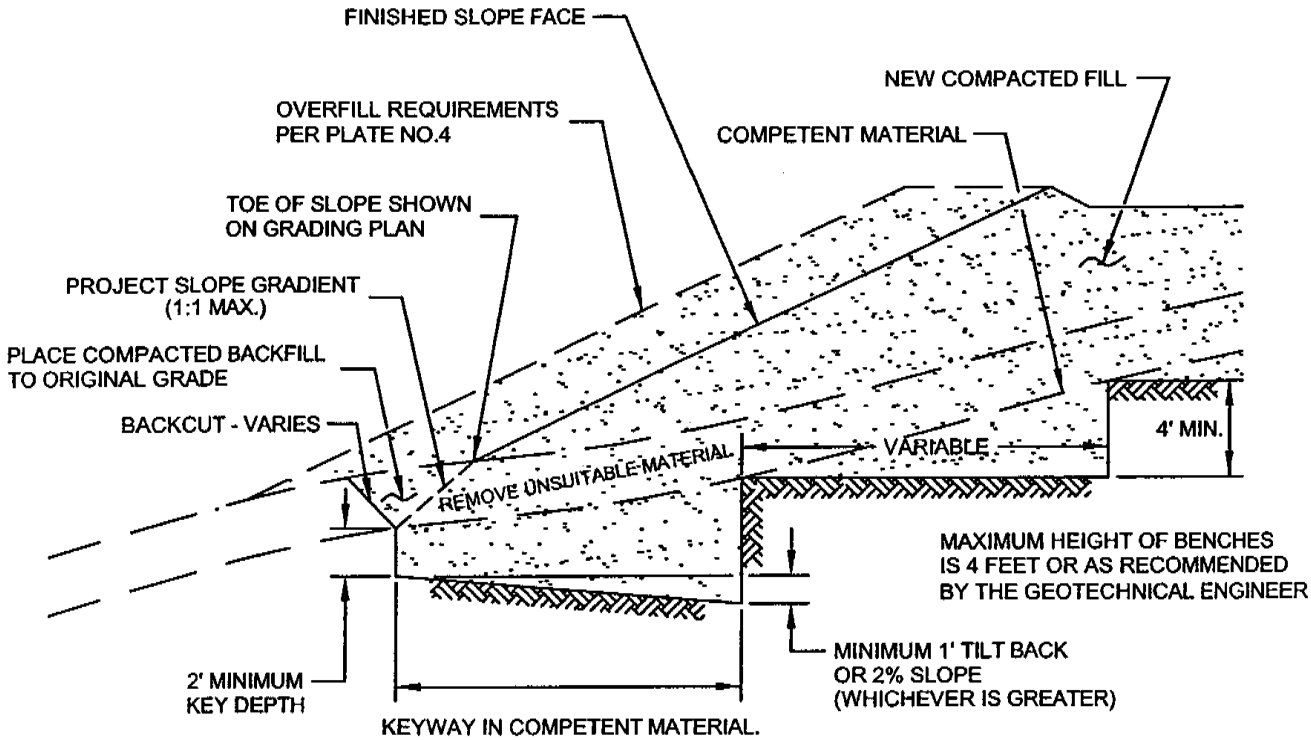
PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE
DRAWN: JAS
CHKD: GKM
PLATE G-3

Southern California Geotechnical
1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398

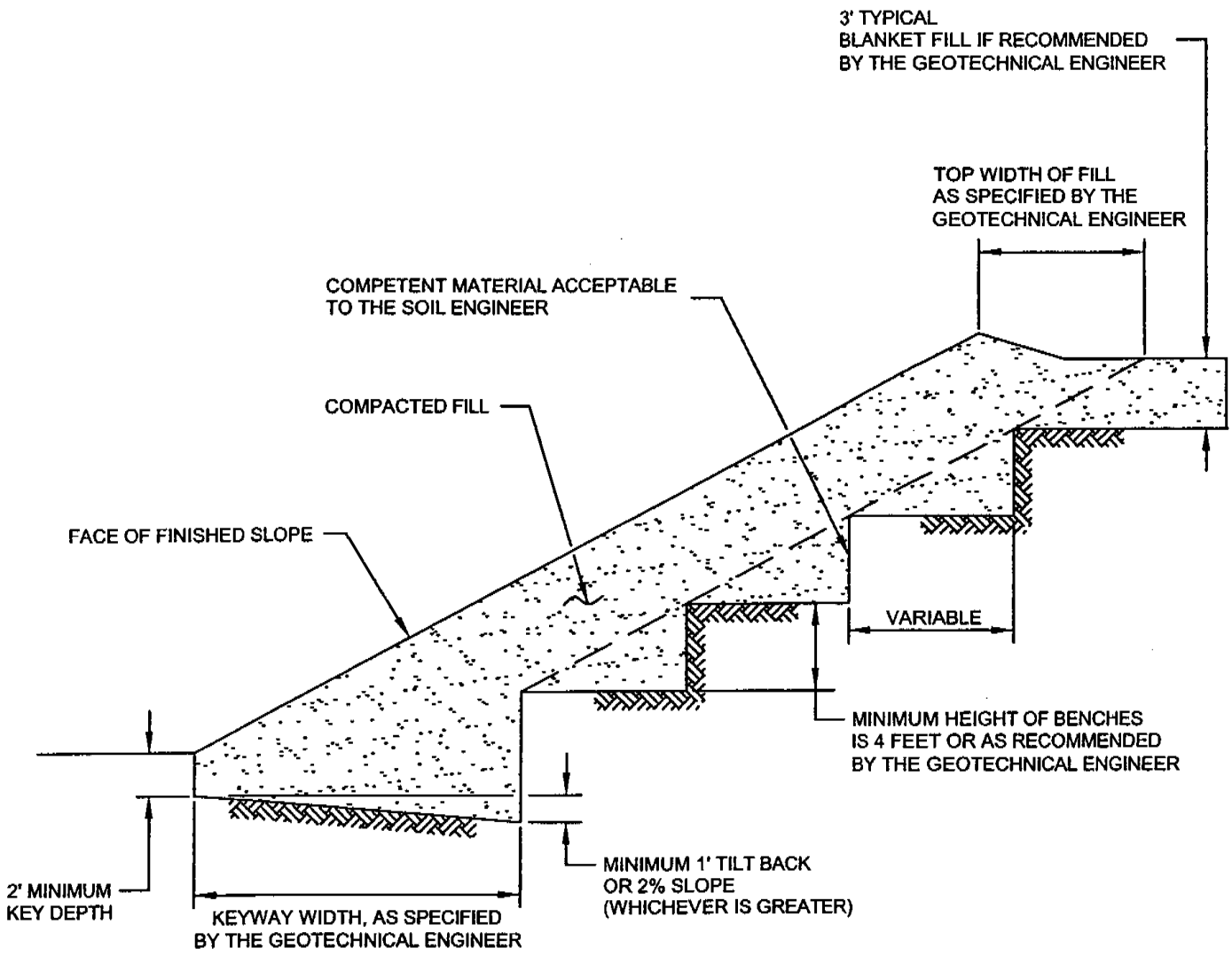


NOTE:
BENCHING SHALL BE REQUIRED WHEN NATURAL SLOPES ARE EQUAL TO OR STEEPER THAN 5:1 OR WHEN RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE	**Southern California Geotechnical** INC.
DRAWN: JAS CHKD: GKM	
	1260 North Hancock Street, Suite 101 Anaheim, California 92807 Phone: (714) 777-0333 Fax: (714) 777-0398
PLATE G-4	



STABILIZATION FILL DETAIL

GRADING GUIDE SPECIFICATIONS

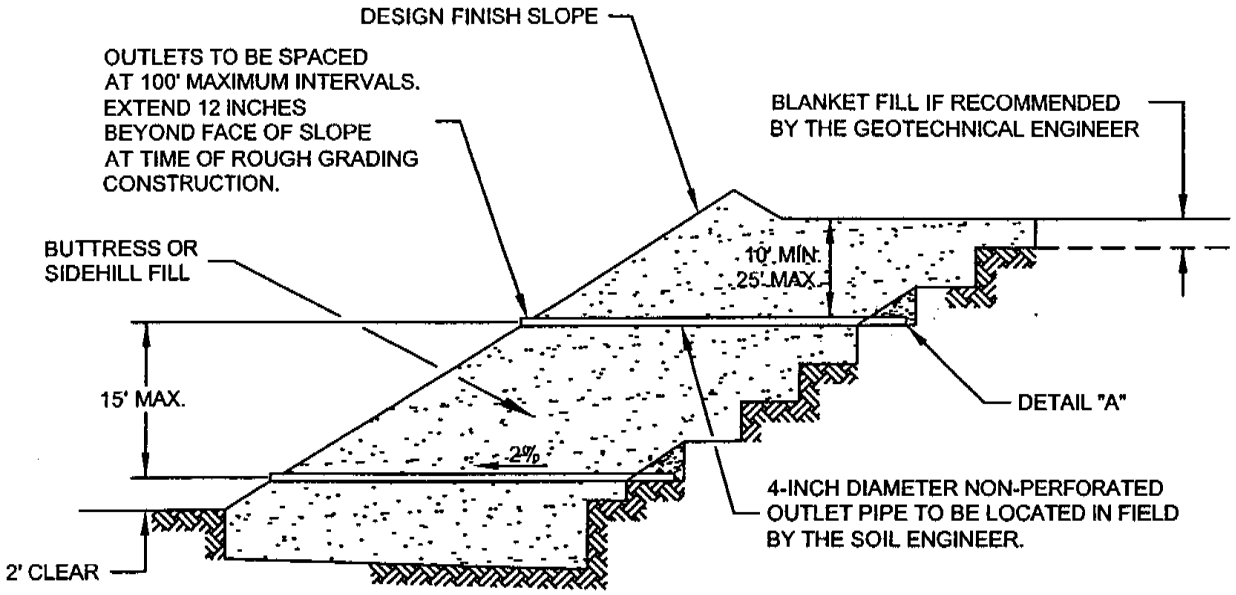
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE G-5

Southern California Geotechnical
INC.

1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398



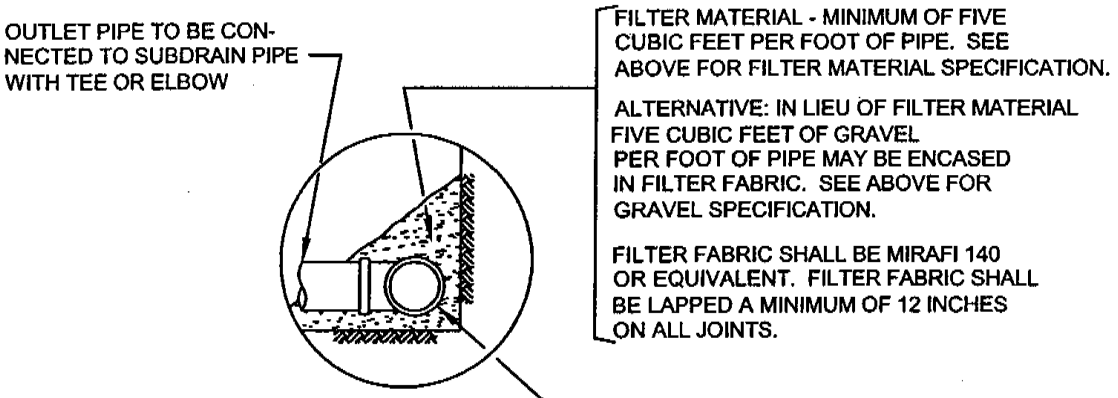
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

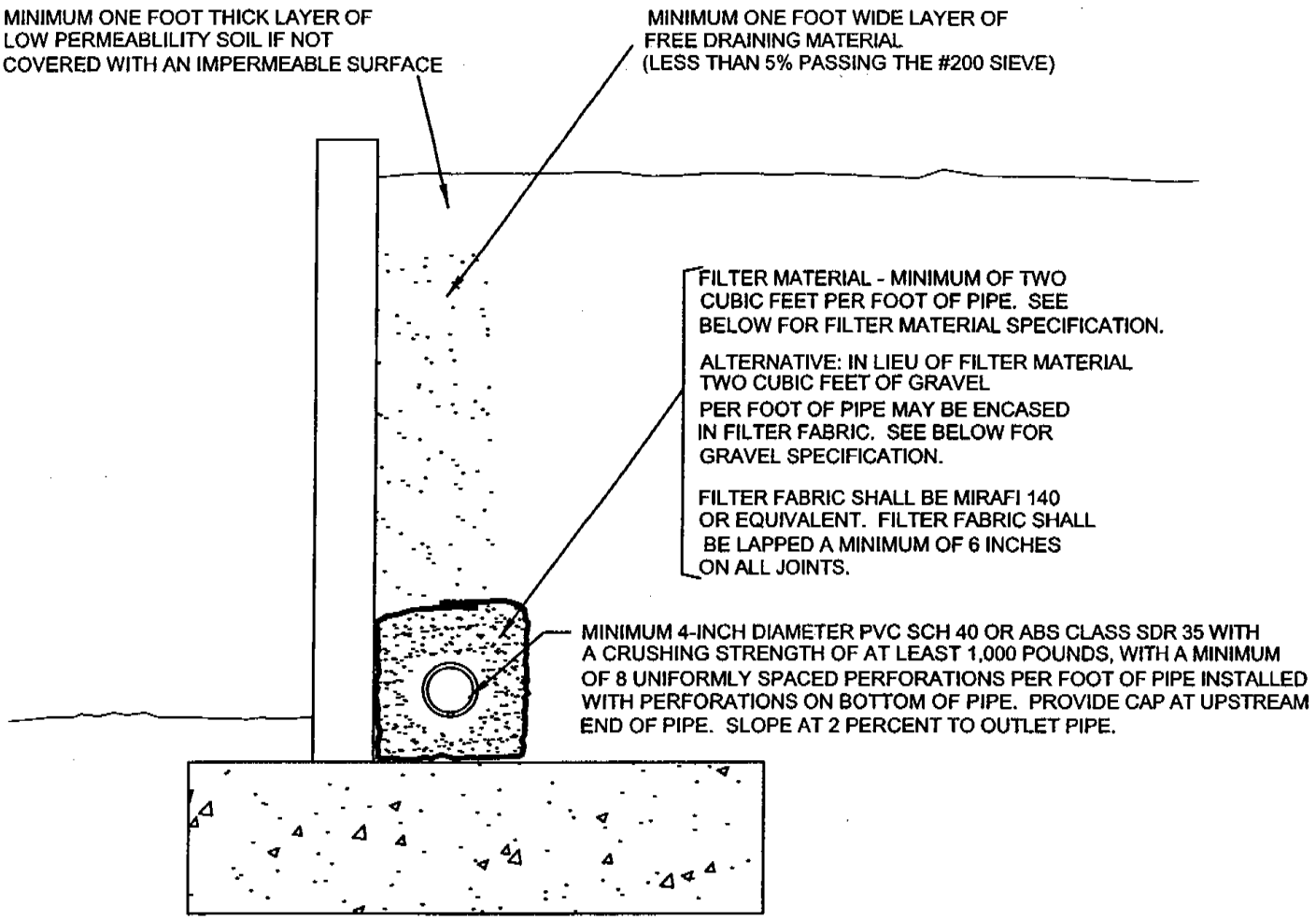
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE G-6

Southern California Geotechnical INC.
1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE G-7

Southern California Geotechnical INC.

1260 North Hancock Street, Suite 101
Anaheim, California 92807
Phone: (714) 777-0333 Fax: (714) 777-0398

THIS PAGE LEFT BLANK INTENTIONALLY

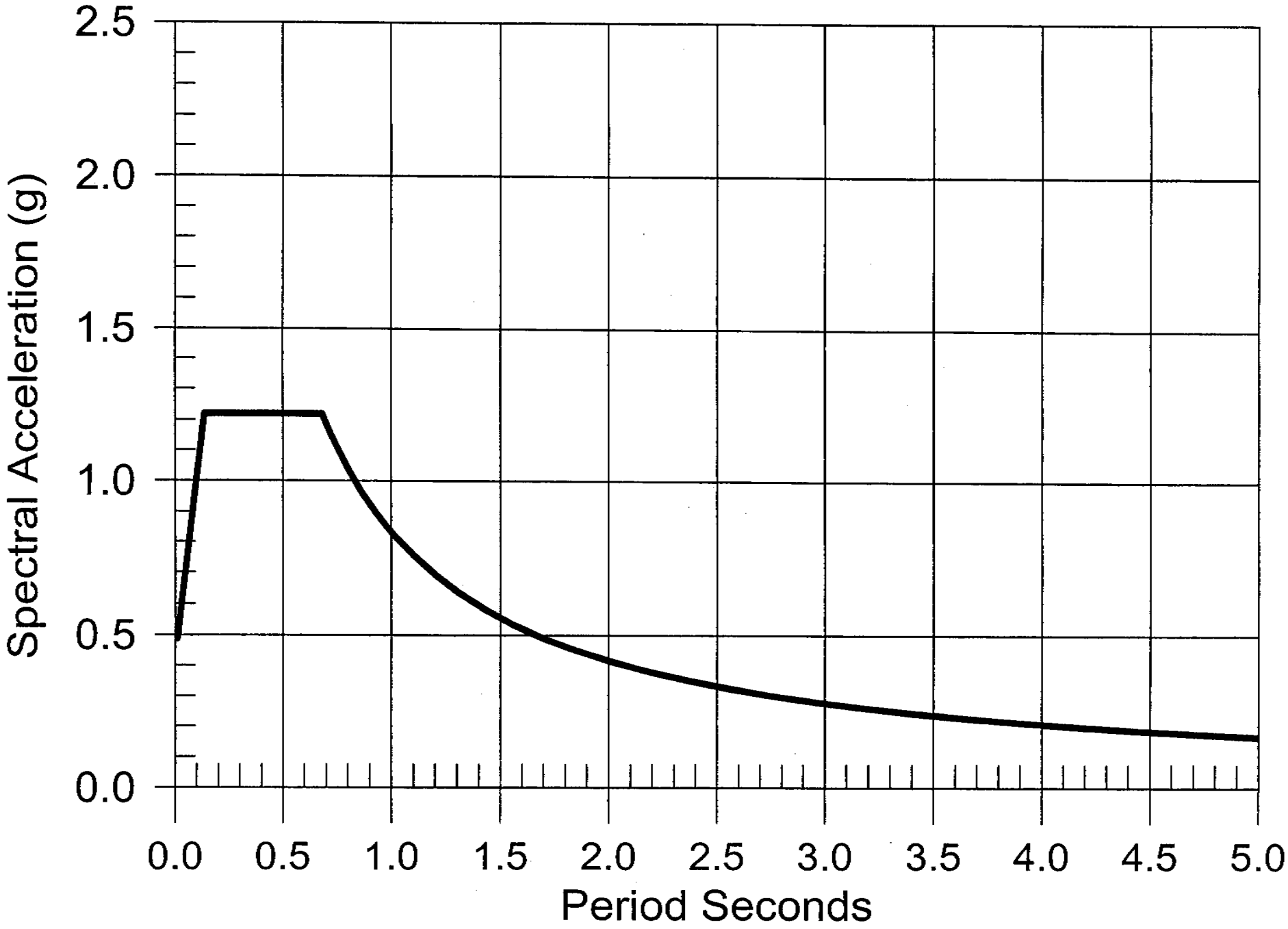
APPENDIX E

UBCSEIS
COMPUTER PROGRAM OUTPUT

THIS PAGE LEFT BLANK INTENTIONALLY

DESIGN RESPONSE SPECTRUM

Seismic Zone: 0.4 Soil Profile: SC



```
**********
*        *
*  U B C S E I S  *
*        *
*  Version 1.00  *
*        *
**********
```

COMPUTATION OF 1997
UNIFORM BUILDING CODE
SEISMIC DESIGN PARAMETERS

JOB NUMBER: 00G224 DATE: 12-19-2000

JOB NAME: Waddell Anaheim

FAULT-DATA-FILE NAME: CDMGUBCR.DAT

SITE COORDINATES:
SITE LATITUDE: 33.8673
SITE LONGITUDE: 117.7533

UBC SEISMIC ZONE: 0.4

UBC SOIL PROFILE TYPE: SC

NEAREST TYPE A FAULT:
NAME: CUCAMONGA
DISTANCE: 28.8 km

NEAREST TYPE B FAULT:
NAME: ELSINORE-WHITTIER
DISTANCE: 2.8 km

NEAREST TYPE C FAULT:
NAME:
DISTANCE: 99999.0 km

SELECTED UBC SEISMIC COEFFICIENTS:
Na: 1.2
Nv: 1.5
Ca: 0.49
Cv: 0.83
Ts: 0.682
To: 0.136

```
**********************************************************************
* CAUTION:  The digitized data points used to model faults are       *
*           limited in number and have been digitized from small-    *
*           scale maps (e.g., 1:750,000 scale).  Consequently,       *
*           the estimated fault-site-distances may be in error by    *
*           several kilometers.  Therefore, it is important that     *
*           the distances be carefully checked for accuracy and      *
*           adjusted as needed, before they are used in design.      *
**********************************************************************
```

SUMMARY OF FAULT PARAMETERS

ABBREVIATED FAULT NAME	APPROX. DISTANCE (km)	SOURCE TYPE (A,B,C)	MAX. MAG. (Mw)	SLIP RATE (mm/yr)	FAULT TYPE (SS,DS,BT)
ELSINORE-WHITTIER	2.8	B	6.8	2.50	SS
CHINO-CENTRAL AVE. (Elsinore)	6.6	B	6.7	1.00	DS
ELSINORE-GLEN IVY	10.8	B	6.8	5.00	SS
SAN JOSE	22.4	B	6.5	0.50	DS
SIERRA MADRE (Central)	28.5	B	7.0	3.00	DS
CUCAMONGA	28.8	A	7.0	5.00	DS
NEWPORT-INGLEWOOD (L.A.Basin)	31.4	B	6.9	1.00	SS
NEWPORT-INGLEWOOD (Offshore)	34.1	B	6.9	1.50	SS
RAYMOND	40.6	B	6.5	0.50	DS
CLAMSHELL-SAWPIT	41.2	B	6.5	0.50	DS
ELSINORE-TEMECULA	45.0	B	6.8	5.00	SS
SAN JACINTO-SAN BERNARDINO	45.3	B	6.7	12.00	SS
PALOS VERDES	47.2	B	7.1	3.00	SS
VERDUGO	47.2	B	6.7	0.50	DS
SAN JACINTO-SAN JACINTO VALLEY	50.5	B	6.9	12.00	SS
HOLLYWOOD	52.2	B	6.5	1.00	DS
SAN ANDREAS - Southern	52.8	A	7.4	24.00	SS
SAN ANDREAS - 1857 Rupture	53.4	A	7.8	34.00	SS
CLEGHORN	56.1	B	6.5	3.00	SS
SANTA MONICA	65.0	B	6.6	1.00	DS
NORTH FRONTAL FAULT ZONE (West)	65.5	B	7.0	1.00	DS
SIERRA MADRE (San Fernando)	67.7	B	6.7	2.00	DS
CORONADO BANK	68.5	B	7.4	3.00	SS
SAN GABRIEL	69.8	B	7.0	1.00	SS
MALIBU COAST	74.2	B	6.7	0.30	DS
SAN JACINTO-ANZA	78.5	A	7.2	12.00	SS
SANTA SUSANA	85.3	B	6.6	5.00	DS
ROSE CANYON	87.4	B	6.9	1.50	SS
ELSINORE-JULIAN	87.4	A	7.1	5.00	SS
ANACAPA-DUME	87.9	B	7.3	3.00	DS
HOLSER	94.2	B	6.5	0.40	DS
NORTH FRONTAL FAULT ZONE (East)	97.0	B	6.7	0.50	DS
PINTO MOUNTAIN	97.5	B	7.0	2.50	SS
HELENDALE - S. LOCKHARDT	98.1	B	7.1	0.60	SS
OAK RIDGE (Onshore)	105.3	B	6.9	4.00	DS
SIMI-SANTA ROSA	107.3	B	6.7	1.00	DS
SAN CAYETANO	112.6	B	6.8	6.00	DS
LENWOOD-LOCKHART-OLD WOMAN SPRGS	116.6	B	7.3	0.60	SS
JOHNSON VALLEY (Northern)	123.3	B	6.7	0.60	SS
SAN JACINTO-COYOTE CREEK	123.7	B	6.8	4.00	SS
BURNT MTN.	126.5	B	6.5	0.60	SS
LANDERS	127.7	B	7.3	0.60	SS
EUREKA PEAK	128.7	B	6.5	0.60	SS
SANTA YNEZ (East)	131.7	B	7.0	2.00	SS
EARTHQUAKE VALLEY	132.3	B	6.5	2.00	SS
EMERSON So. - COPPER MTN.	134.4	B	6.9	0.60	SS

SUMMARY OF FAULT PARAMETERS

ABBREVIATED FAULT NAME	APPROX. DISTANCE (km)	SOURCE TYPE (A,B,C)	MAX. MAG. (Mw)	SLIP RATE (mm/yr)	FAULT TYPE (SS,DS,BT)
GRAVEL HILLS - HARPER LAKE	135.1	B	6.9	0.60	SS
VENTURA - PITAS POINT	138.7	B	6.8	1.00	DS
GARLOCK (West)	142.1	A	7.1	6.00	SS
CALICO - HIDALGO	144.0	B	7.1	0.60	SS
BLACKWATER	145.5	B	6.9	0.60	SS
M.RIDGE-ARROYO PARIDA-SANTA ANA	146.6	B	6.7	0.40	DS
PLEITO THRUST	149.7	B	6.8	2.00	DS
PISGAH-BULLION MTN.-MESQUITE LK	152.2	B	7.1	0.60	SS
RED MOUNTAIN	153.0	B	6.8	2.00	DS
BIG PINE	157.0	B	6.7	0.80	SS
GARLOCK (East)	159.6	A	7.3	7.00	SS
SAN JACINTO - BORREGO	162.0	B	6.6	4.00	SS
ELSINORE-COYOTE MOUNTAIN	163.0	B	6.8	4.00	SS
SANTA CRUZ ISLAND	163.3	B	6.8	1.00	DS
WHITE WOLF	168.1	B	7.2	2.00	DS
So. SIERRA NEVADA	185.2	B	7.1	0.10	DS
SANTA YNEZ (West)	186.7	B	6.9	2.00	SS
LITTLE LAKE	194.0	B	6.7	0.70	SS
SUPERSTITION MTN. (San Jacinto)	195.0	B	6.6	5.00	SS
BRAWLEY SEISMIC ZONE	197.6	B	6.5	25.00	SS
ELMORE RANCH	198.5	B	6.6	1.00	SS
SANTA ROSA ISLAND	199.6	B	6.9	1.00	DS
SUPERSTITION HILLS (San Jacinto)	200.7	B	6.6	4.00	SS
TANK CANYON	202.6	B	6.5	1.00	DS
PANAMINT VALLEY	209.4	B	7.2	2.50	SS
OWL LAKE	209.6	B	6.5	2.00	SS
ELSINORE-LAGUNA SALADA	214.4	B	7.0	3.50	SS
IMPERIAL	227.7	A	7.0	20.00	SS
LOS ALAMOS-W. BASELINE	229.7	B	6.8	0.70	DS
DEATH VALLEY (South)	230.2	B	6.9	4.00	SS
LIONS HEAD	247.0	B	6.6	0.02	DS
SAN JUAN	248.6	B	7.0	1.00	SS
SAN LUIS RANGE (S. Margin)	253.6	B	7.0	0.20	DS
DEATH VALLEY (Graben)	258.6	B	6.9	4.00	DS
OWENS VALLEY	259.2	B	7.6	1.50	SS
CASMALIA (Orcutt Frontal Fault)	263.9	B	6.5	0.25	DS
LOS OSOS	283.0	B	6.8	0.50	DS
HUNTER MTN. - SALINE VALLEY	291.6	B	7.0	2.50	SS
HOSGRI	293.1	B	7.3	2.50	SS
INDEPENDENCE	294.6	B	6.9	0.20	DS
RINCONADA	300.7	B	7.3	1.00	SS
DEATH VALLEY (Northern)	308.7	A	7.2	5.00	SS
BIRCH CREEK	349.9	B	6.5	0.70	DS
SAN ANDREAS (Creeping)	351.4	B	5.0	34.00	SS
WHITE MOUNTAINS	355.5	B	7.1	1.00	SS
DEEP SPRINGS	375.0	B	6.6	0.80	DS

SUMMARY OF FAULT PARAMETERS

ABBREVIATED FAULT NAME	APPROX. DISTANCE (km)	SOURCE TYPE (A,B,C)	MAX. MAG. (Mw)	SLIP RATE (mm/yr)	FAULT TYPE (SS,DS,BT)
DEATH VALLEY (N. of Cucamongo)	383.2	A	7.0	5.00	SS
ROUND VALLEY (E. of S.N.Mtns.)	383.9	B	6.8	1.00	DS
FISH SLOUGH	392.9	B	6.6	0.20	DS
HILTON CREEK	409.7	B	6.7	2.50	DS
HARTLEY SPRINGS	433.4	B	6.6	0.50	DS
ORTIGALITA	433.7	B	6.9	1.00	SS
CALAVERAS (So.of Calaveras Res)	440.5	B	6.2	15.00	SS
MONTEREY BAY - TULARCITOS	445.7	B	7.1	0.50	DS
PALO COLORADO - SUR	448.7	B	7.0	3.00	SS
QUIEN SABE	453.3	B	6.5	1.00	SS
MONO LAKE	469.1	B	6.6	2.50	DS
ZAYANTE-VERGELES	472.4	B	6.8	0.10	SS
SARGENT	477.4	B	6.8	3.00	SS
SAN ANDREAS (1906)	477.6	A	7.9	24.00	SS
ROBINSON CREEK	500.2	B	6.5	0.50	DS
SAN GREGORIO	520.6	A	7.3	5.00	SS
GREENVILLE	525.5	B	6.9	2.00	SS
HAYWARD (SE Extension)	526.8	B	6.5	3.00	SS
MONTE VISTA - SHANNON	527.4	B	6.5	0.40	DS
ANTELOPE VALLEY	540.2	B	6.7	0.80	DS
HAYWARD (Total Length)	546.2	A	7.1	9.00	SS
CALAVERAS (No.of Calaveras Res)	546.2	B	6.8	6.00	SS
GENOA	565.1	B	6.9	1.00	DS
CONCORD - GREEN VALLEY	593.2	B	6.9	6.00	SS
RODGERS CREEK	632.1	A	7.0	9.00	SS
WEST NAPA	632.7	B	6.5	1.00	SS
POINT REYES	652.3	B	6.8	0.30	DS
HUNTING CREEK - BERRYESSA	654.5	B	6.9	6.00	SS
MAACAMA (South)	694.3	B	6.9	9.00	SS
COLLAYOMI	710.9	B	6.5	0.60	SS
BARTLETT SPRINGS	714.0	A	7.1	6.00	SS
MAACAMA (Central)	735.8	A	7.1	9.00	SS
MAACAMA (North)	794.9	A	7.1	9.00	SS
ROUND VALLEY (N. S.F.Bay)	800.6	B	6.8	6.00	SS
BATTLE CREEK	823.4	B	6.5	0.50	DS
LAKE MOUNTAIN	858.8	B	6.7	6.00	SS
GARBERVILLE-BRICELAND	876.1	B	6.9	9.00	SS
MENDOCINO FAULT ZONE	932.6	A	7.4	35.00	DS
LITTLE SALMON (Onshore)	938.7	A	7.0	5.00	DS
MAD RIVER	941.1	B	7.1	0.70	DS
CASCADIA SUBDUCTION ZONE	946.5	A	8.3	35.00	DS
McKINLEYVILLE	951.7	B	7.0	0.60	DS
TRINIDAD	953.1	B	7.3	2.50	DS
FICKLE HILL	953.7	B	6.9	0.60	DS
TABLE BLUFF	959.3	B	7.0	0.60	DS

LITTLE SALMON (Offshore)	972.5	B	7.1	1.00	DS

SUMMARY OF FAULT PARAMETERS

ABBREVIATED FAULT NAME	APPROX. DISTANCE (km)	SOURCE TYPE (A,B,C)	MAX. MAG. (Mw)	SLIP RATE (mm/yr)	FAULT TYPE (SS,DS,BT)
BIG LAGOON - BALD MTN.FLT.ZONE	989.8	B	7.3	0.50	DS

APPENDIX F

SLOPE STABILITY ANALYSES

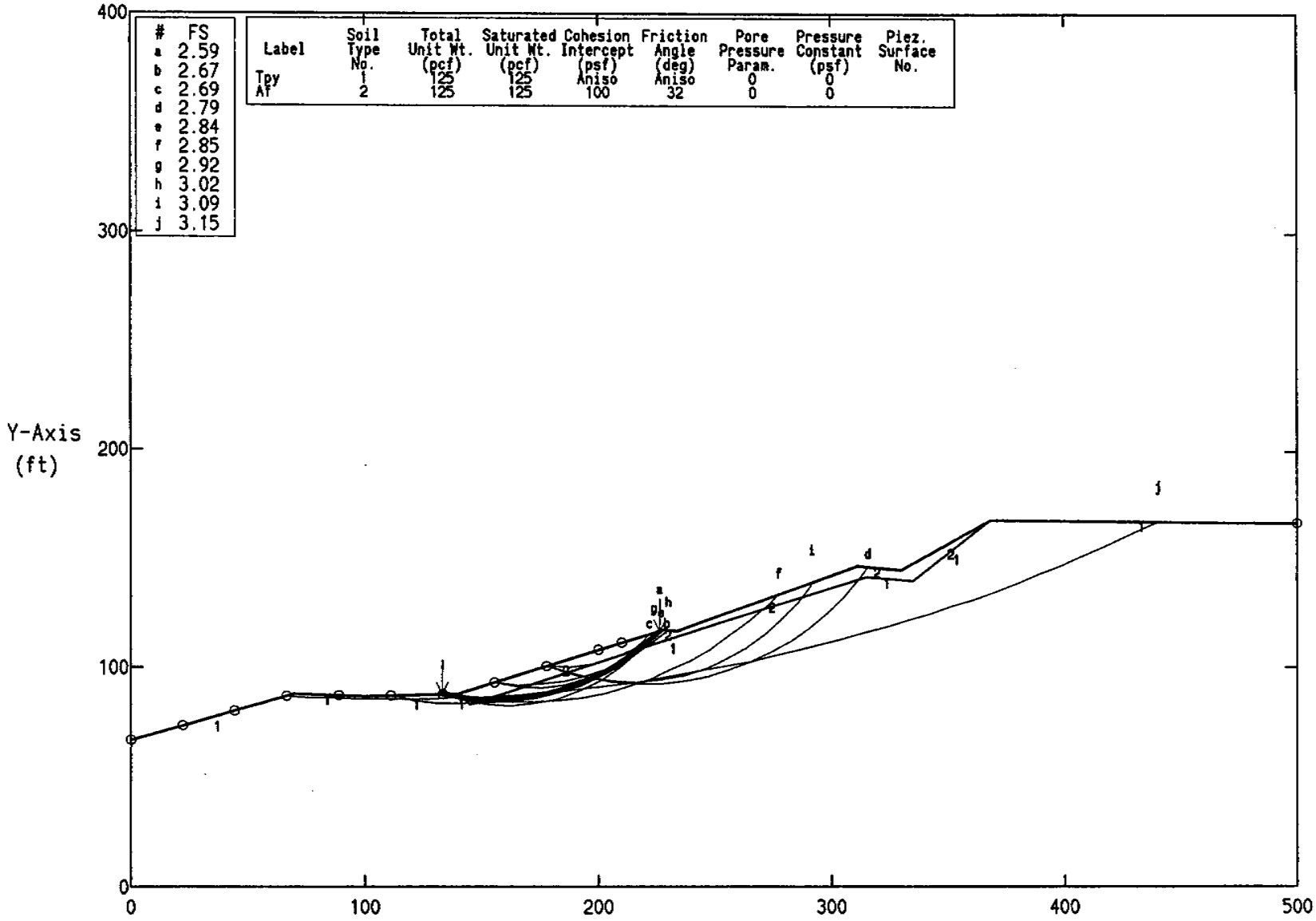
THIS PAGE LEFT BLANK INTENTIONALLY

SECTION A-A'
STATIC ANALYSIS

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Section A, Proposed Static, W/Stab.

Ten Most Critical. C:0G224APS.PLT By: JMK 12/20/2000 8:31am



STABL6H FSmin=2.59 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer's Method of Slices

Run Date: 12/20/2000
Time of Run: 8:31am
Run By: JMK
Input Data Filename: C:0G224APS
Output Filename: C:0G224APS.OUT
Plotted Output Filename: C:0G224APS.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Section A, Proposed Static, W/Stab.

BOUNDARY COORDINATES

9 Top Boundaries
13 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	67.00	70.00	88.00	1
2	70.00	88.00	100.00	87.00	1
3	100.00	87.00	140.00	88.00	1
4	140.00	88.00	228.00	117.00	2
5	228.00	117.00	234.00	116.00	2
6	234.00	116.00	311.00	147.00	2
7	311.00	147.00	330.00	145.00	2
8	330.00	145.00	368.00	168.00	2
9	368.00	168.00	500.00	167.00	1
10	140.00	88.00	145.00	83.00	1
11	145.00	83.00	315.00	142.00	1
12	315.00	142.00	335.00	140.00	1
13	335.00	140.00	368.00	168.00	1

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	40.0	.00	.0	0
2	125.0	125.0	100.0	32.0	.00	.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)

Soil Type 1 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	25.0	100.0	40.0
2	38.0	.0	22.0
3	90.0	100.0	40.0

1

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = .00 ft.
and X = 200.00 ft.

Each Surface Terminates Between X = 210.00 ft.
and X = 500.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = .00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	133.33	87.83
2	143.17	86.05
3	153.15	85.30
4	163.14	85.58
5	173.06	86.89
6	182.78	89.22
7	192.21	92.54
8	201.25	96.81
9	209.80	102.00
10	217.77	108.05
11	225.07	114.88
12	226.47	116.50

Circle Center At X = 155.4 ; Y = 181.9 and Radius, 96.7

*** 2.590 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	155.56	93.13
2	165.51	92.15
3	175.51	92.32
4	185.42	93.65
5	195.11	96.10
6	204.46	99.65
7	213.34	104.26
8	221.63	109.85
9	229.22	116.36
10	229.57	116.74

Circle Center At X = 169.0 ; Y = 178.9 and Radius, 86.8

*** 2.671 ***

1

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	155.56	93.13
2	165.37	91.20
3	175.36	90.86
4	185.28	92.11
5	194.88	94.92
6	203.91	99.23
7	212.13	104.91
8	219.35	111.83
9	221.68	114.92

Circle Center At X = 172.5 ; Y = 153.5 and Radius, 62.7

*** 2.686 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	177.78	100.45
2	187.23	97.19

3	196.94	94.78
4	206.82	93.24
5	216.80	92.57
6	226.79	92.78
7	236.73	93.87
8	246.54	95.84
9	256.13	98.65
10	265.44	102.31
11	274.39	106.77
12	282.92	112.00
13	290.95	117.96
14	298.42	124.60
15	305.28	131.88
16	311.47	139.73
17	315.88	146.49

Circle Center At X = 219.4 ; Y = 205.9 and Radius, 113.4

*** 2.794 ***

1

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	177.78	100.45
2	187.78	100.21
3	197.69	101.52
4	207.28	104.36
5	216.31	108.65
6	224.57	114.28
7	227.17	116.73

Circle Center At X = 184.3 ; Y = 164.4 and Radius, 64.3

*** 2.841 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	133.33	87.83
2	143.15	85.91
3	153.07	84.66
4	163.05	84.07
5	173.05	84.16
6	183.02	84.92
7	192.92	86.34
8	202.70	88.43
9	212.32	91.17
10	221.73	94.55
11	230.89	98.56
12	239.76	103.17
13	248.31	108.37
14	256.48	114.13
15	264.25	120.43
16	271.57	127.23
17	277.47	133.50

Circle Center At X = 166.8 ; Y = 232.7 and Radius, 148.7

*** 2.852 ***

1

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	133.33	87.83
2	142.88	84.84
3	152.73	83.12
4	162.72	82.70
5	172.68	83.60
6	182.44	85.78
7	191.83	89.22
8	200.69	93.86
9	208.87	99.61
10	216.22	106.38
11	222.63	114.06
12	223.57	115.54

Circle Center At X = 160.9 ; Y = 159.1 and Radius, 76.4

*** 2.923 ***

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	111.11	87.28
2	120.91	85.28
3	130.83	84.03
4	140.82	83.53
5	150.82	83.79
6	160.77	84.80
7	170.61	86.56
8	180.29	89.05
9	189.76	92.27
10	198.96	96.19
11	207.84	100.79
12	216.34	106.05
13	224.43	111.94
14	229.99	116.67

Circle Center At X = 142.4 ; Y = 216.1 and Radius, 132.5

*** 3.016 ***

1

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	177.78	100.45
2	187.19	97.07
3	196.92	94.75
4	206.84	93.51
5	216.84	93.36
6	226.79	94.32
7	236.58	96.37
8	246.08	99.49
9	255.19	103.63
10	263.78	108.74
11	271.76	114.77
12	279.02	121.64
13	285.49	129.27
14	291.07	137.56
15	292.01	139.36

Circle Center At X = 213.1 ; Y = 184.1 and Radius, 90.8

*** 3.093 ***

Failure Surface Specified By 40 Coordinate Points

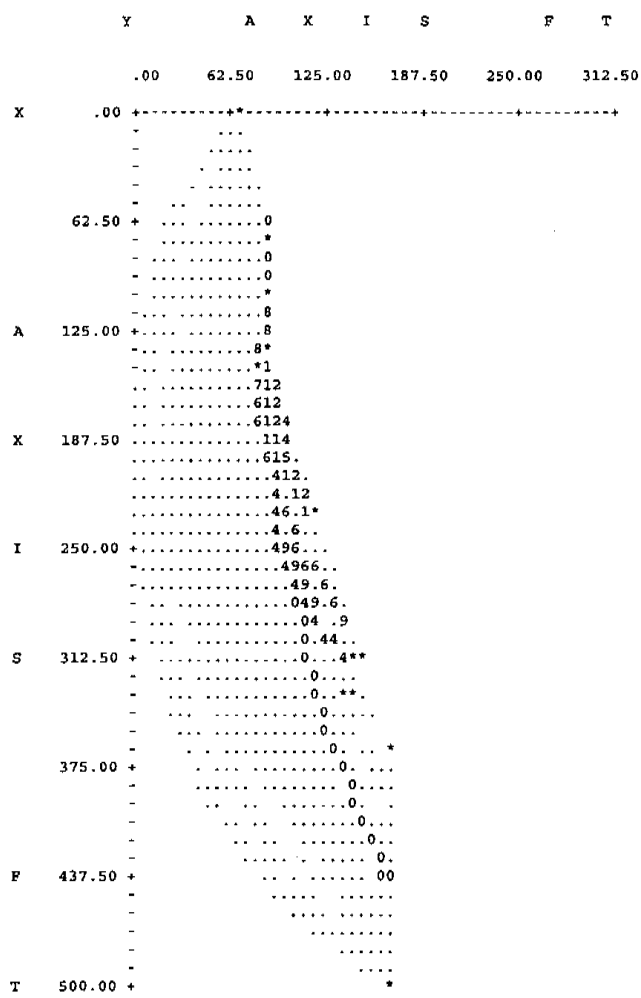
Point No.	X-Surf (ft)	Y-Surf (ft)
1	66.67	87.00
2	76.65	86.42
3	86.64	85.99
4	96.64	85.70
5	106.64	85.56
6	116.64	85.55
7	126.64	85.70
8	136.63	85.98
9	146.62	86.41
10	156.61	86.98
11	166.58	87.69
12	176.54	88.54
13	186.49	89.54
14	196.43	90.68
15	206.35	91.97
16	216.24	93.39
17	226.12	94.96
18	235.97	96.67
19	245.80	98.52
20	255.60	100.50
21	265.37	102.63
22	275.11	104.90
23	284.82	107.31
24	294.49	109.86
25	304.12	112.55
26	313.71	115.37
27	323.26	118.33
28	332.77	121.43
29	342.23	124.66
30	351.65	128.03
31	361.02	131.53
32	370.33	135.17
33	379.59	138.94

34	388.80	142.84
35	397.95	146.87
36	407.04	151.04
37	416.08	155.33
38	425.04	159.75
39	433.95	164.30
40	439.90	167.46

Circle Center At X = 111.8 ; Y = 783.6 and Radius, 698.1

*** 3.145 ***

1

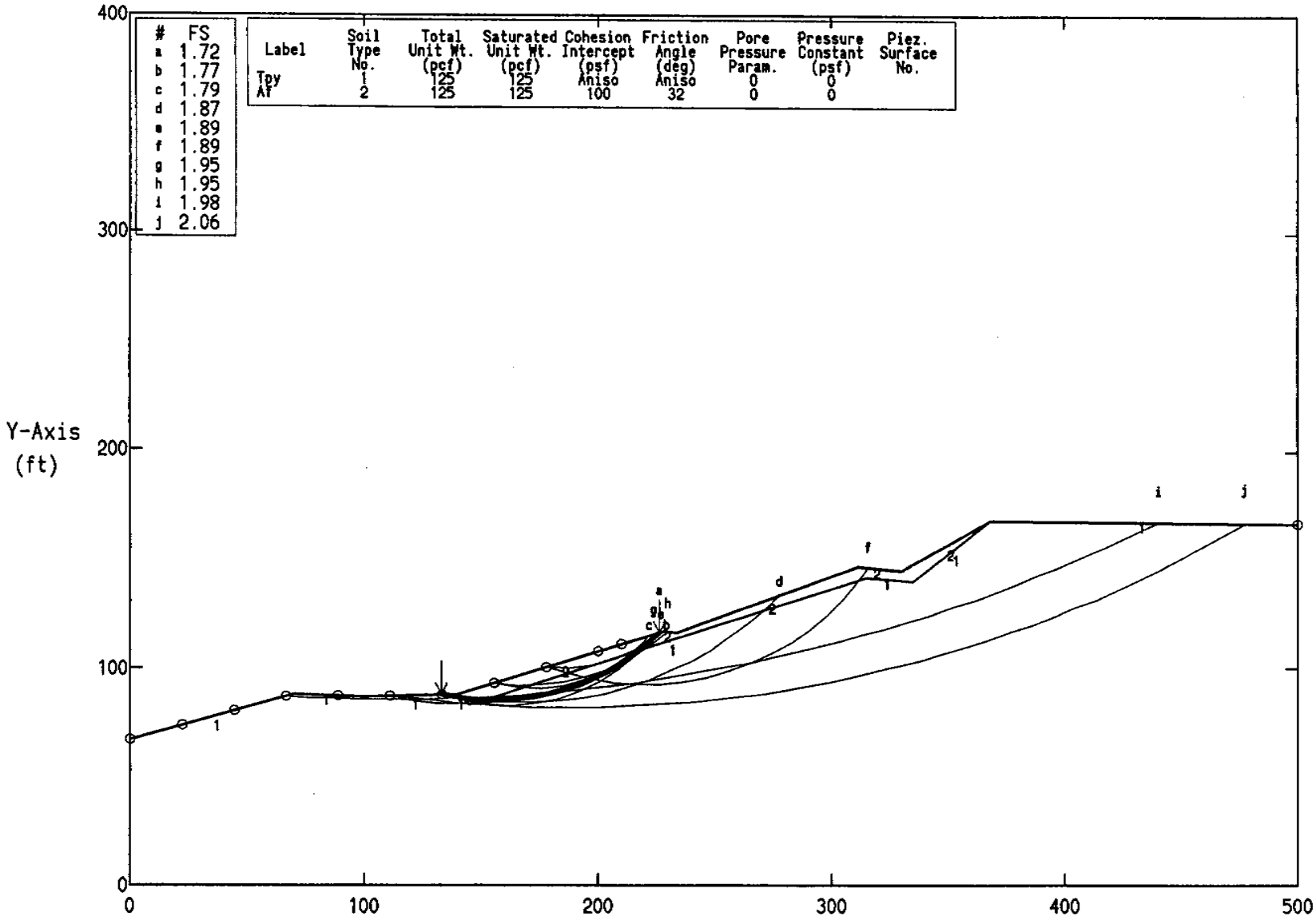


SECTION A-A'
PSEUDOSTATIC ANALYSIS

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Section A, Proposed Seismic, W/Stab.

Ten Most Critical. C:0G224APE.PLT By: JMK 12/20/2000 8:32am



STABL6H FSmin=1.72 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer's Method of Slices

Run Date: 12/20/2000
Time of Run: 8:32am
Run By: JMK
Input Data Filename: C:0G224APE
Output Filename: C:0G224APE.OUT
Plotted Output Filename: C:0G224APE.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Section A, Proposed Seismic, W/Stab.

BOUNDARY COORDINATES

9 Top Boundaries
13 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	67.00	70.00	88.00	1
2	70.00	88.00	100.00	87.00	1
3	100.00	87.00	140.00	88.00	1
4	140.00	88.00	228.00	117.00	2
5	228.00	117.00	234.00	116.00	2
6	234.00	116.00	311.00	147.00	2
7	311.00	147.00	330.00	145.00	2
8	330.00	145.00	368.00	168.00	2
9	368.00	168.00	500.00	167.00	1
10	140.00	88.00	145.00	83.00	1
11	145.00	83.00	315.00	142.00	1
12	315.00	142.00	335.00	140.00	1
13	335.00	140.00	368.00	168.00	1

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	40.0	.00	.0	0
2	125.0	125.0	100.0	32.0	.00	.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)

Soil Type 1 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	25.0	100.0	40.0
2	38.0	.0	22.0
3	90.0	100.0	40.0

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 psf

1

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = .00 ft.
and X = 200.00 ft.

Each Surface Terminates Between X = 210.00 ft.
and X = 500.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = .00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	133.33	87.83
2	143.17	86.05
3	153.15	85.30
4	163.14	85.58
5	173.06	86.89
6	182.78	89.22
7	192.21	92.54
8	201.25	96.81
9	209.80	102.00
10	217.77	108.05
11	225.07	114.88
12	226.47	116.50

Circle Center At X = 155.4 ; Y = 181.9 and Radius, 96.7

*** 1.724 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	155.56	93.13
2	165.51	92.15
3	175.51	92.32
4	185.42	93.65
5	195.11	96.10
6	204.46	99.65
7	213.34	104.26
8	221.63	109.85
9	229.22	116.36
10	229.57	116.74

Circle Center At X = 169.0 ; Y = 178.9 and Radius, 86.8

*** 1.773 ***

1

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	155.56	93.13
2	165.37	91.20
3	175.36	90.86
4	185.28	92.11
5	194.88	94.92
6	203.91	99.23
7	212.13	104.91
8	219.35	111.83
9	221.68	114.92

Circle Center At X = 172.5 ; Y = 153.5 and Radius, 62.7

*** 1.792 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	133.33	87.83
2	143.15	85.91
3	153.07	84.66
4	163.05	84.07
5	173.05	84.16
6	183.02	84.92
7	192.92	86.34
8	202.70	88.43
9	212.32	91.17
10	221.73	94.55
11	230.89	98.56
12	239.76	103.17
13	248.31	108.37
14	256.48	114.13
15	264.25	120.43
16	271.57	127.23
17	277.47	133.50

Circle Center At X = 166.8 ; Y = 232.7 and Radius, 148.7

*** 1.872 ***

1

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	177.78	100.45
2	187.78	100.21
3	197.69	101.52
4	207.28	104.36
5	216.31	108.65
6	224.57	114.28
7	227.17	116.73

Circle Center At X = 184.3 ; Y = 164.4 and Radius, 64.3

*** 1.886 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	177.78	100.45
2	187.23	97.19
3	196.94	94.78
4	206.82	93.24
5	216.80	92.57
6	226.79	92.78
7	236.73	93.87
8	246.54	95.84
9	256.13	98.65
10	265.44	102.31
11	274.39	106.77
12	282.92	112.00
13	290.95	117.96
14	298.42	124.60
15	305.28	131.88
16	311.47	139.73
17	315.88	146.49

Circle Center At X = 219.4 ; Y = 205.9 and Radius, 113.4

*** 1.887 ***

1

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	133.33	87.83
2	142.88	84.84
3	152.73	83.12
4	162.72	82.70
5	172.68	83.60
6	182.44	85.78
7	191.83	89.22

8	200.69	93.86
9	208.87	99.61
10	216.22	106.38
11	222.63	114.06
12	223.57	115.54

Circle Center At X = 160.9 ; Y = 159.1 and Radius, 76.4

*** 1.948 ***

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	111.11	87.28
2	120.91	85.28
3	130.83	84.03
4	140.82	83.53
5	150.82	83.79
6	160.77	84.80
7	170.61	86.56
8	180.29	89.05
9	189.76	92.27
10	198.96	96.19
11	207.84	100.79
12	216.34	106.05
13	224.43	111.94
14	229.99	116.67

Circle Center At X = 142.4 ; Y = 216.1 and Radius, 132.5

*** 1.954 ***

1

Failure Surface Specified By 40 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	66.67	87.00
2	76.65	86.42
3	86.64	85.99
4	96.64	85.70
5	106.64	85.56
6	116.64	85.55
7	126.64	85.70
8	136.63	85.98
9	146.62	86.41
10	156.61	86.98
11	166.58	87.69
12	176.54	88.54
13	186.49	89.54
14	196.43	90.68
15	206.35	91.97
16	216.24	93.39
17	226.12	94.96
18	235.97	96.67
19	245.80	98.52
20	255.60	100.50
21	265.37	102.63
22	275.11	104.90
23	284.82	107.31
24	294.49	109.86
25	304.12	112.55
26	313.71	115.37
27	323.26	118.33
28	332.77	121.43
29	342.23	124.66
30	351.65	128.03
31	361.02	131.53
32	370.33	135.17
33	379.59	138.94
34	388.80	142.84
35	397.95	146.87
36	407.04	151.04
37	416.08	155.33
38	425.04	159.75
39	433.95	164.30
40	439.90	167.46

Circle Center At X = 111.8 ; Y = 783.6 and Radius, 698.1

*** 1.980 ***

Failure Surface Specified By 40 Coordinate Points

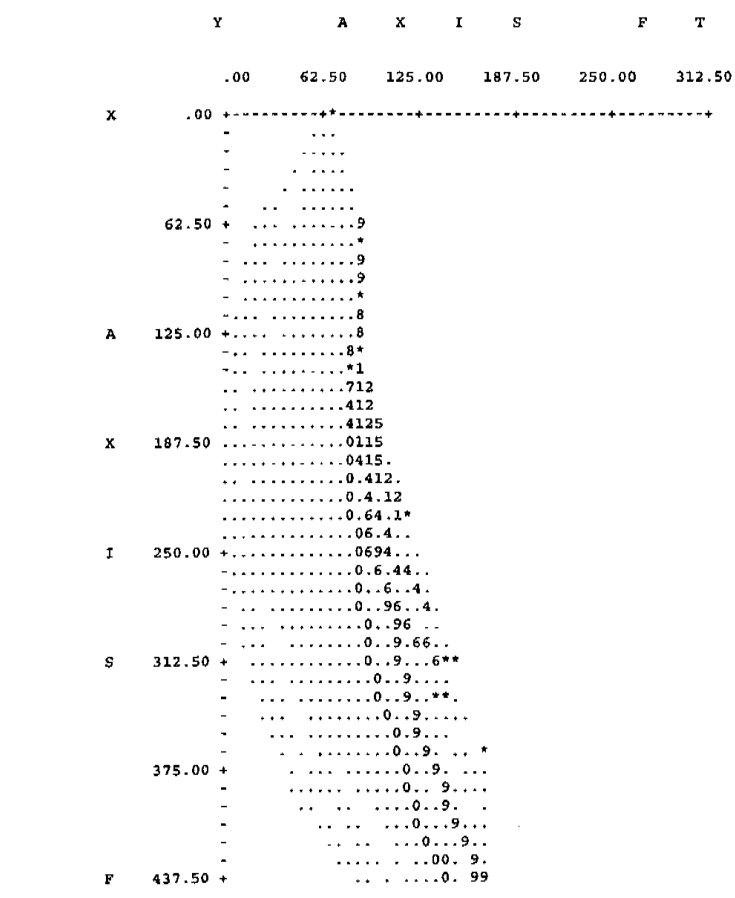
Point	X-Surf	Y-Surf

No.	(ft)	(ft)
1	111.11	87.28
2	121.02	85.95
3	130.96	84.81
4	140.91	83.86
5	150.88	83.09
6	160.87	82.51
7	170.86	82.11
8	180.86	81.90
9	190.86	81.88
10	200.85	82.05
11	210.85	82.40
12	220.83	82.94
13	230.81	83.66
14	240.77	84.57
15	250.71	85.67
16	260.62	86.95
17	270.52	88.42
18	280.38	90.07
19	290.21	91.90
20	300.00	93.92
21	309.76	96.12
22	319.47	98.50
23	329.14	101.07
24	338.75	103.81
25	348.31	106.73
26	357.82	109.83
27	367.27	113.11
28	376.65	116.56
29	385.97	120.19
30	395.22	123.99
31	404.40	127.97
32	413.50	132.11
33	422.52	136.43
34	431.46	140.91
35	440.32	145.56
36	449.08	150.37
37	457.76	155.34
38	466.34	160.48
39	474.82	165.77
40	476.97	167.17

Circle Center At X = 187.0 ; Y = 617.3 and Radius, 535.5

*** 2.060 ***

1




T 500.00

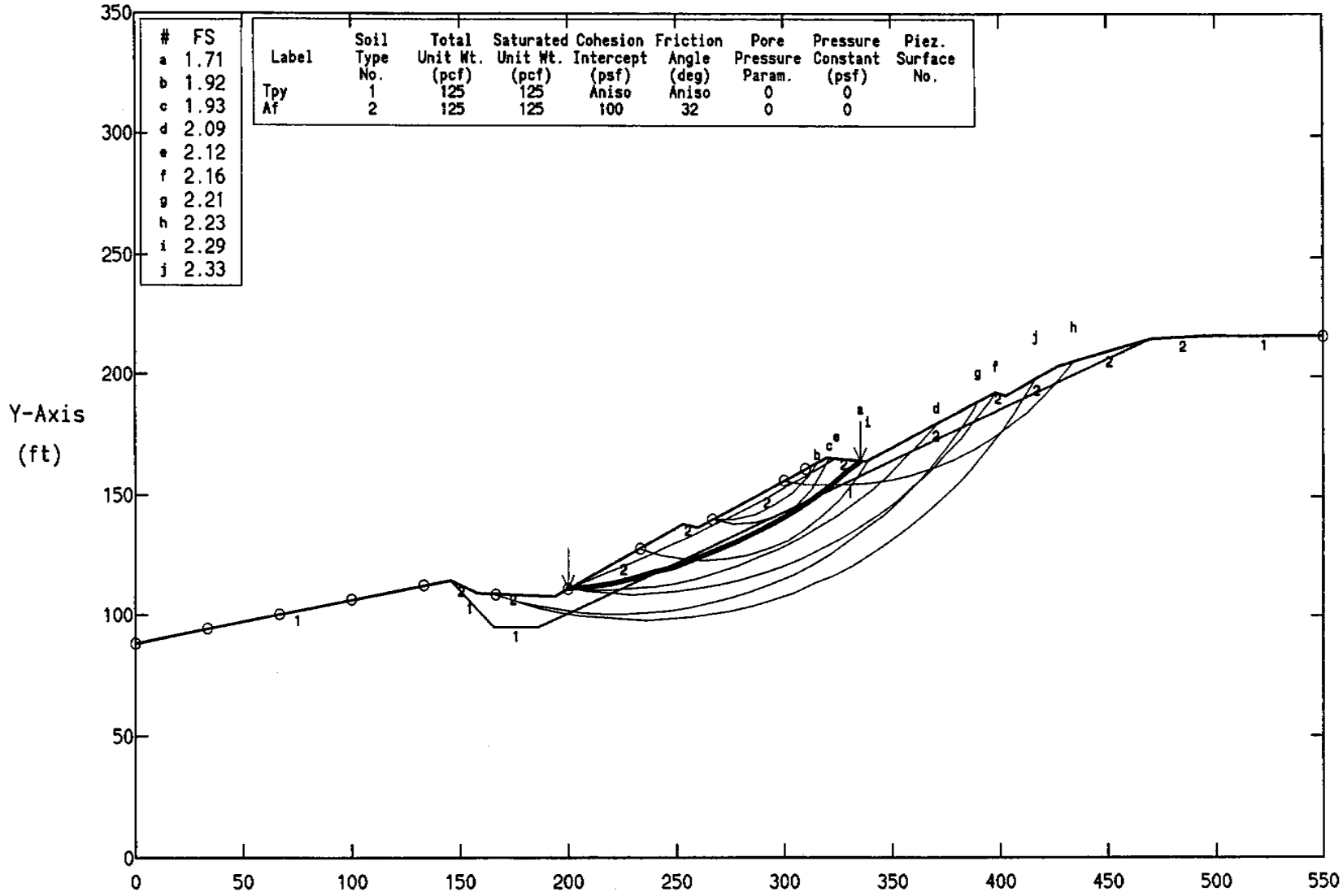
THIS PAGE LEFT BLANK INTENTIONALLY

SECTION B-B'
STATIC ANALYSIS

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Section B, Proposed Static, W/ Stab.

Ten Most Critical. C:0G224BPS.PLT By: JMK 12/20/2000 8:41am



#	FS
a	1.71
b	1.92
c	1.93
d	2.09
e	2.12
f	2.16
g	2.21
h	2.23
i	2.29
j	2.33

Label	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
Tpy	1	125	125	Aniso	Aniso	0	0	
Af	2	125	125	100	32	0	0	

Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer's Method of Slices

Run Date: 12/20/2000
Time of Run: 8:41am
Run By: JMK
Input Data Filename: C:0G224BPS
Output Filename: C:0G224BPS.OUT
Plotted Output Filename: C:0G224BPS.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Section B, Proposed Static, W/ Stab.

BOUNDARY COORDINATES

13 Top Boundaries
16 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	88.00	146.00	115.00	1
2	146.00	115.00	158.00	109.00	2
3	158.00	109.00	194.00	108.00	2
4	194.00	108.00	253.00	138.00	2
5	253.00	138.00	260.00	137.00	2
6	260.00	137.00	320.00	166.00	2
7	320.00	166.00	338.00	164.00	2
8	338.00	164.00	398.00	193.00	2
9	398.00	193.00	403.00	192.00	2
10	403.00	192.00	427.00	204.00	2
11	427.00	204.00	470.00	216.00	2
12	470.00	216.00	495.00	217.00	2
13	495.00	217.00	550.00	217.00	1
14	146.00	115.00	166.00	95.00	1
15	166.00	95.00	186.00	95.00	1
16	186.00	95.00	470.00	216.00	1

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	40.0	.00	.0	0
2	125.0	125.0	100.0	32.0	.00	.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)

Soil Type 1 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	22.0	100.0	40.0
2	35.0	.0	22.0
3	90.0	100.0	40.0

1

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = .00 ft.
and X = 300.00 ft.

Each Surface Terminates Between X = 310.00 ft.
and X = 550.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = .00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	200.00	111.05
2	209.93	112.22
3	219.81	113.76
4	229.63	115.67
5	239.37	117.94
6	249.01	120.58
7	258.55	123.57
8	267.98	126.92
9	277.27	130.62
10	286.41	134.66
11	295.40	139.05
12	304.22	143.77
13	312.85	148.81
14	321.29	154.17
15	329.53	159.84
16	335.48	164.28

Circle Center At X = 173.7 ; Y = 377.1 and Radius, 267.4

*** 1.711 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	266.67	140.22
2	276.67	140.40
3	286.46	142.40
4	295.72	146.17
5	304.14	151.58
6	311.41	158.44
7	315.26	163.71

Circle Center At X = 270.7 ; Y = 194.3 and Radius, 54.2

*** 1.916 ***

1

Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	266.67	140.22
2	276.51	138.44
3	286.50	138.85
4	296.16	141.44
5	305.01	146.09
6	312.63	152.56
7	318.65	160.55
8	321.06	165.88

Circle Center At X = 279.6 ; Y = 183.7 and Radius, 45.3

*** 1.930 ***

Failure Surface Specified By 20 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)

1	200.00	111.05
2	209.99	110.65
3	219.99	110.72
4	229.98	111.27
5	239.93	112.28
6	249.82	113.75
7	259.63	115.69
8	269.34	118.09
9	278.92	120.94
10	288.36	124.24
11	297.64	127.97
12	306.73	132.14
13	315.61	136.73
14	324.27	141.74
15	332.68	147.14
16	340.83	152.94
17	348.70	159.11
18	356.27	165.64
19	363.53	172.52
20	370.35	179.64

Circle Center At X = 213.5 ; Y = 323.5 and Radius, 212.8

*** 2.087 ***

1

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	200.00	111.05
2	209.40	114.47
3	218.76	117.98
4	228.09	121.59
5	237.38	125.28
6	246.63	129.07
7	255.85	132.95
8	265.03	136.92
9	274.17	140.99
10	283.26	145.14
11	292.32	149.38
12	301.33	153.71
13	310.30	158.13
14	319.23	162.64
15	324.72	165.48

Circle Center At X = -141.2 ; Y = 1063.2 and Radius, 1011.4

*** 2.117 ***

Failure Surface Specified By 24 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	200.00	111.05
2	209.93	109.87
3	219.90	109.15
4	229.90	108.92
5	239.90	109.16
6	249.87	109.87
7	259.80	111.06
8	269.66	112.71
9	279.44	114.84
10	289.10	117.42
11	298.62	120.46
12	307.99	123.95
13	317.19	127.88
14	326.19	132.25
15	334.97	137.04
16	343.51	142.23
17	351.79	147.83
18	359.80	153.82
19	367.52	160.18
20	374.93	166.90
21	382.01	173.96
22	388.74	181.35
23	395.12	189.06
24	398.07	192.99

Circle Center At X = 229.9 ; Y = 319.3 and Radius, 210.4

*** 2.156 ***

1

Failure Surface Specified By 27 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	166.67	108.76
2	176.32	106.15
3	186.09	104.02
4	195.96	102.39
5	205.89	101.25
6	215.87	100.60
7	225.87	100.46
8	235.86	100.81
9	245.83	101.66
10	255.74	103.01
11	265.56	104.86
12	275.29	107.19
13	284.89	110.00
14	294.33	113.29
15	303.60	117.05
16	312.67	121.26
17	321.51	125.92
18	330.12	131.02
19	338.45	136.54
20	346.51	142.47
21	354.25	148.79
22	361.67	155.50
23	368.75	162.56
24	375.46	169.97
25	381.80	177.71
26	387.74	185.75
27	389.99	189.13

Circle Center At X = 223.8 ; Y = 300.7 and Radius, 200.3

*** 2.207 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	300.00	156.33
2	309.91	155.01
3	319.89	154.39
4	329.89	154.45
5	339.86	155.21
6	349.76	156.66
7	359.53	158.80
8	369.12	161.61
9	378.50	165.08
10	387.62	169.19
11	396.43	173.92
12	404.89	179.26
13	412.95	185.17
14	420.59	191.63
15	427.76	198.60
16	434.43	206.05
17	434.45	206.08

Circle Center At X = 323.9 ; Y = 298.2 and Radius, 143.9

*** 2.228 ***

1

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	233.33	128.00
2	242.94	125.22
3	252.79	123.51
4	262.77	122.92
5	272.76	123.44
6	282.63	125.06
7	292.25	127.77
8	301.52	131.53
9	310.31	136.30
10	318.52	142.01
11	326.04	148.60
12	332.78	155.99
13	338.66	164.08
14	338.84	164.41

Circle Center At X = 263.1 ; Y = 212.8 and Radius, 89.9

*** 2.294 ***

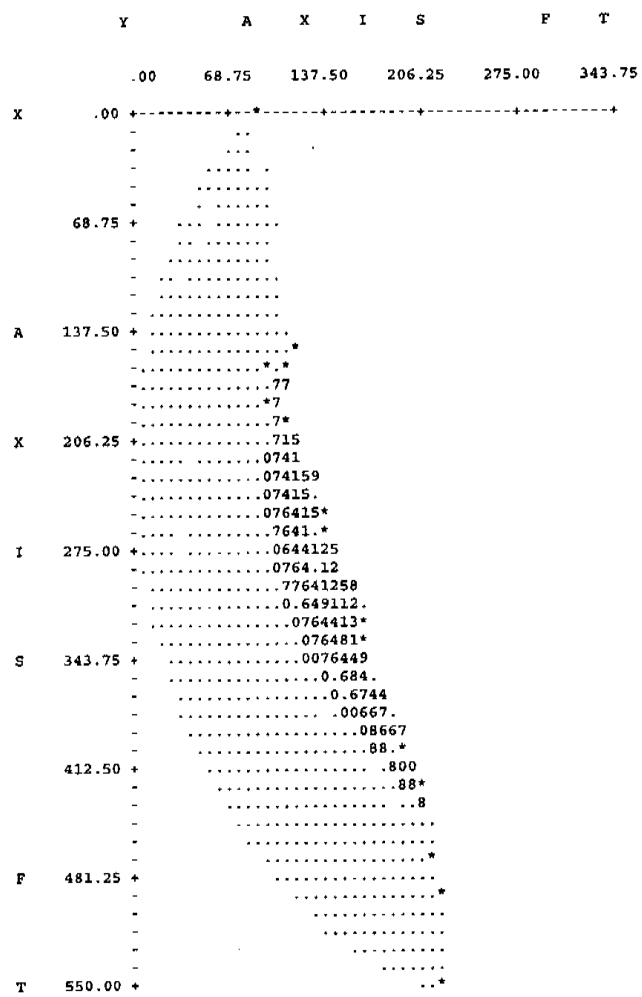
Failure Surface Specified By 30 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	166.67	108.76
2	176.23	105.85
3	185.93	103.38
4	195.72	101.37
5	205.60	99.82
6	215.54	98.72
7	225.52	98.09
8	235.52	97.92
9	245.51	98.21
10	255.48	98.97
11	265.41	100.19
12	275.27	101.87
13	285.04	104.01
14	294.70	106.59
15	304.23	109.63
16	313.60	113.10
17	322.81	117.00
18	331.83	121.32
19	340.63	126.06
20	349.21	131.21
21	357.54	136.74
22	365.60	142.66
23	373.38	148.94
24	380.86	155.58
25	388.02	162.55
26	394.86	169.86
27	401.34	177.47
28	407.47	185.37
29	413.22	193.55
30	416.53	198.77

Circle Center At X = 234.2 ; Y = 313.4 and Radius, 215.4

*** 2.325 ***

1

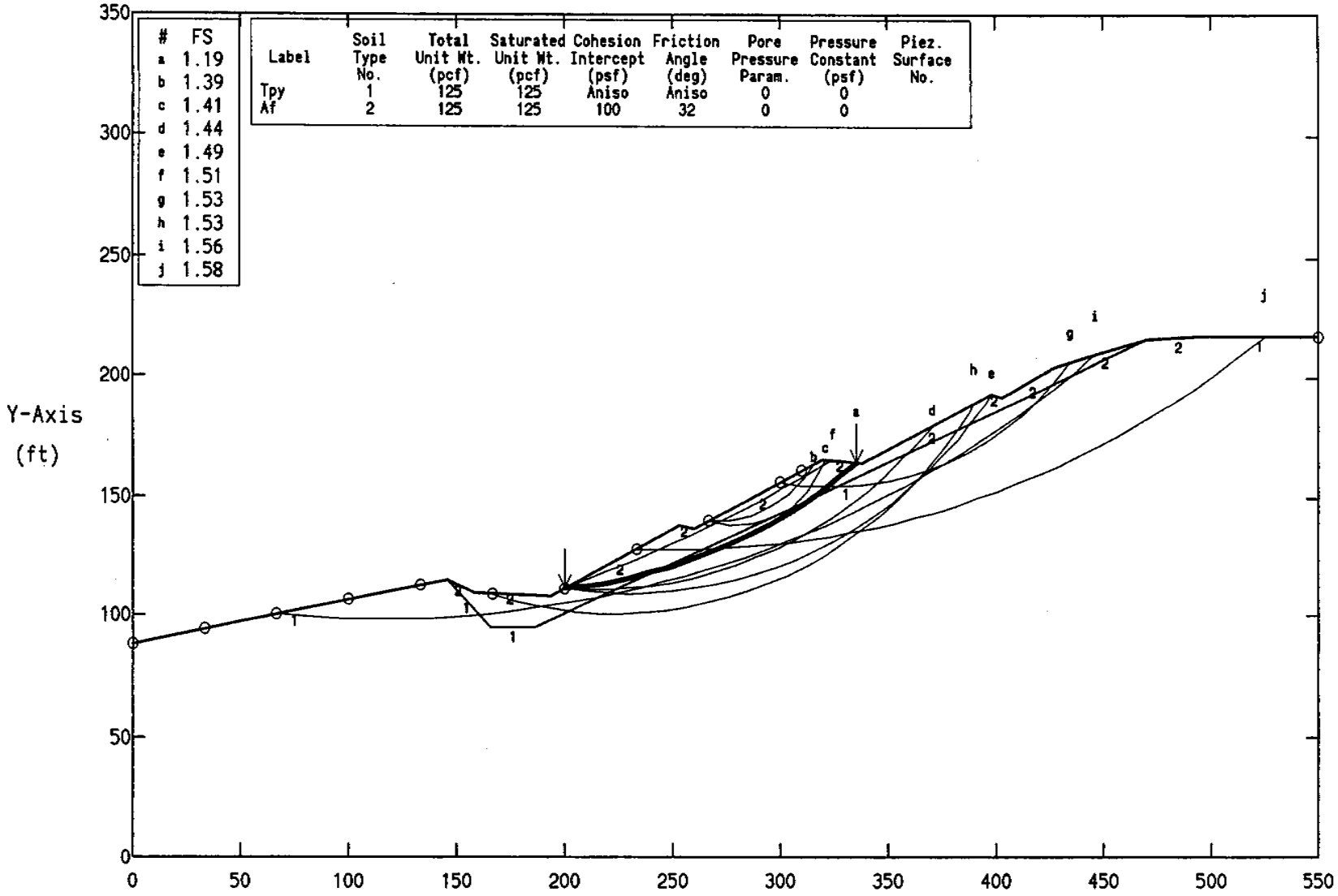


SECTION B-B'
PSEUDOSTATIC ANALYSIS

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Section B, Proposed Seismic, W/ Stab.

Ten Most Critical. C:0G224BPE.PLT By: JMK 12/20/2000 8:42am



Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer's Method of Slices

Run Date: 12/20/2000
Time of Run: 8:42am
Run By: JMK
Input Data Filename: C:0G224BPE
Output Filename: C:0G224BPE.OUT
Plotted Output Filename: C:0G224BPE.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Section B, Proposed Seismic, W/ Stab.

BOUNDARY COORDINATES

13 Top Boundaries
16 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	88.00	146.00	115.00	1
2	146.00	115.00	158.00	109.00	2
3	158.00	109.00	194.00	108.00	2
4	194.00	108.00	253.00	138.00	2
5	253.00	138.00	260.00	137.00	2
6	260.00	137.00	320.00	166.00	2
7	320.00	166.00	338.00	164.00	2
8	338.00	164.00	398.00	193.00	2
9	398.00	193.00	403.00	192.00	2
10	403.00	192.00	427.00	204.00	2
11	427.00	204.00	470.00	216.00	2
12	470.00	216.00	495.00	217.00	2
13	495.00	217.00	550.00	217.00	1
14	146.00	115.00	166.00	95.00	1
15	166.00	95.00	186.00	95.00	1
16	186.00	95.00	470.00	216.00	1

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	40.0	.00	.0	0
2	125.0	125.0	100.0	32.0	.00	.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)

Soil Type 1 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	22.0	100.0	40.0
2	35.0	.0	22.0
3	90.0	100.0	40.0

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 psf

1

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = .00 ft.
and X = 300.00 ft.

Each Surface Terminates Between X = 310.00 ft.
and X = 550.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = .00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	200.00	111.05
2	209.93	112.22
3	219.81	113.76
4	229.63	115.67
5	239.37	117.94
6	249.01	120.58
7	258.55	123.57
8	267.98	126.92
9	277.27	130.62
10	286.41	134.66
11	295.40	139.05
12	304.22	143.77
13	312.85	148.81
14	321.29	154.17
15	329.53	159.84
16	335.48	164.28

Circle Center At X = 173.7 ; Y = 377.1 and Radius, 267.4

*** 1.192 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	266.67	140.22
2	276.67	140.40
3	286.46	142.40
4	295.72	146.17
5	304.14	151.58
6	311.41	158.44
7	315.26	163.71

Circle Center At X = 270.7 ; Y = 194.3 and Radius, 54.2

*** 1.393 ***

1

Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	266.67	140.22
2	276.51	138.44
3	286.50	138.85
4	296.16	141.44
5	305.01	146.09
6	312.63	152.56
7	318.65	160.55
8	321.06	165.88

Circle Center At X = 279.6 ; Y = 183.7 and Radius, 45.3

*** 1.408 ***

Failure Surface Specified By 20 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	200.00	111.05
2	209.99	110.65
3	219.99	110.72
4	229.98	111.27
5	239.93	112.28
6	249.82	113.75
7	259.63	115.69
8	269.34	118.09
9	278.92	120.94
10	288.36	124.24
11	297.64	127.97
12	306.73	132.14
13	315.61	136.73
14	324.27	141.74
15	332.68	147.14
16	340.83	152.94
17	348.70	159.11
18	356.27	165.64
19	363.53	172.52
20	370.35	179.64

Circle Center At X = 213.5 ; Y = 323.5 and Radius, 212.8

*** 1.439 ***

1

Failure Surface Specified By 24 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	200.00	111.05
2	209.93	109.87
3	219.90	109.15
4	229.90	108.92
5	239.90	109.16
6	249.87	109.87
7	259.80	111.06
8	269.66	112.71
9	279.44	114.84
10	289.10	117.42
11	298.62	120.46
12	307.99	123.95
13	317.19	127.88
14	326.19	132.25
15	334.97	137.04
16	343.51	142.23
17	351.79	147.83
18	359.80	153.82
19	367.52	160.18
20	374.93	166.90
21	382.01	173.96
22	388.74	181.35
23	395.12	189.06
24	398.07	192.99

Circle Center At X = 229.9 ; Y = 319.3 and Radius, 210.4

*** 1.490 ***

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	200.00	111.05
2	209.40	114.47
3	218.76	117.98
4	228.09	121.59
5	237.38	125.28
6	246.63	129.07
7	255.85	132.95
8	265.03	136.92
9	274.17	140.99
10	283.26	145.14
11	292.32	149.38
12	301.33	153.71
13	310.30	158.13
14	319.23	162.64
15	324.72	165.48

Circle Center At X = -141.2 ; Y = 1063.2 and Radius, 1011.4

*** 1.507 ***

1

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	300.00	156.33
2	309.91	155.01
3	319.89	154.39
4	329.89	154.45
5	339.86	155.21
6	349.76	156.66
7	359.53	158.80
8	369.12	161.61
9	378.50	165.08
10	387.62	169.19
11	396.43	173.92
12	404.89	179.26
13	412.95	185.17
14	420.59	191.63
15	427.76	198.60
16	434.43	206.05
17	434.45	206.08

Circle Center At X = 323.9 ; Y = 298.2 and Radius, 143.9

*** 1.525 ***

Failure Surface Specified By 27 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	166.67	108.76
2	176.32	106.15
3	186.09	104.02
4	195.96	102.39
5	205.89	101.25
6	215.87	100.60
7	225.87	100.46
8	235.86	100.81
9	245.83	101.66
10	255.74	103.01
11	265.56	104.86
12	275.29	107.19
13	284.89	110.00
14	294.33	113.29
15	303.60	117.05
16	312.67	121.26
17	321.51	125.92
18	330.12	131.02
19	338.45	136.54
20	346.51	142.47
21	354.25	148.79
22	361.67	155.50
23	368.75	162.56
24	375.46	169.97
25	381.80	177.71
26	387.74	185.75
27	389.99	189.13

Circle Center At X = 223.8 ; Y = 300.7 and Radius, 200.3

*** 1.528 ***

1

Failure Surface Specified By 42 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	66.67	100.33
2	76.64	99.53
3	86.62	98.92
4	96.61	98.48
5	106.60	98.23
6	116.60	98.17
7	126.60	98.28
8	136.60	98.58
9	146.59	99.06
10	156.57	99.72
11	166.53	100.56
12	176.48	101.58
13	186.40	102.79

14	196.31	104.18
15	206.18	105.74
16	216.03	107.49
17	225.84	109.41
18	235.62	111.52
19	245.36	113.80
20	255.05	116.26
21	264.69	118.90
22	274.29	121.71
23	283.83	124.70
24	293.32	127.85
25	302.75	131.19
26	312.12	134.69
27	321.42	138.36
28	330.65	142.21
29	339.81	146.22
30	348.90	150.39
31	357.90	154.74
32	366.83	159.24
33	375.68	163.91
34	384.43	168.74
35	393.10	173.72
36	401.68	178.87
37	410.16	184.17
38	418.54	189.62
39	426.82	195.23
40	435.00	200.98
41	443.07	206.89
42	446.40	209.41

Circle Center At X = 115.3 ; Y = 646.5 and Radius, 548.3

*** 1.562 ***

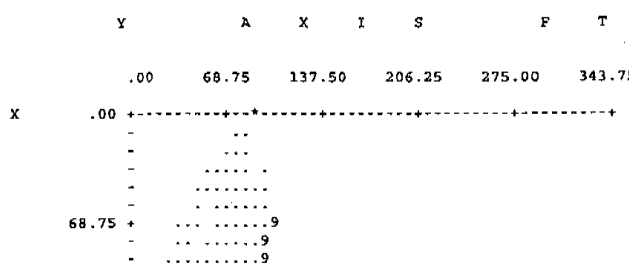
Failure Surface Specified By 33 Coordinate Points

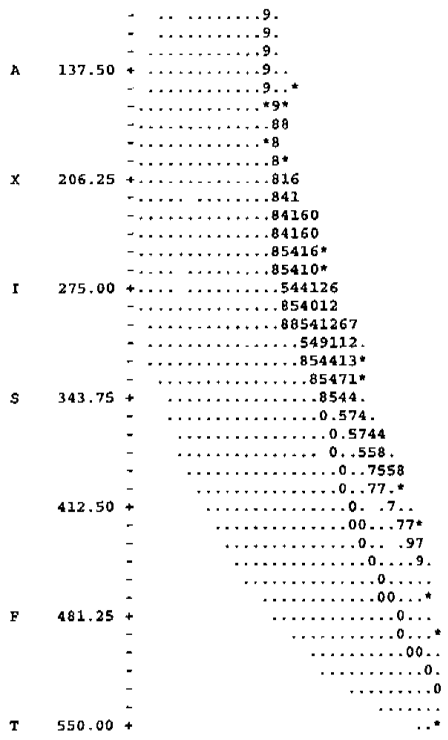
Point No.	X-Surf (ft)	Y-Surf (ft)
1	233.33	128.00
2	243.33	127.76
3	253.33	127.73
4	263.33	127.91
5	273.32	128.31
6	283.30	128.92
7	293.27	129.75
8	303.21	130.78
9	313.14	132.03
10	323.03	133.50
11	332.89	135.17
12	342.71	137.05
13	352.49	139.14
14	362.22	141.44
15	371.90	143.95
16	381.53	146.66
17	391.09	149.58
18	400.59	152.70
19	410.02	156.03
20	419.38	159.55
21	428.66	163.28
22	437.86	167.20
23	446.97	171.32
24	455.99	175.63
25	464.92	180.13
26	473.75	184.82
27	482.48	189.70
28	491.10	194.77
29	499.62	200.02
30	508.01	205.45
31	516.29	211.05
32	524.45	216.84
33	524.67	217.00

Circle Center At X = 249.7 ; Y = 595.8 and Radius, 468.1

*** 1.582 ***

1




A 137.50
X 206.25
I 275.00
S 343.75
412.50
F 481.25
T 550.00

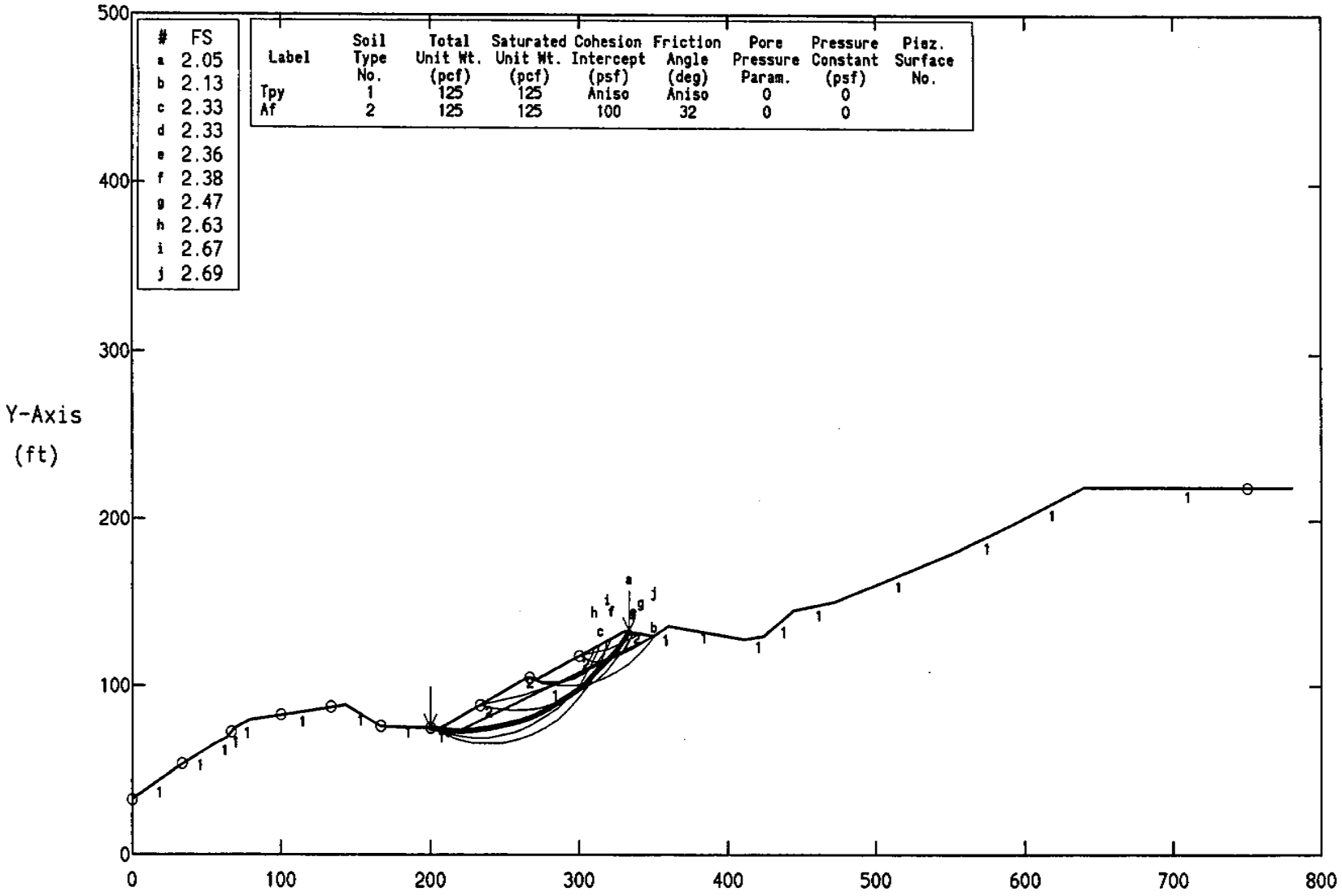
THIS PAGE LEFT BLANK INTENTIONALLY

SECTION C-C'
STATIC ANALYSIS

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Section C, Proposed Static, W/ Stab.

Ten Most Critical. C:0G224CPS.PLT By: JMK 12/20/2000 11:05am



Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer's Method of Slices

Run Date: 12/20/2000
Time of Run: 11:05am
Run By: JMK
Input Data Filename: C:0G224CPS
Output Filename: C:0G224CPS.OUT
Plotted Output Filename: C:0G224CPS.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Section C, Proposed Static, W/ Stab.

BOUNDARY COORDINATES

21 Top Boundaries
23 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	32.00	30.00	52.00	1
2	30.00	52.00	55.00	65.00	1
3	55.00	65.00	63.00	69.00	1
4	63.00	69.00	69.00	75.00	1
5	69.00	75.00	79.00	80.00	1
6	79.00	80.00	143.00	89.00	1
7	143.00	89.00	167.00	76.00	1
8	167.00	76.00	207.00	75.00	1
9	207.00	75.00	265.00	105.00	2
10	265.00	105.00	272.00	104.00	2
11	272.00	104.00	331.00	133.00	2
12	331.00	133.00	350.00	130.00	2
13	350.00	130.00	360.00	136.00	1
14	360.00	136.00	410.00	128.00	1
15	410.00	128.00	424.00	130.00	1
16	424.00	130.00	445.00	145.00	1
17	445.00	145.00	472.00	150.00	1
18	472.00	150.00	552.00	180.00	1
19	552.00	180.00	590.00	197.00	1
20	590.00	197.00	640.00	220.00	1
21	640.00	220.00	780.00	220.00	1
22	207.00	75.00	212.00	70.00	1
23	212.00	70.00	350.00	130.00	1

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	40.0	.00	.0	0
2	125.0	125.0	100.0	32.0	.00	.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)

Soil Type 1 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	26.0	100.0	40.0
2	35.0	.0	22.0
3	90.0	100.0	40.0

1

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = .00 ft.
and X = 300.00 ft.

Each Surface Terminates Between X = 300.00 ft.
and X = 750.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = .00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	200.00	75.17
2	209.93	73.99
3	219.92	73.54
4	229.92	73.82
5	239.86	74.84
6	249.71	76.58
7	259.40	79.04
8	268.89	82.20
9	278.12	86.05
10	287.04	90.56
11	295.61	95.72
12	303.78	101.50
13	311.50	107.85
14	318.73	114.76
15	325.44	122.17
16	331.58	130.06
17	333.30	132.64

Circle Center At X = 221.1 ; Y = 209.8 and Radius, 136.3

*** 2.054 ***

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	233.33	88.62
2	243.16	90.45
3	252.94	92.55
4	262.66	94.92
5	272.30	97.55
6	281.88	100.45
7	291.36	103.61
8	300.76	107.03
9	310.06	110.70
10	319.26	114.63
11	328.34	118.81
12	337.31	123.24
13	346.15	127.91
14	349.88	130.02

Circle Center At X = 171.6 ; Y = 447.4 and Radius, 364.0

*** 2.128 ***

1

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	200.00	75.17
2	209.51	72.08
3	219.31	70.08
4	229.27	69.20
5	239.26	69.45
6	249.17	70.83

7	258.85	73.32
8	268.20	76.89
9	277.07	81.49
10	285.37	87.07
11	292.99	93.55
12	299.82	100.85
13	305.79	108.87
14	310.81	117.52
15	313.91	124.60

Circle Center At X = 232.1 ; Y = 157.5 and Radius, 88.3

*** 2.327 ***

Failure Surface Specified By 6 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	300.00	117.76
2	309.45	114.50
3	319.41	115.40
4	328.12	120.31
5	334.05	128.36
6	334.92	132.38

Circle Center At X = 312.3 ; Y = 138.2 and Radius, 23.8

*** 2.330 ***

1

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	233.33	88.62
2	243.14	86.64
3	253.09	85.73
4	263.09	85.89
5	273.01	87.13
6	282.75	89.44
7	292.17	92.78
8	301.18	97.11
9	309.67	102.40
10	317.55	108.56
11	324.71	115.54
12	331.07	123.25
13	336.57	131.60
14	336.82	132.08

Circle Center At X = 256.6 ; Y = 178.3 and Radius, 92.6

*** 2.363 ***

Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	266.67	104.76
2	276.34	102.22
3	286.34	102.01
4	296.11	104.14
5	305.11	108.49
6	312.85	114.82
7	318.90	122.78
8	321.30	128.23

Circle Center At X = 282.2 ; Y = 144.4 and Radius, 42.6

*** 2.378 ***

1

Failure Surface Specified By 6 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	300.00	117.76
2	309.83	119.61
3	319.47	122.26
4	328.87	125.69
5	337.95	129.87

6	340.76	131.46

Circle Center At X = 282.3 ; Y = 238.8 and Radius, 122.3

*** 2.474 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	266.67	104.76
2	276.06	101.34
3	286.06	101.15
4	295.58	104.22
5	303.59	110.21
6	309.22	118.47
7	310.43	122.89

Circle Center At X = 281.6 ; Y = 131.2 and Radius, 30.4

*** 2.630 ***

1

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	200.00	75.17
2	209.14	71.12
3	218.70	68.19
4	228.54	66.41
5	238.53	65.82
6	248.51	66.42
7	258.35	68.20
8	267.91	71.14
9	277.05	75.19
10	285.64	80.31
11	293.57	86.41
12	300.71	93.40
13	306.97	101.20
14	312.25	109.69
15	316.49	118.75
16	319.30	127.25

Circle Center At X = 238.5 ; Y = 149.7 and Radius, 83.9

*** 2.669 ***

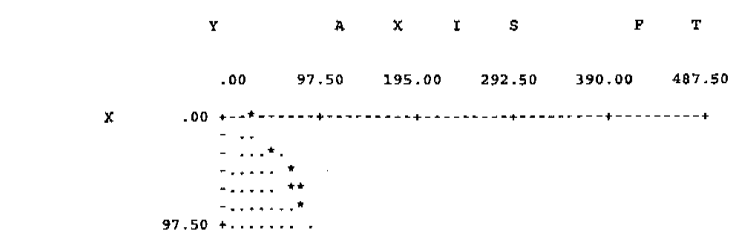
Failure Surface Specified By 11 Coordinate Points

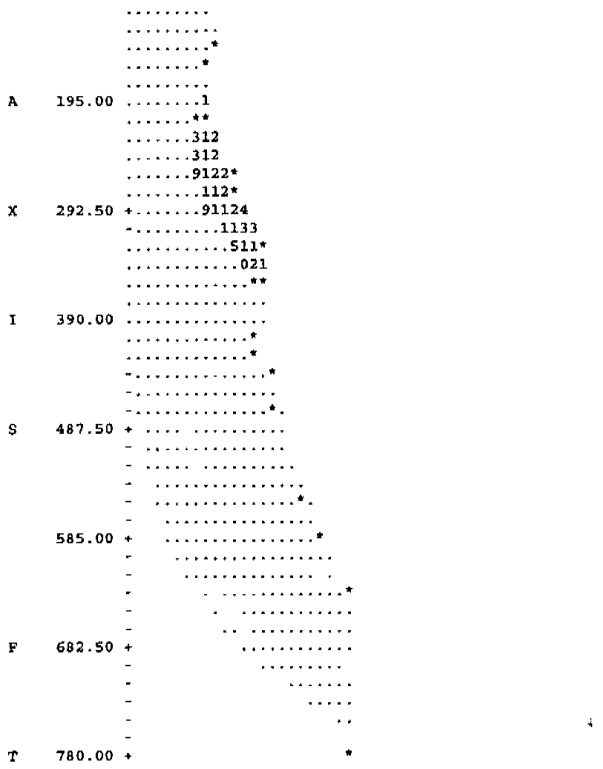
Point No.	X-Surf (ft)	Y-Surf (ft)
1	266.67	104.76
2	276.22	101.81
3	286.10	100.23
4	296.10	100.06
5	306.02	101.30
6	315.67	103.93
7	324.85	107.88
8	333.39	113.09
9	341.10	119.45
10	347.85	126.84
11	350.01	130.01

Circle Center At X = 292.3 ; Y = 170.8 and Radius, 70.8

*** 2.685 ***

1



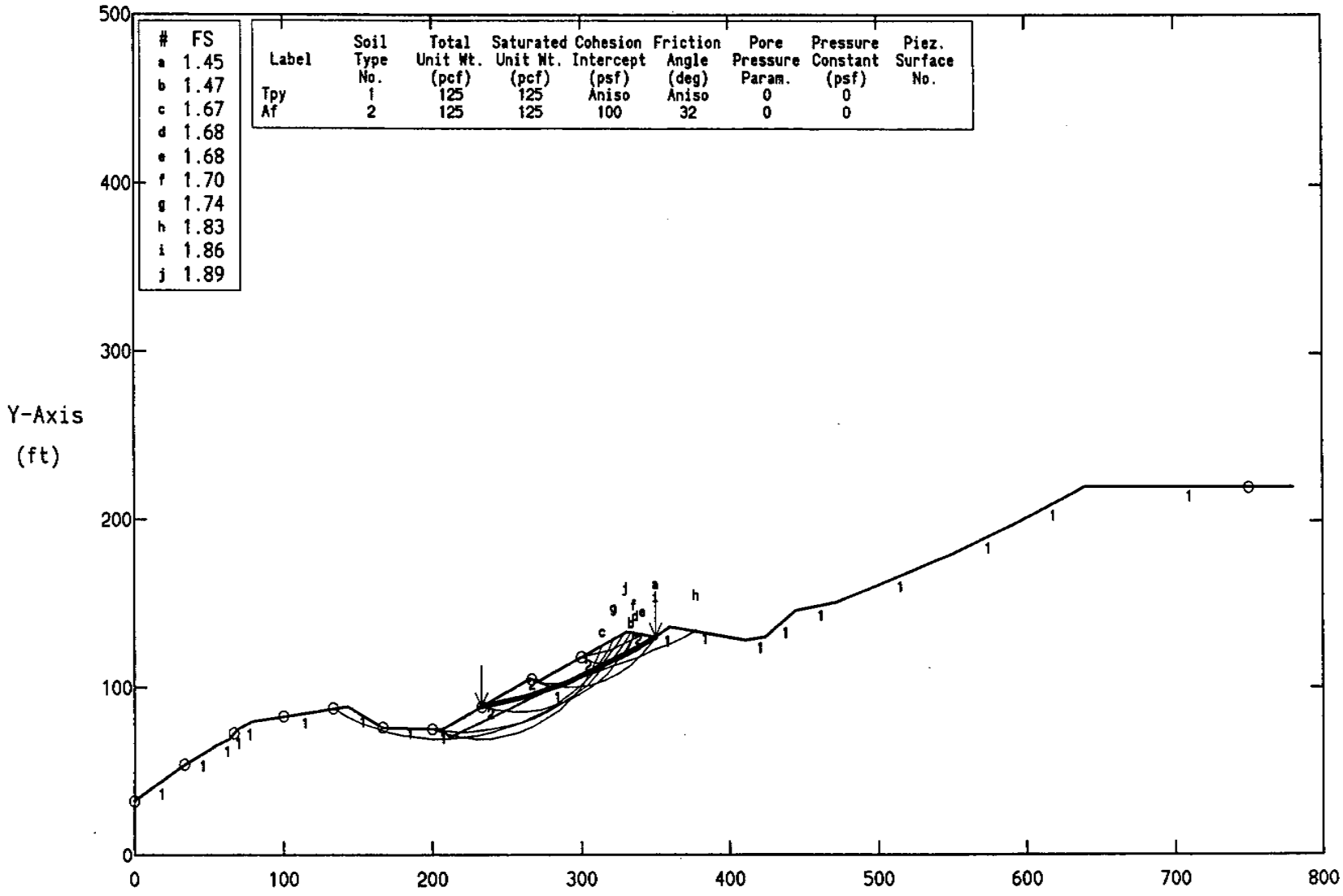

A
195.00
X
292.50
I
390.00
S
487.50
585.00
F
682.50
T
780.00

SECTION C-C'
PSEUDOSTATIC ANALYSIS

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Section C, Proposed Seismic, W/ Stab.

Ten Most Critical. C:0G224CPE.PLT By: JMK 12/20/2000 11:06am



STABL6H FSmin=1.45 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer`s Method of Slices

Run Date: 12/20/2000
Time of Run: 11:06am
Run By: JMK
Input Data Filename: C:0G224CPE
Output Filename: C:0G224CPE.OUT
Plotted Output Filename: C:0G224CPE.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Section C, Proposed Seismic, W/ Stab.

BOUNDARY COORDINATES

21 Top Boundaries
23 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	32.00	30.00	52.00	1
2	30.00	52.00	55.00	65.00	1
3	55.00	65.00	63.00	69.00	1
4	63.00	69.00	69.00	75.00	1
5	69.00	75.00	79.00	80.00	1
6	79.00	80.00	143.00	89.00	1
7	143.00	89.00	167.00	76.00	1
8	167.00	76.00	207.00	75.00	1
9	207.00	75.00	265.00	105.00	2
10	265.00	105.00	272.00	104.00	2
11	272.00	104.00	331.00	133.00	2
12	331.00	133.00	350.00	130.00	2
13	350.00	130.00	360.00	136.00	1
14	360.00	136.00	410.00	128.00	1
15	410.00	128.00	424.00	130.00	1
16	424.00	130.00	445.00	145.00	1
17	445.00	145.00	472.00	150.00	1
18	472.00	150.00	552.00	180.00	1
19	552.00	180.00	590.00	197.00	1
20	590.00	197.00	640.00	220.00	1
21	640.00	220.00	780.00	220.00	1
22	207.00	75.00	212.00	70.00	1
23	212.00	70.00	350.00	130.00	1

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	40.0	.00	.0	0
2	125.0	125.0	100.0	32.0	.00	.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)

Soil Type 1 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	26.0	100.0	40.0
2	35.0	.0	22.0
3	90.0	100.0	40.0

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 psf

1

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced Along The Ground Surface Between X = .00 ft.
and X = 300.00 ft.

Each Surface Terminates Between X = 300.00 ft.
and X = 750.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = .00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Examined. They Are Ordered - Most Critical First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	233.33	88.62
2	243.16	90.45
3	252.94	92.55
4	262.66	94.92
5	272.30	97.55
6	281.88	100.45
7	291.36	103.61
8	300.76	107.03
9	310.06	110.70
10	319.26	114.63
11	328.34	118.81
12	337.31	123.24
13	346.15	127.91
14	349.88	130.02

Circle Center At X = 171.6 ; Y = 447.4 and Radius, 364.0

*** 1.448 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	200.00	75.17
2	209.93	73.99
3	219.92	73.54
4	229.92	73.82
5	239.86	74.84
6	249.71	76.58
7	259.40	79.04
8	268.89	82.20
9	278.12	86.05
10	287.04	90.56
11	295.61	95.72
12	303.78	101.50
13	311.50	107.85
14	318.73	114.76
15	325.44	122.17
16	331.58	130.06
17	333.30	132.64

Circle Center At X = 221.1 ; Y = 209.8 and Radius, 136.3

*** 1.466 ***

1

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	200.00	75.17
2	209.51	72.08
3	219.31	70.08
4	229.27	69.20
5	239.26	69.45
6	249.17	70.83
7	258.85	73.32
8	268.20	76.89
9	277.07	81.49
10	285.37	87.07
11	292.99	93.55
12	299.82	100.85
13	305.79	108.87
14	310.81	117.52
15	313.91	124.60

Circle Center At X = 232.1 ; Y = 157.5 and Radius, 88.3

*** 1.673 ***

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	233.33	88.62
2	243.14	86.64
3	253.09	85.73
4	263.09	85.89
5	273.01	87.13
6	282.75	89.44
7	292.17	92.78
8	301.18	97.11
9	309.67	102.40
10	317.55	108.56
11	324.71	115.54
12	331.07	123.25
13	336.57	131.60
14	336.82	132.08

Circle Center At X = 256.6 ; Y = 178.3 and Radius, 92.6

*** 1.678 ***

1

Failure Surface Specified By 6 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	300.00	117.76
2	309.83	119.61
3	319.47	122.26
4	328.87	125.69
5	337.95	129.87
6	340.76	131.46

Circle Center At X = 282.3 ; Y = 238.8 and Radius, 122.3

*** 1.681 ***

Failure Surface Specified By 6 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	300.00	117.76
2	309.45	114.50
3	319.41	115.40
4	328.12	120.31
5	334.05	128.36
6	334.92	132.38

Circle Center At X = 312.3 ; Y = 138.2 and Radius, 23.8

*** 1.702 ***

1

Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	266.67	104.76
2	276.34	102.22
3	286.34	102.01
4	296.11	104.14
5	305.11	108.49
6	312.85	114.82
7	318.90	122.78
8	321.30	128.23

Circle Center At X = 282.2 ; Y = 144.4 and Radius, 42.6

*** 1.737 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	233.33	88.62
2	243.11	90.72
3	252.86	92.94
4	262.58	95.28
5	272.28	97.74
6	281.94	100.32
7	291.57	103.03
8	301.16	105.85
9	310.72	108.79
10	320.24	111.85
11	329.72	115.03
12	339.16	118.33
13	348.56	121.74
14	357.91	125.27
15	367.22	128.92
16	376.49	132.68
17	377.66	133.17

Circle Center At X = 69.9 ; Y = 874.1 and Radius, 802.3

*** 1.831 ***

1

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	266.67	104.76
2	276.22	101.81
3	286.10	100.23
4	296.10	100.06
5	306.02	101.30
6	315.67	103.93
7	324.85	107.88
8	333.39	113.09
9	341.10	119.45
10	347.85	126.84
11	350.01	130.01

Circle Center At X = 292.3 ; Y = 170.8 and Radius, 70.8

*** 1.862 ***

Failure Surface Specified By 23 Coordinate Points

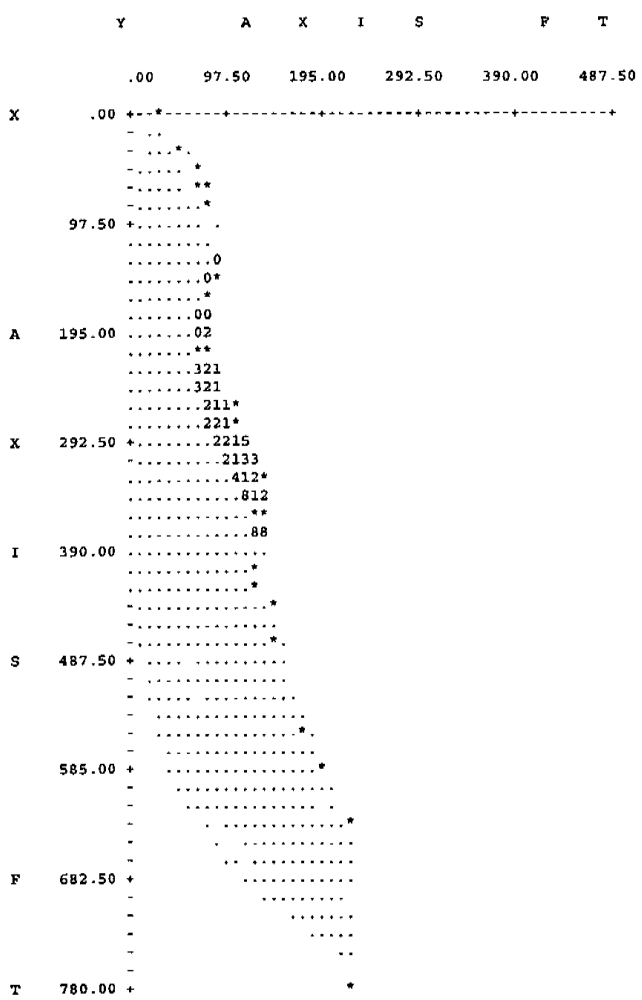
Point No.	X-Surf (ft)	Y-Surf (ft)
1	133.33	87.64
2	142.30	83.20
3	151.53	79.36
4	160.99	76.12
5	170.64	73.51
6	180.44	71.53
7	190.36	70.20
8	200.33	69.51
9	210.33	69.47
10	220.31	70.09
11	230.23	71.35
12	240.05	73.26
13	249.72	75.80
14	259.21	78.96
15	268.47	82.74
16	277.46	87.11
17	286.15	92.06
18	294.50	97.56

19	302.47	103.60
20	310.04	110.14
21	317.16	117.16
22	323.81	124.62
23	329.94	132.48

Circle Center At X = 205.9 ; Y = 222.9 and Radius, 153.5

*** 1.894 ***

1

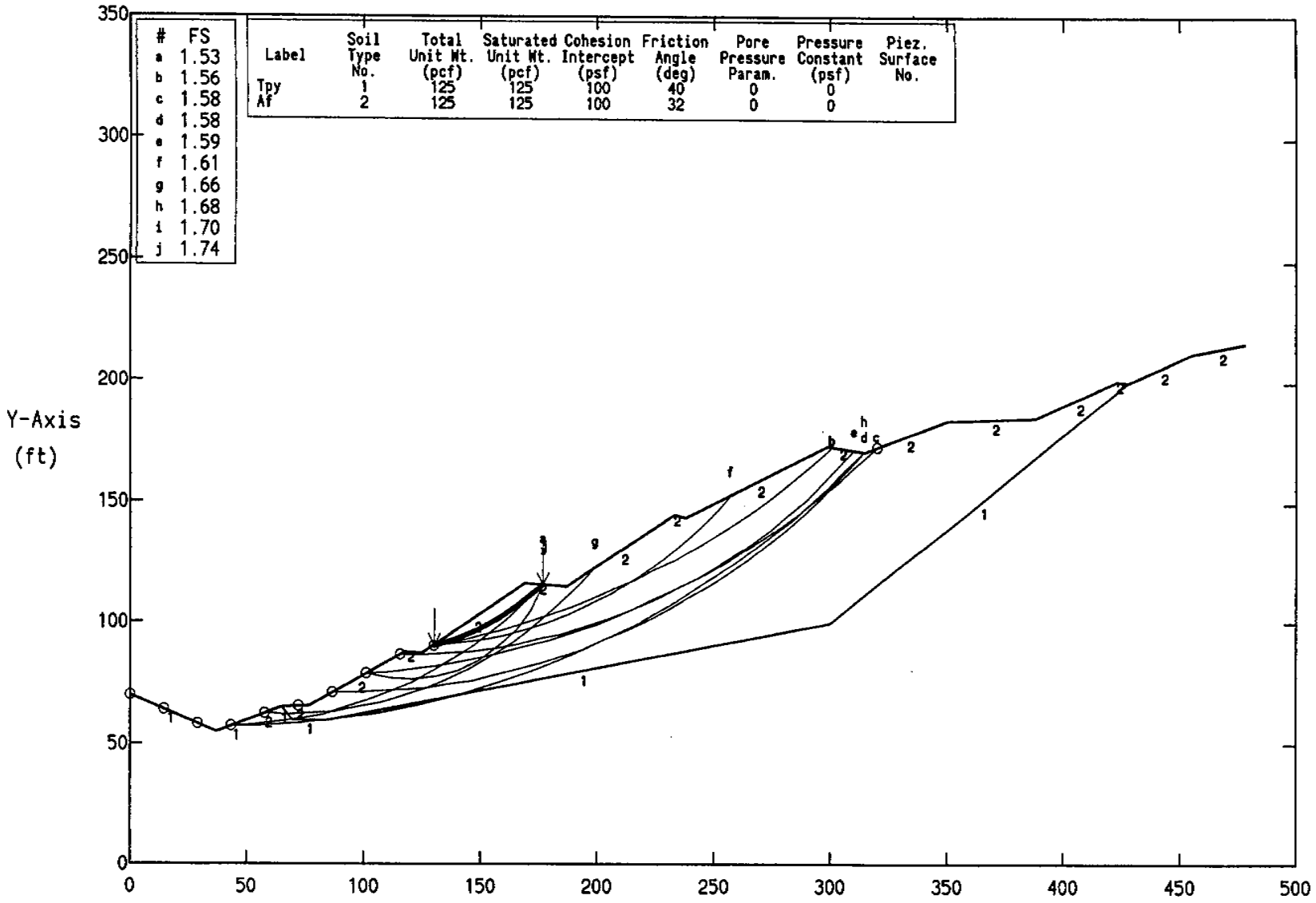


SECTION D-D'
STATIC ANALYSIS

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Section D, Proposed Static, Fill Slope

Ten Most Critical. C:0G224DPS.PLT By: JMK 12/20/2000 8:09am



STABL6H FSmin=1.53 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer`s Method of Slices

Run Date: 12/20/2000
Time of Run: 8:09am
Run By: JMK
Input Data Filename: C:0G224DPS
Output Filename: C:0G224DPS.OUT
Plotted Output Filename: C:0G224DPS.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Section D, Proposed Static, Fill Slope

BOUNDARY COORDINATES

18 Top Boundaries
22 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	70.00	37.00	55.00	1
2	37.00	55.00	50.00	60.00	1
3	50.00	60.00	65.00	65.00	2
4	65.00	65.00	77.00	66.00	2
5	77.00	66.00	118.00	88.00	2
6	118.00	88.00	125.00	87.00	2
7	125.00	87.00	169.00	116.00	2
8	169.00	116.00	187.00	115.00	2
9	187.00	115.00	233.00	145.00	2
10	233.00	145.00	238.00	144.00	2
11	238.00	144.00	299.00	173.00	2
12	299.00	173.00	315.00	171.00	2
13	315.00	171.00	350.00	184.00	2
14	350.00	184.00	388.00	185.00	2
15	388.00	185.00	423.00	201.00	2
16	423.00	201.00	428.00	200.00	2
17	428.00	200.00	455.00	212.00	2
18	455.00	212.00	478.00	216.00	2
19	65.00	65.00	70.00	60.00	1
20	70.00	60.00	85.00	60.00	1
21	85.00	60.00	300.00	100.00	1
22	300.00	100.00	428.00	200.00	1

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	40.0	.00	.0	0
2	125.0	125.0	100.0	32.0	.00	.0	0

1

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = .00 ft.
and X = 130.00 ft.

Each Surface Terminates Between X = 130.00 ft.
and X = 320.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = .00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Examined. They Are Ordered - Most Critical First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	130.00	90.30
2	139.57	93.18
3	148.85	96.93
4	157.74	101.50
5	166.18	106.87
6	174.10	112.97
7	176.89	115.56

Circle Center At X = 103.0 ; Y = 197.0 and Radius, 110.0

*** 1.533 ***

Failure Surface Specified By 21 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	130.00	90.30
2	139.82	92.21
3	149.57	94.41
4	159.26	96.87
5	168.88	99.62
6	178.41	102.63
7	187.86	105.91
8	197.21	109.46
9	206.45	113.27
10	215.59	117.34
11	224.60	121.67
12	233.49	126.25
13	242.25	131.09
14	250.86	136.16
15	259.33	141.48
16	267.64	147.04
17	275.79	152.83
18	283.78	158.85
19	291.59	165.09
20	299.22	171.56
21	300.61	172.80

Circle Center At X = 67.2 ; Y = 437.8 and Radius, 353.1

*** 1.556 ***

1

Failure Surface Specified By 26 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	101.11	78.94
2	111.08	79.67
3	121.03	80.68
4	130.95	81.98
5	140.82	83.56
6	150.65	85.42
7	160.42	87.56
8	170.12	89.98
9	179.75	92.68
10	189.30	95.64
11	198.76	98.88
12	208.12	102.39
13	217.39	106.16
14	226.54	110.20
15	235.57	114.49
16	244.47	119.04
17	253.24	123.85
18	261.87	128.90
19	270.36	134.19
20	278.69	139.73
21	286.85	145.50
22	294.85	151.50
23	302.68	157.72
24	310.32	164.17
25	317.78	170.83
26	319.87	172.81

Circle Center At X = 80.5 ; Y = 429.0 and Radius, 350.7

*** 1.582 ***

Failure Surface Specified By 27 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	86.67	71.19
2	96.67	71.17
3	106.66	71.48
4	116.64	72.13
5	126.59	73.12
6	136.50	74.44
7	146.37	76.10
8	156.17	78.09
9	165.89	80.41
10	175.54	83.05
11	185.09	86.02
12	194.53	89.31
13	203.86	92.91
14	213.06	96.83
15	222.12	101.06
16	231.04	105.59
17	239.80	110.41
18	248.39	115.53
19	256.80	120.94
20	265.02	126.63
21	273.05	132.59
22	280.88	138.82
23	288.48	145.31
24	295.87	152.05
25	303.02	159.04
26	309.94	166.26
27	314.26	171.09

Circle Center At X = 92.3 ; Y = 367.6 and Radius, 296.5

*** 1.583 ***

1

Failure Surface Specified By 23 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	115.56	86.69
2	125.56	86.76
3	135.55	87.22
4	145.51	88.07
5	155.43	89.31
6	165.30	90.92
7	175.10	92.92
8	184.81	95.30
9	194.43	98.05
10	203.93	101.17
11	213.30	104.65
12	222.53	108.50
13	231.61	112.70
14	240.51	117.25
15	249.23	122.14
16	257.76	127.37
17	266.08	132.92
18	274.17	138.79
19	282.04	144.96
20	289.66	151.44
21	297.02	158.21
22	304.11	165.26
23	310.03	171.62

Circle Center At X = 118.6 ; Y = 344.8 and Radius, 258.2

*** 1.585 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	130.00	90.30
2	139.97	91.13
3	149.87	92.52
4	159.68	94.45
5	169.37	96.92
6	178.91	99.92
7	188.27	103.45
8	197.42	107.48
9	206.33	112.02
10	214.97	117.05

11	223.33	122.54
12	231.36	128.49
13	239.06	134.88
14	246.39	141.68
15	253.34	148.87
16	256.88	152.97

Circle Center At X = 119.9 ; Y = 270.7 and Radius, 180.7

*** 1.611 ***

1

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	57.78	62.59
2	67.78	62.35
3	77.77	62.68
4	87.73	63.59
5	97.62	65.06
6	107.41	67.10
7	117.07	69.70
8	126.56	72.85
9	135.85	76.53
10	144.92	80.75
11	153.74	85.47
12	162.26	90.70
13	170.48	96.40
14	178.35	102.57
15	185.86	109.17
16	192.97	116.20
17	198.88	122.75

Circle Center At X = 67.0 ; Y = 236.7 and Radius, 174.3

*** 1.663 ***

Failure Surface Specified By 32 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	43.33	57.44
2	53.33	57.58
3	63.32	57.99
4	73.30	58.66
5	83.26	59.60
6	93.19	60.79
7	103.08	62.24
8	112.93	63.95
9	122.74	65.92
10	132.49	68.15
11	142.17	70.63
12	151.79	73.37
13	161.34	76.35
14	170.80	79.59
15	180.17	83.07
16	189.45	86.80
17	198.63	90.77
18	207.70	94.97
19	216.66	99.42
20	225.50	104.10
21	234.21	109.00
22	242.79	114.14
23	251.24	119.50
24	259.54	125.07
25	267.69	130.87
26	275.68	136.87
27	283.52	143.08
28	291.19	149.50
29	298.69	156.12
30	306.01	162.93
31	313.15	169.92
32	314.28	171.09

Circle Center At X = 42.7 ; Y = 438.7 and Radius, 381.3

*** 1.677 ***

1

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	43.33	57.44

2	53.32	57.91
3	63.27	58.90
4	73.16	60.41
5	82.95	62.44
6	92.62	64.97
7	102.15	68.01
8	111.51	71.54
9	120.67	75.55
10	129.61	80.03
11	138.30	84.98
12	146.72	90.37
13	154.85	96.20
14	162.66	102.44
15	170.14	109.08
16	176.72	115.57

Circle Center At X = 39.3 ; Y = 248.9 and Radius, 191.5

*** 1.695 ***

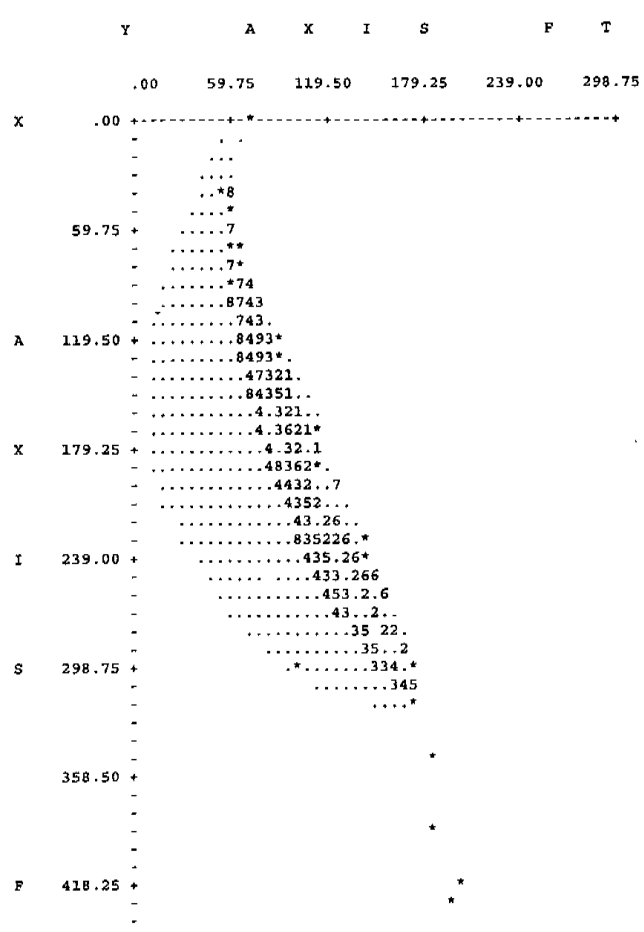
Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	101.11	78.94
2	110.91	76.95
3	120.90	76.52
4	130.84	77.65
5	140.47	80.33
6	149.57	84.47
7	157.91	89.99
8	165.29	96.75
9	171.51	104.57
10	176.44	113.27
11	177.29	115.54

Circle Center At X = 118.7 ; Y = 140.3 and Radius, 63.8

*** 1.736 ***

1




T 478.00

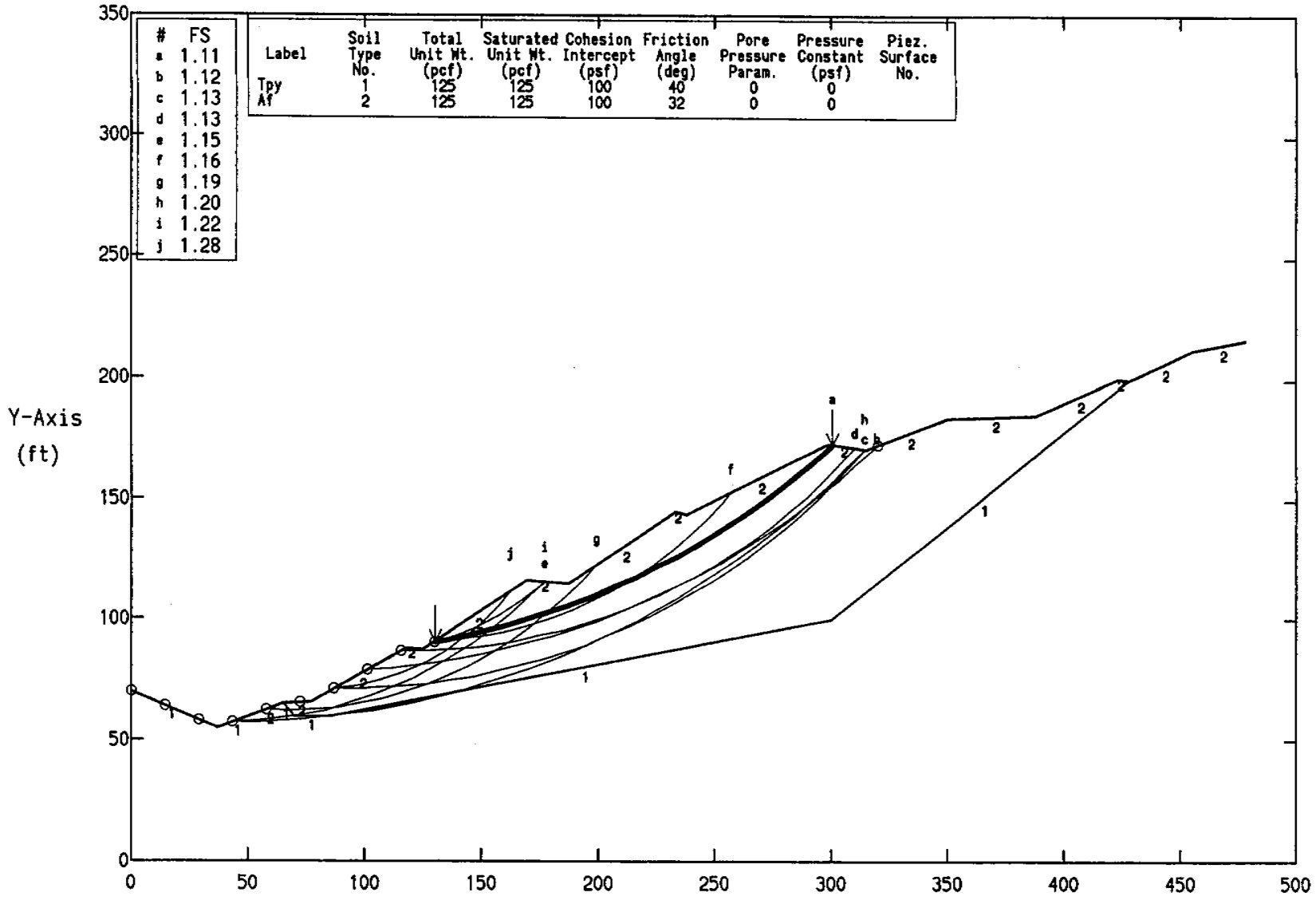
THIS PAGE LEFT BLANK INTENTIONALLY

SECTION D-D'
PSEUDOSTATIC ANALYSIS

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Section D, Proposed Seismic, Fill Slope

Ten Most Critical. C:0G224DPE.PLT By: JMK 12/20/2000 7:13am



STABL6H FSmin=1.11 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer's Method of Slices

Run Date: 12/20/2000
Time of Run: 7:13am
Run By: JMK
Input Data Filename: C:0G224DPE
Output Filename: C:0G224DPE.OUT
Plotted Output Filename: C:0G224DPE.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Section D, Proposed Seismic, Fill Slope

BOUNDARY COORDINATES

18 Top Boundaries
22 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	70.00	37.00	55.00	1
2	37.00	55.00	50.00	60.00	1
3	50.00	60.00	65.00	65.00	2
4	65.00	65.00	77.00	66.00	2
5	77.00	66.00	118.00	88.00	2
6	118.00	88.00	125.00	87.00	2
7	125.00	87.00	169.00	116.00	2
8	169.00	116.00	187.00	115.00	2
9	187.00	115.00	233.00	145.00	2
10	233.00	145.00	238.00	144.00	2
11	238.00	144.00	299.00	173.00	2
12	299.00	173.00	315.00	171.00	2
13	315.00	171.00	350.00	184.00	2
14	350.00	184.00	388.00	185.00	2
15	388.00	185.00	423.00	201.00	2
16	423.00	201.00	428.00	200.00	2
17	428.00	200.00	455.00	212.00	2
18	455.00	212.00	478.00	216.00	2
19	65.00	65.00	70.00	60.00	1
20	70.00	60.00	85.00	60.00	1
21	85.00	60.00	300.00	100.00	1
22	300.00	100.00	428.00	200.00	1

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	40.0	.00	.0	0
2	125.0	125.0	100.0	32.0	.00	.0	0

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 psf

1

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = .00 ft.
and X = 130.00 ft.

Each Surface Terminates Between X = 130.00 ft.
and X = 320.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = .00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 21 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	130.00	90.30
2	139.82	92.21
3	149.57	94.41
4	159.26	96.87
5	168.88	99.62
6	178.41	102.63
7	187.86	105.91
8	197.21	109.46
9	206.45	113.27
10	215.59	117.34
11	224.60	121.67
12	233.49	126.25
13	242.25	131.09
14	250.86	136.16
15	259.33	141.48
16	267.64	147.04
17	275.79	152.83
18	283.78	158.85
19	291.59	165.09
20	299.22	171.56
21	300.61	172.80

Circle Center At X = 67.2 ; Y = 437.8 and Radius, 353.1

*** 1.114 ***

Failure Surface Specified By 26 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	101.11	78.94
2	111.08	79.67
3	121.03	80.68
4	130.95	81.98
5	140.82	83.56
6	150.65	85.42
7	160.42	87.56
8	170.12	89.98
9	179.75	92.68
10	189.30	95.64
11	198.76	98.88
12	208.12	102.39
13	217.39	106.16
14	226.54	110.20
15	235.57	114.49
16	244.47	119.04
17	253.24	123.85
18	261.87	128.90
19	270.36	134.19
20	278.69	139.73
21	286.85	145.50
22	294.85	151.50
23	302.68	157.72
24	310.32	164.17
25	317.78	170.83
26	319.87	172.81

Circle Center At X = 80.5 ; Y = 429.0 and Radius, 350.7

*** 1.123 ***

1

Failure Surface Specified By 27 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)

1	86.67	71.19
2	96.67	71.17
3	106.66	71.48
4	116.64	72.13
5	126.59	73.12
6	136.50	74.44
7	146.37	76.10
8	156.17	78.09
9	165.89	80.41
10	175.54	83.05
11	185.09	86.02
12	194.53	89.31
13	203.86	92.91
14	213.06	96.83
15	222.12	101.06
16	231.04	105.59
17	239.80	110.41
18	248.39	115.53
19	256.80	120.94
20	265.02	126.63
21	273.05	132.59
22	280.88	138.82
23	288.48	145.31
24	295.87	152.05
25	303.02	159.04
26	309.94	166.26
27	314.26	171.09

Circle Center At X = 92.3 ; Y = 367.6 and Radius, 296.5

*** 1.131 ***

Failure Surface Specified By 23 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	115.56	86.69
2	125.56	86.76
3	135.55	87.22
4	145.51	88.07
5	155.43	89.31
6	165.30	90.92
7	175.10	92.92
8	184.81	95.30
9	194.43	98.05
10	203.93	101.17
11	213.30	104.65
12	222.53	108.50
13	231.61	112.70
14	240.51	117.25
15	249.23	122.14
16	257.76	127.37
17	266.08	132.92
18	274.17	138.79
19	282.04	144.96
20	289.66	151.44
21	297.02	158.21
22	304.11	165.26
23	310.03	171.62

Circle Center At X = 118.6 ; Y = 344.8 and Radius, 258.2

*** 1.134 ***

1

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	130.00	90.30
2	139.57	93.18
3	148.85	96.93
4	157.74	101.50
5	166.18	106.87
6	174.10	112.97
7	176.89	115.56

Circle Center At X = 103.0 ; Y = 197.0 and Radius, 110.0

*** 1.146 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)

1	130.00	90.30
2	139.97	91.13
3	149.87	92.52
4	159.68	94.45
5	169.37	96.92
6	178.91	99.92
7	188.27	103.45
8	197.42	107.48
9	206.33	112.02
10	214.97	117.05
11	223.33	122.54
12	231.36	128.49
13	239.06	134.88
14	246.39	141.68
15	253.34	148.87
16	256.88	152.97

Circle Center At X = 119.9 ; Y = 270.7 and Radius, 180.7

*** 1.158 ***

1

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	57.78	62.59
2	67.78	62.35
3	77.77	62.68
4	87.73	63.59
5	97.62	65.06
6	107.41	67.10
7	117.07	69.70
8	126.56	72.85
9	135.85	76.53
10	144.92	80.75
11	153.74	85.47
12	162.26	90.70
13	170.48	96.40
14	178.35	102.57
15	185.86	109.17
16	192.97	116.20
17	198.88	122.75

Circle Center At X = 67.0 ; Y = 236.7 and Radius, 174.3

*** 1.193 ***

Failure Surface Specified By 32 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	43.33	57.44
2	53.33	57.58
3	63.32	57.99
4	73.30	58.66
5	83.26	59.60
6	93.19	60.79
7	103.08	62.24
8	112.93	63.95
9	122.74	65.92
10	132.49	68.15
11	142.17	70.63
12	151.79	73.37
13	161.34	76.35
14	170.80	79.59
15	180.17	83.07
16	189.45	86.80
17	198.63	90.77
18	207.70	94.97
19	216.66	99.42
20	225.50	104.10
21	234.21	109.00
22	242.79	114.14
23	251.24	119.50
24	259.54	125.07
25	267.69	130.87
26	275.68	136.87
27	283.52	143.08
28	291.19	149.50
29	298.69	156.12
30	306.01	162.93
31	313.15	169.92
32	314.28	171.09

Circle Center At X = 42.7 ; Y = 438.7 and Radius, 381.3

*** 1.198 ***

1

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	43.33	57.44
2	53.32	57.91
3	63.27	58.90
4	73.16	60.41
5	82.95	62.44
6	92.62	64.97
7	102.15	68.01
8	111.51	71.54
9	120.67	75.55
10	129.61	80.03
11	138.30	84.98
12	146.72	90.37
13	154.85	96.20
14	162.66	102.44
15	170.14	109.08
16	176.72	115.57

Circle Center At X = 39.3 ; Y = 248.9 and Radius, 191.5

*** 1.220 ***

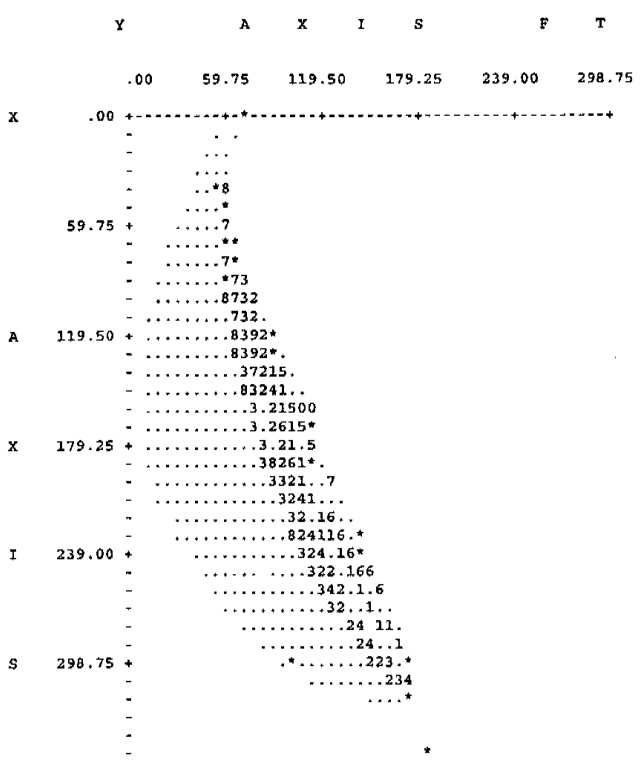
Failure Surface Specified By 10 Coordinate Points

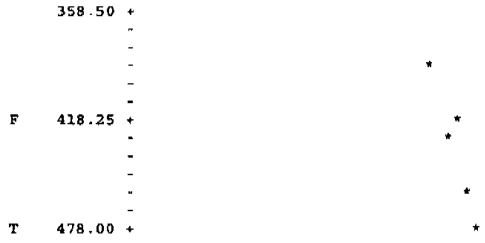
Point No.	X-Surf (ft)	Y-Surf (ft)
1	86.67	71.19
2	96.60	72.35
3	106.37	74.46
4	115.90	77.50
5	125.10	81.43
6	133.87	86.23
7	142.14	91.85
8	149.84	98.23
9	156.90	105.32
10	161.72	111.20

Circle Center At X = 79.5 ; Y = 175.3 and Radius, 104.3

*** 1.278 ***

1




358.50
F 418.25
T 478.00

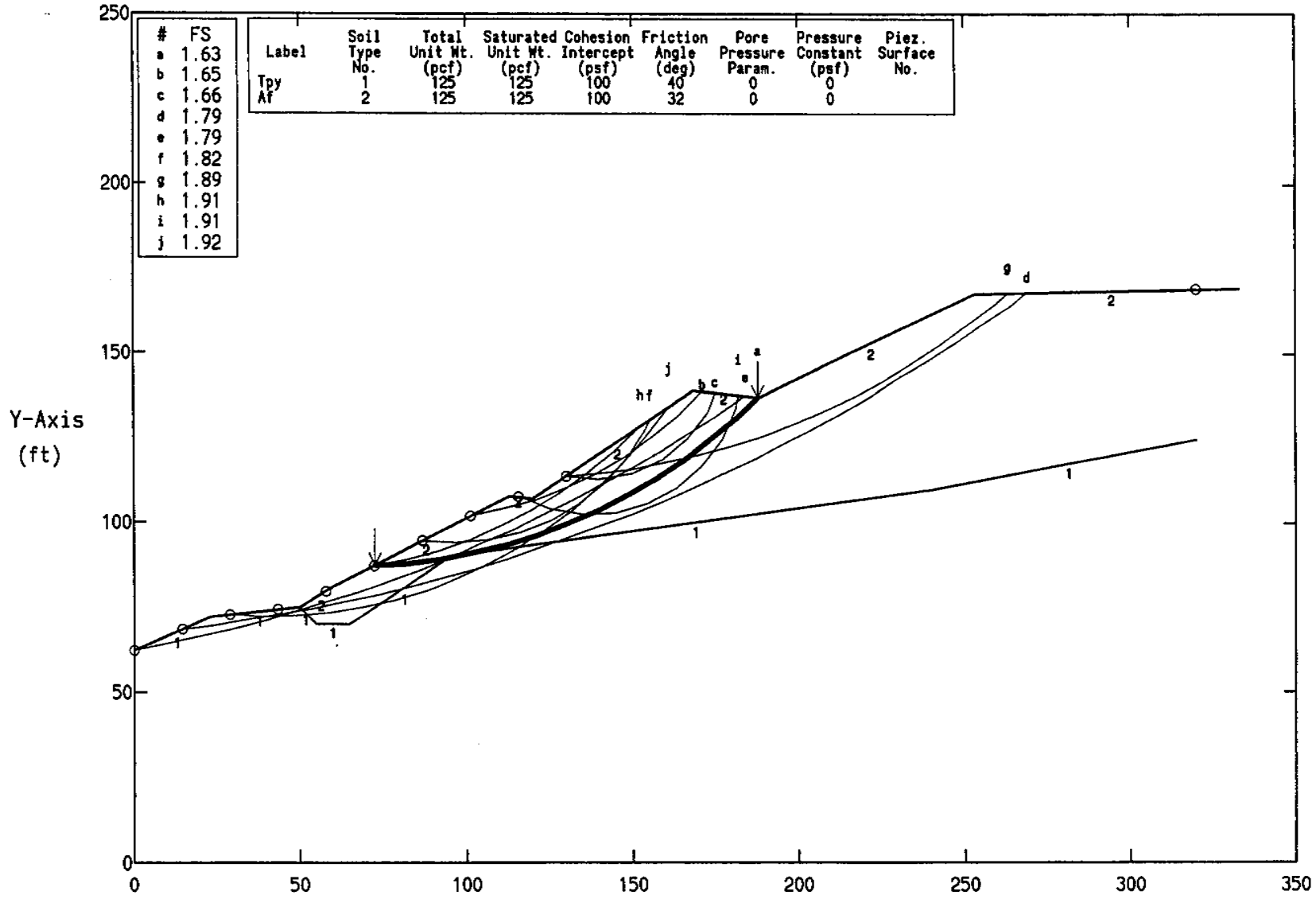
THIS PAGE LEFT BLANK INTENTIONALLY

SECTION E-E'
STATIC ANALYSIS

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Section E, Proposed Static, Fill Slope

Ten Most Critical. C:0G224EPS.PLT By: JMK 12/20/2000 6:24am



STABL6H FSmin=1.63 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer`s Method of Slices

Run Date: 12/20/2000
Time of Run: 6:24am
Run By: JMK
Input Data Filename: C:0G224EPS
Output Filename: C:0G224EPS.OUT
Plotted Output Filename: C:0G224EPS.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Section E, Proposed Static, Fill Slope

BOUNDARY COORDINATES

9 Top Boundaries
14 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	62.00	23.00	72.00	1
2	23.00	72.00	50.00	75.00	1
3	50.00	75.00	60.00	81.00	2
4	60.00	81.00	113.00	108.00	2
5	113.00	108.00	120.00	107.00	2
6	120.00	107.00	168.00	139.00	2
7	168.00	139.00	188.00	137.00	2
8	188.00	137.00	253.00	168.00	2
9	253.00	168.00	333.00	170.00	2
10	50.00	75.00	55.00	70.00	1
11	55.00	70.00	65.00	70.00	1
12	65.00	70.00	95.00	90.00	1
13	95.00	90.00	240.00	110.00	1
14	240.00	110.00	320.00	125.00	1

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	40.0	.00	.0	0
2	125.0	125.0	100.0	32.0	.00	.0	0

1

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = .00 ft.
and X = 130.00 ft.

Each Surface Terminates Between X = 130.00 ft.
and X = 320.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = .00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	72.22	87.23
2	82.20	87.92
3	92.12	89.18
4	101.95	91.00
5	111.67	93.37
6	121.23	96.30
7	130.61	99.77
8	139.78	103.76
9	148.70	108.27
10	157.36	113.28
11	165.71	118.77
12	173.74	124.73
13	181.42	131.14
14	187.71	137.03

Circle Center At X = 65.1 ; Y = 262.8 and Radius, 175.7

*** 1.625 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	101.11	101.94
2	110.92	103.87
3	120.55	106.59
4	129.91	110.11
5	138.95	114.38
6	147.60	119.39
7	155.82	125.10
8	163.53	131.46
9	170.69	138.44
10	170.92	138.71

Circle Center At X = 82.8 ; Y = 221.4 and Radius, 120.9

*** 1.645 ***

1

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	130.00	113.67
2	139.95	112.70
3	149.82	114.33
4	158.94	118.44
5	166.69	124.76
6	172.56	132.85
7	174.67	138.33

Circle Center At X = 138.7 ; Y = 151.2 and Radius, 38.6

*** 1.656 ***

Failure Surface Specified By 29 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	14.44	68.28
2	24.36	69.55
3	34.26	71.01
4	44.12	72.65
5	53.95	74.47
6	63.75	76.47
7	73.51	78.66
8	83.23	81.03
9	92.90	83.57
10	102.52	86.29
11	112.09	89.20
12	121.60	92.28
13	131.06	95.53
14	140.45	98.96
15	149.78	102.56
16	159.04	106.34
17	168.23	110.28
18	177.34	114.40
19	186.38	118.68
20	195.33	123.13

21	204.21	127.75
22	212.99	132.53
23	221.68	137.47
24	230.28	142.57
25	238.79	147.83
26	247.20	153.24
27	255.50	158.82
28	263.70	164.54
29	269.02	168.40

Circle Center At X = -49.3 ; Y = 604.1 and Radius, 539.6

*** 1.789 ***

1

Failure Surface Specified By 22 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	.00	62.00
2	9.82	63.90
3	19.59	66.00
4	29.33	68.31
5	39.01	70.82
6	48.63	73.52
7	58.20	76.43
8	67.71	79.54
9	77.14	82.84
10	86.51	86.34
11	95.80	90.04
12	105.02	93.92
13	114.15	98.00
14	123.19	102.26
15	132.15	106.72
16	141.01	111.36
17	149.77	116.18
18	158.43	121.18
19	166.98	126.36
20	175.42	131.72
21	183.75	137.25
22	183.97	137.40

Circle Center At X = -86.4 ; Y = 534.9 and Radius, 480.7

*** 1.792 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	86.67	94.59
2	96.64	93.89
3	106.61	94.70
4	116.34	97.00
5	125.62	100.74
6	134.22	105.83
7	141.97	112.16
8	148.68	119.57
9	154.19	127.91
10	155.45	130.63

Circle Center At X = 96.3 ; Y = 160.2 and Radius, 66.3

*** 1.824 ***

1

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	130.00	113.67
2	139.96	114.54
3	149.88	115.85
4	159.72	117.60
5	169.48	119.78
6	179.13	122.39
7	188.66	125.43
8	198.04	128.89
9	207.26	132.76
10	216.30	137.04
11	225.15	141.71
12	233.77	146.77
13	242.16	152.20
14	250.31	158.01
15	258.19	164.17

16	262.96	168.25

Circle Center At X = 115.3 ; Y = 338.8 and Radius, 225.6

*** 1.894 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	72.22	87.23
2	82.03	89.17
3	91.69	91.77
4	101.14	95.04
5	110.34	98.95
6	119.26	103.48
7	127.84	108.62
8	136.05	114.33
9	143.84	120.59
10	151.19	127.38
11	152.25	128.50

Circle Center At X = 49.0 ; Y = 230.7 and Radius, 145.3

*** 1.911 ***

1

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	115.56	107.63
2	124.86	103.96
3	134.73	102.36
4	144.71	102.91
5	154.35	105.59
6	163.19	110.26
7	170.83	116.71
8	176.91	124.65
9	181.15	133.70
10	182.04	137.60

Circle Center At X = 137.2 ; Y = 148.8 and Radius, 46.5

*** 1.913 ***

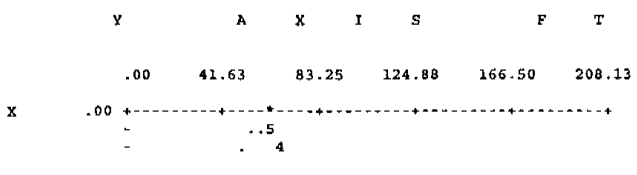
Failure Surface Specified By 17 Coordinate Points

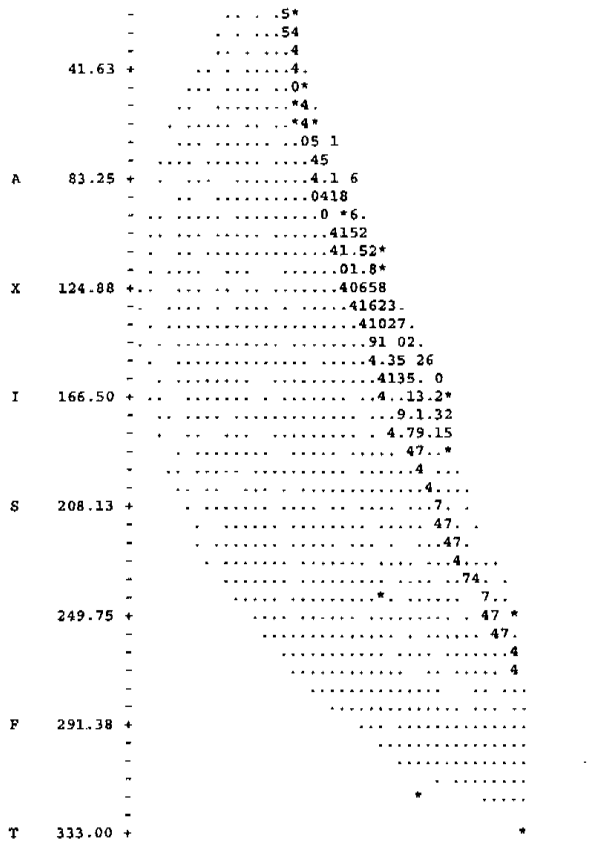
Point No.	X-Surf (ft)	Y-Surf (ft)
1	28.89	72.65
2	38.88	72.18
3	48.88	72.39
4	58.84	73.28
5	68.71	74.84
6	78.46	77.07
7	88.04	79.96
8	97.39	83.49
9	106.49	87.64
10	115.28	92.40
11	123.73	97.75
12	131.80	103.66
13	139.44	110.11
14	146.64	117.06
15	153.34	124.48
16	159.52	132.34
17	160.79	134.19

Circle Center At X = 40.8 ; Y = 219.4 and Radius, 147.2

*** 1.917 ***

1



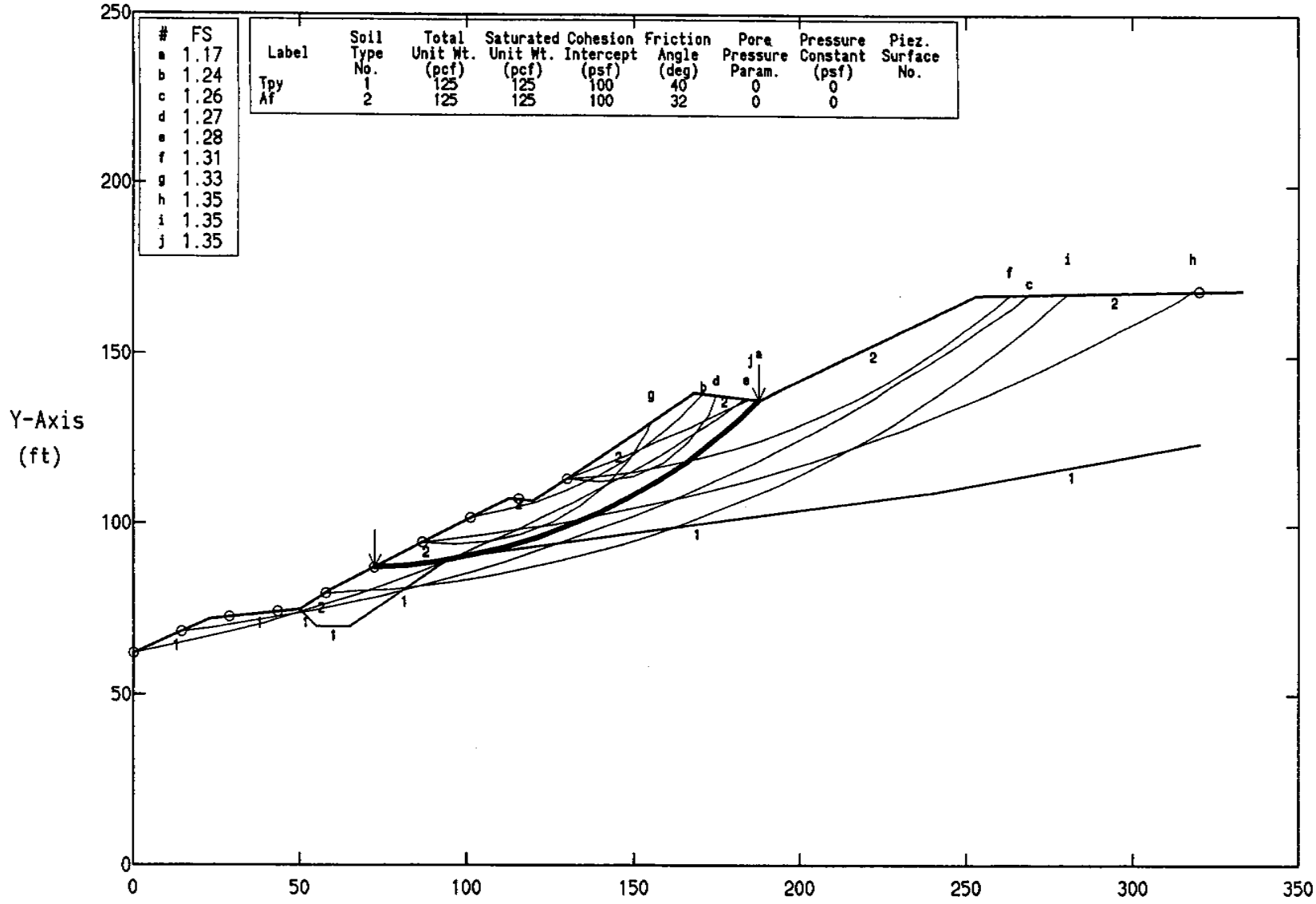

A
X
I
S
F
T
41.63
83.25
124.88
166.50
208.13
249.75
291.38
333.00

SECTION E-E'
PSEUDOSTATIC ANALYSIS

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Section E, Proposed Seismic, Fill Slope

Ten Most Critical. C:0G224EPE.PLT By: JMK 12/20/2000 6:26am



STABL6H FSmin=1.17 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer`s Method of Slices

Run Date: 12/20/2000
Time of Run: 6:26am
Run By: JMK
Input Data Filename: C:0G224EPE
Output Filename: C:0G224EPE.OUT
Plotted Output Filename: C:0G224EPE.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Section E, Proposed Seismic, Fill Slope

BOUNDARY COORDINATES

9 Top Boundaries
14 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	62.00	23.00	72.00	1
2	23.00	72.00	50.00	75.00	1
3	50.00	75.00	60.00	81.00	2
4	60.00	81.00	113.00	108.00	2
5	113.00	108.00	120.00	107.00	2
6	120.00	107.00	168.00	139.00	2
7	168.00	139.00	188.00	137.00	2
8	188.00	137.00	253.00	168.00	2
9	253.00	168.00	333.00	170.00	2
10	50.00	75.00	55.00	70.00	1
11	55.00	70.00	65.00	70.00	1
12	65.00	70.00	95.00	90.00	1
13	95.00	90.00	240.00	110.00	1
14	240.00	110.00	320.00	125.00	1

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	40.0	.00	.0	0
2	125.0	125.0	100.0	32.0	.00	.0	0

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 psf

1

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = .00 ft.
and X = 130.00 ft.

Each Surface Terminates Between X = 130.00 ft.
and X = 320.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = .00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Examined. They Are Ordered - Most Critical First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	72.22	87.23
2	82.20	87.92
3	92.12	89.18
4	101.95	91.00
5	111.67	93.37
6	121.23	96.30
7	130.61	99.77
8	139.78	103.76
9	148.70	108.27
10	157.36	113.28
11	165.71	118.77
12	173.74	124.73
13	181.42	131.14
14	187.71	137.03

Circle Center At X = 65.1 ; Y = 262.8 and Radius, 175.7

*** 1.171 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	101.11	101.94
2	110.92	103.87
3	120.55	106.59
4	129.91	110.11
5	138.95	114.38
6	147.60	119.39
7	155.82	125.10
8	163.53	131.46
9	170.69	138.44
10	170.92	138.71

Circle Center At X = 82.8 ; Y = 221.4 and Radius, 120.9

*** 1.240 ***

1

Failure Surface Specified By 29 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	14.44	68.28
2	24.36	69.55
3	34.26	71.01
4	44.12	72.65
5	53.95	74.47
6	63.75	76.47
7	73.51	78.66
8	83.23	81.03
9	92.90	83.57
10	102.52	86.29
11	112.09	89.20
12	121.60	92.28
13	131.06	95.53
14	140.45	98.96
15	149.78	102.56
16	159.04	106.34
17	168.23	110.28
18	177.34	114.40
19	186.38	118.68
20	195.33	123.13
21	204.21	127.75
22	212.99	132.53
23	221.68	137.47
24	230.28	142.57
25	238.79	147.83
26	247.20	153.24
27	255.50	158.82
28	263.70	164.54
29	269.02	168.40

Circle Center At X = -49.3 ; Y = 604.1 and Radius, 539.6

*** 1.255 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	130.00	113.67
2	139.95	112.70
3	149.82	114.33
4	158.94	118.44
5	166.69	124.76
6	172.56	132.85
7	174.67	138.33

Circle Center At X = 138.7 ; Y = 151.2 and Radius, 38.6

*** 1.265 ***

1

Failure Surface Specified By 22 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	.00	62.00
2	9.82	63.90
3	19.59	66.00
4	29.33	68.31
5	39.01	70.82
6	48.63	73.52
7	58.20	76.43
8	67.71	79.54
9	77.14	82.84
10	86.51	86.34
11	95.80	90.04
12	105.02	93.92
13	114.15	98.00
14	123.19	102.26
15	132.15	106.72
16	141.01	111.36
17	149.77	116.18
18	158.43	121.18
19	166.98	126.36
20	175.42	131.72
21	183.75	137.25
22	183.97	137.40

Circle Center At X = -86.4 ; Y = 534.9 and Radius, 480.7

*** 1.279 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	130.00	113.67
2	139.96	114.54
3	149.88	115.85
4	159.72	117.60
5	169.48	119.78
6	179.13	122.39
7	188.66	125.43
8	198.04	128.89
9	207.26	132.76
10	216.30	137.04
11	225.15	141.71
12	233.77	146.77
13	242.16	152.20
14	250.31	158.01
15	258.19	164.17
16	262.96	168.25

Circle Center At X = 115.3 ; Y = 338.8 and Radius, 225.6

*** 1.307 ***

1

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)

1	86.67	94.59
2	96.64	93.89
3	106.61	94.70
4	116.34	97.00
5	125.62	100.74
6	134.22	105.83
7	141.97	112.16
8	148.68	119.57
9	154.19	127.91
10	155.45	130.63

Circle Center At X = 96.3 ; Y = 160.2 and Radius, 66.3

*** 1.330 ***

Failure Surface Specified By 26 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	86.67	94.59
2	96.60	95.71
3	106.52	97.00
4	116.41	98.47
5	126.28	100.10
6	136.11	101.90
7	145.92	103.87
8	155.69	106.01
9	165.42	108.31
10	175.11	110.78
11	184.76	113.41
12	194.36	116.21
13	203.91	119.17
14	213.41	122.30
15	222.85	125.58
16	232.24	129.03
17	241.57	132.64
18	250.83	136.40
19	260.03	140.33
20	269.16	144.41
21	278.22	148.64
22	287.20	153.03
23	296.11	157.57
24	304.94	162.27
25	313.69	167.11
26	318.05	169.63

Circle Center At X = 25.8 ; Y = 676.6 and Radius, 585.2

*** 1.354 ***

1

Failure Surface Specified By 26 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	57.78	79.67
2	67.77	80.16
3	77.74	80.93
4	87.68	81.98
5	97.59	83.31
6	107.46	84.92
7	117.28	86.81
8	127.04	88.98
9	136.74	91.42
10	146.37	94.13
11	155.91	97.12
12	165.37	100.37
13	174.73	103.89
14	183.98	107.67
15	193.13	111.71
16	202.16	116.01
17	211.07	120.56
18	219.84	125.36
19	228.47	130.41
20	236.96	135.70
21	245.29	141.22
22	253.47	146.98
23	261.48	152.97
24	269.31	159.18
25	276.97	165.61
26	280.43	168.69

Circle Center At X = 45.5 ; Y = 433.6 and Radius, 354.1

*** 1.354 ***

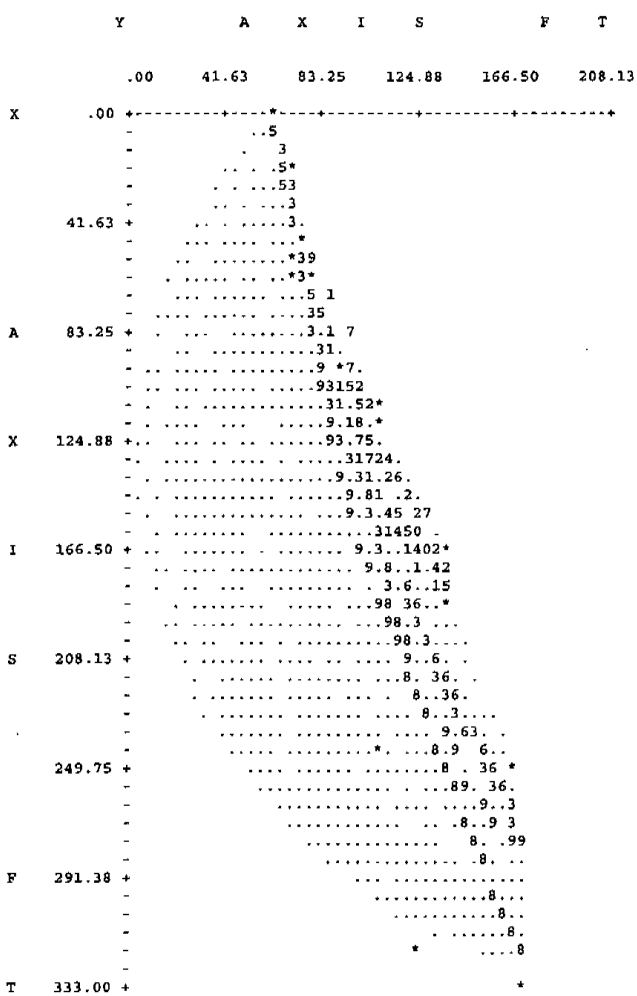
Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	130.00	113.67
2	139.25	117.47
3	148.47	121.34
4	157.67	125.25
5	166.85	129.21
6	176.01	133.23
7	185.11	137.29

Circle Center At X = -531.0 ; Y = 1732.0 and Radius, 1748.2

*** 1.354 ***

1

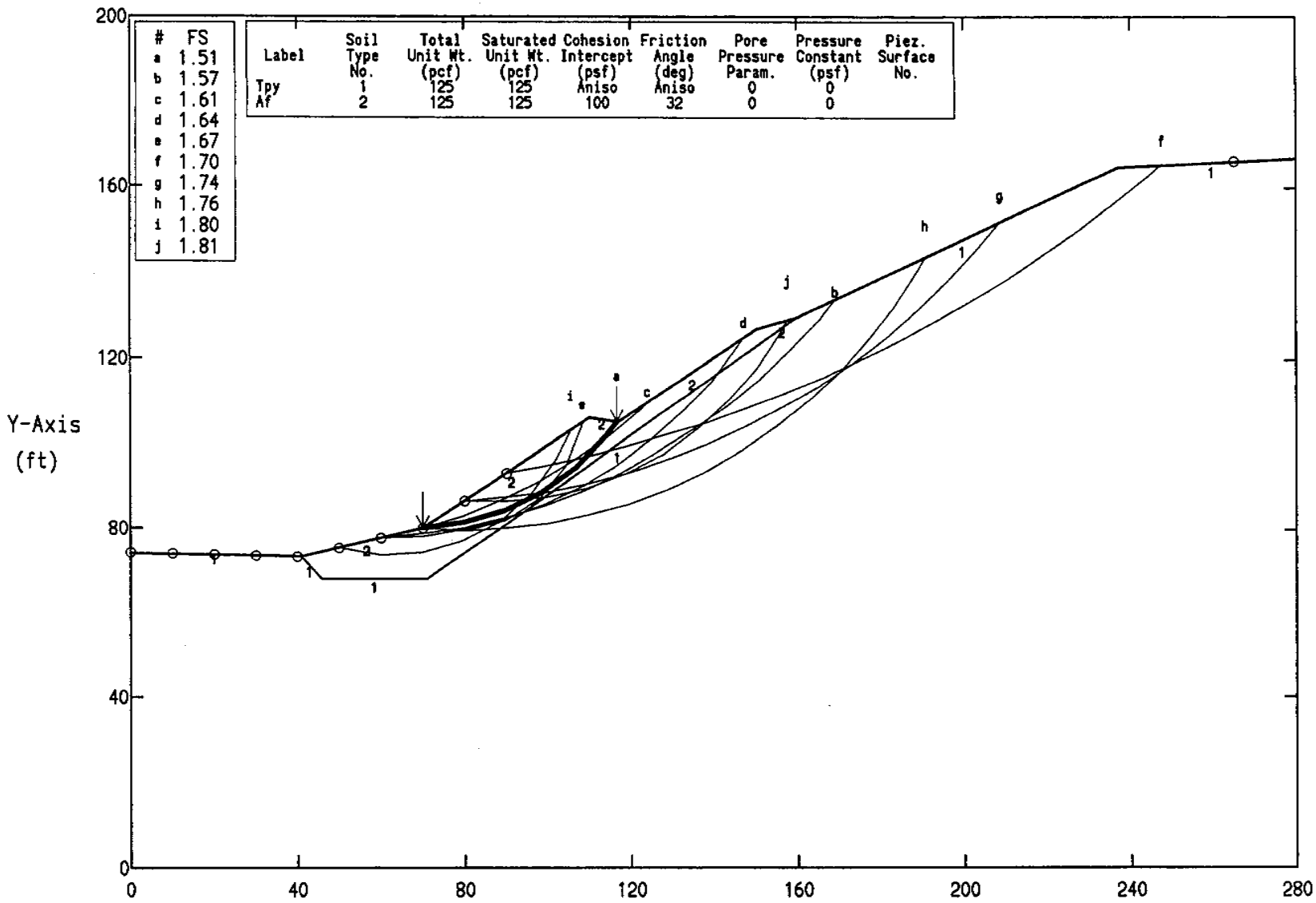


SECTION F-F'
STATIC ANALYSIS

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Section F, Proposed Static, W/ Stab

Ten Most Critical. C:0G224FPS.PLT By: JMK 12/20/2000 6:45am



STABL6H FSmin=1.51 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer`s Method of Slices

Run Date: 12/20/2000
Time of Run: 6:49am
Run By: JMK
Input Data Filename: C:0G224FPS
Output Filename: C:0G224FPS.OUT
Plotted Output Filename: C:0G224FPS.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Section F, Proposed Static, W/ Stab

BOUNDARY COORDINATES

8 Top Boundaries
11 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	74.00	41.00	73.00	1
2	41.00	73.00	70.00	80.00	2
3	70.00	80.00	110.00	106.00	2
4	110.00	106.00	117.00	105.00	2
5	117.00	105.00	150.00	127.00	2
6	150.00	127.00	160.00	130.00	2
7	160.00	130.00	237.00	165.00	1
8	237.00	165.00	280.00	167.00	1
9	41.00	73.00	46.00	68.00	1
10	46.00	68.00	71.00	68.00	1
11	71.00	68.00	160.00	130.00	1

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	40.0	.00	.0	0
2	125.0	125.0	100.0	32.0	.00	.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)

Soil Type 1 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	28.0	100.0	40.0
2	35.0	.0	22.0
3	90.0	100.0	40.0

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 psf

1

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = .00 ft.
and X = 90.00 ft.

Each Surface Terminates Between X = 90.00 ft.
and X = 265.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = .00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	70.00	80.00
2	79.90	81.41
3	89.46	84.33
4	98.45	88.71
5	106.66	94.43
6	113.87	101.35
7	116.68	105.05

Circle Center At X = 66.0 ; Y = 144.0 and Radius, 64.2

*** 1.133 ***

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	60.00	77.59
2	69.95	78.62
3	79.81	80.28
4	89.54	82.58
5	99.10	85.50
6	108.46	89.03
7	117.57	93.16
8	126.39	97.86
9	134.90	103.12
10	143.05	108.92
11	150.81	115.23
12	158.14	122.02
13	165.03	129.28
14	169.06	134.12

Circle Center At X = 49.0 ; Y = 232.5 and Radius, 155.3

*** 1.149 ***

1

Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	70.00	80.00
2	79.54	83.00
3	88.83	86.71
4	97.81	91.11
5	106.43	96.18
6	114.64	101.88
7	122.41	108.18
8	123.91	109.61

Circle Center At X = 35.0 ; Y = 207.8 and Radius, 132.5

*** 1.198 ***

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	60.00	77.59
2	69.98	78.22
3	79.86	79.78
4	89.55	82.26
5	98.96	85.63
6	108.02	89.86
7	116.65	94.92
8	124.76	100.77
9	132.30	107.34
10	139.19	114.59
11	145.37	122.45
12	147.03	125.02

Circle Center At X = 58.2 ; Y = 184.7 and Radius, 107.1

*** 1.209 ***

1

Failure Surface Specified By 19 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	90.00	93.00
2	99.83	94.85
3	109.59	97.00
4	119.29	99.43
5	128.92	102.15
6	138.45	105.16
7	147.90	108.44
8	157.24	112.01
9	166.48	115.85
10	175.59	119.96
11	184.58	124.34
12	193.44	128.99
13	202.15	133.89
14	210.71	139.06
15	219.12	144.47
16	227.36	150.13
17	235.43	156.04
18	243.33	162.18
19	247.32	165.48

Circle Center At X = 32.4 ; Y = 425.1 and Radius, 337.0

*** 1.215 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	80.00	86.50
2	89.97	87.33
3	99.87	88.72
4	109.68	90.66
5	119.36	93.15
6	128.90	96.18
7	138.24	99.73
8	147.37	103.81
9	156.26	108.39
10	164.88	113.46
11	173.20	119.00
12	181.20	125.00
13	188.85	131.45
14	196.13	138.31
15	203.01	145.56
16	208.49	152.04

Circle Center At X = 70.2 ; Y = 264.6 and Radius, 178.4

*** 1.260 ***

1

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	70.00	80.00
2	79.98	79.35
3	89.67	81.84
4	98.10	87.20
5	104.46	94.93

6	108.10	104.24
7	108.13	104.79

Circle Center At X = 77.0 ; Y = 111.0 and Radius, 31.8

*** 1.283 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	70.00	80.00
2	79.99	79.62
3	89.99	80.02
4	99.92	81.20
5	109.72	83.15
6	119.35	85.86
7	128.73	89.32
8	137.81	93.50
9	146.54	98.38
10	154.86	103.93
11	162.72	110.11
12	170.08	116.89
13	176.88	124.22
14	183.08	132.06
15	188.66	140.37
16	190.67	143.94

Circle Center At X = 79.9 ; Y = 207.4 and Radius, 127.7

*** 1.289 ***

1

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	80.00	86.50
2	90.00	86.34
3	99.94	87.41
4	109.68	89.70
5	119.05	93.18
6	127.93	97.78
7	136.17	103.45
8	143.65	110.09
9	150.25	117.60
10	155.87	125.87
11	157.62	129.29

Circle Center At X = 86.3 ; Y = 167.1 and Radius, 80.9

*** 1.338 ***

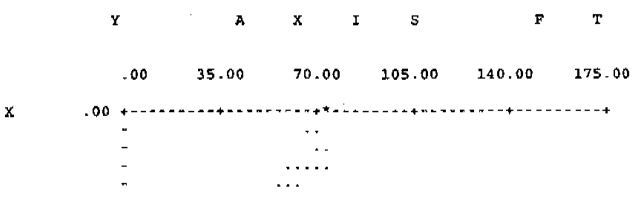
Failure Surface Specified By 8 Coordinate Points

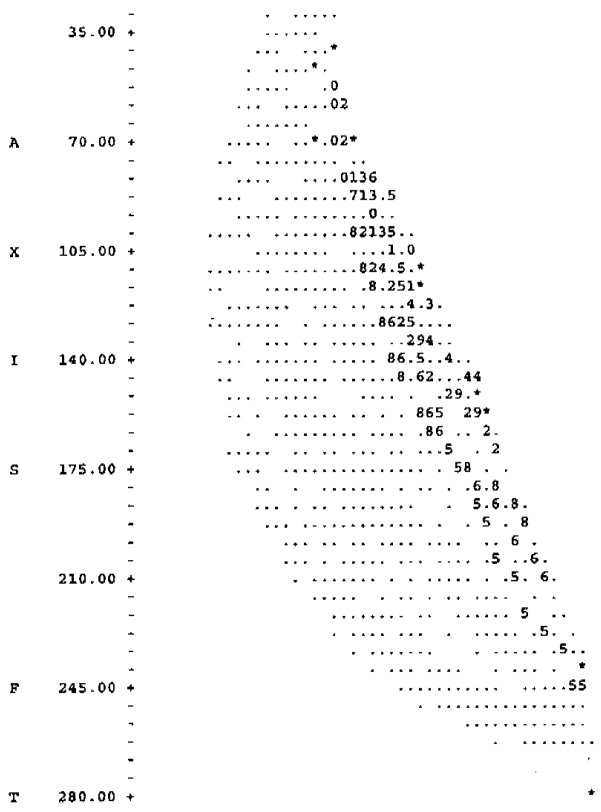
Point No.	X-Surf (ft)	Y-Surf (ft)
1	50.00	75.17
2	59.88	73.65
3	69.87	74.26
4	79.49	76.98
5	88.31	81.68
6	95.94	88.15
7	102.02	96.09
8	105.21	102.89

Circle Center At X = 62.0 ; Y = 120.4 and Radius, 46.8

*** 1.346 ***

1



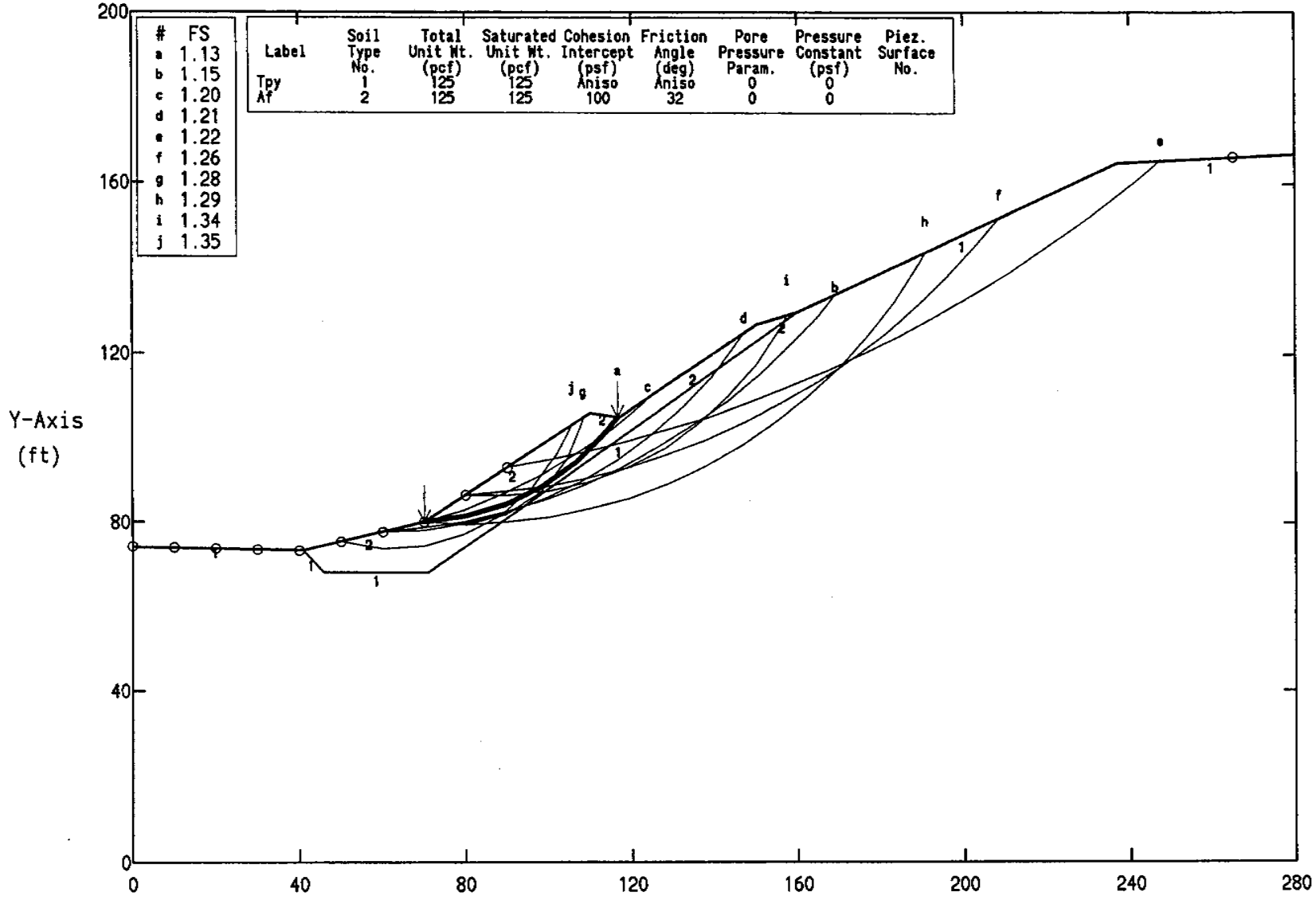

35.00
A 70.00
X 105.00
I 140.00
S 175.00
210.00
F 245.00
T 280.00

SECTION F-F'
PSEUDOSTATIC ANALYSIS

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Section F, Proposed Seismic, W/ Stab

Ten Most Critical. C:0G224FPE.PLT By: JMK 12/20/2000 6:50am



STABL6H FSmin=1.13 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer`s Method of Slices

Run Date: 12/20/2000
Time of Run: 6:50am
Run By: JMK
Input Data Filename: C:0G224FPE
Output Filename: C:0G224FPE.OUT
Plotted Output Filename: C:0G224FPE.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Section F, Proposed Seismic, W/ Stab

BOUNDARY COORDINATES

8 Top Boundaries
11 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	74.00	41.00	73.00	1
2	41.00	73.00	70.00	80.00	2
3	70.00	80.00	110.00	106.00	2
4	110.00	106.00	117.00	105.00	2
5	117.00	105.00	150.00	127.00	2
6	150.00	127.00	160.00	130.00	2
7	160.00	130.00	237.00	165.00	1
8	237.00	165.00	280.00	167.00	1
9	41.00	73.00	46.00	68.00	1
10	46.00	68.00	71.00	68.00	1
11	71.00	68.00	160.00	130.00	1

1

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	40.0	.00	.0	0
2	125.0	125.0	100.0	32.0	.00	.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)

Soil Type 1 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	28.0	100.0	40.0
2	35.0	.0	22.0
3	90.0	100.0	40.0

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 psf

1

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = .00 ft.
and X = 90.00 ft.

Each Surface Terminates Between X = 90.00 ft.
and X = 265.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = .00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	70.00	80.00
2	79.90	81.41
3	89.46	84.33
4	98.45	88.71
5	106.66	94.43
6	113.87	101.35
7	116.68	105.05

Circle Center At X = 66.0 ; Y = 144.0 and Radius, 64.2

*** 1.133 ***

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	60.00	77.59
2	69.95	78.62
3	79.81	80.28
4	89.54	82.58
5	99.10	85.50
6	108.46	89.03
7	117.57	93.16
8	126.39	97.86
9	134.90	103.12
10	143.05	108.92
11	150.81	115.23
12	158.14	122.02
13	165.03	129.28
14	169.06	134.12

Circle Center At X = 49.0 ; Y = 232.5 and Radius, 155.3

*** 1.149 ***

1

Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	70.00	80.00
2	79.54	83.00
3	88.83	86.71
4	97.81	91.11
5	106.43	96.18
6	114.64	101.88
7	122.41	108.18
8	123.91	109.61

Circle Center At X = 35.0 ; Y = 207.8 and Radius, 132.5

*** 1.198 ***

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	60.00	77.59
2	69.98	78.22
3	79.86	79.78
4	89.55	82.26
5	98.96	85.63
6	108.02	89.86
7	116.65	94.92
8	124.76	100.77
9	132.30	107.34
10	139.19	114.59
11	145.37	122.45
12	147.03	125.02

Circle Center At X = 58.2 ; Y = 184.7 and Radius, 107.1

*** 1.209 ***

1

Failure Surface Specified By 19 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	90.00	93.00
2	99.83	94.85
3	109.59	97.00
4	119.29	99.43
5	128.92	102.15
6	138.45	105.16
7	147.90	108.44
8	157.24	112.01
9	166.48	115.85
10	175.59	119.96
11	184.58	124.34
12	193.44	128.99
13	202.15	133.89
14	210.71	139.06
15	219.12	144.47
16	227.36	150.13
17	235.43	156.04
18	243.33	162.18
19	247.32	165.48

Circle Center At X = 32.4 ; Y = 425.1 and Radius, 337.0

*** 1.215 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	80.00	86.50
2	89.97	87.33
3	99.87	88.72
4	109.68	90.66
5	119.36	93.15
6	128.90	96.18
7	138.24	99.73
8	147.37	103.81
9	156.26	108.39
10	164.88	113.46
11	173.20	119.00
12	181.20	125.00
13	188.85	131.45
14	196.13	138.31
15	203.01	145.56
16	208.49	152.04

Circle Center At X = 70.2 ; Y = 264.6 and Radius, 178.4

*** 1.260 ***

1

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	70.00	80.00
2	79.98	79.35
3	89.67	81.84
4	98.10	87.20
5	104.46	94.93

6	108.10	104.24
7	108.13	104.79

Circle Center At X = 77.0 ; Y = 111.0 and Radius, 31.8

*** 1.283 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	70.00	80.00
2	79.99	79.62
3	89.99	80.02
4	99.92	81.20
5	109.72	83.15
6	119.35	85.86
7	128.73	89.32
8	137.81	93.50
9	146.54	98.38
10	154.86	103.93
11	162.72	110.11
12	170.08	116.89
13	176.88	124.22
14	183.08	132.06
15	188.66	140.37
16	190.67	143.94

Circle Center At X = 79.9 ; Y = 207.4 and Radius, 127.7

*** 1.289 ***

1

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	80.00	86.50
2	90.00	86.34
3	99.94	87.41
4	109.68	89.70
5	119.05	93.18
6	127.93	97.78
7	136.17	103.45
8	143.65	110.09
9	150.25	117.60
10	155.87	125.87
11	157.62	129.29

Circle Center At X = 86.3 ; Y = 167.1 and Radius, 80.9

*** 1.338 ***

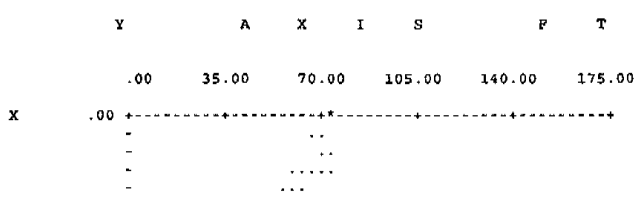
Failure Surface Specified By 8 Coordinate Points

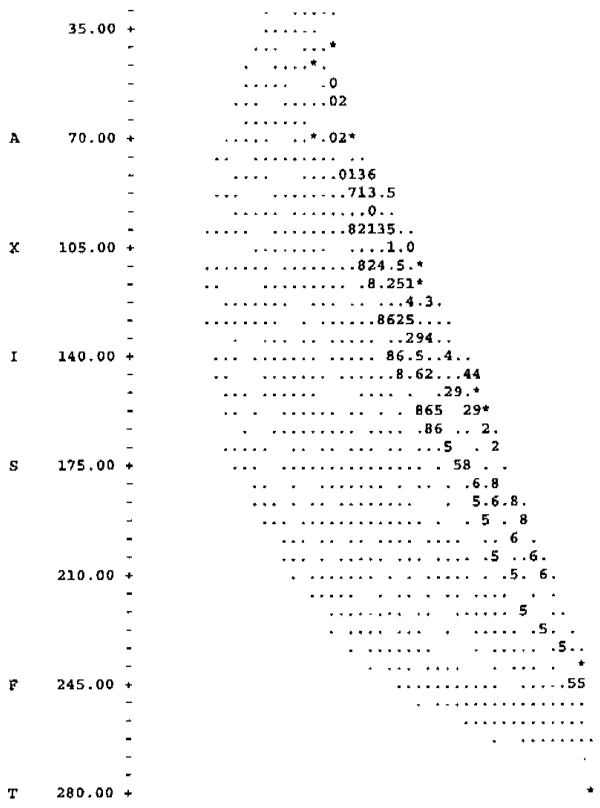
Point No.	X-Surf (ft)	Y-Surf (ft)
1	50.00	75.17
2	59.88	73.65
3	69.87	74.26
4	79.49	76.98
5	88.31	81.68
6	95.94	88.15
7	102.02	96.09
8	105.21	102.89

Circle Center At X = 62.0 ; Y = 120.4 and Radius, 46.8

*** 1.346 ***

1



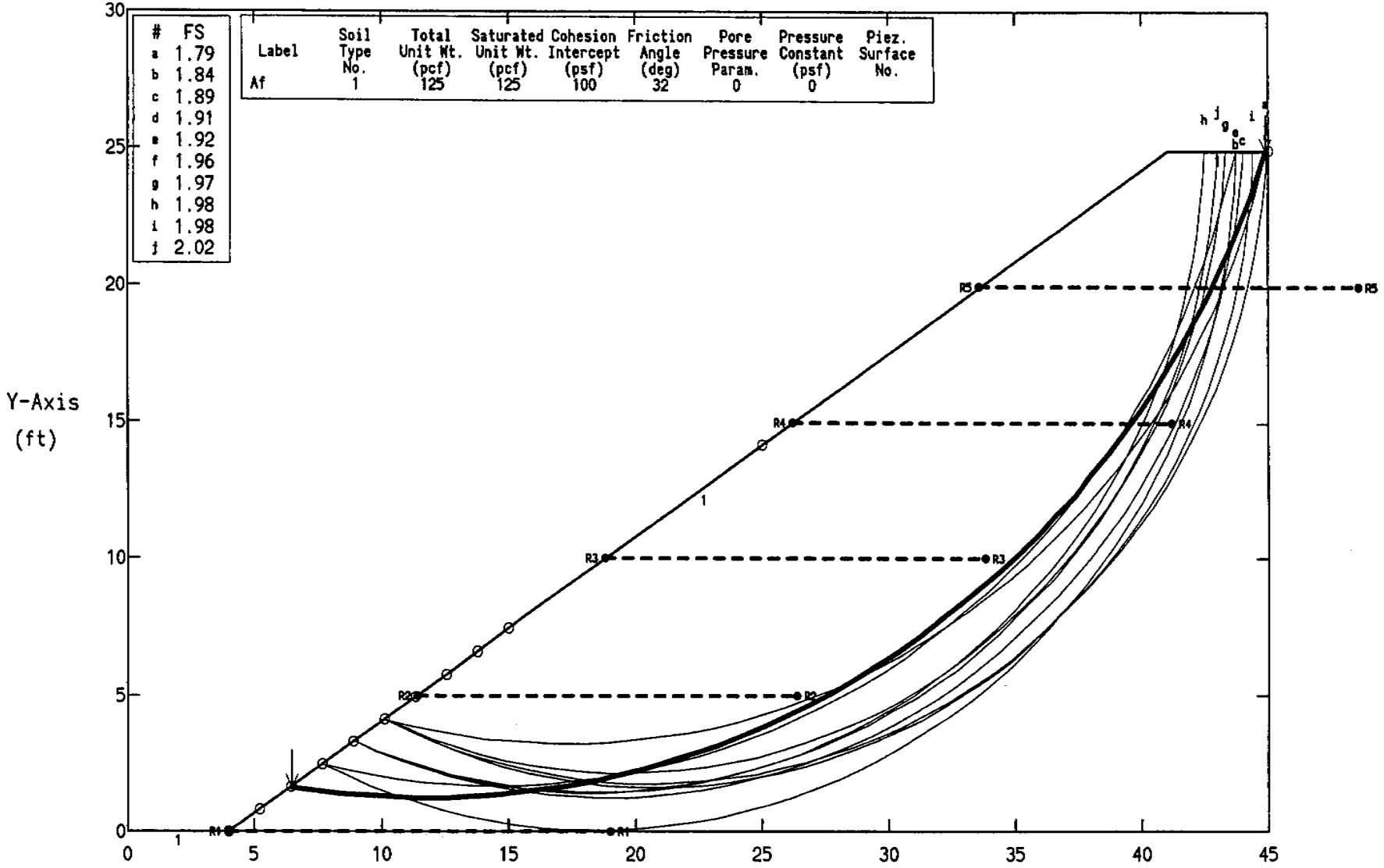

35.00
70.00
A
105.00
X
140.00
I
175.00
S
210.00
F
245.00
T
280.00

FILL SLOPE
SURFICIAL STABILTY ANALYSIS
WITH GEOGRID REINFORCEMENT

THIS PAGE LEFT BLANK INTENTIONALLY

Wedding Chapel, Anaheim CA. Surficial Fill Slope, Static

Ten Most Critical. C:0G224SFS.PLT By: JMK 12/20/2000 12:01pm



Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer's Method of Slices

Run Date: 12/20/2000
Time of Run: 11:44am
Run By: JMK
Input Data Filename: C:0G224SFS
Output Filename: C:0G224SFS.OUT
Plotted Output Filename: C:0G224SFS.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Surficial Fill Slope, Static

BOUNDARY COORDINATES

3 Top Boundaries
3 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	.00	4.00	.00	1
2	4.00	.00	41.00	25.00	1
3	41.00	25.00	45.00	25.00	1

1

ISOTROPIC SOIL PARAMETERS

1 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	32.0	.00	.0	0

1

REINFORCING LAYER(S)

5 REINFORCING LAYER(S) SPECIFIED

REINFORCING LAYER NO. 1

2 POINTS DEFINE THIS LAYER

POINT NO.	X-COORD	Y-COORD	FORCE	INCLINATION FACTOR
1	4.00	.00	3089.00	.000
2	19.00	.00	3089.00	.000

REINFORCING LAYER NO. 2

2 POINTS DEFINE THIS LAYER

POINT NO.	X-COORD	Y-COORD	FORCE	INCLINATION FACTOR
1	11.40	5.00	3089.00	.000
2	26.40	5.00	3089.00	.000

REINFORCING LAYER NO. 3

2 POINTS DEFINE THIS LAYER

POINT NO.	X-COORD	Y-COORD	FORCE	INCLINATION FACTOR
1	18.80	10.00	3089.00	.000
2	33.80	10.00	3089.00	.000

REINFORCING LAYER NO. 4

2 POINTS DEFINE THIS LAYER

POINT NO.	X-COORD	Y-COORD	FORCE	INCLINATION FACTOR
1	26.20	15.00	3089.00	.000
2	41.20	15.00	3089.00	.000

REINFORCING LAYER NO. 5

2 POINTS DEFINE THIS LAYER

POINT NO.	X-COORD	Y-COORD	FORCE	INCLINATION FACTOR
1	33.60	20.00	3089.00	.000
2	48.60	20.00	3089.00	.000

1

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced Along The Ground Surface Between X = 4.00 ft.
and X = 15.00 ft.

Each Surface Terminates Between X = 25.00 ft.
and X = 45.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = .00 ft.

1.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Examined. They Are Ordered - Most Critical First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 50 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	6.44	1.65
2	7.44	1.51
3	8.43	1.40
4	9.43	1.32
5	10.42	1.27
6	11.42	1.25
7	12.42	1.25
8	13.42	1.28
9	14.42	1.34
10	15.42	1.43
11	16.41	1.55
12	17.40	1.70
13	18.38	1.88
14	19.36	2.08
15	20.34	2.31
16	21.30	2.57
17	22.26	2.85
18	23.21	3.17
19	24.15	3.51
20	25.08	3.88
21	26.00	4.27
22	26.91	4.69
23	27.80	5.14
24	28.68	5.61
25	29.55	6.10
26	30.41	6.62
27	31.24	7.17
28	32.07	7.74
29	32.87	8.33
30	33.66	8.94
31	34.43	9.58
32	35.18	10.24
33	35.92	10.92
34	36.63	11.62
35	37.32	12.34
36	38.00	13.08
37	38.65	13.84
38	39.28	14.62
39	39.88	15.42
40	40.46	16.23

41	41.02	17.06
42	41.56	17.90
43	42.07	18.76
44	42.56	19.63
45	43.02	20.52
46	43.46	21.42
47	43.87	22.33
48	44.25	23.26
49	44.61	24.19
50	44.89	25.00

Circle Center At X = 11.8 ; Y = 36.2 and Radius, 35.0

*** 1.786 ***

Failure Surface Specified By 49 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	7.67	2.48
2	8.64	2.26
3	9.63	2.08
4	10.62	1.94
5	11.61	1.82
6	12.61	1.74
7	13.61	1.69
8	14.61	1.68
9	15.61	1.70
10	16.60	1.75
11	17.60	1.84
12	18.59	1.95
13	19.58	2.11
14	20.56	2.29
15	21.54	2.51
16	22.51	2.76
17	23.47	3.04
18	24.42	3.36
19	25.35	3.70
20	26.28	4.08
21	27.19	4.49
22	28.09	4.93
23	28.98	5.40
24	29.84	5.89
25	30.69	6.42
26	31.53	6.98
27	32.34	7.56
28	33.13	8.17
29	33.90	8.80
30	34.65	9.46
31	35.38	10.15
32	36.09	10.86
33	36.77	11.59
34	37.42	12.35
35	38.05	13.12
36	38.66	13.92
37	39.23	14.74
38	39.78	15.57
39	40.31	16.42
40	40.80	17.30
41	41.26	18.18
42	41.69	19.08
43	42.09	20.00
44	42.47	20.93
45	42.81	21.87
46	43.12	22.82
47	43.39	23.78
48	43.64	24.75
49	43.69	25.00

Circle Center At X = 14.5 ; Y = 31.6 and Radius, 29.9

*** 1.840 ***

1

Failure Surface Specified By 50 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	8.89	3.30
2	9.82	2.93
3	10.76	2.59
4	11.71	2.28
5	12.67	2.02
6	13.65	1.79
7	14.63	1.60
8	15.62	1.46
9	16.61	1.35
10	17.61	1.28
11	18.61	1.25
12	19.61	1.26

13	20.61	1.31
14	21.60	1.40
15	22.60	1.52
16	23.58	1.69
17	24.56	1.90
18	25.53	2.15
19	26.49	2.43
20	27.43	2.75
21	28.37	3.11
22	29.29	3.51
23	30.19	3.94
24	31.07	4.41
25	31.94	4.91
26	32.78	5.44
27	33.60	6.01
28	34.40	6.61
29	35.18	7.25
30	35.93	7.91
31	36.65	8.60
32	37.34	9.32
33	38.01	10.07
34	38.64	10.84
35	39.24	11.64
36	39.81	12.46
37	40.35	13.30
38	40.86	14.17
39	41.33	15.05
40	41.76	15.95
41	42.16	16.87
42	42.52	17.80
43	42.84	18.75
44	43.13	19.71
45	43.38	20.67
46	43.59	21.65
47	43.76	22.64
48	43.89	23.63
49	43.98	24.62
50	44.00	25.00

Circle Center At X = 18.9 ; Y = 26.4 and Radius, 25.2

*** 1.890 ***

Failure Surface Specified By 47 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	10.11	4.13
2	11.08	3.89
3	12.06	3.69
4	13.05	3.53
5	14.04	3.40
6	15.04	3.30
7	16.03	3.24
8	17.03	3.21
9	18.03	3.22
10	19.03	3.27
11	20.03	3.35
12	21.02	3.46
13	22.01	3.61
14	23.00	3.80
15	23.97	4.01
16	24.94	4.27
17	25.90	4.55
18	26.84	4.87
19	27.78	5.23
20	28.70	5.61
21	29.61	6.03
22	30.50	6.48
23	31.38	6.96
24	32.24	7.47
25	33.08	8.01
26	33.90	8.58
27	34.70	9.18
28	35.48	9.81
29	36.24	10.46
30	36.97	11.14
31	37.68	11.85
32	38.37	12.58
33	39.02	13.33
34	39.65	14.10
35	40.26	14.90
36	40.83	15.72
37	41.38	16.56
38	41.89	17.42
39	42.38	18.29
40	42.83	19.18
41	43.26	20.09
42	43.65	21.01
43	44.01	21.94
44	44.33	22.89
45	44.62	23.84
46	44.88	24.81
47	44.93	25.00

Circle Center At X = 17.3 ; Y = 31.7 and Radius, 28.4

*** 1.912 ***

1

Failure Surface Specified By 52 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	7.67	2.48
2	8.58	2.07
3	9.51	1.69
4	10.45	1.36
5	11.40	1.06
6	12.37	.80
7	13.34	.57
8	14.32	.39
9	15.31	.24
10	16.31	.14
11	17.31	.07
12	18.31	.04
13	19.31	.06
14	20.30	.11
15	21.30	.20
16	22.29	.33
17	23.28	.50
18	24.25	.71
19	25.22	.96
20	26.18	1.25
21	27.13	1.57
22	28.06	1.93
23	28.98	2.33
24	29.88	2.77
25	30.76	3.24
26	31.62	3.74
27	32.47	4.28
28	33.29	4.85
29	34.09	5.45
30	34.86	6.09
31	35.61	6.75
32	36.33	7.45
33	37.02	8.17
34	37.68	8.92
35	38.32	9.69
36	38.92	10.49
37	39.49	11.31
38	40.02	12.15
39	40.53	13.02
40	41.00	13.90
41	41.43	14.80
42	41.82	15.72
43	42.18	16.65
44	42.51	17.60
45	42.79	18.56
46	43.04	19.53
47	43.25	20.51
48	43.42	21.49
49	43.55	22.48
50	43.64	23.48
51	43.69	24.48
52	43.69	25.00

Circle Center At X = 18.5 ; Y = 25.3 and Radius, 25.2

*** 1.916 ***

Failure Surface Specified By 49 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	10.11	4.13
2	11.02	3.72
3	11.95	3.34
4	12.89	3.01
5	13.85	2.71
6	14.81	2.45
7	15.79	2.23
8	16.77	2.06
9	17.76	1.92
10	18.76	1.82
11	19.76	1.77
12	20.76	1.75
13	21.76	1.78
14	22.75	1.85
15	23.75	1.96
16	24.74	2.10
17	25.72	2.29
18	26.69	2.52
19	27.66	2.79
20	28.61	3.10

21	29.54	3.45
22	30.47	3.84
23	31.37	4.26
24	32.26	4.72
25	33.13	5.22
26	33.98	5.75
27	34.80	6.31
28	35.60	6.91
29	36.38	7.54
30	37.13	8.21
31	37.85	8.90
32	38.54	9.62
33	39.20	10.37
34	39.83	11.15
35	40.43	11.95
36	40.99	12.77
37	41.52	13.62
38	42.02	14.49
39	42.48	15.38
40	42.90	16.28
41	43.29	17.21
42	43.63	18.14
43	43.94	19.10
44	44.21	20.06
45	44.44	21.03
46	44.63	22.01
47	44.77	23.00
48	44.88	24.00
49	44.95	25.00

Circle Center At X = 20.6 ; Y = 26.1 and Radius, 24.4

*** 1.960 ***

1

Failure Surface Specified By 49 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	8.89	3.30
2	9.82	2.94
3	10.77	2.62
4	11.73	2.34
5	12.70	2.09
6	13.68	1.89
7	14.66	1.72
8	15.65	1.59
9	16.65	1.51
10	17.65	1.46
11	18.65	1.45
12	19.65	1.48
13	20.65	1.56
14	21.64	1.67
15	22.63	1.82
16	23.61	2.01
17	24.58	2.24
18	25.55	2.51
19	26.50	2.82
20	27.44	3.16
21	28.36	3.54
22	29.27	3.96
23	30.16	4.42
24	31.03	4.91
25	31.88	5.43
26	32.71	5.99
27	33.52	6.58
28	34.30	7.20
29	35.06	7.85
30	35.79	8.54
31	36.49	9.25
32	37.17	9.99
33	37.81	10.75
34	38.42	11.54
35	39.00	12.36
36	39.55	13.19
37	40.06	14.05
38	40.54	14.93
39	40.99	15.83
40	41.39	16.74
41	41.76	17.67
42	42.10	18.61
43	42.39	19.57
44	42.65	20.53
45	42.87	21.51
46	43.05	22.49
47	43.18	23.48
48	43.28	24.48
49	43.32	25.00

Circle Center At X = 18.3 ; Y = 26.5 and Radius, 25.0

*** 1.967 ***

Failure Surface Specified By 49 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	8.89	3.30
2	9.82	2.93
3	10.76	2.60
4	11.72	2.31
5	12.69	2.06
6	13.66	1.85
7	14.65	1.68
8	15.64	1.55
9	16.64	1.46
10	17.64	1.42
11	18.64	1.41
12	19.64	1.45
13	20.63	1.52
14	21.63	1.64
15	22.61	1.80
16	23.59	2.00
17	24.56	2.24
18	25.52	2.52
19	26.47	2.84
20	27.41	3.20
21	28.32	3.60
22	29.22	4.03
23	30.11	4.50
24	30.97	5.01
25	31.81	5.55
26	32.62	6.13
27	33.42	6.74
28	34.18	7.38
29	34.92	8.05
30	35.63	8.76
31	36.31	9.49
32	36.96	10.25
33	37.58	11.03
34	38.17	11.85
35	38.72	12.68
36	39.23	13.54
37	39.71	14.41
38	40.16	15.31
39	40.56	16.22
40	40.93	17.15
41	41.26	18.10
42	41.55	19.06
43	41.80	20.02
44	42.01	21.00
45	42.18	21.99
46	42.31	22.98
47	42.40	23.97
48	42.44	24.97
49	42.44	25.00

Circle Center At X = 18.3 ; Y = 25.6 and Radius, 24.2

*** 1.978 ***

1

Failure Surface Specified By 49 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	10.11	4.13
2	11.01	3.70
3	11.94	3.31
4	12.87	2.96
5	13.82	2.65
6	14.78	2.37
7	15.76	2.14
8	16.74	1.96
9	17.73	1.81
10	18.72	1.70
11	19.72	1.64
12	20.72	1.62
13	21.72	1.64
14	22.72	1.70
15	23.71	1.81
16	24.70	1.95
17	25.68	2.14
18	26.66	2.37
19	27.62	2.64
20	28.57	2.96
21	29.51	3.31
22	30.43	3.70
23	31.33	4.13
24	32.21	4.59
25	33.08	5.10
26	33.92	5.64
27	34.74	6.21
28	35.53	6.82
29	36.30	7.46

30	37.04	8.14
31	37.75	8.84
32	38.43	9.58
33	39.07	10.34
34	39.69	11.13
35	40.27	11.94
36	40.82	12.78
37	41.33	13.64
38	41.80	14.52
39	42.24	15.42
40	42.63	16.34
41	42.99	17.27
42	43.31	18.22
43	43.59	19.18
44	43.83	20.15
45	44.02	21.13
46	44.18	22.12
47	44.29	23.11
48	44.36	24.11
49	44.39	25.00

Circle Center At X = 20.7 ; Y = 25.3 and Radius, 23.7

*** 1.980 ***

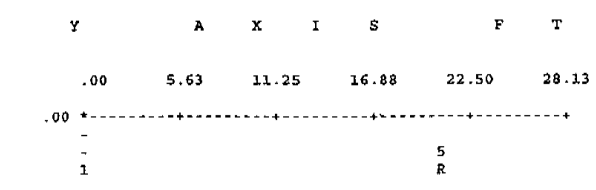
Failure Surface Specified By 47 Coordinate Points

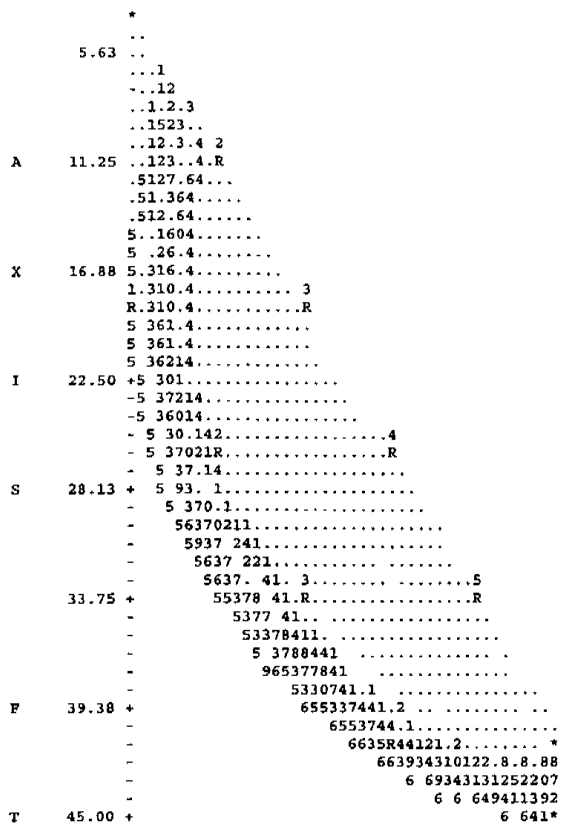
Point No.	X-Surf (ft)	Y-Surf (ft)
1	10.11	4.13
2	11.03	3.74
3	11.97	3.40
4	12.93	3.10
5	13.89	2.83
6	14.87	2.61
7	15.85	2.43
8	16.84	2.29
9	17.84	2.20
10	18.83	2.14
11	19.83	2.13
12	20.83	2.17
13	21.83	2.24
14	22.82	2.36
15	23.81	2.52
16	24.79	2.72
17	25.76	2.97
18	26.72	3.25
19	27.66	3.58
20	28.59	3.94
21	29.51	4.35
22	30.40	4.79
23	31.28	5.27
24	32.14	5.79
25	32.97	6.35
26	33.77	6.94
27	34.56	7.56
28	35.31	8.22
29	36.04	8.91
30	36.73	9.63
31	37.39	10.37
32	38.03	11.15
33	38.62	11.95
34	39.19	12.78
35	39.71	13.63
36	40.20	14.50
37	40.66	15.39
38	41.07	16.30
39	41.44	17.23
40	41.78	18.17
41	42.07	19.13
42	42.33	20.09
43	42.54	21.07
44	42.71	22.06
45	42.83	23.05
46	42.92	24.04
47	42.96	25.00

Circle Center At X = 19.6 ; Y = 25.5 and Radius, 23.4

*** 2.020 ***

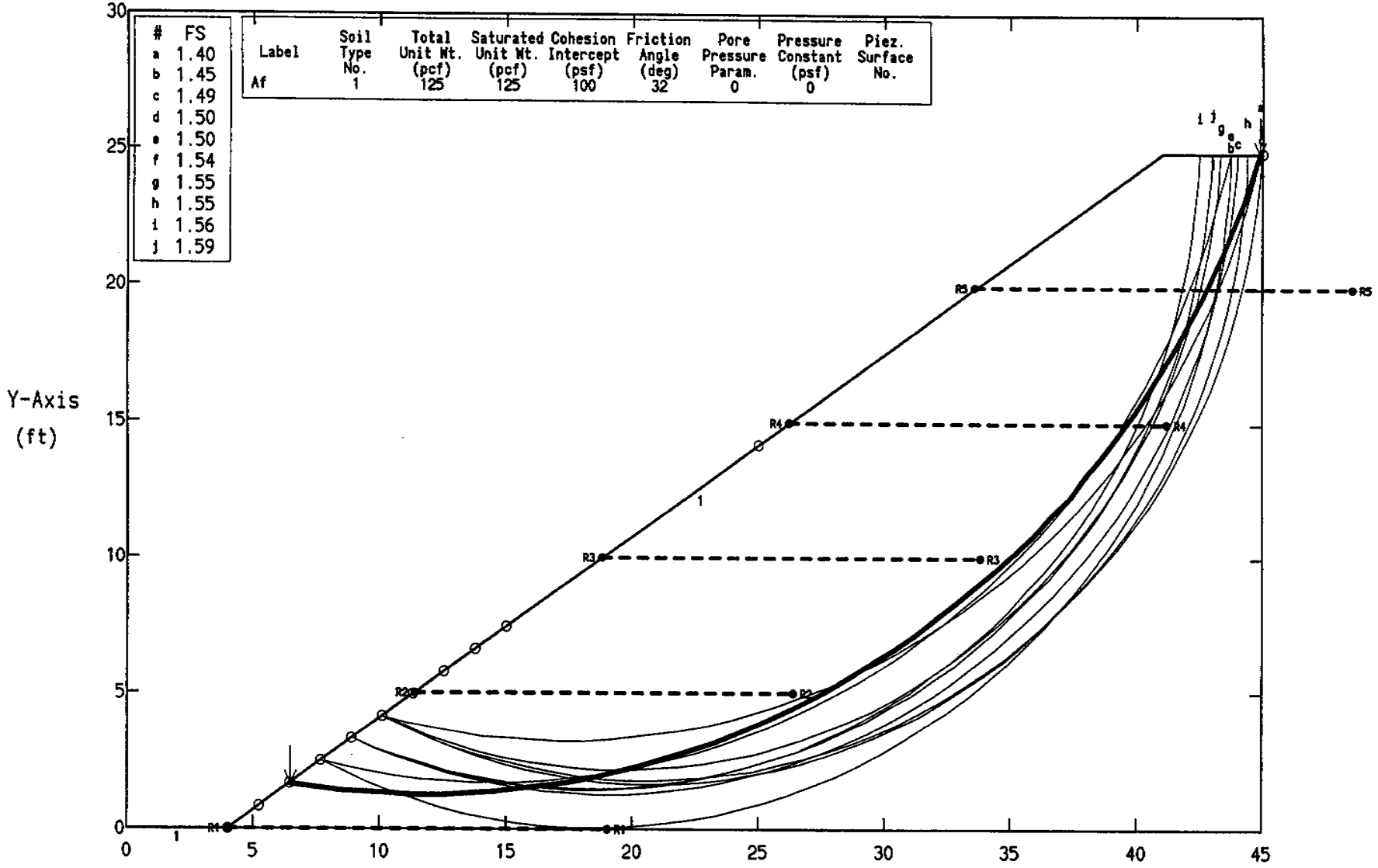
1




A
X
I
S
F
T
5.63
11.25
16.88
22.50
28.13
33.75
39.38
45.00

Wedding Chapel, Anaheim CA. Surficial Fill Slope, Seismic

Ten Most Critical. C:0G224SFE.PLT By: JMK 12/20/2000 12:01pm



STABL6H FSmin=1.40 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

** STABL6H **
by
Purdue University

1

--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer`s Method of Slices

Run Date: 12/20/2000
Time of Run: 11:48am
Run By: JMK
Input Data Filename: C:0G224SFE
Output Filename: C:0G224SFE.OUT
Plotted Output Filename: C:0G224SFE.PLT

PROBLEM DESCRIPTION Wedding Chapel, Anaheim CA.
Surficial Fill Slope, Seismic

BOUNDARY COORDINATES

3 Top Boundaries
3 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	.00	4.00	.00	1
2	4.00	.00	41.00	25.00	1
3	41.00	25.00	45.00	25.00	1

1

ISOTROPIC SOIL PARAMETERS

1 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	125.0	100.0	32.0	.00	.0	0

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 psf

1

REINFORCING LAYER(S)

5 REINFORCING LAYER(S) SPECIFIED

REINFORCING LAYER NO. 1

2 POINTS DEFINE THIS LAYER

POINT NO.	X-COORD	Y-COORD	FORCE	INCLINATION FACTOR
1	4.00	.00	3089.00	.000
2	19.00	.00	3089.00	.000

REINFORCING LAYER NO. 2

2 POINTS DEFINE THIS LAYER

POINT NO.	X-COORD	Y-COORD	FORCE	INCLINATION FACTOR
1	11.40	5.00	3089.00	.000
2	26.40	5.00	3089.00	.000

REINFORCING LAYER NO. 3

2 POINTS DEFINE THIS LAYER

POINT	X-COORD	Y-COORD	FORCE	INCLINATION

NO.				FACTOR
1	18.80	10.00	3089.00	.000
2	33.80	10.00	3089.00	.000

REINFORCING LAYER NO. 4

2 POINTS DEFINE THIS LAYER

POINT NO.	X-COORD	Y-COORD	FORCE	INCLINATION FACTOR
1	26.20	15.00	3089.00	.000
2	41.20	15.00	3089.00	.000

REINFORCING LAYER NO. 5

2 POINTS DEFINE THIS LAYER

POINT NO.	X-COORD	Y-COORD	FORCE	INCLINATION FACTOR
1	33.60	20.00	3089.00	.000
2	48.60	20.00	3089.00	.000

1

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

100 Trial Surfaces Have Been Generated.

10 Surfaces Initiate From Each Of 10 Points Equally Spaced Along The Ground Surface Between X = 4.00 ft.
and X = 15.00 ft.

Each Surface Terminates Between X = 25.00 ft.
and X = 45.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = .00 ft.

1.00 ft. Line Segments Define Each Trial Failure Surface.

1

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Examined. They Are Ordered - Most Critical First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 50 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	6.44	1.65
2	7.44	1.51
3	8.43	1.40
4	9.43	1.32
5	10.42	1.27
6	11.42	1.25
7	12.42	1.25
8	13.42	1.28
9	14.42	1.34
10	15.42	1.43
11	16.41	1.55
12	17.40	1.70
13	18.38	1.88
14	19.36	2.08
15	20.34	2.31
16	21.30	2.57
17	22.26	2.85
18	23.21	3.17
19	24.15	3.51
20	25.08	3.88
21	26.00	4.27
22	26.91	4.69
23	27.80	5.14
24	28.68	5.61
25	29.55	6.10
26	30.41	6.62
27	31.24	7.17
28	32.07	7.74
29	32.87	8.33
30	33.66	8.94

31	34.43	9.58
32	35.18	10.24
33	35.92	10.92
34	36.63	11.62
35	37.32	12.34
36	38.00	13.08
37	38.65	13.84
38	39.28	14.62
39	39.88	15.42
40	40.46	16.23
41	41.02	17.06
42	41.56	17.90
43	42.07	18.76
44	42.56	19.63
45	43.02	20.52
46	43.46	21.42
47	43.87	22.33
48	44.25	23.26
49	44.61	24.19
50	44.89	25.00

Circle Center At X = 11.8 ; Y = 36.2 and Radius, 35.0

*** 1.401 ***

Failure Surface Specified By 49 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	7.67	2.48
2	8.64	2.26
3	9.63	2.08
4	10.62	1.94
5	11.61	1.82
6	12.61	1.74
7	13.61	1.69
8	14.61	1.68
9	15.61	1.70
10	16.60	1.75
11	17.60	1.84
12	18.59	1.95
13	19.58	2.11
14	20.56	2.29
15	21.54	2.51
16	22.51	2.76
17	23.47	3.04
18	24.42	3.36
19	25.35	3.70
20	26.28	4.08
21	27.19	4.49
22	28.09	4.93
23	28.98	5.40
24	29.84	5.89
25	30.69	6.42
26	31.53	6.98
27	32.34	7.56
28	33.13	8.17
29	33.90	8.80
30	34.65	9.46
31	35.38	10.15
32	36.09	10.86
33	36.77	11.59
34	37.42	12.35
35	38.05	13.12
36	38.66	13.92
37	39.23	14.74
38	39.78	15.57
39	40.31	16.42
40	40.80	17.30
41	41.26	18.18
42	41.69	19.08
43	42.09	20.00
44	42.47	20.93
45	42.81	21.87
46	43.12	22.82
47	43.39	23.78
48	43.64	24.75
49	43.69	25.00

Circle Center At X = 14.5 ; Y = 31.6 and Radius, 29.9

*** 1.449 ***

1

Failure Surface Specified By 50 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	8.89	3.30
2	9.82	2.93

3	10.76	2.59
4	11.71	2.28
5	12.67	2.02
6	13.65	1.79
7	14.63	1.60
8	15.62	1.46
9	16.61	1.35
10	17.61	1.28
11	18.61	1.25
12	19.61	1.26
13	20.61	1.31
14	21.60	1.40
15	22.60	1.52
16	23.58	1.69
17	24.56	1.90
18	25.53	2.15
19	26.49	2.43
20	27.43	2.75
21	28.37	3.11
22	29.29	3.51
23	30.19	3.94
24	31.07	4.41
25	31.94	4.91
26	32.78	5.44
27	33.60	6.01
28	34.40	6.61
29	35.18	7.25
30	35.93	7.91
31	36.65	8.60
32	37.34	9.32
33	38.01	10.07
34	38.64	10.84
35	39.24	11.64
36	39.81	12.46
37	40.35	13.30
38	40.86	14.17
39	41.33	15.05
40	41.76	15.95
41	42.16	16.87
42	42.52	17.80
43	42.84	18.75
44	43.13	19.71
45	43.38	20.67
46	43.59	21.65
47	43.76	22.64
48	43.89	23.63
49	43.98	24.62
50	44.00	25.00

Circle Center At X = 18.9 ; Y = 26.4 and Radius, 25.2

*** 1.489 ***

Failure Surface Specified By 47 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	10.11	4.13
2	11.08	3.89
3	12.06	3.69
4	13.05	3.53
5	14.04	3.40
6	15.04	3.30
7	16.03	3.24
8	17.03	3.21
9	18.03	3.22
10	19.03	3.27
11	20.03	3.35
12	21.02	3.46
13	22.01	3.61
14	23.00	3.80
15	23.97	4.01
16	24.94	4.27
17	25.90	4.55
18	26.84	4.87
19	27.78	5.23
20	28.70	5.61
21	29.61	6.03
22	30.50	6.48
23	31.38	6.96
24	32.24	7.47
25	33.08	8.01
26	33.90	8.58
27	34.70	9.18
28	35.48	9.81
29	36.24	10.46
30	36.97	11.14
31	37.68	11.85
32	38.37	12.58
33	39.02	13.33
34	39.65	14.10
35	40.26	14.90
36	40.83	15.72
37	41.38	16.56
38	41.89	17.42

39	42.38	18.29
40	42.83	19.18
41	43.26	20.09
42	43.65	21.01
43	44.01	21.94
44	44.33	22.89
45	44.62	23.84
46	44.88	24.81
47	44.93	25.00

Circle Center At X = 17.3 ; Y = 31.7 and Radius, 28.4

*** 1.500 ***

1

Failure Surface Specified By 52 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	7.67	2.48
2	8.58	2.07
3	9.51	1.69
4	10.45	1.36
5	11.40	1.06
6	12.37	.80
7	13.34	.57
8	14.32	.39
9	15.31	.24
10	16.31	.14
11	17.31	.07
12	18.31	.04
13	19.31	.06
14	20.30	.11
15	21.30	.20
16	22.29	.33
17	23.28	.50
18	24.25	.71
19	25.22	.96
20	26.18	1.25
21	27.13	1.57
22	28.06	1.93
23	28.98	2.33
24	29.88	2.77
25	30.76	3.24
26	31.62	3.74
27	32.47	4.28
28	33.29	4.85
29	34.09	5.45
30	34.86	6.09
31	35.61	6.75
32	36.33	7.45
33	37.02	8.17
34	37.68	8.92
35	38.32	9.69
36	38.92	10.49
37	39.49	11.31
38	40.02	12.15
39	40.53	13.02
40	41.00	13.90
41	41.43	14.80
42	41.82	15.72
43	42.18	16.65
44	42.51	17.60
45	42.79	18.56
46	43.04	19.53
47	43.25	20.51
48	43.42	21.49
49	43.55	22.48
50	43.64	23.48
51	43.69	24.48
52	43.69	25.00

Circle Center At X = 18.5 ; Y = 25.3 and Radius, 25.2

*** 1.503 ***

Failure Surface Specified By 49 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	10.11	4.13
2	11.02	3.72
3	11.95	3.34
4	12.89	3.01
5	13.85	2.71
6	14.81	2.45
7	15.79	2.23
8	16.77	2.06
9	17.76	1.92
10	18.76	1.82

11	19.76	1.77
12	20.76	1.75
13	21.76	1.78
14	22.75	1.85
15	23.75	1.96
16	24.74	2.10
17	25.72	2.29
18	26.69	2.52
19	27.66	2.79
20	28.61	3.10
21	29.54	3.45
22	30.47	3.84
23	31.37	4.26
24	32.26	4.72
25	33.13	5.22
26	33.98	5.75
27	34.80	6.31
28	35.60	6.91
29	36.38	7.54
30	37.13	8.21
31	37.85	8.90
32	38.54	9.62
33	39.20	10.37
34	39.83	11.15
35	40.43	11.95
36	40.99	12.77
37	41.52	13.62
38	42.02	14.49
39	42.48	15.38
40	42.90	16.28
41	43.29	17.21
42	43.63	18.14
43	43.94	19.10
44	44.21	20.06
45	44.44	21.03
46	44.63	22.01
47	44.77	23.00
48	44.88	24.00
49	44.95	25.00

Circle Center At X = 20.6 ; Y = 26.1 and Radius, 24.4

*** 1.535 ***

1

Failure Surface Specified By 49 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	8.89	3.30
2	9.82	2.94
3	10.77	2.62
4	11.73	2.34
5	12.70	2.09
6	13.68	1.89
7	14.66	1.72
8	15.65	1.59
9	16.65	1.51
10	17.65	1.46
11	18.65	1.45
12	19.65	1.48
13	20.65	1.56
14	21.64	1.67
15	22.63	1.82
16	23.61	2.01
17	24.58	2.24
18	25.55	2.51
19	26.50	2.82
20	27.44	3.16
21	28.36	3.54
22	29.27	3.96
23	30.16	4.42
24	31.03	4.91
25	31.88	5.43
26	32.71	5.99
27	33.52	6.58
28	34.30	7.20
29	35.06	7.85
30	35.79	8.54
31	36.49	9.25
32	37.17	9.99
33	37.81	10.75
34	38.42	11.54
35	39.00	12.36
36	39.55	13.19
37	40.06	14.05
38	40.54	14.93
39	40.99	15.83
40	41.39	16.74
41	41.76	17.67
42	42.10	18.61
43	42.39	19.57
44	42.65	20.53
45	42.87	21.51
46	43.05	22.49

47	43.18	23.48
48	43.28	24.48
49	43.32	25.00

Circle Center At X = 18.3 ; Y = 26.5 and Radius, 25.0

*** 1.545 ***

Failure Surface Specified By 49 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	10.11	4.13
2	11.01	3.70
3	11.94	3.31
4	12.87	2.96
5	13.82	2.65
6	14.78	2.37
7	15.76	2.14
8	16.74	1.96
9	17.73	1.81
10	18.72	1.70
11	19.72	1.64
12	20.72	1.62
13	21.72	1.64
14	22.72	1.70
15	23.71	1.81
16	24.70	1.95
17	25.68	2.14
18	26.66	2.37
19	27.62	2.64
20	28.57	2.96
21	29.51	3.31
22	30.43	3.70
23	31.33	4.13
24	32.21	4.59
25	33.08	5.10
26	33.92	5.64
27	34.74	6.21
28	35.53	6.82
29	36.30	7.46
30	37.04	8.14
31	37.75	8.84
32	38.43	9.58
33	39.07	10.34
34	39.69	11.13
35	40.27	11.94
36	40.82	12.78
37	41.33	13.64
38	41.80	14.52
39	42.24	15.42
40	42.63	16.34
41	42.99	17.27
42	43.31	18.22
43	43.59	19.18
44	43.83	20.15
45	44.02	21.13
46	44.18	22.12
47	44.29	23.11
48	44.36	24.11
49	44.39	25.00

Circle Center At X = 20.7 ; Y = 25.3 and Radius, 23.7

*** 1.552 ***

1

Failure Surface Specified By 49 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	8.89	3.30
2	9.82	2.93
3	10.76	2.60
4	11.72	2.31
5	12.69	2.06
6	13.66	1.85
7	14.65	1.68
8	15.64	1.55
9	16.64	1.46
10	17.64	1.42
11	18.64	1.41
12	19.64	1.45
13	20.63	1.52
14	21.63	1.64
15	22.61	1.80
16	23.59	2.00
17	24.56	2.24
18	25.52	2.52
19	26.47	2.84

20	27.41	3.20
21	28.32	3.60
22	29.22	4.03
23	30.11	4.50
24	30.97	5.01
25	31.81	5.55
26	32.62	6.13
27	33.42	6.74
28	34.18	7.38
29	34.92	8.05
30	35.63	8.76
31	36.31	9.49
32	36.96	10.25
33	37.58	11.03
34	38.17	11.85
35	38.72	12.68
36	39.23	13.54
37	39.71	14.41
38	40.16	15.31
39	40.56	16.22
40	40.93	17.15
41	41.26	18.10
42	41.55	19.06
43	41.80	20.02
44	42.01	21.00
45	42.18	21.99
46	42.31	22.98
47	42.40	23.97
48	42.44	24.97
49	42.44	25.00

Circle Center At X = 18.3 ; Y = 25.6 and Radius, 24.2

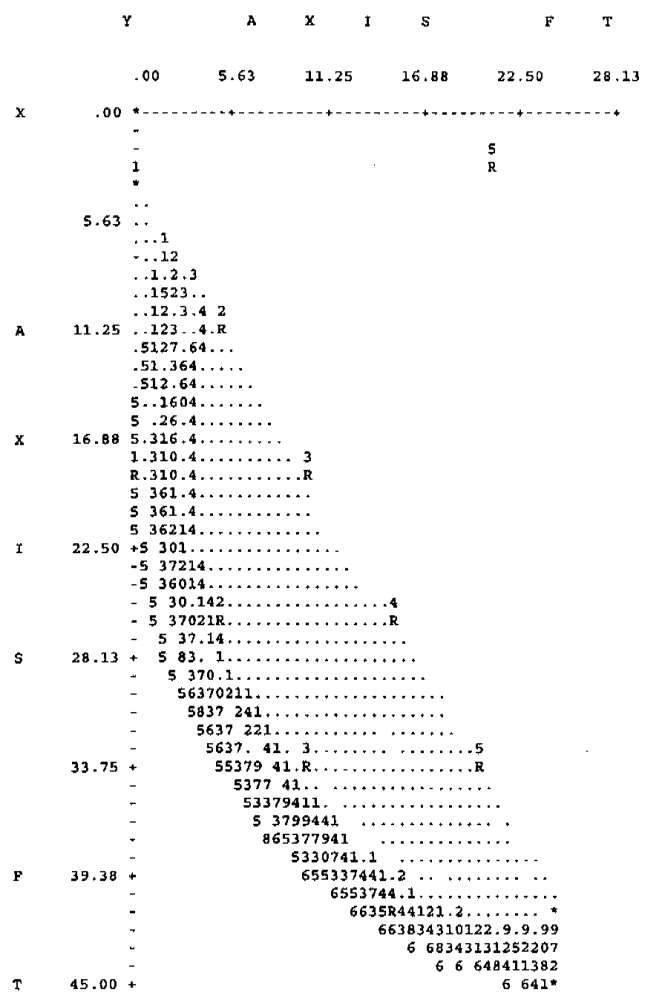
*** 1.555 ***

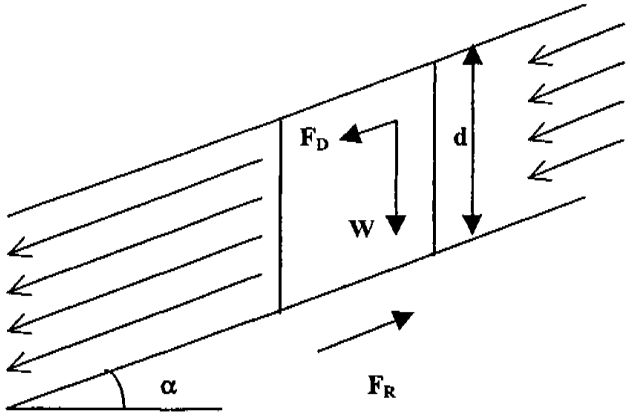
Failure Surface Specified By 47 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	10.11	4.13
2	11.03	3.74
3	11.97	3.40
4	12.93	3.10
5	13.89	2.83
6	14.87	2.61
7	15.85	2.43
8	16.84	2.29
9	17.84	2.20
10	18.83	2.14
11	19.83	2.13
12	20.83	2.17
13	21.83	2.24
14	22.82	2.36
15	23.81	2.52
16	24.79	2.72
17	25.76	2.97
18	26.72	3.25
19	27.66	3.58
20	28.59	3.94
21	29.51	4.35
22	30.40	4.79
23	31.28	5.27
24	32.14	5.79
25	32.97	6.35
26	33.77	6.94
27	34.56	7.56
28	35.31	8.22
29	36.04	8.91
30	36.73	9.63
31	37.39	10.37
32	38.03	11.15
33	38.62	11.95
34	39.19	12.78
35	39.71	13.63
36	40.20	14.50
37	40.66	15.39
38	41.07	16.30
39	41.44	17.23
40	41.78	18.17
41	42.07	19.13
42	42.33	20.09
43	42.54	21.07
44	42.71	22.06
45	42.83	23.05
46	42.92	24.04
47	42.96	25.00

Circle Center At X = 19.6 ; Y = 25.5 and Radius, 23.4

*** 1.590 ***


Y A X I S F T
.00 5.63 11.25 16.88 22.50 28.13
X .00
5.63
A 11.25
X 16.88
I 22.50
S 28.13
F 39.38
T 45.00



Symbol Definition

d	=	assumed depth of saturation	=	4.0	ft
γ_w	=	unit weight of water	=	62.4	pcf
γ_n	=	natural unit weight of soil	=	125	pcf
α	=	slope angle	=	33.7	degrees
ϕ	=	soil internal angle of friction	=	32	degrees
c	=	soil cohesion	=	100	psf

Slope Stability Calculation

Driving Force

$$F_D = d * \gamma_n * \cos\alpha * \sin\alpha = 230.8 \text{ psf}$$

Resisting Force

$$F_R = \left[d(\gamma_n - \gamma_w)\cos^2\alpha * \tan\phi\right] + c = 208.3 \text{ psf}$$

Factor of Safety

$$FS = F_R / F_D = 0.90$$

PLATE F-1

SURFICIAL SLOPE STABILITY ANALYSIS

Proposed Fill Slopes—Sections D-D' and E-E'
Wedding and Banquet Facility
Anaheim, California
Project No. 00G224-1

Southern California Geotechnical INC.

THIS PAGE LEFT BLANK INTENTIONALLY