APPENDIX D-2:

GROUP DELTA CONSULTANTS. "FINAL ASSESSMENT, SLOPES BELOW CABORA ROAD RIPARIAN CORRIDOR, PLAYA VISTA DEVELOPMENT, LOS ANGELES, CA GDC PROJECT NO. L-194B" DECEMBER 3, 2001.

CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

Date: February 19, 2002

To: Michael Paronai, District Engineer
West Los Angeles District
Bureau of Engineering

From: Michael P. Brown, Division Manager
Geotechnical Engineering Division
Bureau of Engineering

Subject: **FINAL ASSESSMENT REPORT, BLUFF RESTORATION (PLAYA VISTA) PERMIT BD 401484**

The Geotechnical Engineering Division (GED) has reviewed the "Final Assessment" report prepared by Group Delta Consultants (GDC) for Bluff Restoration at Playa Vista, Tract 49104. The report titled "Final Assessment, Slopes Below Cabrora Road. Riparian Corridor, Playa Vista Development, Los Angeles, California," dated December 3, 2001 and revised on January 31, 2002, was received at our office on February 14, 2002. GED recommends that the report be approved as long as the following conditions are met:

1. A representative from the geotechnical consultant, working under a registered geologist or geotechnical engineer, shall monitor all earthwork associated with restoration of the bluff.
2. At the completion of earthwork, the geotechical engineer shall prepare a final report which presents results of laboratory compaction tests (ASTM D 1557) and field density tests and shall include a statement that the earthwork was completed in accordance with the recommendations of the referenced GDC report. This report shall be submitted to GED for review and approval before the bond is released.

If you have any questions regarding these comments, please call Patrick Schmidt at (213) 847-4046 or Chris Regilski at (213) 847-4016.

W78F5400\DATA\PROJECT\No File Number\Playa Vista\bluff restoration approval letter-gdc report

GROUP DELTA CONSULTANTS

Certified MBE

Geotechnical Engineering
Geology
Hydrogeology
Earthquake Engineering
Materials Testing & Inspection
Forensic Services

PLAYA CAPITAL COMPANY, LLC
12555 W. Jefferson Blvd., Suite 300
Los Angeles, CA 90066

December 3, 2001

Attention: Mr. Tim Connors

Subject: **Final Assessment**
Slopes Below Cabrora Road
Riparian Corridor
Playa Vista Development
Los Angeles, California
GDC Project No.: L-194B

References: "**Response to Review Comments**", GDC, 2/21/2001.
"**Results of Meeting with LADWP on 1/3/01 and Additional Slope Stability Analyses**", GDC, 1/9/2001.
"**Response to City Review Comments**", GDC, 5/30/2000.

Dear Mr. Connors:

As requested, we are providing our final assessment report on the slope stability conditions for the slopes that descend from Cabrora Road to the proposed Riparian Corridor. Slopes above Cabrora Road were not analyzed. This report is intended for submittal to Mr. Michael Brown of the City of Los Angeles, Department of Public Works (LADPW) Geotechnical Department.

1.0 General

The Riparian Corridor is a proposed 10,000-foot-long drainage channel to be located along the southern limit of the Playa Vista Development, which is split into two phases. Phase One is broken into two segments that extend 4200 feet east and 3500 feet west of Phase Two, which is about 2300 feet long. The Riparian Corridor, including both phases, is shown on Figure 1.

Immediately south of the Riparian Corridor is the Ballona Escarpment (bluff), which is an erosion feature, created by downcutting of the ancestral Los Angeles River. The bluff is comprised of Pleistocene Age dune sands that rise about 120 feet above the Playa Vista Development. The natural slopes of the bluff are typically inclined at about 1.25:1 (H:V).

Cabrora Road was constructed over an LADPW sewer outfall, about 35 feet to 40 feet above the toe of the slope. The sewer was constructed of masonry materials about 70 years ago, and is about ten feet wide by 12 feet high. Soils excavated from the sewer trench were spilled onto the slope below, creating an oversteepened and erodable condition.

The slope that descends from Cabrora Road is prone to local raveling, rilling and surficial instability. As required by the conditions of approval, Playa Vista will remove all vegetation from the slope, place an erosion mat (or equivalent), and vegetate the slopes with approved native plants. In addition, drainage improvements will be made to Cabrora Road to prevent uncontrolled drainage from running on the subject slopes. LADPW stated that these mitigation measures would be sufficient for the City to approve the project. The proposed slope improvements should be considered as improving the near-surface erosion resistance and thereby increasing the surficial factor of safety.

2.0 Slope Stability Analyses

LADPW required that stability calculations be performed to evaluate the stability of the slope below Cabrora Road and the existing sewer main. Stability analyses of the full slope height, about 120 feet, by LeRoy Crandall (1/3/91) indicated a factor of safety of 1.5. However, our analyses focus only on the slope below Cabrora Road, as agreed upon in meetings with Playa Vista and LADWP.

Potential slope failures below Cabrora Road were examined for three modes of failure: surficial, toe and deep seated. The factor of safety varies depending on slope height, slope grade and the strength of materials that comprise the slope. The required factor of safety is 1.5 for static conditions and 1.1 for seismic.

Soil strength parameters used in the stability analyses were assigned based on results of laboratory testing (saturated direct shear) of samples collected by GDC and LeRoy Crandall as shown in Figures 5 and 6. Calculations were performed using the slope stability computer program PCSTABL5. The table below summarizes the parameters selected for our analyses.

Soil Unit	Cohesion, psf	Internal Friction, Φ	Source
Sewer Void	0	0°	Assumed by GDC
Slope Fill	200	30°	LeRoy Crandall, 1991
Native CL/ML	300	12°	GDC, 2000
Pleistocene Sediments	250	33°	LeRoy Crandall, 1991

Our original analyses looked at several slope sections in both Phases 1 and 2, to identify slopes considered to be the steepest and/or highest along the alignment (i.e. the worst case). These slopes had calculated factors of safety as low as 1.3, and the critical failure surface intersected the existing sewer and passed through the toe of the slope. However, most sections of the slope are not as high or as steep as these worst-case sections.

GDC chose to analyze the highest slope section (Section C-C) in Phase 1 as a typical slope shape for the alignment, and adjust the slope height and slope angle to determine the maximum height and angle that achieves a factor of safety of 1.5.

Our analyses examined several combinations of slope angles (1.4:1, 1.5:1 and 1.6:1) and slope heights ranging from 37 feet to 42 feet. We assumed that the sewer main was water-filled and had zero strength.

These analyses indicated that slopes greater than 38 feet from toe to crest (at Cabrora Road) have a factor of safety less than 1.5. Also, slopes steeper than 1.5:1 (H:V) generally have a factor of safety less than 1.5. Slopes less than 38 feet high and with grades equal to, or flatter than, 1.5:1 are generally stable and have a factor of safety of at least 1.5 under static loading and 1.1 under seismic loading.

Psomas was able to identify areas of the slope that are higher than 38 feet or steeper than 1.5:1 (H:V), and areas with an oversteepened toe or rill features. Each of these areas is shown on Figures 2 to 4, indicated by respective hatchings. Our field mapping of the slope confirmed the location and extent of these areas and that all areas in need of repair had indeed been identified.

Slope stability analyses were carried out on two other sections, B-B and D-D, located at the edge of two different repair areas (Figure 2). These calculations were performed, at the request of LADWP, to confirm that the proposed repair areas identified by Psomas are large enough, that is, do they include all portions of the slope that do not meet the stability criteria. Results of these analyses showed factors of safety of 1.7 and 1.9 under existing conditions. The stability results are included in the Appendix.

The results of our analyses are provided in Table 1 and as attachments. Also included are the results of our slope stability analyses carried out on Sections S5R (Figure 2) and S7R (Figure 4). These sections involved different design assumptions such as a thicker layer of spill fill and no sewer tunnel. As such, Sections S5R and S7R are included only to compare our former findings with our current findings, but not to support our recommendations.

Table 1

Slope Section	Slope Grade	Slope Height (feet)	Factor of Safety (Static)	Factor of Safety (Seismic)
B-B	1.5:1 *	40	1.91	1.27
C-C	1.4:1 **	37	1.49	1.08
	1.5:1 *	38	1.51	1.09
		40	1.48	1.08
		42	1.48	1.07
	1.6:1 **	40	1.56	1.12
		42	1.55	1.12
D-D	1.5:1 *	36	1.72	1.24
S5R	1.2:1 ***	41	1.30	0.96
S7R	1.45:1 ***	34	1.34	0.99

Notes:

* Design slope grade.
** Trial analysis slope grade.
*** Existing slope grade.

3.0 Conclusions and Recommendations

Previous stability analyses indicated that the existing surficial factor of safety of the slopes below Cabrora Road are near 1.1 and therefore should be considered marginally stable.

Deep-seated stability of the slope that descends from Cabrora Road varies from place to place along the length of the slope. This variability is due to fluctuations in slope height, steepness and shape. The majority of the subject slope is less than 38 feet high and flatter than 1.5:1 (H:V) and thereby meets the required factor of safety and as such requires no slope repair aside from erosion protection and re-vegetation. The remainder of the slope requires one of four modes of repair described below, which are identified in Figures 2 to 4 and depicted in Figures 6 and 7.

1. Full Slope Height Fill

Entire slope height is cut back in benches, a minimum of one equipment width into dense native soil with a 2-foot deep key at the toe. The removed material shall be replaced with material having a minimum cohesion of 200 psf and effective angle of internal friction of 30°, with a slope grade of 1.5:1 (H:V).

The area of the slope requiring this mode of repair is confined to one location measuring approximately 200 feet long, as indicated by the cross-hatched area "1" on Figures 2 and 4.

We envision that construction of this slope repair will involve step-by-step bench removals beginning at the crest and ending with a key at the toe. Each bench may be about 4 feet high. Slope fill may be placed in 1 to 2-foot lifts in the reverse order of the removals.

2. Partial Slope Height Fill

A portion of the slope height shall be cut back into dense native soil and filled, with material having a minimum cohesion of 200 psf and effective angle of internal friction of 30°, in two-foot lifts. The slope grade shall match the surrounding grade of 1.5:1 (H:V) or flatter. Eight areas are identified on Figures 2 to 4 as repair-type "2", which include Sections S5R and S7R.

3. Rill/Gully Fill

Rill or gully features shall be cut back into dense native soil and filled, with material having a minimum cohesion of 200 psf and effective angle of internal friction of 30°. Fill soils should be compacted with vibratory plate tampers, or the like, in 6 to 8-inch lifts to match the surrounding grades. Five areas are identified on Figures 2 and 3 as repair-type "3".

4. Toe of Slope Fill

For slopes where an over-steepened toe is identified, the existing soils shall be cut back far enough to eliminate the over-steepened portion and a two-foot-deep key with a width equal to the height of the cut. Fill material having a minimum cohesion of 200 psf and effective angle of internal friction of 30° shall be used.

Given that the sewer is known to be in poor condition, it is possible that erosion due to leaks from the sewer itself could cause slope failures for which our slope stability analyses have not accounted. The four slope repair methods presented herein will not guard against internal erosion caused by leakage from the tunnel. Measures shall be taken by LADWP to prevent such damage.

Surface erosion protection, such as Soil Guard™, shall be placed on non-vegetated slopes, as specified by the Landscape Architect to protect these slopes while vegetation takes hold. The materials used for erosion protection and the methods of installation shall meet the standard requirements of LADWP.

Slopes greater than 30 feet high generally require mid-slope benches to divert runoff and minimize erosion. Playa Capital Corp. and LADWP agree that mid-slope benches will not be necessary below Cabrora Road provided that adequate drainage is provided along Cabrora Road and sufficient erosion protection is utilized.

4.0 Construction and Grading

All earthwork and grading performed within the subject site should be subject to approval of this office and conform to the requirements of the owners and the following recommendations:

1. The general contractor or grading contractor is responsible for notifying the owner, City of Los Angeles, other appropriate governmental agencies, and the project geotechnical engineer or geologist of the planned start of the site clean up, the start of grading operations, and times when grading is resumed after an interruption. The project Geologist/Geotechnical Engineer must approve the operations described below for each specific area before proceeding with construction. Where such approval is not obtained, the Contractor, at his own expense, will re-do the work at the discretion of the Geologist/Geotechnical Engineer.

2. All areas to receive fill shall be stripped and cleared of all vegetation, debris, or other soft, porous or unsuitable material. Existing stockpiles or debris or other unsuitable materials, including debris found within existing fills, where present, must be removed and disposed off site.

3. The excavation bottom shall be observed by the project Geotechnical Engineer and the City of Los Angeles, prior to placing any new fill.

4. After the required observations, the approved excavation bottom shall be scarified to a depth of 6 inches, moisture conditioned to between 0% and +3% of the optimum moisture content, and compacted to a minimum of 90% relative compaction as determined by ASTM D1557-91.

5. All fill materials to be placed shall be free of organic materials, vegetation, dumped debris, or rocks greater than 3 inches in any dimension, and shall be approved by the project Geotechnical Engineer. All fill materials shall meet or exceed the strength requirement of 30° internal friction angle and 200 psf cohesion. Any existing trash or debris or other unsuitable materials from the excavations of existing fills at the site shall be removed from the site. Fill soils shall be placed in thin layers, well mixed, and moisture-conditioned to between 0% and +3% of the optimum moisture content and compacted using suitable compaction equipment to a relative compaction of 90% as determined by ASTM D1557-91. Each compacted lift shall be no more than 6 inches in thickness. Compaction equipment and techniques shall be selected by the contractor to

achieve the required compaction and shall take into consideration, among other factors, the material type and the working limits of the projects. In no case will flooding or jetting be allowed.

6. Unless otherwise specified, all earthwork and grading will be performed under the continuous observation of the project Geotechnical Engineer. Compaction testing of the fill soils shall be performed at the discretion of the project geotechnical engineer. In accordance with current City requirements, a density test shall be performed for every 2 feet in vertical fill placed or 500 cubic yards, whichever occurs first. If specified compaction is not achieved additional compactive effort, moisture conditioning of the fill soils, and/or removal and recompaction of the below-minimum-compaction soils will be required at the expense of the contractor.

7. If, during the course of the grading, conditions are encountered that, in the opinion of the project Geotechnical Engineer, differ significantly from those described in the geotechnical report, work shall be stopped and the condition(s) evaluated.

8. If, in the opinion of the project Geotechnical Engineer, Contractor or Owner, an unsafe condition is created or encountered during grading, all work in the area will be stopped until measures can be taken to mitigate the unsafe condition. An unsafe condition shall be considered any condition that creates a danger to workers, on-site structures or construction, or any off-site properties or persons.

9. If abandoned utility lines are encountered during grading operations they shall be cut off at the property lines, filled with pressure-pumped sand-cement slurry (minimum 2-bag mix), and sealed at the property lines.

5.0 Closure

If you have any questions concerning the information in this letter, please contact us at (310) 320-5100.

Sincerely,
GROUP DELTA CONSULTANTS, INC.

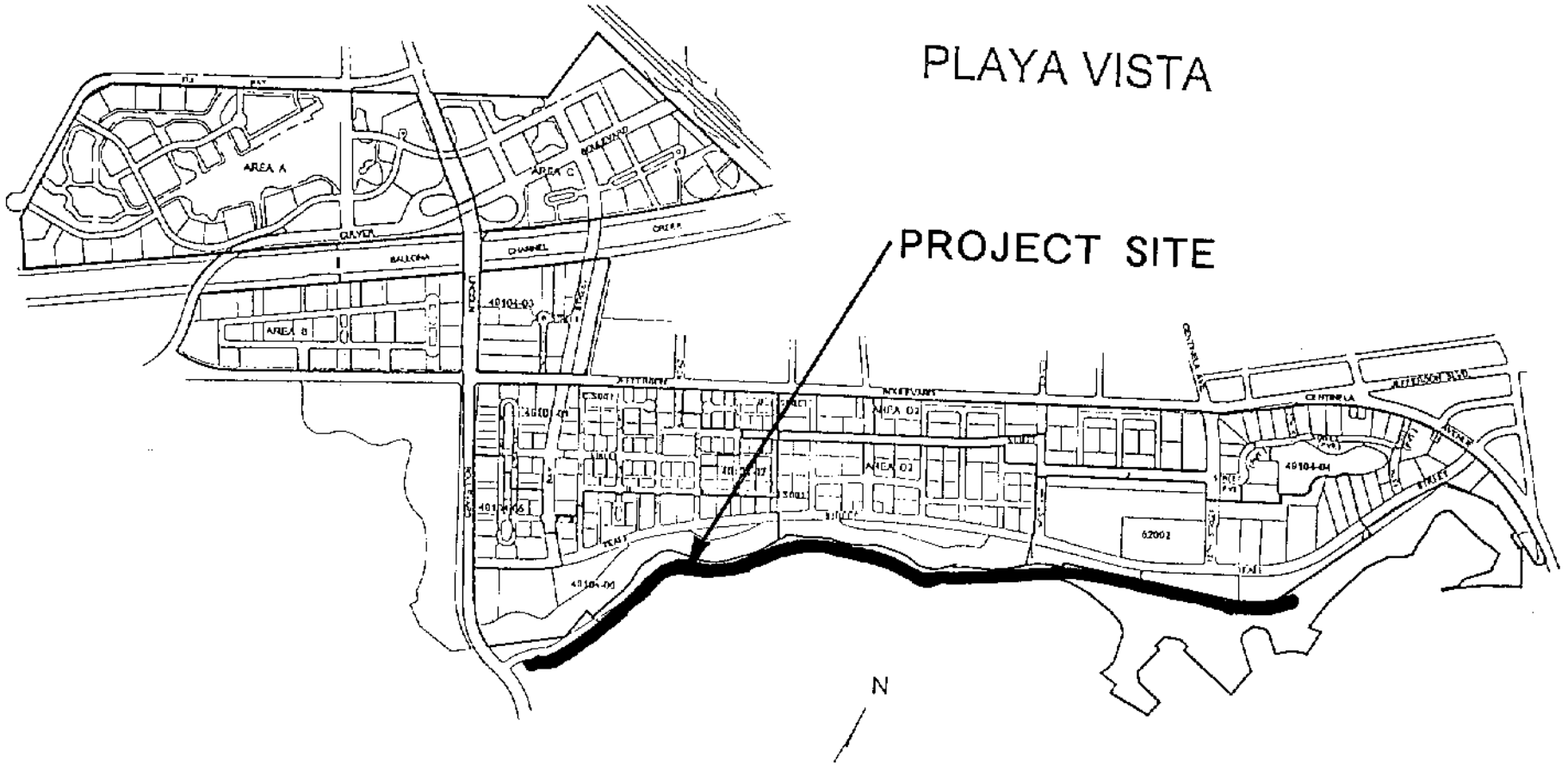
REGISTERED PROFESSIONAL ENGINEER
MICHAEL DAVID READER
No. GE 2259
Exp. 3/31/02
GEOTECHNICAL
STATE OF CALIFORNIA

Michael David Reader, G.E. #2259
Vice President

Attachments: Figures 1 to 7
Slope Stability Calculations

cc: Chris Regilski, Los Angeles Department of Water and Power
Phong Nguyen, Los Angeles Department of Public Works

GROUP DELTA CONSULTANTS



REFERENCE: Playa Vista Base Map, Barratt Niehus, 9/10/99.

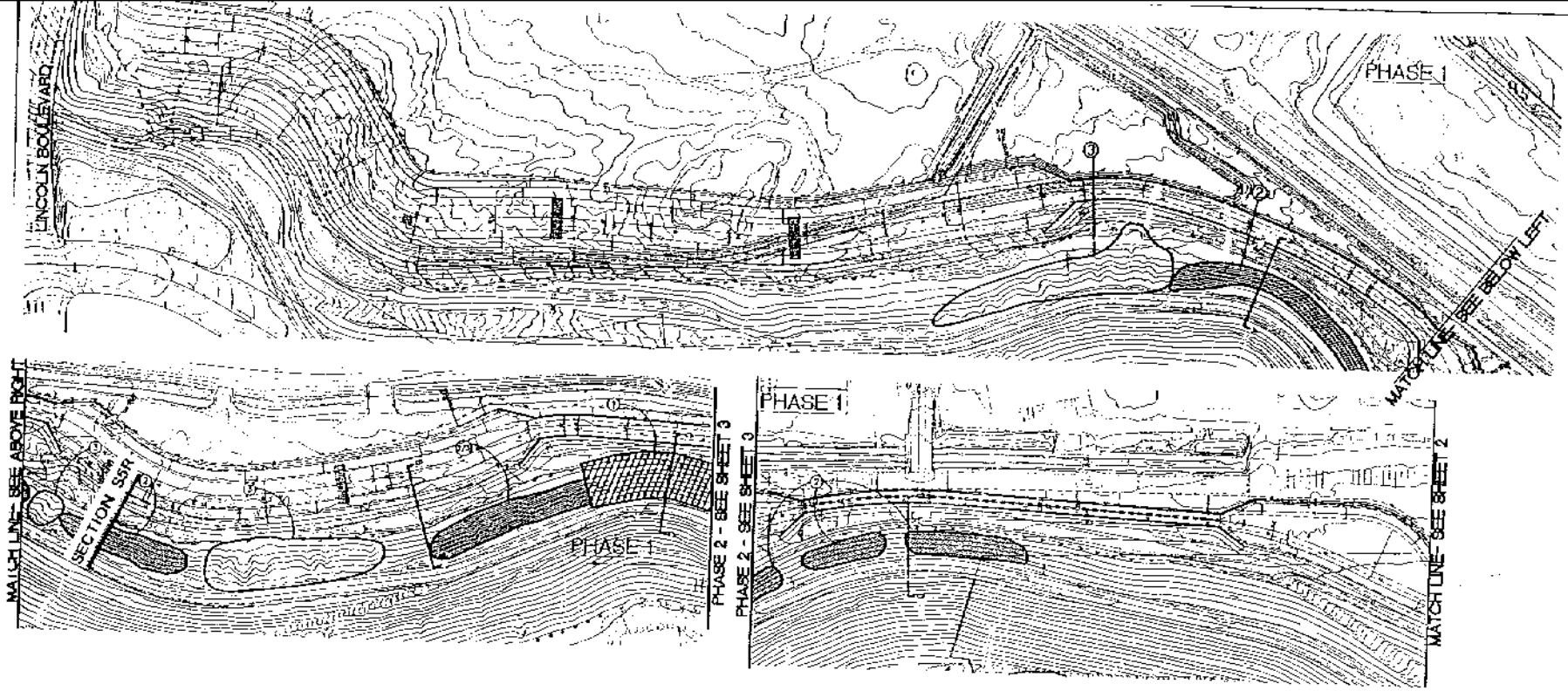
VICINITY MAP

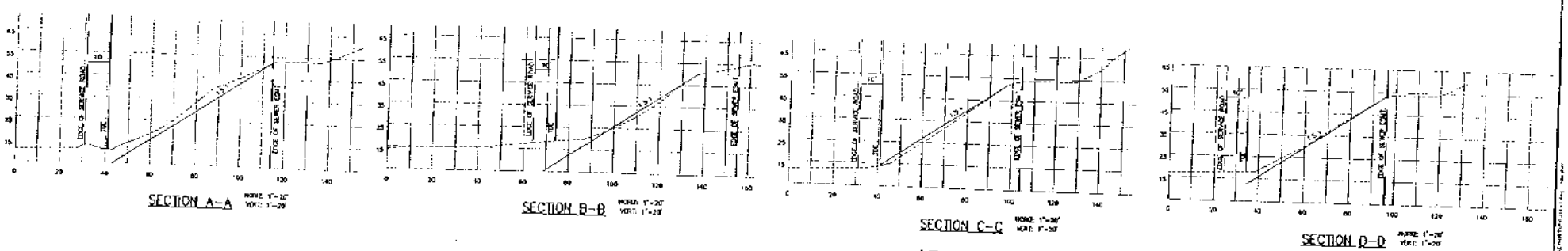
Playa Vista - Repair in Corridor
Playa Vista Development - Los Angeles, CA

PROJECT NUMBER:	L-194B
DATE:	11/29/01
REVISED:	
FIGURE NUMBER:	1
SCALE:	AS SHOWN
DRAWN BY:	T Ybarra
APPROVED BY:	M Reader

GROUP DELTA CONSULTANTS, INC.

N:\Playa Vista\L-194b Pln Cor 2\Vicinity Map





LEGEND:

(#) SLOPE REMEDIATION PER SPECIFIC GEOTECHNICAL SECTION

TYPE I SLOPE REMEDIATION - REBUILD SLOPE FROM TOE OF SLOPE TO NORTH EASEMENT LINE OF DOROTHEA ROAD PER GEOTECHNICAL ENGINEER RECOMMENDATION.

TYPE II MINOR SLOPE REMEDIATION - LOCALLY REPAIR SLOPES PER GEOTECHNICAL ENGINEER RECOMMENDATION.

GRAPHIC SCALE

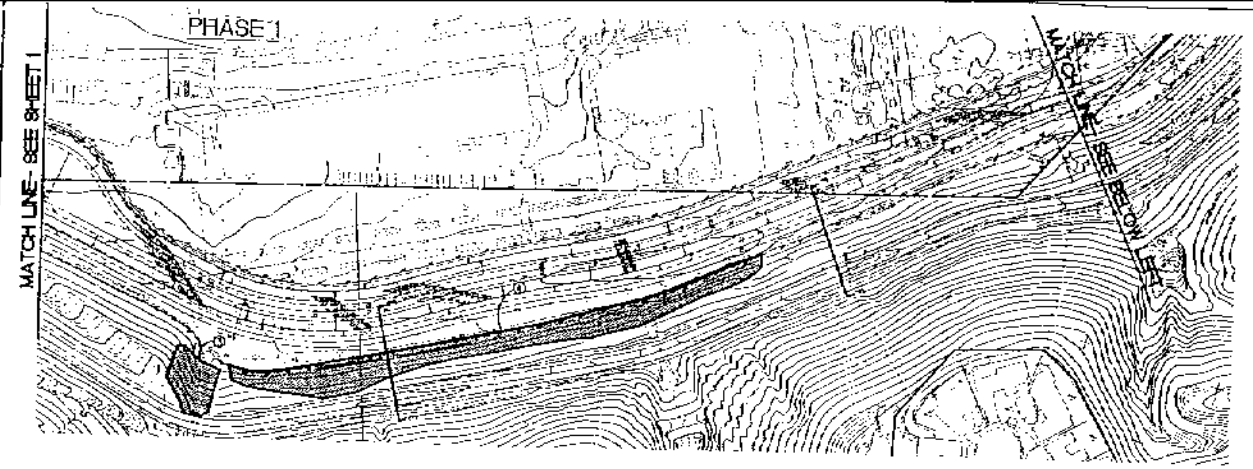
Playa Capital Company, LLC
Playa Vista Development

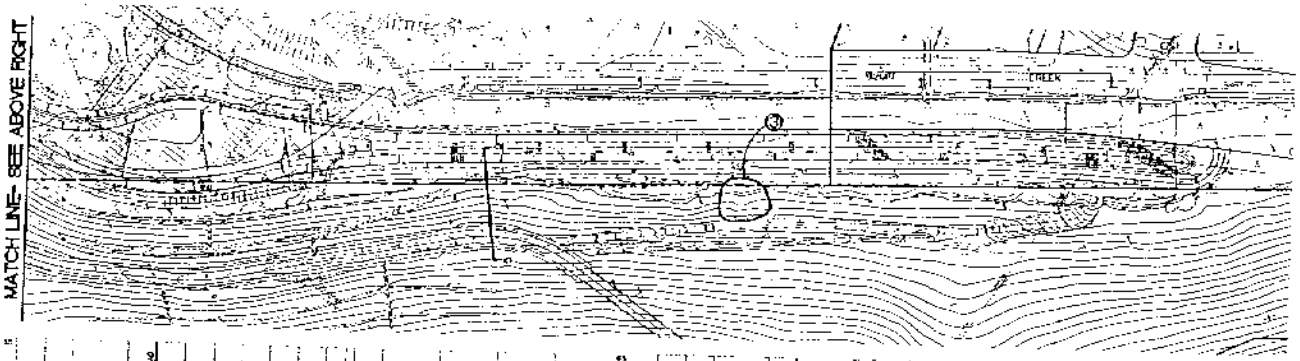
SLOPE REMEDIATION AREA EXHIBIT

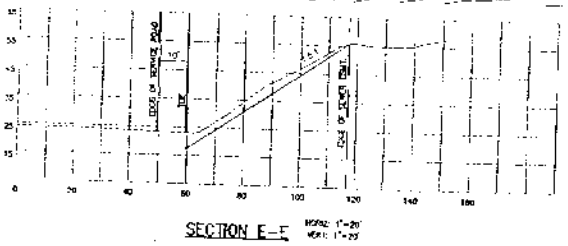
PSOMAS

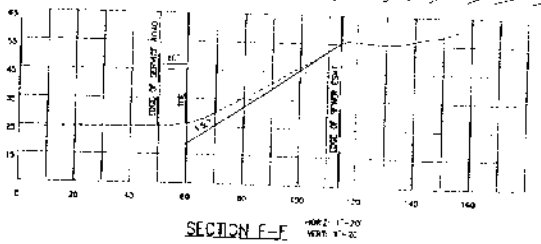
DATE: 8/14/01 REVISED ON: 9/6/01
JOB No: 1PCC0203.28

SHEET 1 OF 3 FIGURE






SECTION E–E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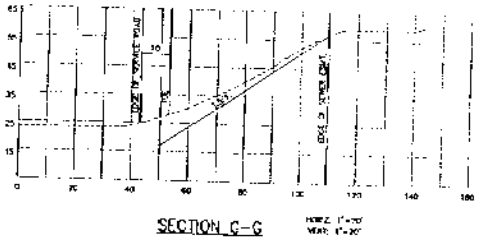

SECTION G–G

LEGEND:

(#) SLOPE REMEDIATION PER SPECIFIC GEOTECHNICAL SECTION

TYPE I SLOPE REMEDIATION – REGRADE SLOPE FROM TOE OF SLOPE TO NORTH EASEMENT LINE OF CORDOBA ROAD PER GEOTECHNICAL ENGINEER RECOMMENDATION.

TYPE II MINOR SLOPE REMEDIATION – LOCALLY REPAIR SLOPES PER GEOTECHNICAL ENGINEER RECOMMENDATION.

Playa Capital Company, LLC
Playa Vista Development

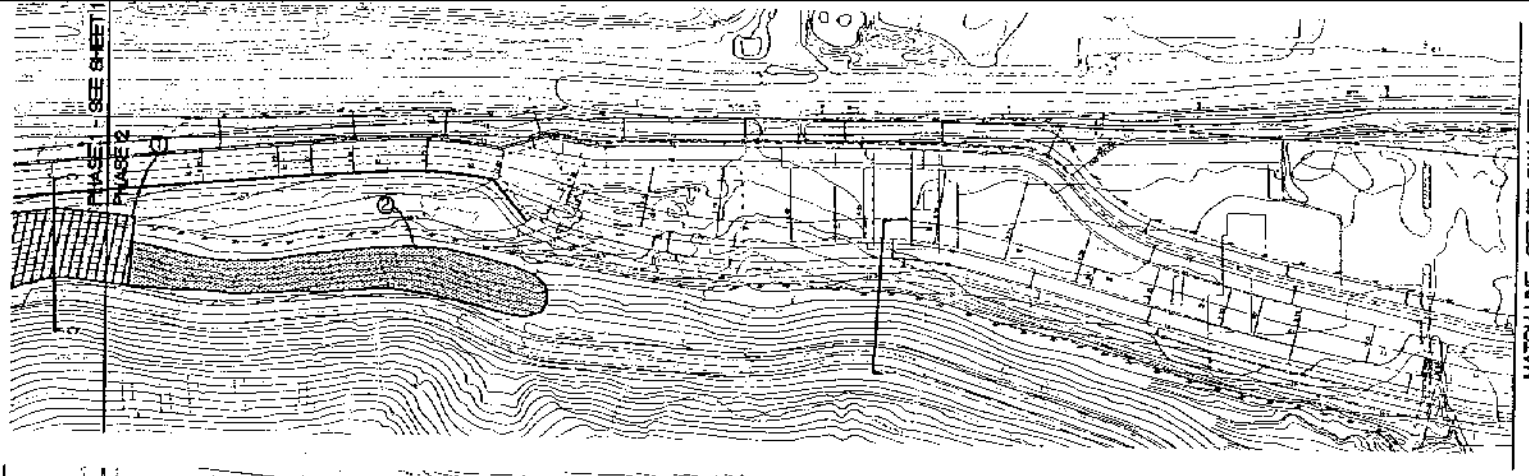
SLOPE REMEDIATION AREA EXHIBIT

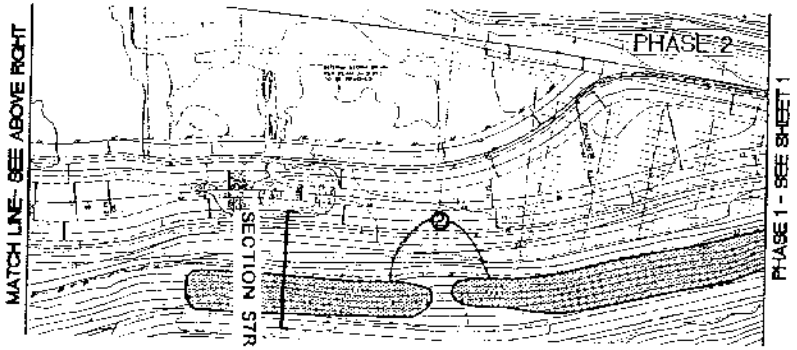
PSOMAS

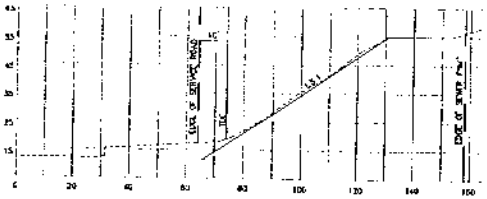
DATE: 08/14/01 REVISED ON: 9/6/01
JOB No: 3PCC02G3.2B

FIGURE 3

SHEET 2 OF 3







SECTION 1-1

Playa Capital Company, LLC
Playa Vista Development

LEGEND:

TYPE A SLOPE REMEDIATION – REBUILD SLOPE FROM TOE OF SLOPE TO NORTH EASEMENT LINE OF CORDOVA ROAD PER GEOTECHNICAL ENGINEER RECOMMENDATION.

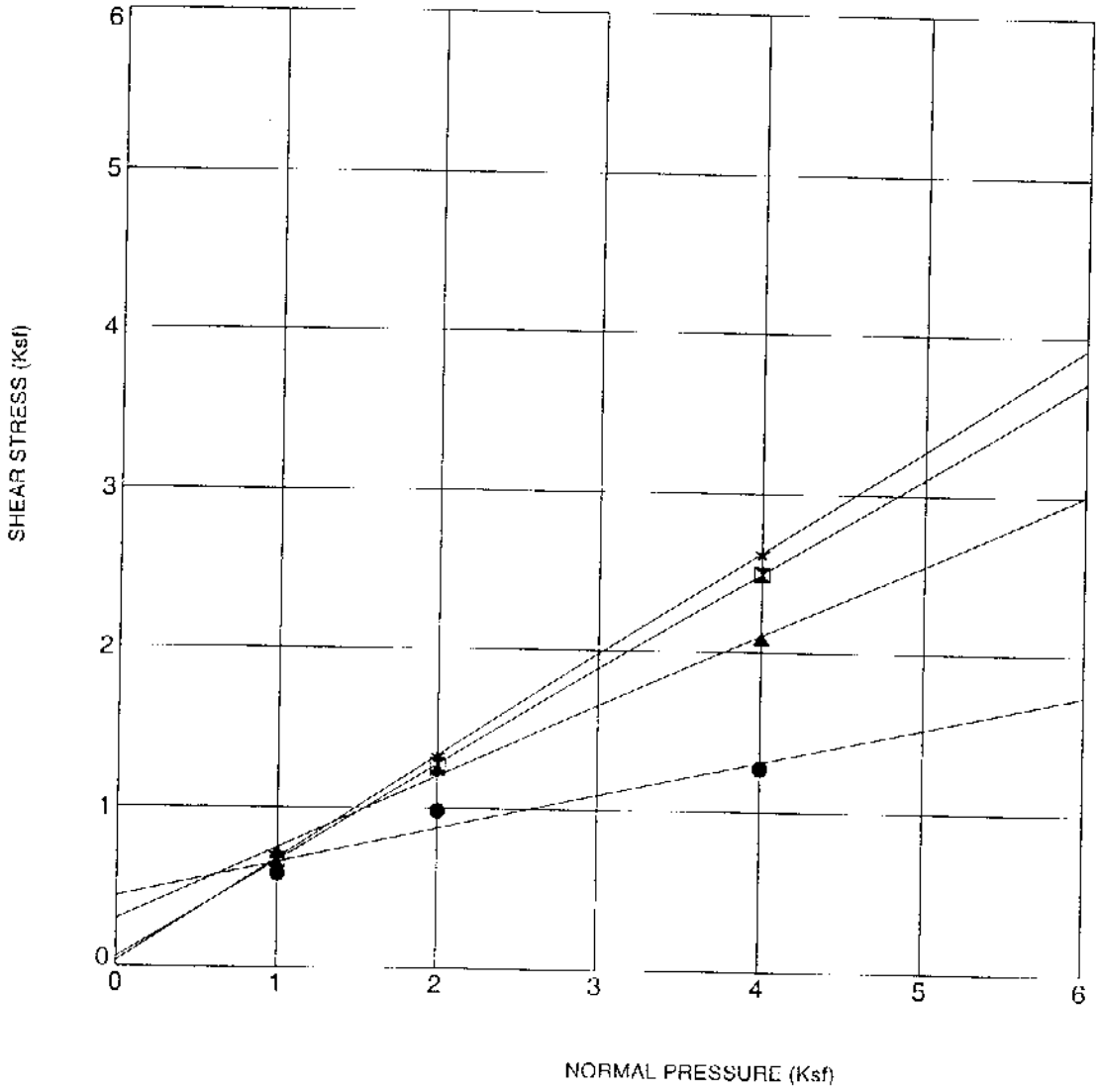
TYPE B MINOR SLOPE REMEDIATION – LOCALLY REPAIR SLOPES PER GEOTECHNICAL ENGINEER RECOMMENDATION.

SLOPE REMEDIATION AREA EXHIBIT

PSOMAS

DATE: 8/16/01 REVISED ON:
JOB No: IPCC0263.28
SHEET 3 OF 3
PV1314

FIGURE 4



SYM	BORING	Depth(ft)	DESCRIPTION	γ_d lb/ft^3	MC % Before	MC % After	c KSF	ϕ deg
●	B-119H	10.0	(CL) Olive Green Silty CLay	80.0	43.7	41.9	0.44	12.2
⧗	B-120H	10.0	(SM) Brown Silty Sand	107.6	17.0	20.1	0.06	31.3
▲	B-123H	20.0	(CH) Dark Gray Organic Clay		112.7	109.0	0.30	24.3
★	B-127H	5.0	((SM) Brown Silty Sand	103.9	13.8	18.5	0.04	32.9

NOTE: All samples submerged unless otherwise noted
Shear Strengths are Peak values with less than 0.25 inch deflection

GDC_DIRECT_SHEAR_L194C.G3J GDC_WLOG.GDT 11/23/01

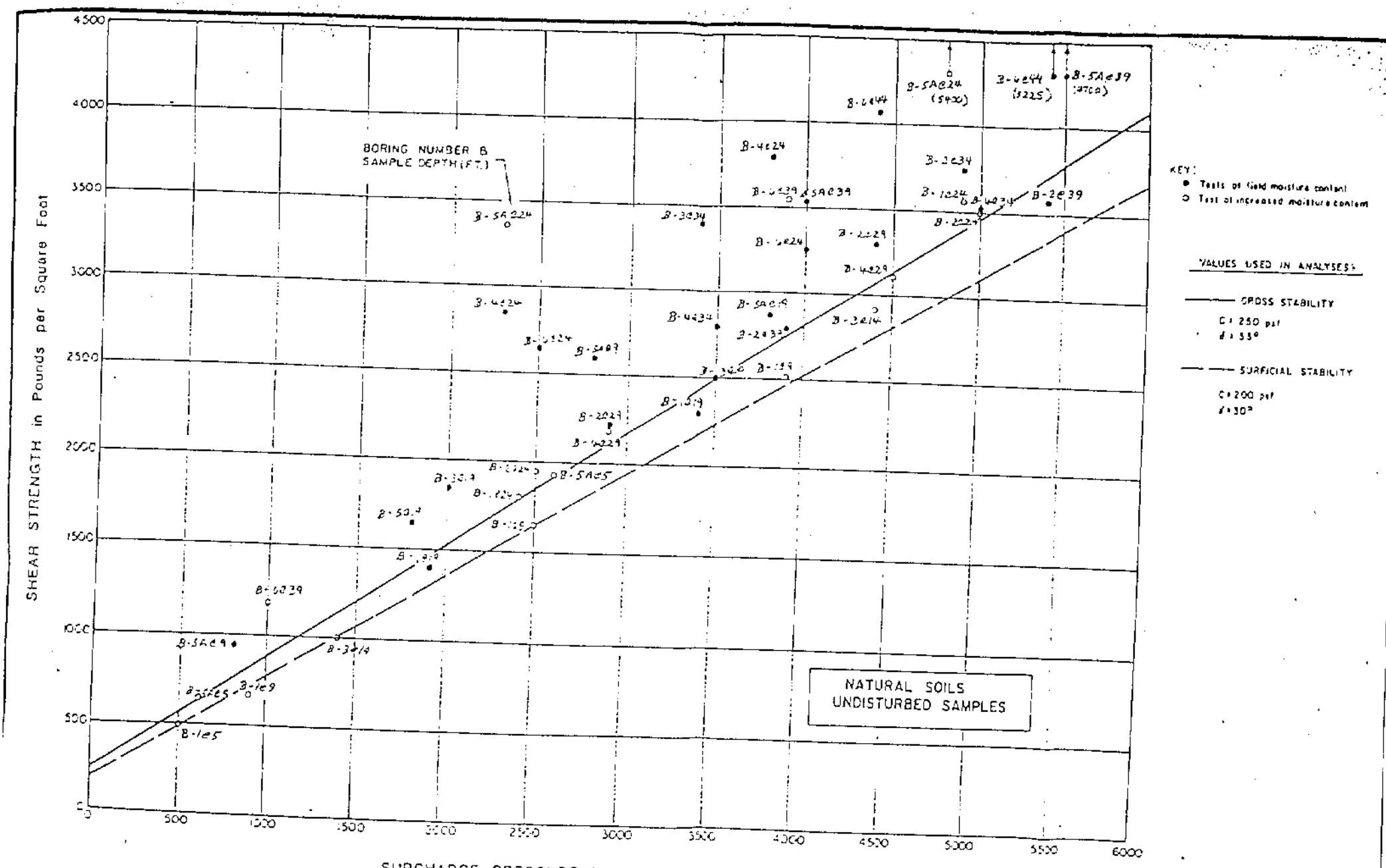
GROUP DELTA CONSULTANTS

DIRECT SHEAR TEST

GROUP DELTA CONSULTANTS, INC.

Project: Playa Vista - Ripparrian Corridor Phase II
Location: Marina del Rey, California
Number: L-194C

FIGURE 5



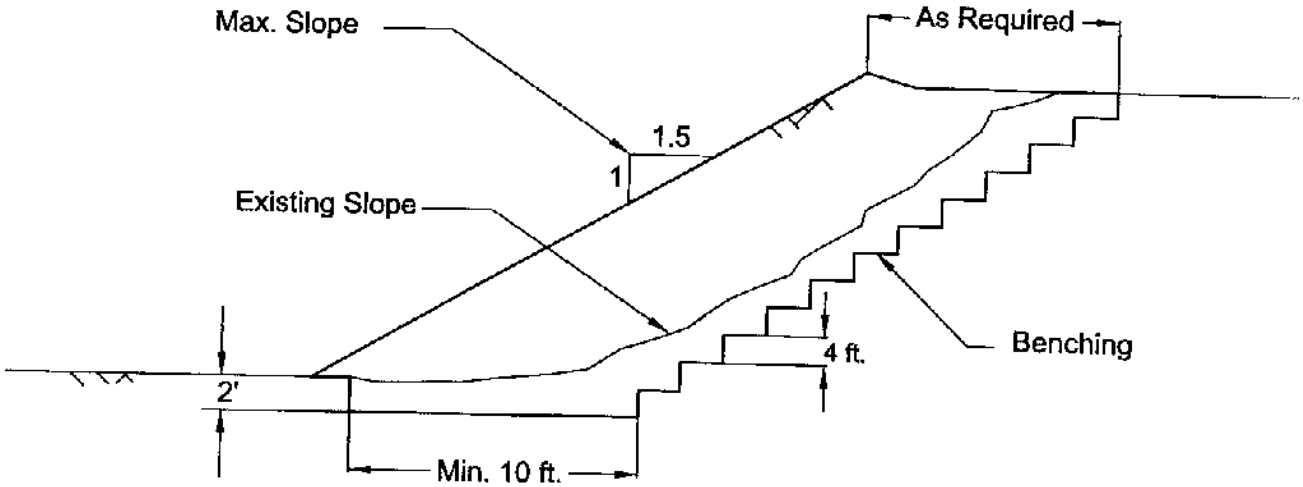
DIRECT SHEAR TEST DATA

LEROY CRANDALL AND ASSOCIATES

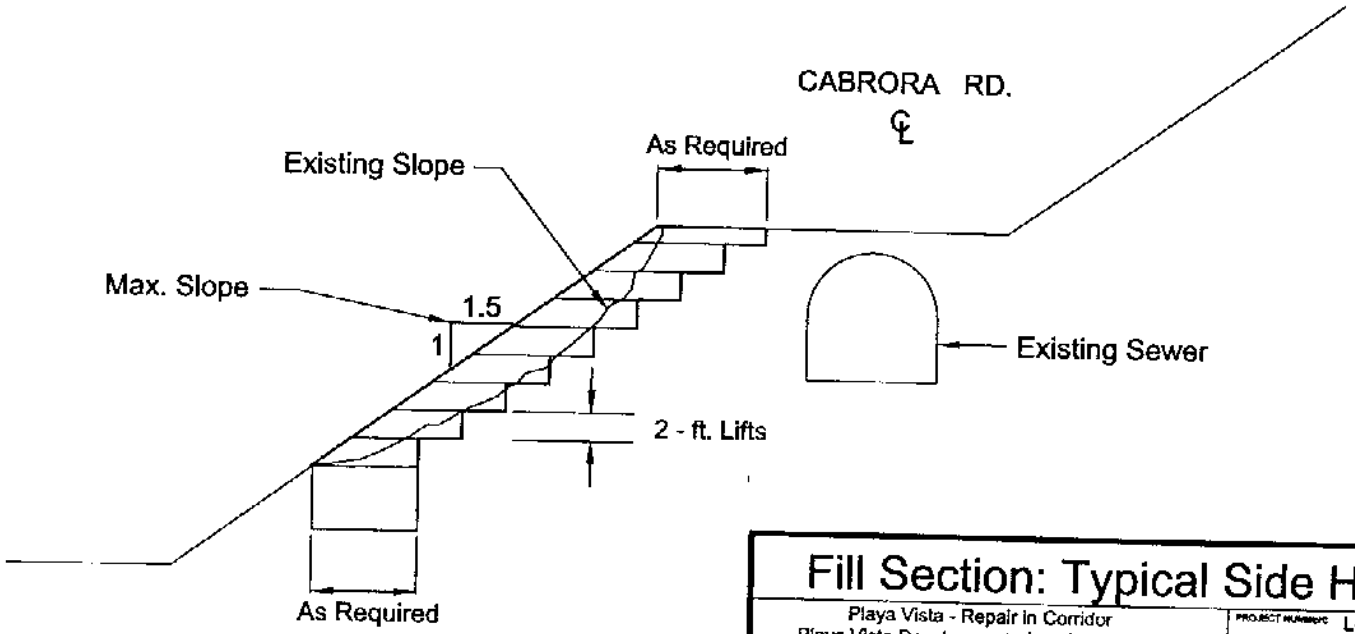
FIGURE 6

TYPICAL SIDE HILL FILL SECTION

① Full Slope Height Fill



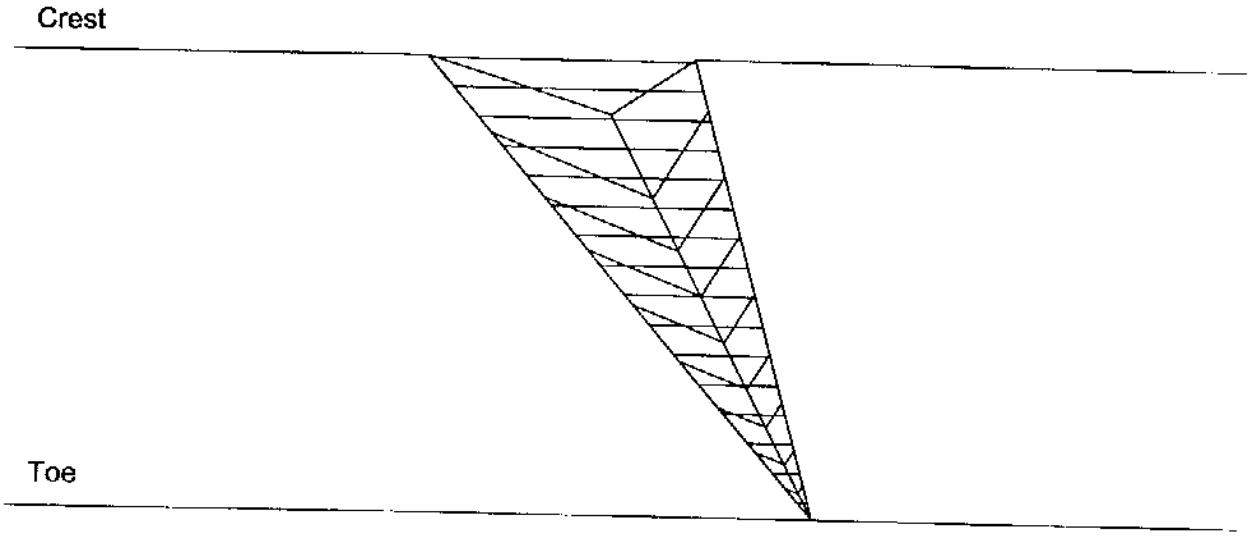
② Partial Slope Height Fill



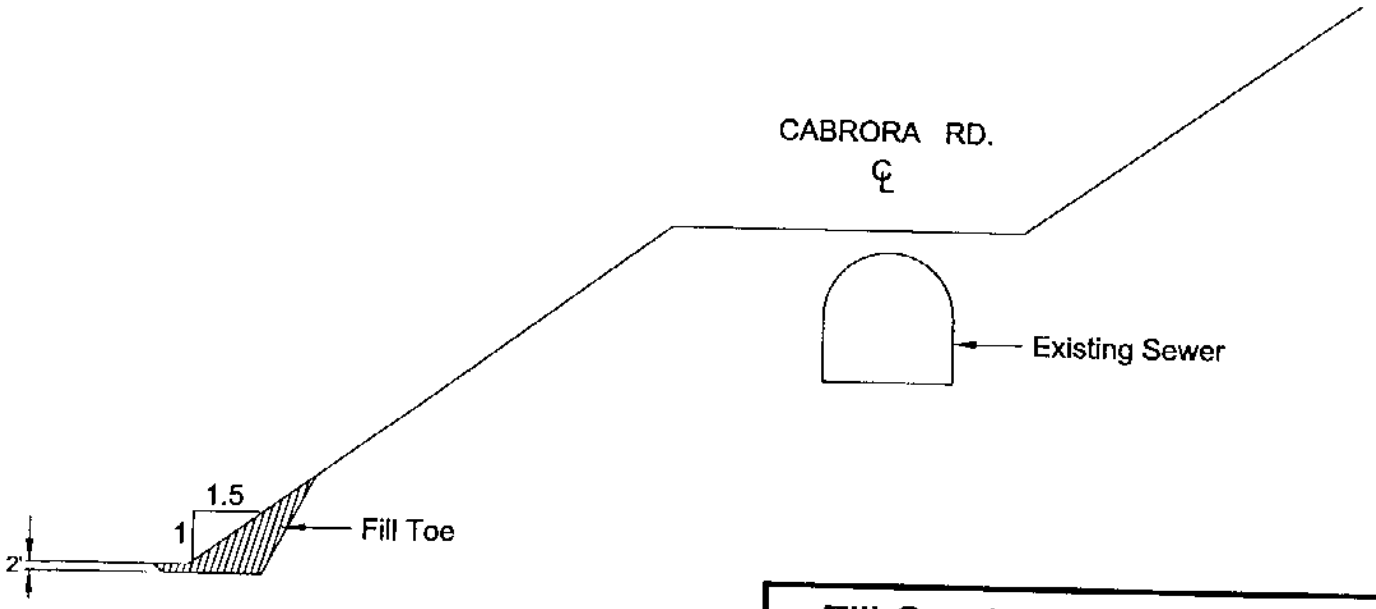
Fill Section: Typical Side Hill		
Playa Vista - Repair in Corridor Playa Vista Development - Los Angeles, CA		PROJECT NUMBER: L-194B
		DATE: 07/20/01
SCALE: NTS	DRAWN BY: T Ybarra	REVISED: 11/29/01
	APPROVED BY: M Reader	FIGURE: 7
GROUP DELTA CONSULTANTS, INC.		

TYPICAL SIDE HILL FILL SECTION

③ Ravel/Gulley Filling



④ Filling of Slope Toe

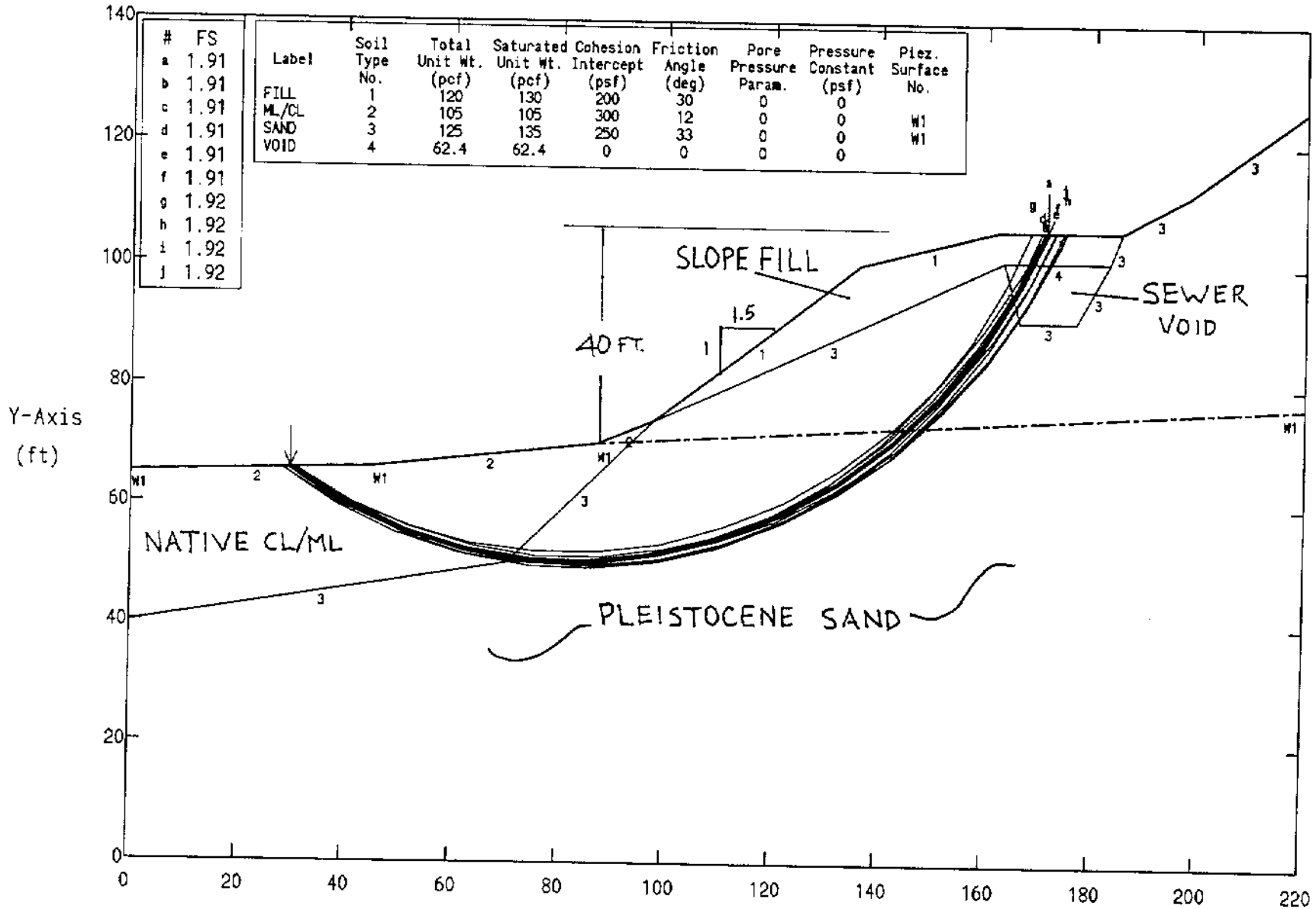


Fill Section: Typical Side Hill		
Playa Vista - Repair In Corridor Playa Vista Development - Los Angeles, CA		PROJECT NUMBER: L-194B
		DATE: 09/20/01
SCALE: NTS	DRAWN BY: T Ybarra	REVISED: 11/29/01
	APPROVED BY: M Reader	FIGURE: 8
GROUP DELTA CONSULTANTS, INC.		

PCSTABL 5M CALCULATIONS

Playa Vista Cabrora Rd Section B_B from Psomas Remediation Exhibit

Ten Most Critical. C:PSMSB_B.PLT By: TWA 10/31/2001 2:06pm

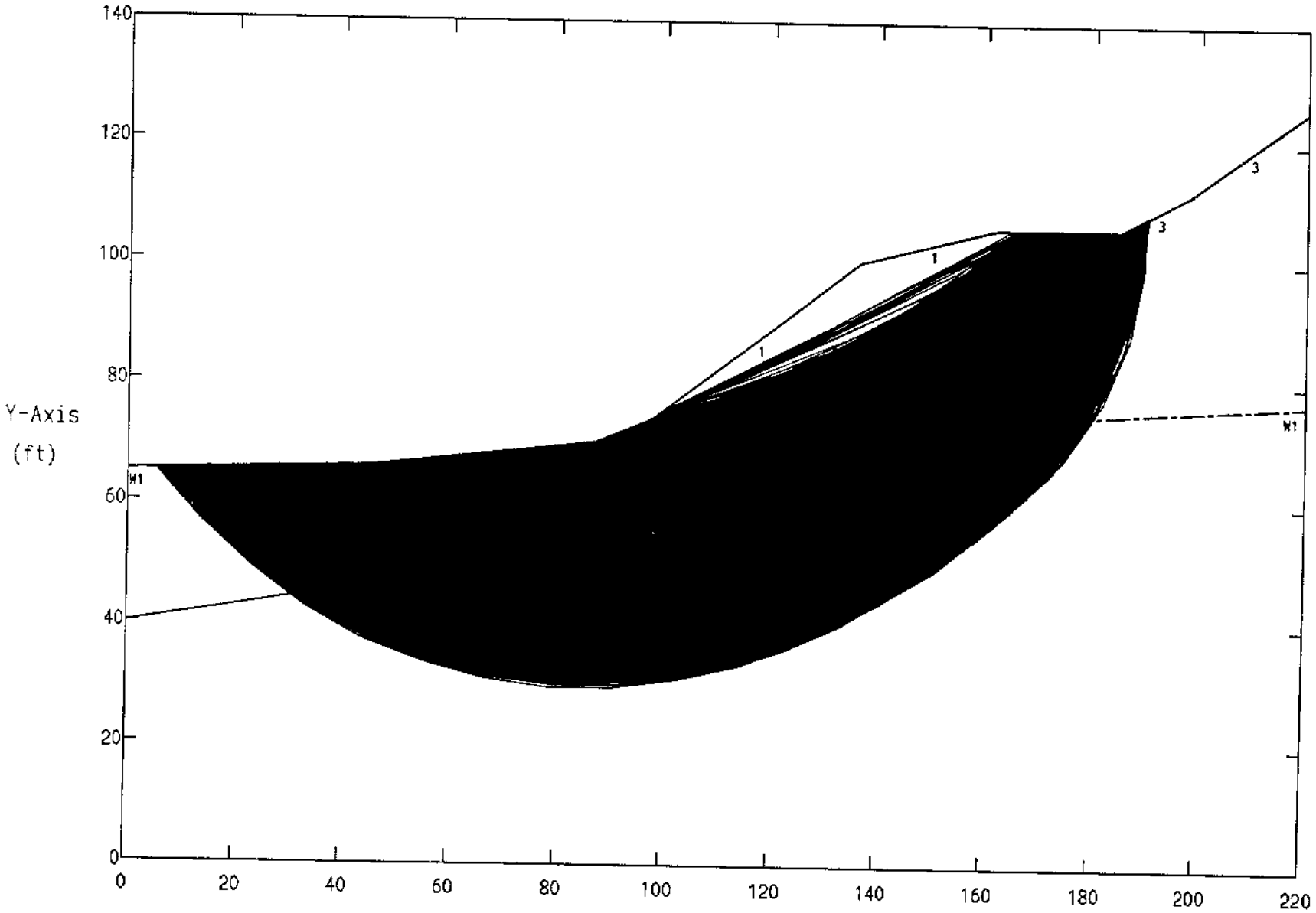


PCSTABL5M/SI FSmin=1.91 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

Playa Vista Cabrora Rd Section B_B from Psomas Remediation Exhibit

All surfaces evaluated. C:PSMSB_B.PLT By: TWA 10/31/2001 2:06pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	10/31/2001
Time of Run:	2:06pm
Run By:	TWA
Input Data Filename:	C:PSMSB_B
Output Filename:	C:PSMSB_B.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:PSMSB_B.PLT

PROBLEM DESCRIPTION Playa Vista Cabrora Rd Section B_B
from Psomas Remediation Exhibit

BOUNDARY COORDINATES

8 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	65.00	45.00	66.00	2
2	45.00	66.00	87.00	70.00	2
3	87.00	70.00	97.50	74.00	2
4	97.50	74.00	136.00	100.00	1
5	136.00	100.00	162.00	106.00	1
6	162.00	106.00	185.00	106.00	1
7	185.00	106.00	198.00	112.00	3
8	198.00	112.00	220.00	126.00	3
9	.00	40.00	70.00	50.00	3
10	70.00	50.00	97.50	74.00	3
11	97.50	74.00	163.00	101.00	3
12	163.00	101.00	183.00	101.00	4
13	183.00	101.00	185.00	106.00	3
14	163.00	101.00	166.00	91.00	3
15	166.00	91.00	176.50	91.00	3
16	176.50	91.00	183.00	101.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	105.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 4 Coordinate Points

Point No.	X Water (ft)	Y-Water (ft)
1	.00	65.00
2	45.00	66.00
3	87.00	70.00
4	220.00	77.00

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

10000 Trial Surfaces Have Been Generated.

100 Surfaces Initiate From Each Of100 Points Equally Spaced Along The Ground Surface Between X = 5.00 ft.
and X = 99.00 ft.

Each Surface Terminates Between X = 165.00 ft.
and X = 190.00 ft.

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

12.00 ft. Line Segments Define Each Trial Failure Surface.

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 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	29.69	65.66
2	40.19	59.85
3	51.31	55.36
4	62.91	52.26
5	74.79	50.59
6	86.79	50.39
7	98.72	51.65
8	110.41	54.35
9	121.69	58.46
10	132.38	63.91
11	142.33	70.62
12	151.38	78.49
13	159.41	87.41
14	166.29	97.24
15	170.95	106.00

Circle Center At X = 82.5 ; Y = 148.6 and Radius, 98.3

*** 1.911 ***

Individual data on the 25 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	10.5	3332.0	.0	2262.8	.0	.0	.0	.0	.0
2	4.8	3573.6	.0	2289.5	.0	.0	.0	.0	.0
3	6.3	6410.6	.0	4089.7	.0	.0	.0	.0	.0
4	11.6	16244.5	.0	9948.3	.0	.0	.0	.0	.0
5	8.3	14388.5	.0	8595.6	.0	.0	.0	.0	.0
6	3.5	6823.2	.0	3962.2	.0	.0	.0	.0	.0
7	12.0	27046.8	.0	14102.4	.0	.0	.0	.0	.0
8	.2	524.4	.0	258.0	.0	.0	.0	.0	.0
9	6.3	16706.0	.0	7663.2	.0	.0	.0	.0	.0
10	4.2	12226.2	.0	5043.1	.0	.0	.0	.0	.0

11	1.2	3723.4	1159.1	1456.2	.0	.0	.0	.0	.0
12	11.7	39872.1	7241.9	13405.1	.0	.0	.0	.0	.0
13	11.3	44437.7	400.1	11310.8	.0	.0	.0	.0	.0
14	10.7	44623.7	.0	8169.6	.0	.0	.0	.0	.0
15	3.6	15315.1	.0	2001.3	.0	.0	.0	.0	.0
16	6.3	25472.7	.0	2027.0	.0	.0	.0	.0	.0
17	2.8	10415.4	.0	265.7	.0	.0	.0	.0	.0
18	6.2	20883.1	.0	.0	.0	.0	.0	.0	.0
19	8.0	21335.2	.0	.0	.0	.0	.0	.0	.0
20	2.6	5246.3	.0	.0	.0	.0	.0	.0	.0
21	1.0	1746.1	.0	.0	.0	.0	.0	.0	.0
22	1.8	2334.8	.0	.0	.0	.0	.0	.0	.0
23	1.5	1368.1	.0	.0	.0	.0	.0	.0	.0
24	2.0	1433.0	.0	.0	.0	.0	.0	.0	.0
25	2.7	797.5	.0	.0	.0	.0	.0	.0	.0

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	27.79	65.62
2	38.34	59.90
3	49.50	55.48
4	61.10	52.43
5	72.99	50.78
6	84.99	50.57
7	96.92	51.79
8	108.63	54.42
9	119.94	58.43
10	130.69	63.76
11	140.73	70.34
12	149.91	78.07
13	158.10	86.84
14	165.19	96.52
15	170.51	106.00

Circle Center At X = 80.8 ; Y = 150.8 and Radius, 100.4

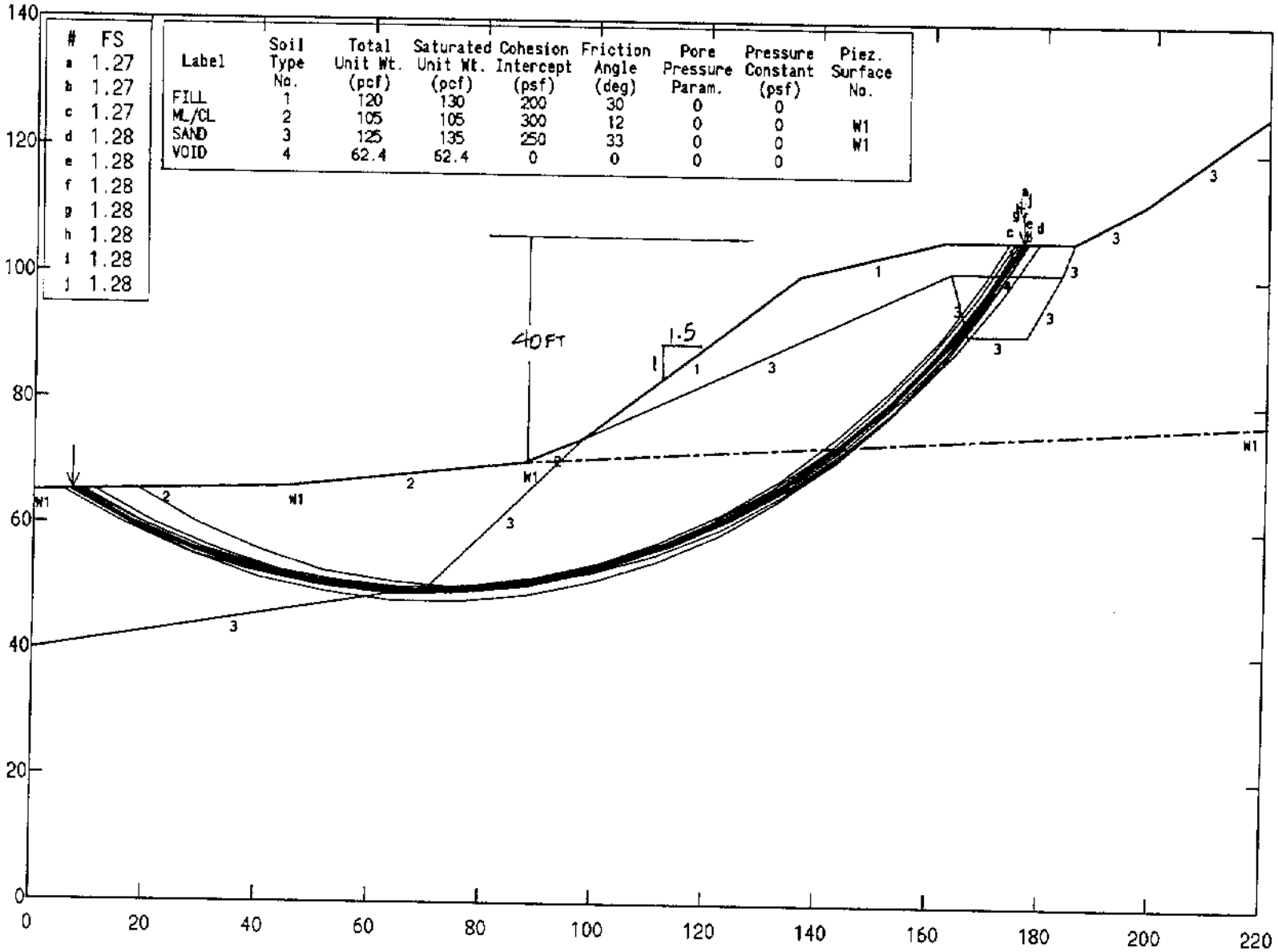
*** 1.912 ***

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	29.69	65.66
2	40.01	59.55
3	51.02	54.77
4	62.54	51.42
5	74.40	49.53

Playa Vista Cabrora Rd Section B_B from Psomas Remediation Exhibit

Ten Most Critical. C:PSMSB_B.PLT By: TWA 10/31/2001 2:08pm

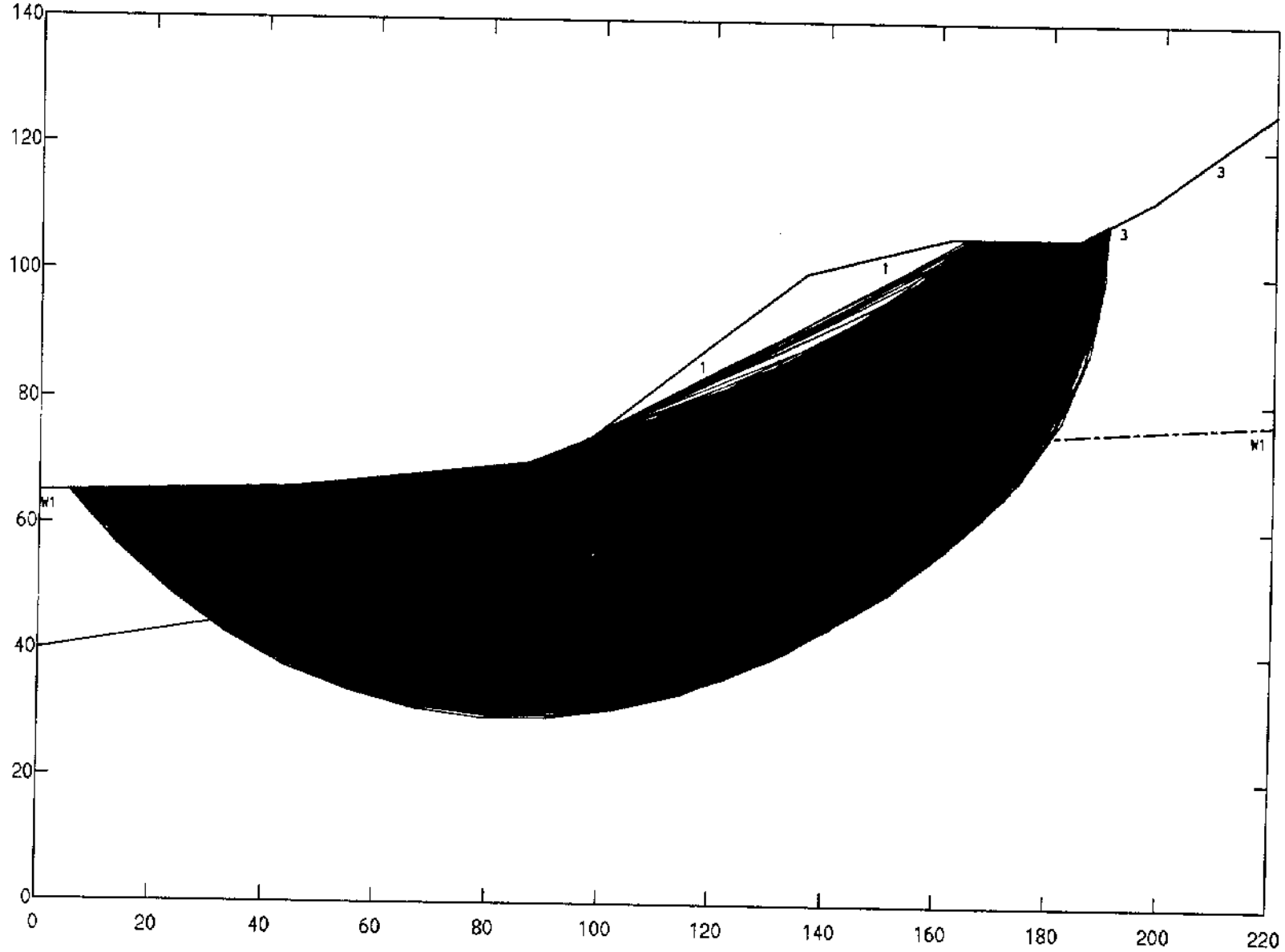


PCSTABL5M/SI FSmin=1.27 X-Axis (ft) SEISMIC

Factors Of Safety Calculated By The Modified Bishop Method

Playa Vista Cabrora Rd Section B_B from Psomas Remediation Exhibit

All surfaces evaluated. C:PSMSB_B.PLT By: TWA 10/31/2001 2:08pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	10/31/2001
Time of Run:	2:08pm
Run By:	TWA
Input Data Filename:	C:PSMSB_B
Output Filename:	C:PSMSB_B.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:PSMSB_B.PLT

PROBLEM DESCRIPTION Playa Vista Cabrora Rd Section B_B
from Psomas Remediation Exhibit

BOUNDARY COORDINATES

8 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	65.00	45.00	66.00	2
2	45.00	66.00	87.00	70.00	2
3	87.00	70.00	97.50	74.00	2
4	97.50	74.00	136.00	100.00	1
5	136.00	100.00	162.00	106.00	1
6	162.00	106.00	185.00	106.00	1
7	185.00	106.00	198.00	112.00	3
8	198.00	112.00	220.00	126.00	3
9	.00	40.00	70.00	50.00	3
10	70.00	50.00	97.50	74.00	3
11	97.50	74.00	163.00	101.00	3
12	163.00	101.00	183.00	101.00	4
13	183.00	101.00	185.00	106.00	3
14	163.00	101.00	166.00	91.00	3
15	166.00	91.00	176.50	91.00	3
16	176.50	91.00	183.00	101.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	105.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 4 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	65.00
2	45.00	66.00
3	87.00	70.00
4	220.00	77.00

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 (psf)

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

10000 Trial Surfaces Have Been Generated.

100 Surfaces Initiate From Each Of100 Points Equally Spaced
Along The Ground Surface Between X = 5.00 ft.
and X = 99.00 ft.

Each Surface Terminates Between X = 165.00 ft.

and X = 190.00 ft.

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

12.00 ft. Line Segments Define Each Trial Failure Surface.

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	6.90	65.15
2	17.71	59.94
3	28.95	55.74
4	40.53	52.59
5	52.35	50.53
6	64.31	49.57
7	76.31	49.71
8	88.24	50.96
9	100.01	53.30
10	111.52	56.72
11	122.65	61.18
12	133.33	66.66
13	143.46	73.09
14	152.96	80.43
15	161.73	88.62
16	169.71	97.58
17	175.93	106.00

Circle Center At X = 68.8 ; Y = 179.5 and Radius, 130.0

*** 1.273 ***

Individual data on the 28 slices

Water Force	Water Force	Tie Force	Tie Force	Earthquake Force	Surcharge

Slice No.	Width (ft)	Weight (lbs)	Top (lbs)	Bot (lbs)	Norm (lbs)	Tan (lbs)	Hor (lbs)	Ver (lbs)	Load (lbs)
1	10.8	3096.3	.0	2042.8	.0	.0	464.4	.0	.0
2	11.2	9067.3	.0	5750.8	.0	.0	1360.1	.0	.0
3	11.6	14113.8	.0	8689.2	.0	.0	2117.1	.0	.0
4	4.5	6455.3	.0	3893.3	.0	.0	968.3	.0	.0
5	7.3	11713.4	.0	7034.6	.0	.0	1757.0	.0	.0
6	12.0	21629.6	.0	12837.9	.0	.0	3244.4	.0	.0
7	2.9	5575.7	.0	3298.9	.0	.0	836.4	.0	.0
8	2.8	5497.9	.0	3243.8	.0	.0	824.7	.0	.0
9	6.3	13178.7	.0	7452.0	.0	.0	1976.8	.0	.0
10	10.7	24754.7	.0	12835.7	.0	.0	3713.2	.0	.0
11	1.2	3069.2	.0	1492.7	.0	.0	460.4	.0	.0
12	5.1	13122.5	.0	6014.8	.0	.0	1968.4	.0	.0
13	4.2	11610.3	.0	4823.9	.0	.0	1741.5	.0	.0
14	2.5	7294.2	2299.8	2805.8	.0	.0	1094.1	.0	.0
15	11.5	37291.0	6425.3	11947.9	.0	.0	5593.6	.0	.0
16	11.1	41034.7	.0	9445.9	.0	.0	6155.2	.0	.0
17	10.7	41442.3	.0	6159.7	.0	.0	6216.4	.0	.0
18	2.7	10532.5	.0	985.1	.0	.0	1579.9	.0	.0
19	7.3	27194.8	.0	1133.0	.0	.0	4079.2	.0	.0
20	.2	723.8	.0	.0	.0	.0	108.6	.0	.0
21	9.5	30542.6	.0	.0	.0	.0	4581.4	.0	.0
22	8.8	22104.3	.0	.0	.0	.0	3315.6	.0	.0
23	.3	570.3	.0	.0	.0	.0	85.6	.0	.0
24	1.0	2039.1	.0	.0	.0	.0	305.9	.0	.0
25	2.5	3790.1	.0	.0	.0	.0	568.5	.0	.0
26	4.3	4096.0	.0	.0	.0	.0	614.4	.0	.0
27	2.5	1785.4	.0	.0	.0	.0	267.8	.0	.0
28	3.7	1106.4	.0	.0	.0	.0	166.0	.0	.0

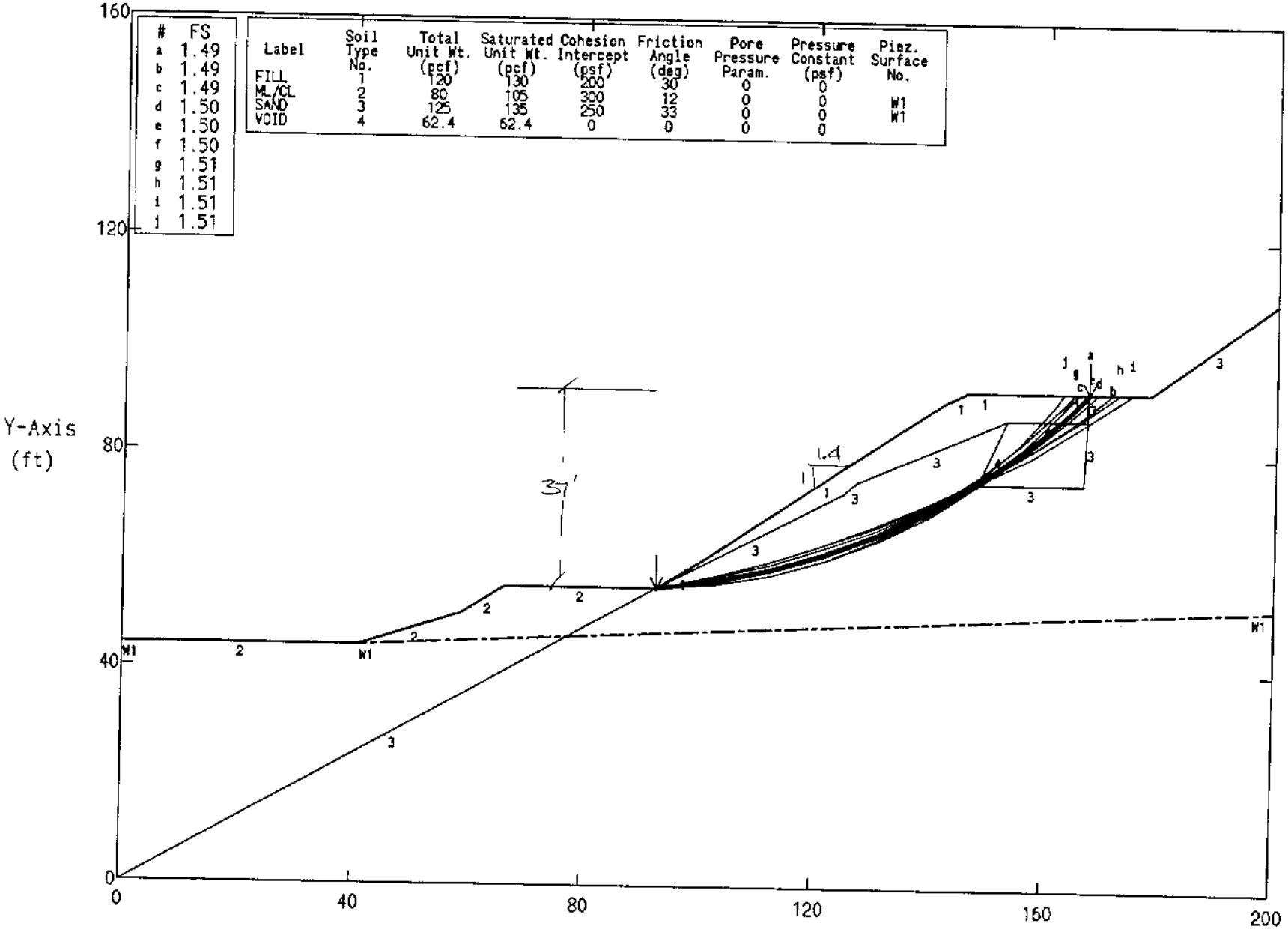
Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	7.85	65.17
2	18.72	60.10
3	30.01	56.03
4	41.62	53.00
5	53.46	51.04
6	65.43	50.17
7	77.43	50.38
8	89.36	51.68
9	101.12	54.06
10	112.62	57.49
11	123.76	61.96
12	134.45	67.41
13	144.59	73.82
14	154.12	81.11
15	162.94	89.25
16	170.99	98.15
17	176.89	106.00

Circle Center At X = 69.1 ; Y = 182.2 and Radius, 132.1

PLAYA VISTA CABRORA RD **SECTION C-C** Water-filled Tunnel, EXIST COND.

Ten Most Critical. C:RIPN1SI.PLT By: TWA 7/31/2001 1:38pm

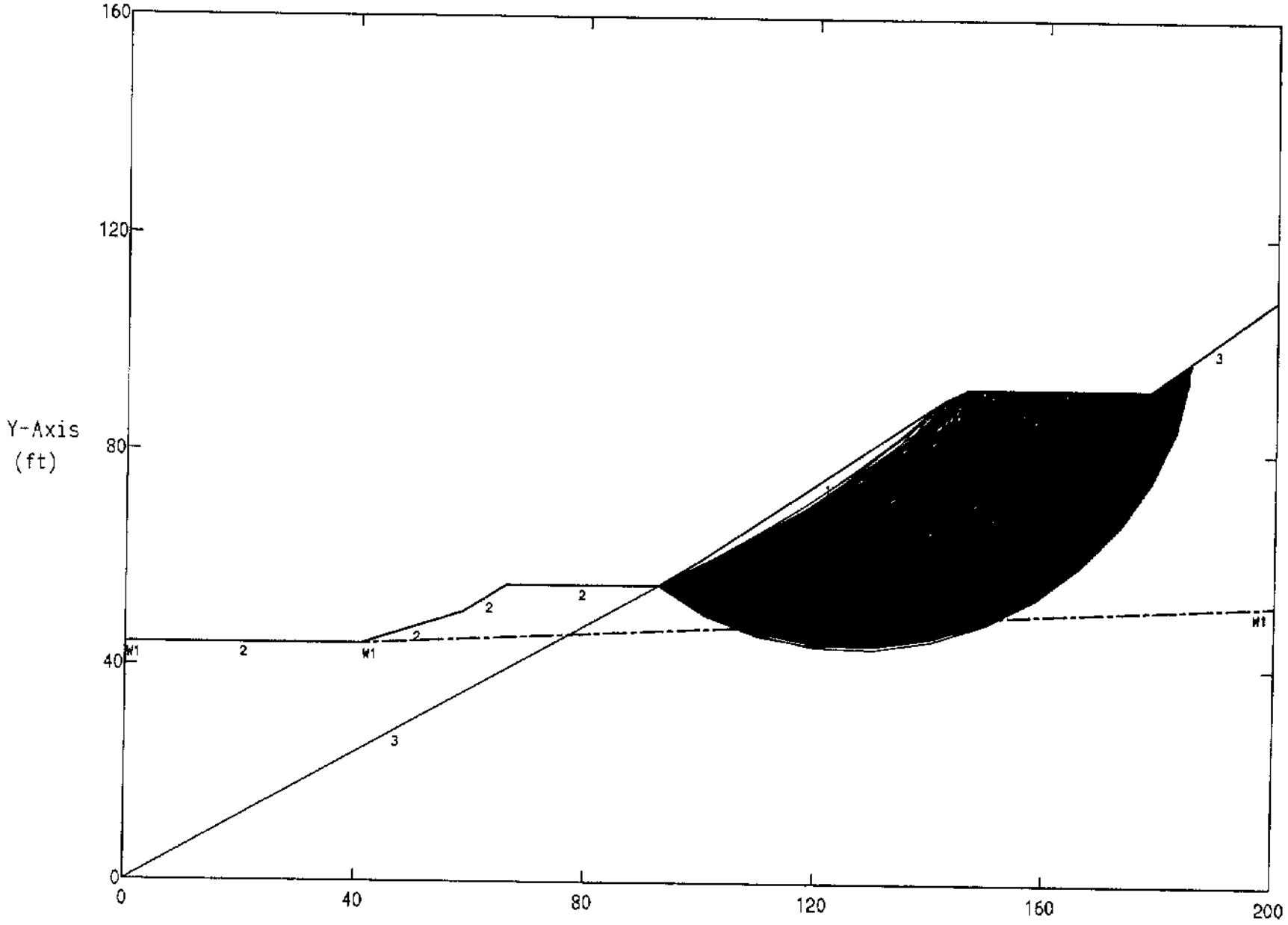


POSTABL5M/SI FSmin=1.49 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION N1 Water-filled Tunnel, EXIST COND.

All surfaces evaluated. C:RIPN1SI.PLT By: TWA 7/31/2001 1:38pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	7/31/2001
Time of Run:	1:38pm
Run By:	TWA
Input Data Filename:	C:RIPN1SI
Output Filename:	C:R1PN1SI.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:RIPN1SI.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION N1
Water-filled Tunnel, EXIST COND.

BOUNDARY COORDINATES

10 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	55.00	2
4	66.00	55.00	92.50	55.00	2
5	92.50	55.00	100.00	60.00	1
6	100.00	60.00	142.00	90.00	1
7	142.00	90.00	146.00	92.00	1
8	146.00	92.00	152.00	92.00	1
9	152.00	92.00	178.00	92.00	1
10	178.00	92.00	200.00	109.00	3
11	.00	.00	92.50	55.00	3
12	92.50	55.00	125.00	73.00	3
13	125.00	73.00	127.00	75.00	3
14	127.00	75.00	153.00	87.00	3
15	148.00	75.00	153.00	87.00	4
16	153.00	87.00	166.90	87.00	4
17	166.90	87.00	167.00	92.00	3
18	148.00	75.00	166.50	75.00	3
19	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	200.00	52.00

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

1000 Trial Surfaces Have Been Generated.

1000 Surfaces Initiate From Each Of 1 Points Equally Spaced Along The Ground Surface Between X = 92.50 ft.
and X = 92.50 ft.

Each Surface Terminates Between X = 140.00 ft.
and X = 185.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

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 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.50	55.00
2	102.40	56.44
3	112.14	58.71
4	121.66	61.77
5	130.89	65.62
6	139.76	70.22
7	148.23	75.54
8	156.22	81.55
9	163.69	88.21
10	167.29	92.00

Circle Center At X = 80.3 ; Y = 173.7 and Radius, 119.3

*** 1.486 ***

Individual data on the 20 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	7.5	1814.6	.0	.0	.0	.0	.0	.0	.0
2	2.4	1361.0	.0	.0	.0	.0	.0	.0	.0
3	9.7	9173.7	.0	.0	.0	.0	.0	.0	.0
4	9.5	13906.2	.0	.0	.0	.0	.0	.0	.0
5	3.3	5857.9	.0	.0	.0	.0	.0	.0	.0
6	2.0	3701.7	.0	.0	.0	.0	.0	.0	.0
7	3.9	7613.9	.0	.0	.0	.0	.0	.0	.0
8	8.9	18932.6	.0	.0	.0	.0	.0	.0	.0
9	2.2	5020.7	.0	.0	.0	.0	.0	.0	.0
10	4.0	8895.9	.0	.0	.0	.0	.0	.0	.0
11	2.2	4685.9	.0	.0	.0	.0	.0	.0	.0
12	.0	10.7	.0	.0	.0	.0	.0	.0	.0
13	3.8	6233.4	.0	.0	.0	.0	.0	.0	.0

14	1.0	1188.6	.0	.0	.0	.0	.0	.0	.0
15	3.2	3272.8	.0	.0	.0	.0	.0	.0	.0
16	6.1	4706.6	.0	.0	.0	.0	.0	.0	.0
17	1.4	713.7	.0	.0	.0	.0	.0	.0	.0
18	3.3	814.7	.0	.0	.0	.0	.0	.0	.0
19	.0	.2	.0	.0	.0	.0	.0	.0	.0
20	.3	5.3	.0	.0	.0	.0	.0	.0	.0

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.50	55.00
2	102.31	56.94
3	111.98	59.49
4	121.47	62.64
5	130.75	66.37
6	139.78	70.66
7	148.53	75.51
8	156.95	80.90
9	165.03	86.79
10	171.30	92.00

Circle Center At X = 66.3 ; Y = 213.3 and Radius, 160.4

*** 1.488 ***

Failure Surface Specified By 10 Coordinate Points

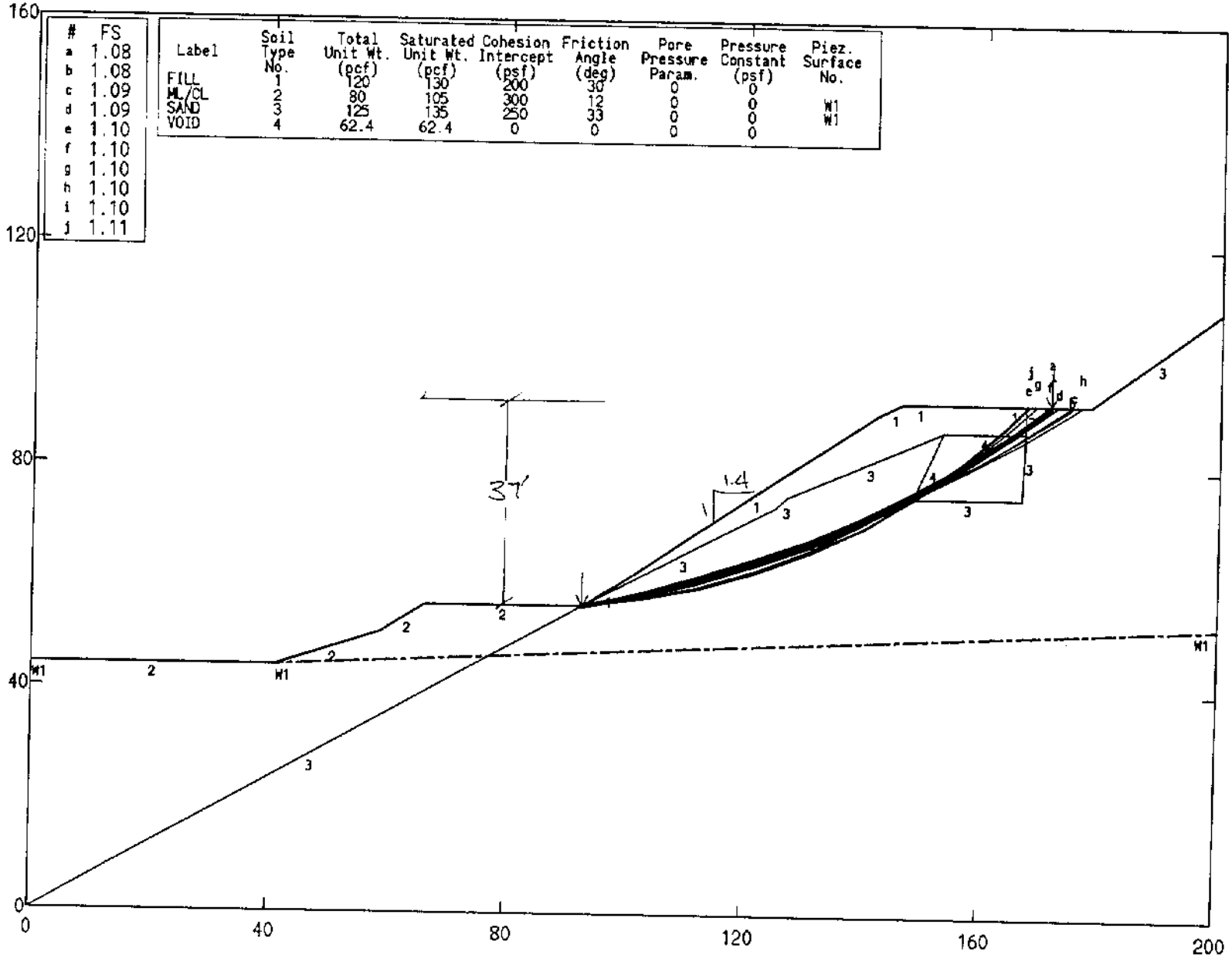
Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.50	55.00
2	102.44	56.12
3	112.22	58.18
4	121.76	61.18
5	130.97	65.08
6	139.76	69.85
7	148.05	75.44
8	155.76	81.81
9	162.83	88.88
10	165.40	92.00

Circle Center At X = 86.1 ; Y = 158.0 and Radius, 103.2

*** 1.490 ***

PLAYA VISTA CABRORA RD **SECTION C-C** Water-filled Tunnel, EXIST COND. Seismic

Ten Most Critical. C:\RIPN1SI.PLT By: TWA 7/31/2001 1:37pm

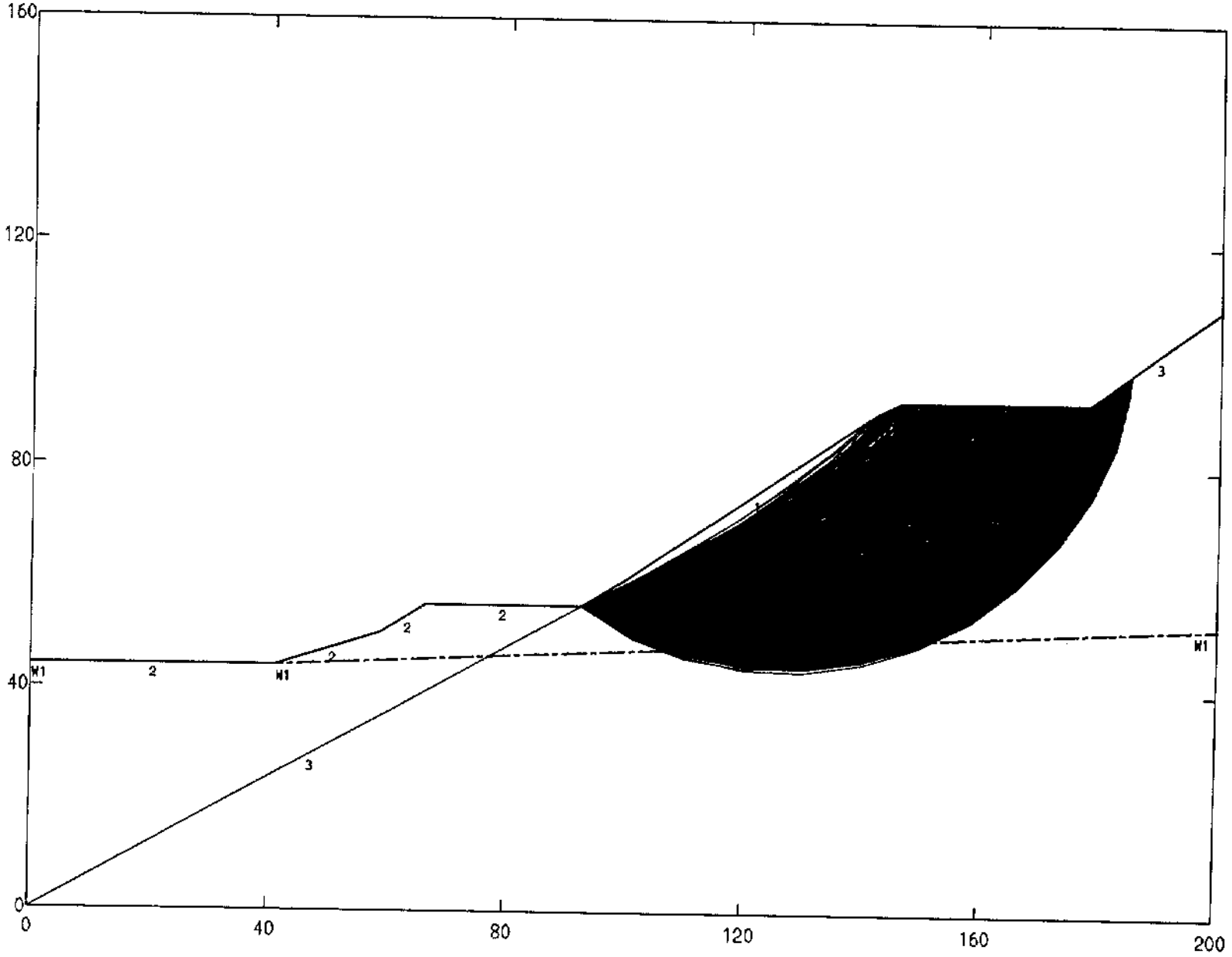


PCSTABL5M/SI FSmin=1.08 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION N1 Water-filled Tunnel, EXIST COND. Seismic

All surfaces evaluated. C:RIPN1SI.PLT By: TWA 7/31/2001 1:37pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	7/31/2001
Time of Run:	1:37pm
Run By:	TWA
Input Data Filename:	C:RIPN1SI
Output Filename:	C:RIPN1SI.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:RIPN1SI.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION N1
Water-filled Tunnel, EXIST COND. Seismic

BOUNDARY COORDINATES

10 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	55.00	2
4	66.00	55.00	92.50	55.00	2
5	92.50	55.00	100.00	60.00	1
6	100.00	60.00	142.00	90.00	1
7	142.00	90.00	146.00	92.00	1
8	146.00	92.00	152.00	92.00	1
9	152.00	92.00	178.00	92.00	1
10	178.00	92.00	200.00	109.00	3
11	.00	.00	92.50	55.00	3
12	92.50	55.00	125.00	73.00	3
13	125.00	73.00	127.00	75.00	3
14	127.00	75.00	153.00	87.00	3
15	148.00	75.00	153.00	87.00	4
16	153.00	87.00	166.90	87.00	4
17	166.90	87.00	167.00	92.00	3
18	148.00	75.00	166.50	75.00	3
19	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	200.00	52.00

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 (psf)

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

1000 Trial Surfaces Have Been Generated.

1000 Surfaces Initiate From Each Of 1 Points Equally Spaced
Along The Ground Surface Between X = 92.50 ft.
and X = 92.50 ft.

Each Surface Terminates Between X = 140.00 ft.
and X = 185.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

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 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.50	55.00
2	102.31	56.94
3	111.98	59.49
4	121.47	62.64
5	130.75	66.37
6	139.78	70.66
7	148.53	75.51
8	156.95	80.90
9	165.03	86.79
10	171.30	92.00

Circle Center At X = 66.3 ; Y = 213.3 and Radius, 160.4

*** 1.078 ***

Individual data on the 20 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	7.5	1630.8	.0	.0	.0	.0	244.6	.0	.0
2	2.3	1174.4	.0	.0	.0	.0	176.2	.0	.0
3	9.7	8223.9	.0	.0	.0	.0	1233.6	.0	.0

4	9.5	12742.3	.0	.0	.0	.0	1911.3	.0	.0
5	3.5	5762.5	.0	.0	.0	.0	864.4	.0	.0
6	2.0	3482.4	.0	.0	.0	.0	522.4	.0	.0
7	3.8	6948.5	.0	.0	.0	.0	1042.3	.0	.0
8	9.0	18531.4	.0	.0	.0	.0	2779.7	.0	.0
9	2.2	4887.5	.0	.0	.0	.0	733.1	.0	.0
10	4.0	8834.5	.0	.0	.0	.0	1325.2	.0	.0
11	2.1	4503.7	.0	.0	.0	.0	675.5	.0	.0
12	.4	816.0	.0	.0	.0	.0	122.4	.0	.0
13	3.5	5740.9	.0	.0	.0	.0	861.1	.0	.0
14	1.0	1232.2	.0	.0	.0	.0	184.8	.0	.0
15	4.0	4188.6	.0	.0	.0	.0	628.3	.0	.0
16	8.1	6435.9	.0	.0	.0	.0	965.4	.0	.0
17	.2	150.8	.0	.0	.0	.0	22.6	.0	.0
18	1.6	853.9	.0	.0	.0	.0	128.1	.0	.0
19	.1	32.0	.0	.0	.0	.0	4.8	.0	.0
20	4.3	922.2	.0	.0	.0	.0	138.3	.0	.0

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.50	55.00
2	102.24	57.28
3	111.85	60.02
4	121.33	63.22
5	130.64	66.85
6	139.78	70.93
7	148.70	75.44
8	157.41	80.36
9	165.87	85.69
10	174.07	91.42
11	174.82	92.00

Circle Center At X = 49.3 ; Y = 261.3 and Radius, 210.8

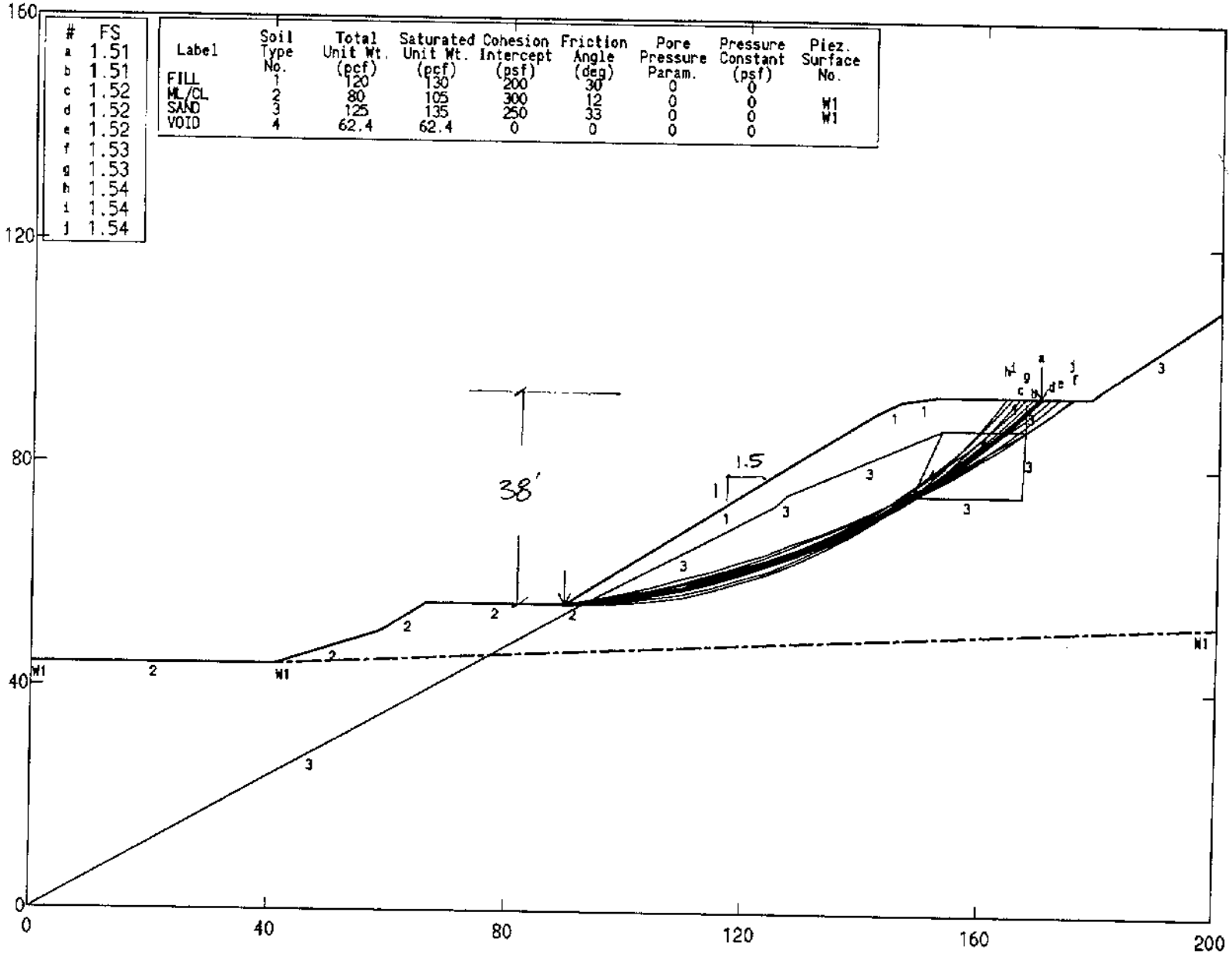
*** 1.080 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.50	55.00
2	102.21	57.40
3	111.80	60.22
4	121.26	63.46
5	130.57	67.12
6	139.70	71.19
7	148.65	75.66

PLAYA VISTA CABRORA RD **SECTION C-C** Water-filled Tunnel, 1.5:1 Slope

Ten Most Critical. C:1_5TO1.PLT By: TWA 7/23/2001 5:03pm



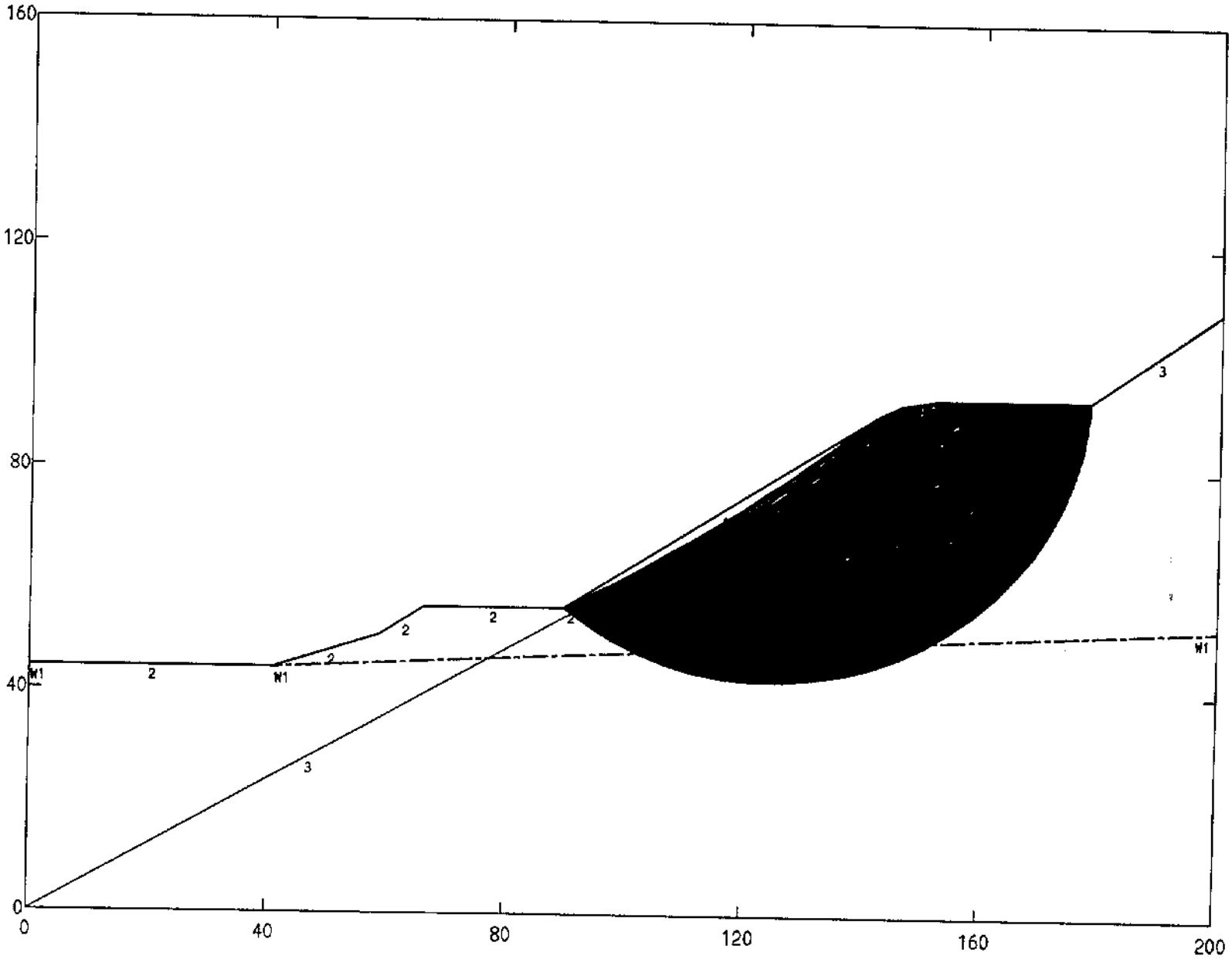
Y-Axis (ft)

PCSTABL5M/SI FSmin=1.51 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION N1 Water-filled Tunnel, 1.5:1 Slope

All surfaces evaluated. C:1_5TO1.PLT By: TWA 7/23/2001 5:03pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	7/23/2001
Time of Run:	5:03pm
Run By:	TWA
Input Data Filename:	C:1_5TO1
Output Filename:	C:1_5TO1.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:1_5TO1.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION N1
Water-filled Tunnel, 1.5:1 Slope

BOUNDARY COORDINATES

9 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	55.00	2
4	66.00	55.00	89.50	55.00	2
5	89.50	55.00	142.00	90.00	1
6	142.00	90.00	146.00	92.00	1
7	146.00	92.00	152.00	93.00	1
8	152.00	93.00	178.00	93.00	1
9	178.00	93.00	200.00	109.00	3
10	89.50	55.00	92.50	55.00	2
11	.00	.00	92.50	55.00	3
12	92.50	55.00	125.00	73.00	3
13	125.00	73.00	127.00	75.00	3
14	127.00	75.00	153.00	87.00	3
15	148.00	75.00	153.00	87.00	4
16	153.00	87.00	166.90	87.00	4
17	166.90	87.00	167.00	92.00	3
18	148.00	75.00	166.50	75.00	3
19	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	200.00	52.00

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

1000 Trial Surfaces Have Been Generated.

1000 Surfaces Initiate From Each Of 1 Points Equally Spaced Along The Ground Surface Between X = 89.50 ft.
and X = 89.50 ft.

Each Surface Terminates Between X = 138.00 ft.
and X = 178.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

5.00 ft. Line Segments Define Each Trial Failure Surface.

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 20 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	89.50	55.00
2	94.48	55.44
3	99.44	56.09
4	104.36	56.95
5	109.25	58.01
6	114.09	59.27
7	118.87	60.73
8	123.59	62.38
9	128.24	64.23
10	132.80	66.27
11	137.27	68.50
12	141.65	70.92
13	145.93	73.51
14	150.09	76.28
15	154.14	79.21
16	158.06	82.32
17	161.85	85.58
18	165.50	88.99
19	169.01	92.56
20	169.40	93.00

Circle Center At X = 81.3 ; Y = 175.2 and Radius, 120.5

*** 1.509 ***

Individual data on the 31 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	3.6	442.9	.0	.0	.0	.0	.0	.0	.0
2	1.4	418.9	.0	.0	.0	.0	.0	.0	.0
3	5.0	2543.3	.0	.0	.0	.0	.0	.0	.0

4	4.9	4079.3	.0	.0	.0	.0	.0	.0	.0
5	4.9	5446.8	.0	.0	.0	.0	.0	.0	.0
6	4.8	6639.6	.0	.0	.0	.0	.0	.0	.0
7	4.8	7653.6	.0	.0	.0	.0	.0	.0	.0
8	4.7	8486.2	.0	.0	.0	.0	.0	.0	.0
9	1.4	2698.1	.0	.0	.0	.0	.0	.0	.0
10	2.0	3944.4	.0	.0	.0	.0	.0	.0	.0
11	1.2	2504.1	.0	.0	.0	.0	.0	.0	.0
12	4.6	9620.5	.0	.0	.0	.0	.0	.0	.0
13	4.5	9904.2	.0	.0	.0	.0	.0	.0	.0
14	4.4	10016.7	.0	.0	.0	.0	.0	.0	.0
15	.3	801.1	.0	.0	.0	.0	.0	.0	.0
16	3.9	9009.2	.0	.0	.0	.0	.0	.0	.0
17	.1	158.7	.0	.0	.0	.0	.0	.0	.0
18	2.0	4407.5	.0	.0	.0	.0	.0	.0	.0
19	.2	372.2	.0	.0	.0	.0	.0	.0	.0
20	1.9	3730.1	.0	.0	.0	.0	.0	.0	.0
21	1.9	3079.2	.0	.0	.0	.0	.0	.0	.0
22	1.0	1354.2	.0	.0	.0	.0	.0	.0	.0
23	1.1	1404.9	.0	.0	.0	.0	.0	.0	.0
24	3.9	4348.7	.0	.0	.0	.0	.0	.0	.0
25	3.8	3449.9	.0	.0	.0	.0	.0	.0	.0
26	1.5	1161.2	.0	.0	.0	.0	.0	.0	.0
27	2.1	1279.4	.0	.0	.0	.0	.0	.0	.0
28	1.5	574.4	.0	.0	.0	.0	.0	.0	.0
29	.0	9.2	.0	.0	.0	.0	.0	.0	.0
30	2.0	351.5	.0	.0	.0	.0	.0	.0	.0
31	.4	10.5	.0	.0	.0	.0	.0	.0	.0

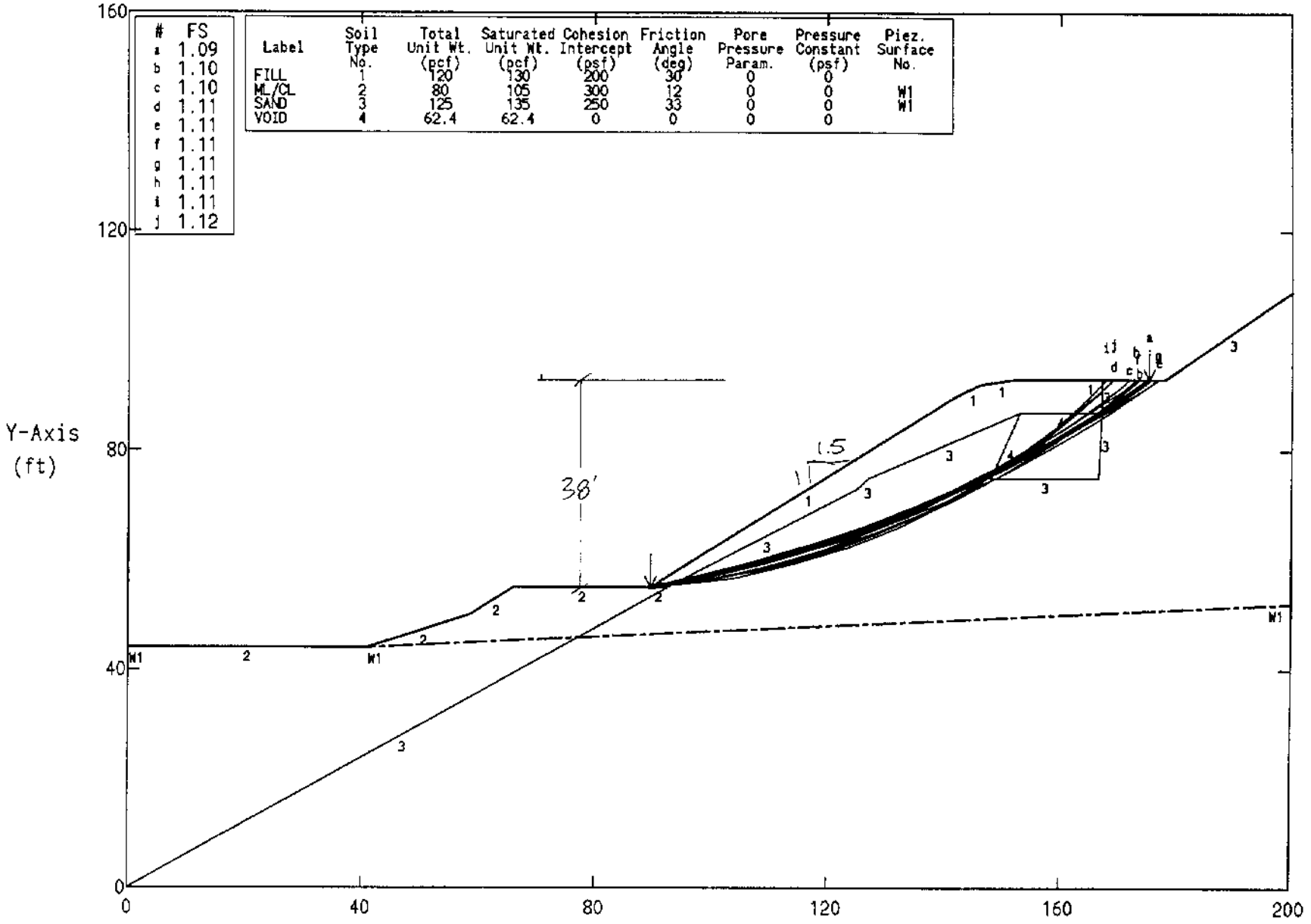
Failure Surface Specified By 19 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	89.50	55.00
2	94.48	55.48
3	99.43	56.16
4	104.35	57.05
5	109.23	58.15
6	114.06	59.45
7	118.83	60.95
8	123.53	62.65
9	128.15	64.55
10	132.70	66.64
11	137.15	68.91
12	141.50	71.37
13	145.75	74.02
14	149.88	76.84
15	153.88	79.82
16	157.76	82.98
17	161.51	86.29
18	165.11	89.76
19	168.20	93.00

Circle Center At X = 80.7 ; Y = 173.8 and Radius, 119.2

PLAYA VISTA CABRORA RD **SECTION C-C** Water-filled Tunnel, 1.5:1 Slope Seismic

Ten Most Critical. C:1_5TO1SI.PLT By: TWA 7/31/2001 1:11pm

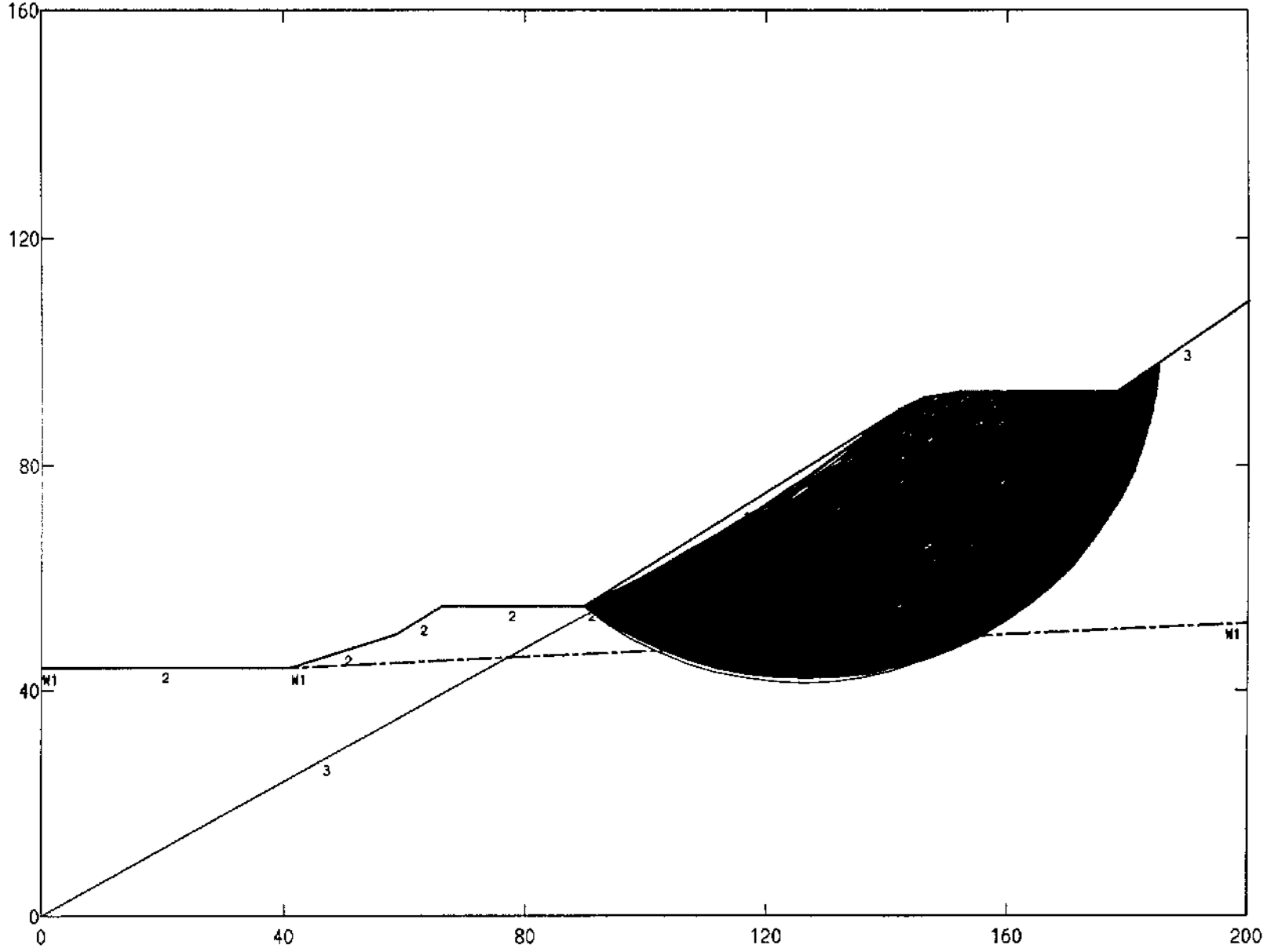


PCSTABL5M/SI FSmin=1.09 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION N1 Water-filled Tunnel, 1.5:1 Slope Seismic

All surfaces evaluated. C:1_5TO1SI.PLT By: TWA 7/31/2001 1:11pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	7/31/2001
Time of Run:	1:11pm
Run By:	TWA
Input Data Filename:	C:1_5TO1SI
Output Filename:	C:1_5TO1SI.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:1_5TO1SI.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION N1
Water-filled Tunnel, 1.5:1 Slope Seismic

BOUNDARY COORDINATES

9 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	55.00	2
4	66.00	55.00	89.50	55.00	2
5	89.50	55.00	142.00	90.00	1
6	142.00	90.00	146.00	92.00	1
7	146.00	92.00	152.00	93.00	1
8	152.00	93.00	178.00	93.00	1
9	178.00	93.00	200.00	109.00	3
10	89.50	55.00	92.50	55.00	2
11	.00	.00	92.50	55.00	3
12	92.50	55.00	125.00	73.00	3
13	125.00	73.00	127.00	75.00	3
14	127.00	75.00	153.00	87.00	3
15	148.00	75.00	153.00	87.00	4
16	153.00	87.00	166.90	87.00	4
17	166.90	87.00	167.00	93.00	3
18	148.00	75.00	166.50	75.00	3
19	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

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1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	200.00	52.00

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 (psf)

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

1000 Trial Surfaces Have Been Generated.

1000 Surfaces Initiate From Each Of 1 Points Equally Spaced
Along The Ground Surface Between X = 89.50 ft.
and X = 89.50 ft.

Each Surface Terminates Between X = 138.00 ft.
and X = 185.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

5.00 ft. Line Segments Define Each Trial Failure Surface.

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 20 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	89.50	55.00
2	94.40	56.02
3	99.27	57.15
4	104.11	58.40
5	108.92	59.76
6	113.70	61.23
7	118.44	62.82
8	123.14	64.52
9	127.80	66.33
10	132.42	68.24
11	136.99	70.27
12	141.51	72.40
13	145.98	74.65
14	150.40	76.99
15	154.76	79.44
16	159.06	81.99
17	163.30	84.64
18	167.47	87.40
19	171.58	90.24
20	175.36	93.00

Circle Center At X = 48.9 ; Y = 262.7 and Radius, 211.6

*** 1.092 ***

Individual data on the 30 slices

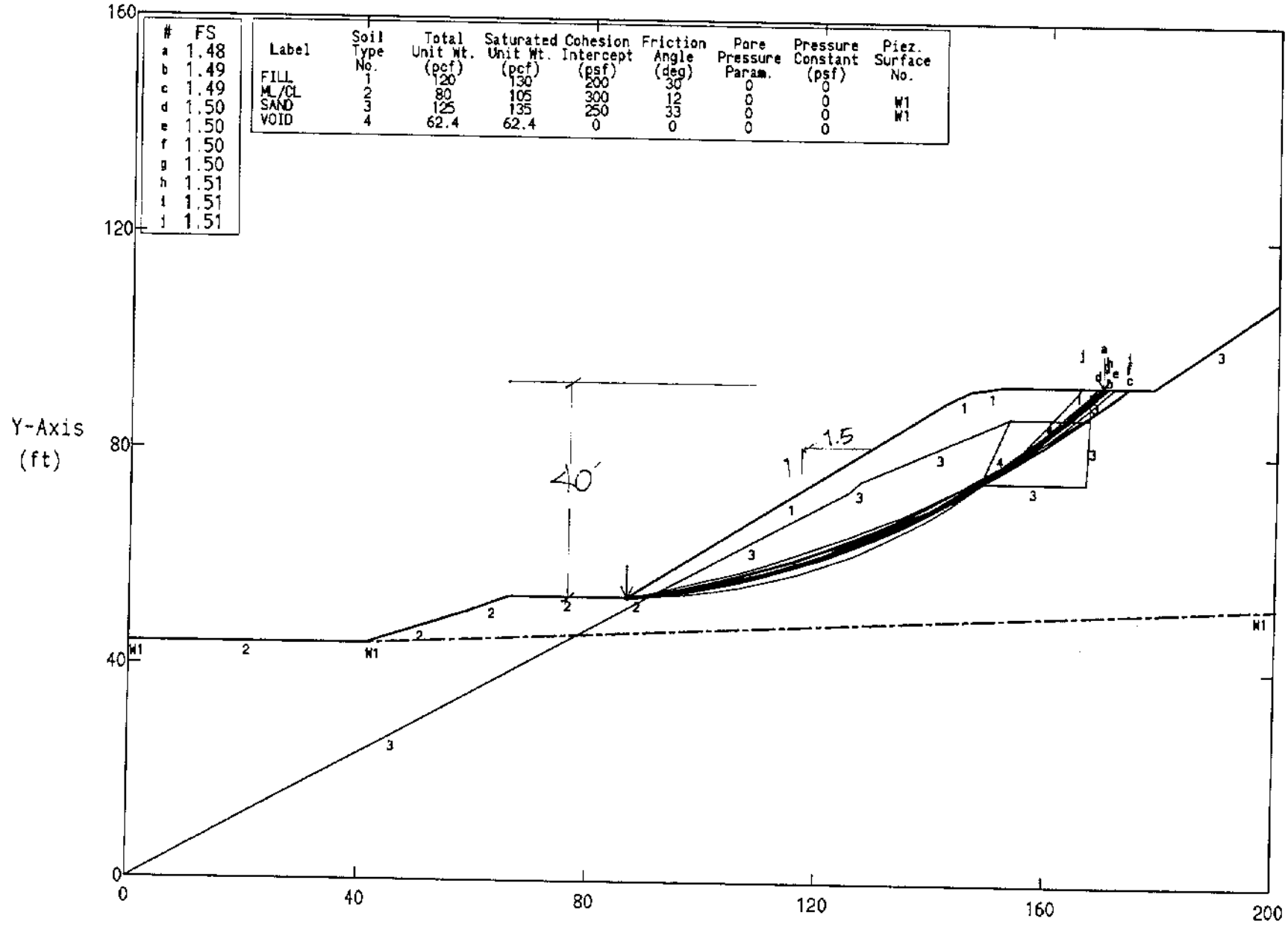
Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	4.8	634.6	.0	.0	.0	.0	95.2	.0	.0
2	.1	25.4	.0	.0	.0	.0	3.8	.0	.0
3	4.9	1950.8	.0	.0	.0	.0	292.6	.0	.0
4	4.8	3165.8	.0	.0	.0	.0	474.9	.0	.0
5	4.8	4283.5	.0	.0	.0	.0	642.5	.0	.0
6	4.8	5303.1	.0	.0	.0	.0	795.5	.0	.0
7	4.7	6223.8	.0	.0	.0	.0	933.6	.0	.0
8	4.7	7045.5	.0	.0	.0	.0	1056.8	.0	.0
9	1.9	3008.0	.0	.0	.0	.0	451.2	.0	.0
10	2.0	3373.6	.0	.0	.0	.0	506.0	.0	.0
11	.8	1394.5	.0	.0	.0	.0	209.2	.0	.0
12	4.6	8406.2	.0	.0	.0	.0	1260.9	.0	.0
13	4.6	8922.6	.0	.0	.0	.0	1338.4	.0	.0
14	4.5	9342.6	.0	.0	.0	.0	1401.4	.0	.0
15	.5	1035.3	.0	.0	.0	.0	155.3	.0	.0
16	4.0	8473.8	.0	.0	.0	.0	1271.1	.0	.0
17	.0	37.4	.0	.0	.0	.0	5.6	.0	.0
18	2.4	4944.7	.0	.0	.0	.0	741.7	.0	.0
19	2.0	3746.5	.0	.0	.0	.0	562.0	.0	.0
20	1.6	2509.9	.0	.0	.0	.0	376.5	.0	.0
21	1.0	1344.9	.0	.0	.0	.0	201.7	.0	.0
22	1.8	2148.3	.0	.0	.0	.0	322.3	.0	.0
23	4.3	4782.3	.0	.0	.0	.0	717.3	.0	.0
24	4.2	4025.8	.0	.0	.0	.0	603.9	.0	.0
25	3.6	2837.2	.0	.0	.0	.0	425.6	.0	.0
26	.0	21.1	.0	.0	.0	.0	3.2	.0	.0
27	.1	72.4	.0	.0	.0	.0	10.9	.0	.0
28	.5	325.3	.0	.0	.0	.0	48.8	.0	.0
29	4.1	2061.0	.0	.0	.0	.0	309.1	.0	.0
30	3.8	624.8	.0	.0	.0	.0	93.7	.0	.0

Failure Surface Specified By 20 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	89.50	55.00
2	94.45	55.71
3	99.38	56.57
4	104.27	57.59
5	109.13	58.76
6	113.95	60.09
7	118.73	61.57
8	123.45	63.21
9	128.12	64.99
10	132.74	66.92
11	137.28	69.00
12	141.76	71.22
13	146.17	73.58
14	150.50	76.08

PLAYA VISTA CABRORA RD **SECTION C-C** Water-filled Tunnel, 1.5:1 Slope

Ten Most Critical. C:TRIALS.PLT By: TWA 10/23/2001 2:05pm

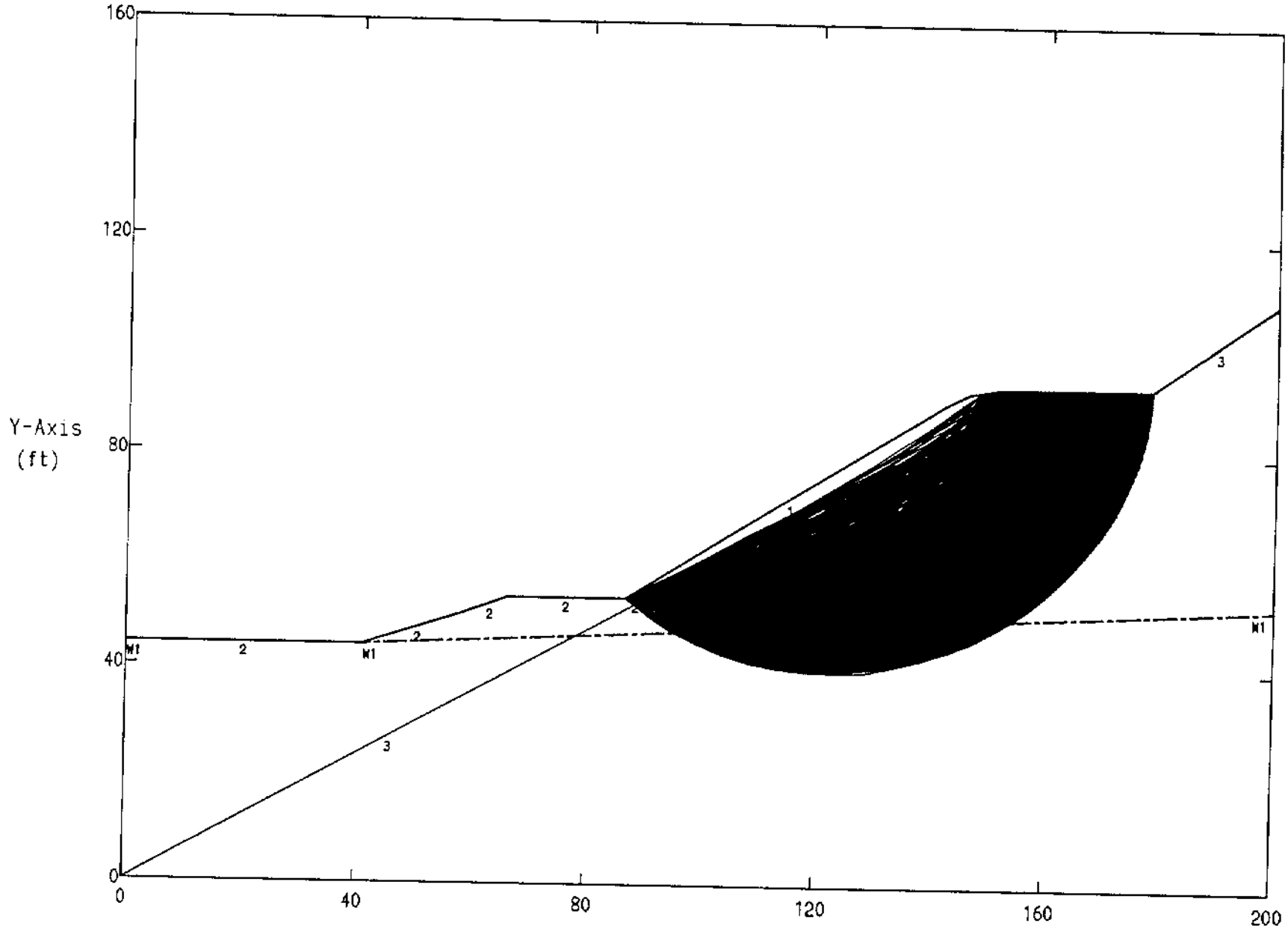


PCSTABL5M/SI FSmin=1.48 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION N1 Water-filled Tunnel, 1.5:1 Slope

All surfaces evaluated. C:TRIALS.PLT By: TWA 10/23/2001 2:05pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	10/23/2001
Time of Run:	2:05pm
Run By:	TWA
Input Data Filename:	C:TRIALS
Output Filename:	C:TRIALS.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:TRIALS.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION N1
Water-filled Tunnel, 1.5:1 Slope

BOUNDARY COORDINATES

9 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	53.00	2
4	66.00	53.00	86.50	53.00	2
5	86.50	53.00	142.00	90.00	1
6	142.00	90.00	146.00	92.00	1
7	146.00	92.00	152.00	93.00	1
8	152.00	93.00	178.00	93.00	1
9	178.00	93.00	200.00	109.00	3
10	86.50	53.00	90.00	53.00	2
11	.00	.00	90.00	53.00	3
12	90.00	53.00	125.00	73.00	3
13	125.00	73.00	127.00	75.00	3
14	127.00	75.00	153.00	87.00	3
15	148.00	75.00	153.00	87.00	4
16	153.00	87.00	166.90	87.00	4
17	166.90	87.00	167.00	92.00	3
18	148.00	75.00	166.50	75.00	3
19	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	200.00	52.00

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

1000 Trial Surfaces Have Been Generated.

1000 Surfaces Initiate From Each Of 1 Points Equally Spaced Along The Ground Surface Between X = 86.50 ft.
and X = 86.50 ft.

Each Surface Terminates Between X = 148.00 ft.
and X = 178.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

5.00 ft. Line Segments Define Each Trial Failure Surface.

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 20 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	86.50	53.00
2	91.47	53.56
3	96.41	54.30
4	101.33	55.23
5	106.20	56.35
6	111.03	57.65
7	115.80	59.14
8	120.51	60.81
9	125.16	62.65
10	129.74	64.67
11	134.23	66.86
12	138.64	69.23
13	142.95	71.75
14	147.17	74.44
15	151.27	77.29
16	155.27	80.30
17	159.15	83.45
18	162.91	86.75
19	166.54	90.19
20	169.29	93.00

Circle Center At X = 74.4 ; Y = 183.7 and Radius, 131.3

*** 1.484 ***

Individual data on the 30 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	4.4	630.5	.0	.0	.0	.0	.0	.0	.0
2	.6	191.8	.0	.0	.0	.0	.0	.0	.0
3	4.9	2425.3	.0	.0	.0	.0	.0	.0	.0

4	4.9	3900.7	.0	.0	.0	.0	.0	.0	.0
5	4.9	5220.8	.0	.0	.0	.0	.0	.0	.0
6	4.8	6380.9	.0	.0	.0	.0	.0	.0	.0
7	4.8	7377.6	.0	.0	.0	.0	.0	.0	.0
8	4.7	8209.3	.0	.0	.0	.0	.0	.0	.0
9	4.5	8553.5	.0	.0	.0	.0	.0	.0	.0
10	.2	322.0	.0	.0	.0	.0	.0	.0	.0
11	1.8	3702.6	.0	.0	.0	.0	.0	.0	.0
12	2.7	5688.9	.0	.0	.0	.0	.0	.0	.0
13	4.5	9725.1	.0	.0	.0	.0	.0	.0	.0
14	4.4	9897.2	.0	.0	.0	.0	.0	.0	.0
15	3.4	7718.3	.0	.0	.0	.0	.0	.0	.0
16	1.0	2190.7	.0	.0	.0	.0	.0	.0	.0
17	3.0	6931.5	.0	.0	.0	.0	.0	.0	.0
18	1.2	2578.0	.0	.0	.0	.0	.0	.0	.0
19	.8	1825.6	.0	.0	.0	.0	.0	.0	.0
20	3.3	6018.3	.0	.0	.0	.0	.0	.0	.0
21	.7	1091.0	.0	.0	.0	.0	.0	.0	.0
22	1.0	1342.2	.0	.0	.0	.0	.0	.0	.0
23	2.3	2707.2	.0	.0	.0	.0	.0	.0	.0
24	3.9	4035.8	.0	.0	.0	.0	.0	.0	.0
25	3.8	3151.7	.0	.0	.0	.0	.0	.0	.0
26	.3	194.5	.0	.0	.0	.0	.0	.0	.0
27	3.4	1778.2	.0	.0	.0	.0	.0	.0	.0
28	.4	134.6	.0	.0	.0	.0	.0	.0	.0
29	.0	7.9	.0	.0	.0	.0	.0	.0	.0
30	2.3	322.4	.0	.0	.0	.0	.0	.0	.0

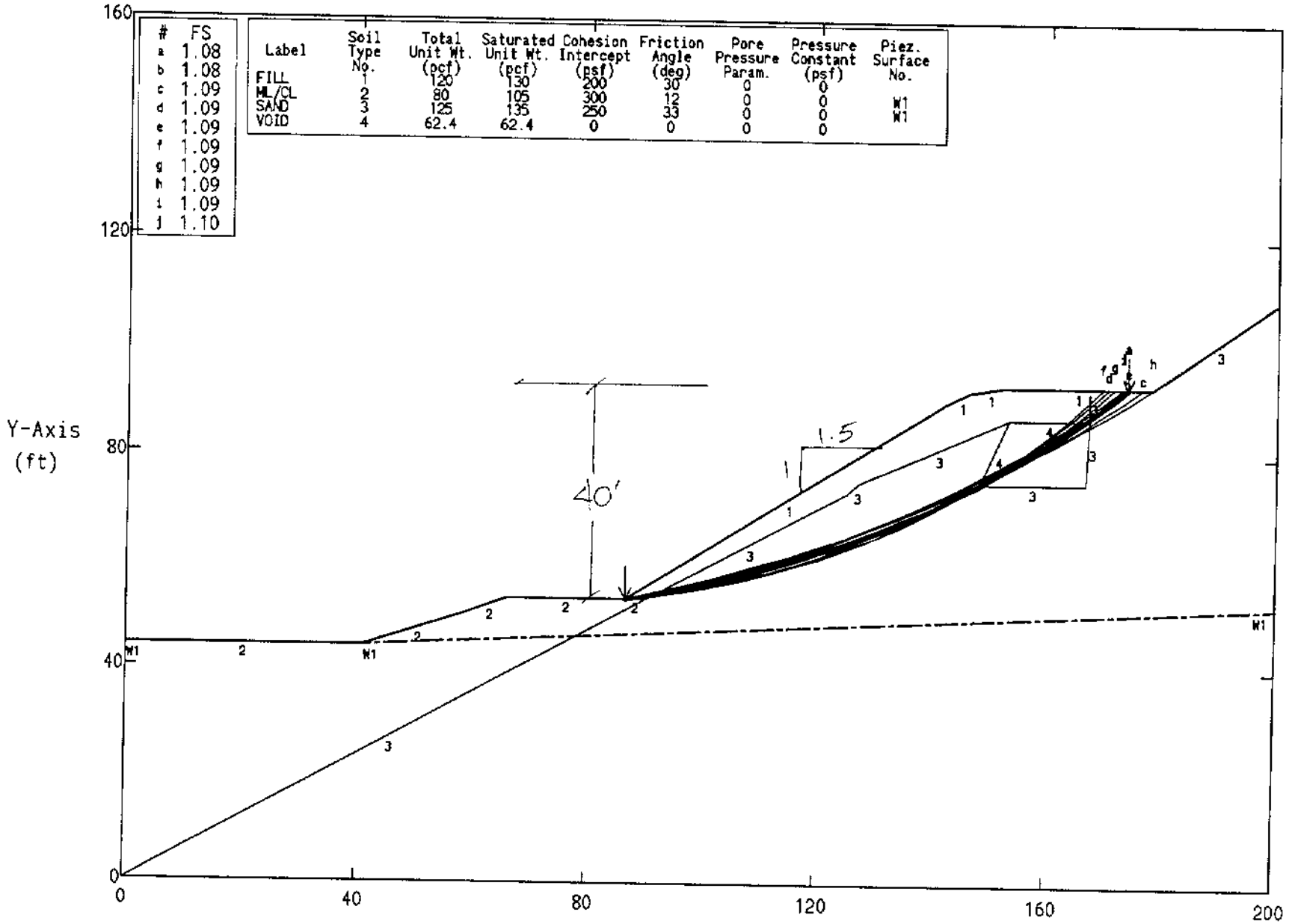
Failure Surface Specified By 20 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	86.50	53.00
2	91.45	53.68
3	96.38	54.53
4	101.28	55.55
5	106.13	56.74
6	110.95	58.09
7	115.71	59.61
8	120.42	61.30
9	125.06	63.14
10	129.65	65.15
11	134.15	67.31
12	138.59	69.62
13	142.94	72.09
14	147.20	74.70
15	151.37	77.46
16	155.44	80.36
17	159.41	83.40
18	163.27	86.58
19	167.02	89.89
20	170.31	93.00

Circle Center At X = 69.3 ; Y = 196.9 and Radius, 144.9

PLAYA VISTA CABRORA RD Water-filled Tunnel, 1.5:1 Slope **SECTION C-C**

Ten Most Critical. C:TRIALS.PLT By: TWA 10/23/2001 3:15pm

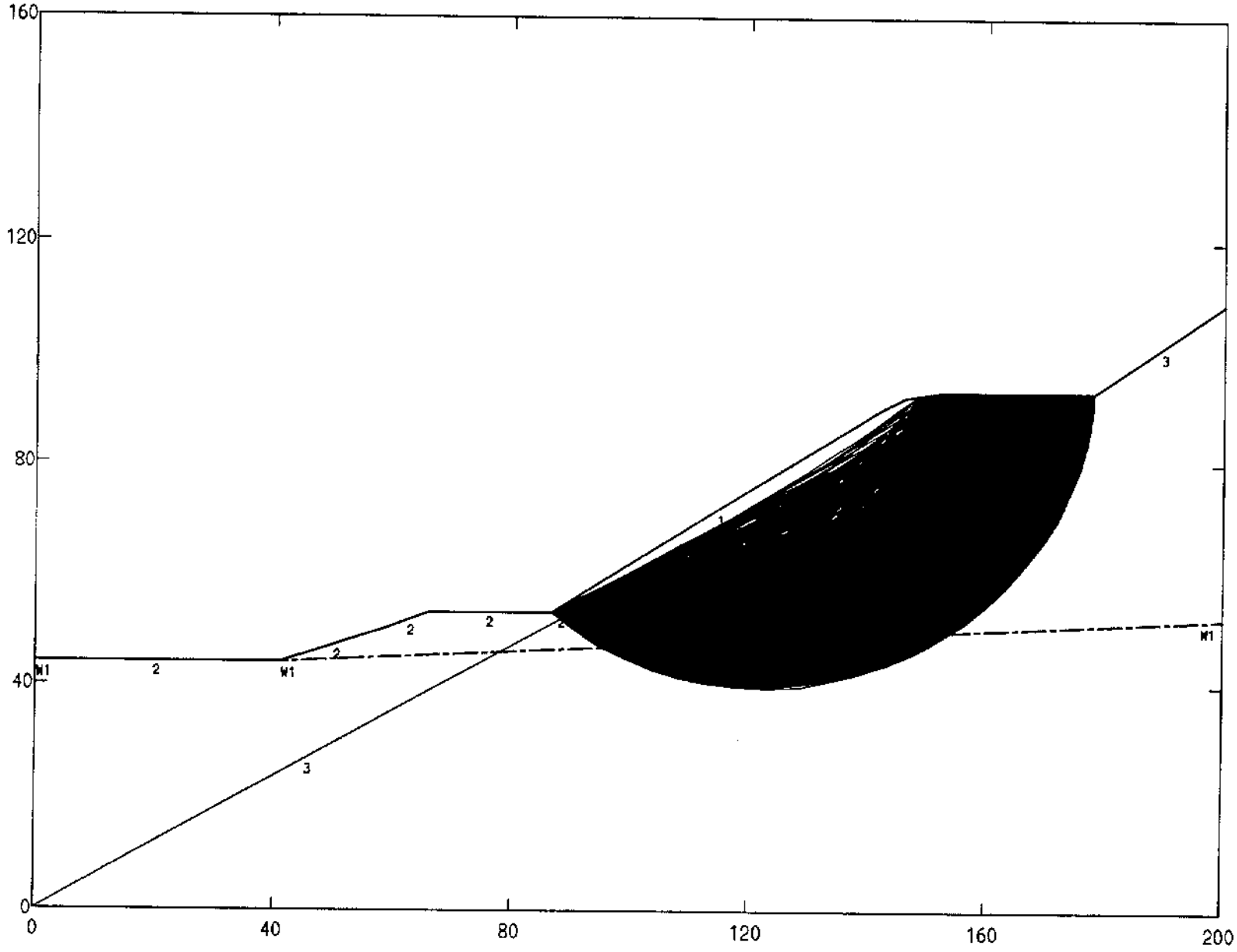


PCSTABL5M/SI FSmin=1.08 X-Axis (ft) SEISMIC

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD Water-filled Tunnel, 1.5:1 Slope

All surfaces evaluated. C:TRIALS.PLT By: TWA 10/23/2001 3:15pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	10/23/2001
Time of Run:	3:15pm
Run By:	TWA
Input Data Filename:	C:TRIALS
Output Filename:	C:TRIALS.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:TRIALS.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD
Water-filled Tunnel, 1.5:1 Slope

BOUNDARY COORDINATES

9 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	53.00	2
4	66.00	53.00	86.50	53.00	2
5	86.50	53.00	142.00	90.00	1
6	142.00	90.00	146.00	92.00	1
7	146.00	92.00	152.00	93.00	1
8	152.00	93.00	178.00	93.00	1
9	178.00	93.00	200.00	109.00	3
10	86.50	53.00	90.00	53.00	2
11	.00	.00	90.00	53.00	3
12	90.00	53.00	125.00	73.00	3
13	125.00	73.00	127.00	75.00	3
14	127.00	75.00	153.00	87.00	3
15	148.00	75.00	153.00	87.00	4
16	153.00	87.00	166.90	87.00	4
17	166.90	87.00	167.00	92.00	3
18	148.00	75.00	166.50	75.00	3
19	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	200.00	52.00

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 (psf)

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

1000 Trial Surfaces Have Been Generated.

1000 Surfaces Initiate From Each Of 1 Points Equally Spaced
Along The Ground Surface Between X = 86.50 ft.
and X = 86.50 ft.

Each Surface Terminates Between X = 148.00 ft.
and X = 178.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

5.00 ft. Line Segments Define Each Trial Failure Surface.

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	86.50	53.00
2	91.42	53.87
3	96.32	54.87
4	101.19	56.01
5	106.03	57.28
6	110.83	58.69
7	115.58	60.23
8	120.30	61.90
9	124.96	63.69
10	129.57	65.62
11	134.13	67.68
12	138.63	69.86
13	143.07	72.16
14	147.44	74.58
15	151.75	77.13
16	155.98	79.79
17	160.14	82.57
18	164.21	85.46
19	168.21	88.47
20	172.12	91.58
21	173.80	93.00

Circle Center At X = 57.6 ; Y = 231.4 and Radius, 180.7

*** 1.075 ***

Individual data on the 32 slices

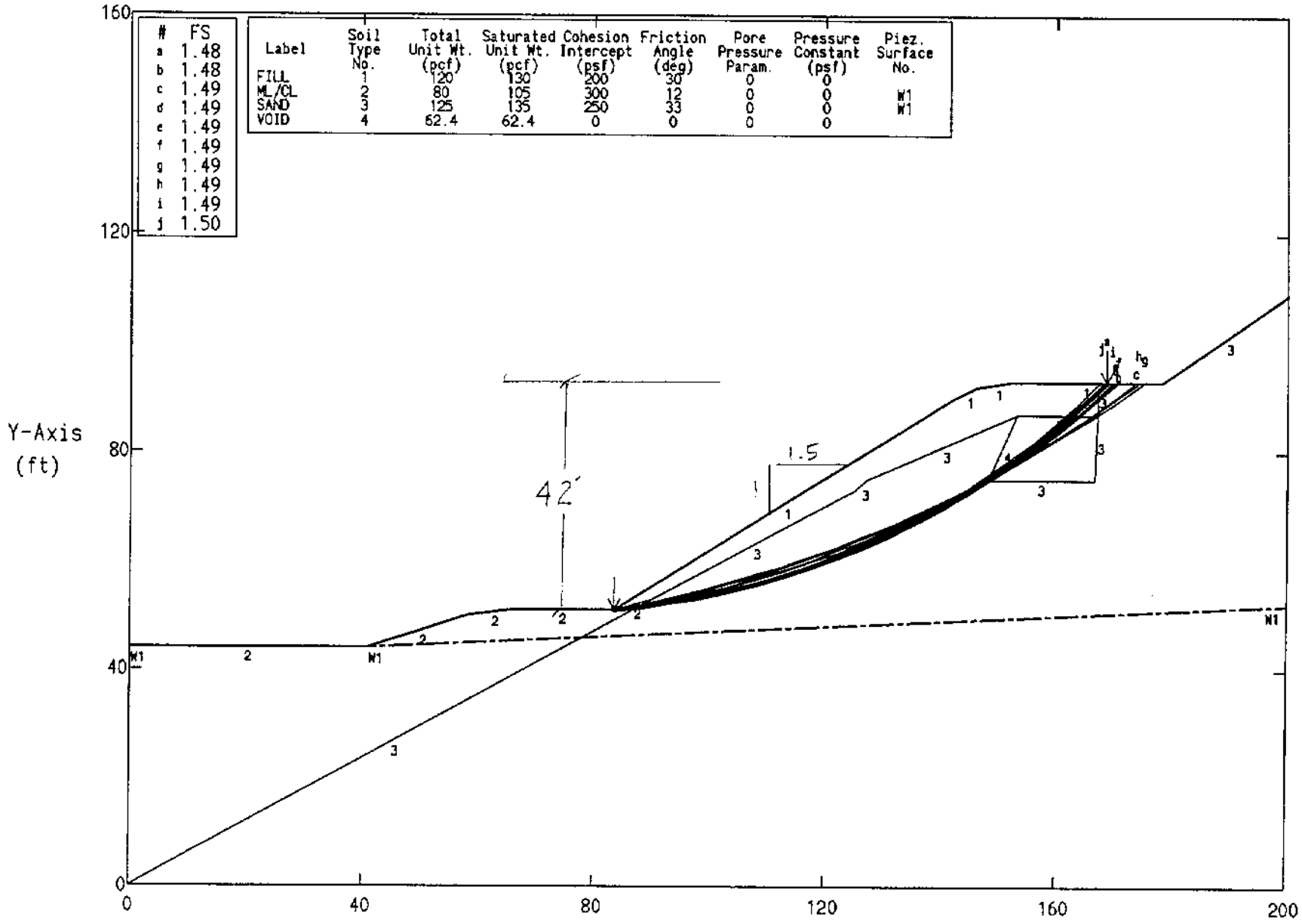
Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	4.9	713.7	.0	.0	.0	.0	107.0	.0	.0
2	.1	42.9	.0	.0	.0	.0	6.4	.0	.0
3	4.8	2062.5	.0	.0	.0	.0	309.4	.0	.0
4	4.9	3411.0	.0	.0	.0	.0	511.7	.0	.0
5	4.8	4603.0	.0	.0	.0	.0	690.4	.0	.0
6	4.8	5679.4	.0	.0	.0	.0	851.9	.0	.0
7	4.8	6639.2	.0	.0	.0	.0	995.9	.0	.0
8	4.7	7481.8	.0	.0	.0	.0	1122.3	.0	.0
9	4.7	8207.0	.0	.0	.0	.0	1231.0	.0	.0
10	.0	71.4	.0	.0	.0	.0	10.7	.0	.0
11	2.0	3748.0	.0	.0	.0	.0	562.2	.0	.0
12	2.6	5009.3	.0	.0	.0	.0	751.4	.0	.0
13	4.6	9315.2	.0	.0	.0	.0	1397.3	.0	.0
14	4.5	9682.3	.0	.0	.0	.0	1452.4	.0	.0
15	3.4	7507.7	.0	.0	.0	.0	1126.2	.0	.0
16	1.1	2418.7	.0	.0	.0	.0	362.8	.0	.0
17	2.9	6578.9	.0	.0	.0	.0	986.8	.0	.0
18	1.4	3179.1	.0	.0	.0	.0	476.9	.0	.0
19	.6	1198.1	.0	.0	.0	.0	179.7	.0	.0
20	.1	314.6	.0	.0	.0	.0	47.2	.0	.0
21	3.6	6525.2	.0	.0	.0	.0	978.8	.0	.0
22	.3	377.6	.0	.0	.0	.0	56.6	.0	.0
23	1.0	1380.4	.0	.0	.0	.0	207.1	.0	.0
24	3.0	3659.2	.0	.0	.0	.0	548.9	.0	.0
25	4.2	4501.6	.0	.0	.0	.0	675.2	.0	.0
26	4.1	3694.9	.0	.0	.0	.0	554.2	.0	.0
27	2.0	1568.1	.0	.0	.0	.0	235.2	.0	.0
28	.7	451.9	.0	.0	.0	.0	67.8	.0	.0
29	.1	60.2	.0	.0	.0	.0	9.0	.0	.0
30	1.2	723.6	.0	.0	.0	.0	108.5	.0	.0
31	3.9	1395.7	.0	.0	.0	.0	209.3	.0	.0
32	1.7	142.8	.0	.0	.0	.0	21.4	.0	.0

Failure Surface Specified By 21 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	86.50	53.00
2	91.44	53.80
3	96.34	54.75
4	101.22	55.84
5	106.07	57.08
6	110.88	58.45
7	115.64	59.97
8	120.36	61.63
9	125.03	63.42
10	129.64	65.35
11	134.19	67.41

PLAYA VISTA CABRORA RD Water-filled Tunnel, 1.5:1 Slope **SECTION C-C**

Ten Most Critical. C:TRIALS.PLT By: TWA 10/23/2001 3:02pm

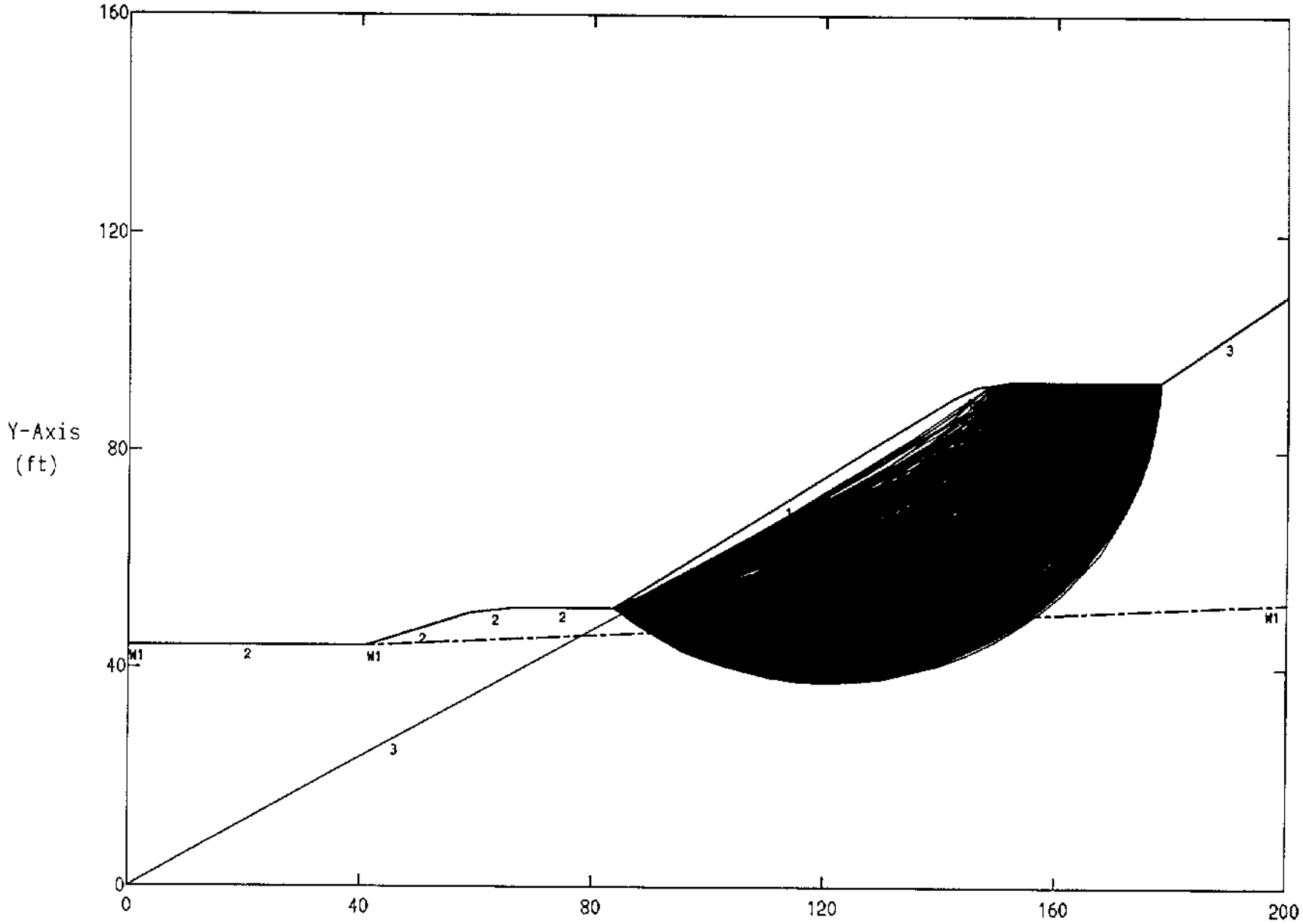


PCSTABL5M/SI FSmin=1.48 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD Water-filled Tunnel, 1.5:1 Slope

All surfaces evaluated. C:TRIALS.PLT By: TWA 10/23/2001 3:02pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	10/23/2001
Time of Run:	3:02pm
Run By:	TWA
Input Data Filename:	C:TRIALS
Output Filename:	C:TRIALS.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:TRIALS.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD
Water-filled Tunnel, 1.5:1 Slope

BOUNDARY COORDINATES

9 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	51.00	2
4	66.00	51.00	83.50	51.00	2
5	83.50	51.00	142.00	90.00	1
6	142.00	90.00	146.00	92.00	1
7	146.00	92.00	152.00	93.00	1
8	152.00	93.00	178.00	93.00	1
9	178.00	93.00	200.00	109.00	3
10	83.50	51.00	90.00	53.00	2
11	.00	.00	90.00	53.00	3
12	90.00	53.00	125.00	73.00	3
13	125.00	73.00	127.00	75.00	3
14	127.00	75.00	153.00	87.00	3
15	148.00	75.00	153.00	87.00	4
16	153.00	87.00	166.90	87.00	4
17	166.90	87.00	167.00	92.00	3
18	148.00	75.00	166.50	75.00	3
19	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	200.00	52.00

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

1000 Trial Surfaces Have Been Generated.

1000 Surfaces Initiate From Each Of 1 Points Equally Spaced Along The Ground Surface Between X = 83.50 ft.
and X = 83.50 ft.

Each Surface Terminates Between X = 148.00 ft.
and X = 178.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

5.00 ft. Line Segments Define Each Trial Failure Surface.

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	83.50	51.00
2	88.46	51.60
3	93.40	52.38
4	98.31	53.34
5	103.18	54.49
6	108.00	55.81
7	112.77	57.31
8	117.48	58.99
9	122.12	60.84
10	126.70	62.85
11	131.20	65.04
12	135.61	67.39
13	139.93	69.90
14	144.16	72.57
15	148.29	75.40
16	152.30	78.37
17	156.21	81.49
18	160.00	84.76
19	163.66	88.16
20	167.20	91.69
21	168.42	93.00

Circle Center At X = 69.8 ; Y = 185.7 and Radius, 135.4

*** 1.480 ***

Individual data on the 32 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	3.9	442.2	.0	.0	.0	.0	.0	.0	.0
2	1.1	284.7	.0	.0	.0	.0	.0	.0	.0

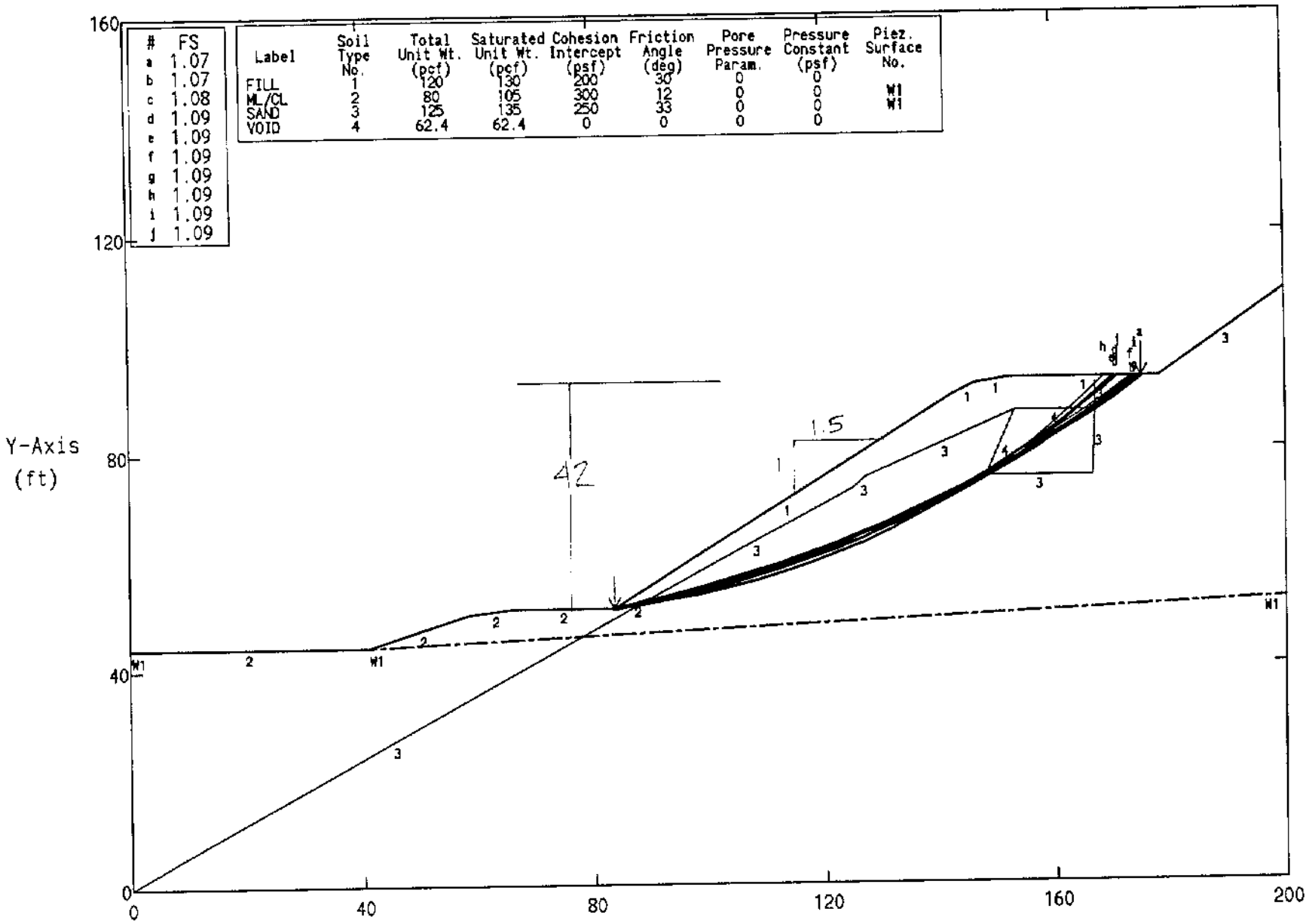
3	1.5	564.4	.0	.0	.0	.0	.0	.0	.0
4	3.4	1810.5	.0	.0	.0	.0	.0	.0	.0
5	4.9	3838.5	.0	.0	.0	.0	.0	.0	.0
6	4.9	5137.7	.0	.0	.0	.0	.0	.0	.0
7	4.8	6281.5	.0	.0	.0	.0	.0	.0	.0
8	4.8	7267.2	.0	.0	.0	.0	.0	.0	.0
9	4.7	8093.1	.0	.0	.0	.0	.0	.0	.0
10	4.6	8759.1	.0	.0	.0	.0	.0	.0	.0
11	2.9	5756.5	.0	.0	.0	.0	.0	.0	.0
12	1.7	3513.0	.0	.0	.0	.0	.0	.0	.0
13	.3	630.4	.0	.0	.0	.0	.0	.0	.0
14	4.2	9001.2	.0	.0	.0	.0	.0	.0	.0
15	4.4	9819.1	.0	.0	.0	.0	.0	.0	.0
16	4.3	9859.8	.0	.0	.0	.0	.0	.0	.0
17	2.1	4766.2	.0	.0	.0	.0	.0	.0	.0
18	2.2	4947.2	.0	.0	.0	.0	.0	.0	.0
19	1.8	4142.7	.0	.0	.0	.0	.0	.0	.0
20	2.1	4579.4	.0	.0	.0	.0	.0	.0	.0
21	.2	350.8	.0	.0	.0	.0	.0	.0	.0
22	3.7	6476.7	.0	.0	.0	.0	.0	.0	.0
23	.3	423.8	.0	.0	.0	.0	.0	.0	.0
24	.7	898.7	.0	.0	.0	.0	.0	.0	.0
25	3.2	3672.5	.0	.0	.0	.0	.0	.0	.0
26	3.8	3643.9	.0	.0	.0	.0	.0	.0	.0
27	2.4	1911.1	.0	.0	.0	.0	.0	.0	.0
28	1.2	810.9	.0	.0	.0	.0	.0	.0	.0
29	3.3	1269.9	.0	.0	.0	.0	.0	.0	.0
30	.0	1.9	.0	.0	.0	.0	.0	.0	.0
31	.2	34.2	.0	.0	.0	.0	.0	.0	.0
32	1.2	95.7	.0	.0	.0	.0	.0	.0	.0

Failure Surface Specified By 21 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	83.50	51.00
2	88.45	51.69
3	93.38	52.55
4	98.27	53.58
5	103.13	54.76
6	107.95	56.11
7	112.71	57.61
8	117.43	59.27
9	122.09	61.09
10	126.68	63.07
11	131.21	65.19
12	135.66	67.47
13	140.03	69.89
14	144.32	72.46
15	148.53	75.16
16	152.64	78.01
17	156.65	80.99
18	160.56	84.10
19	164.37	87.35
20	168.07	90.71
21	170.41	93.00

PLAYA VISTA CABRORA RD Water-filled Tunnel, 1.5:1 Slope **SECTION C-C**

Ten Most Critical. C:TRIALS.PLT By: TWA 10/23/2001 3:05pm



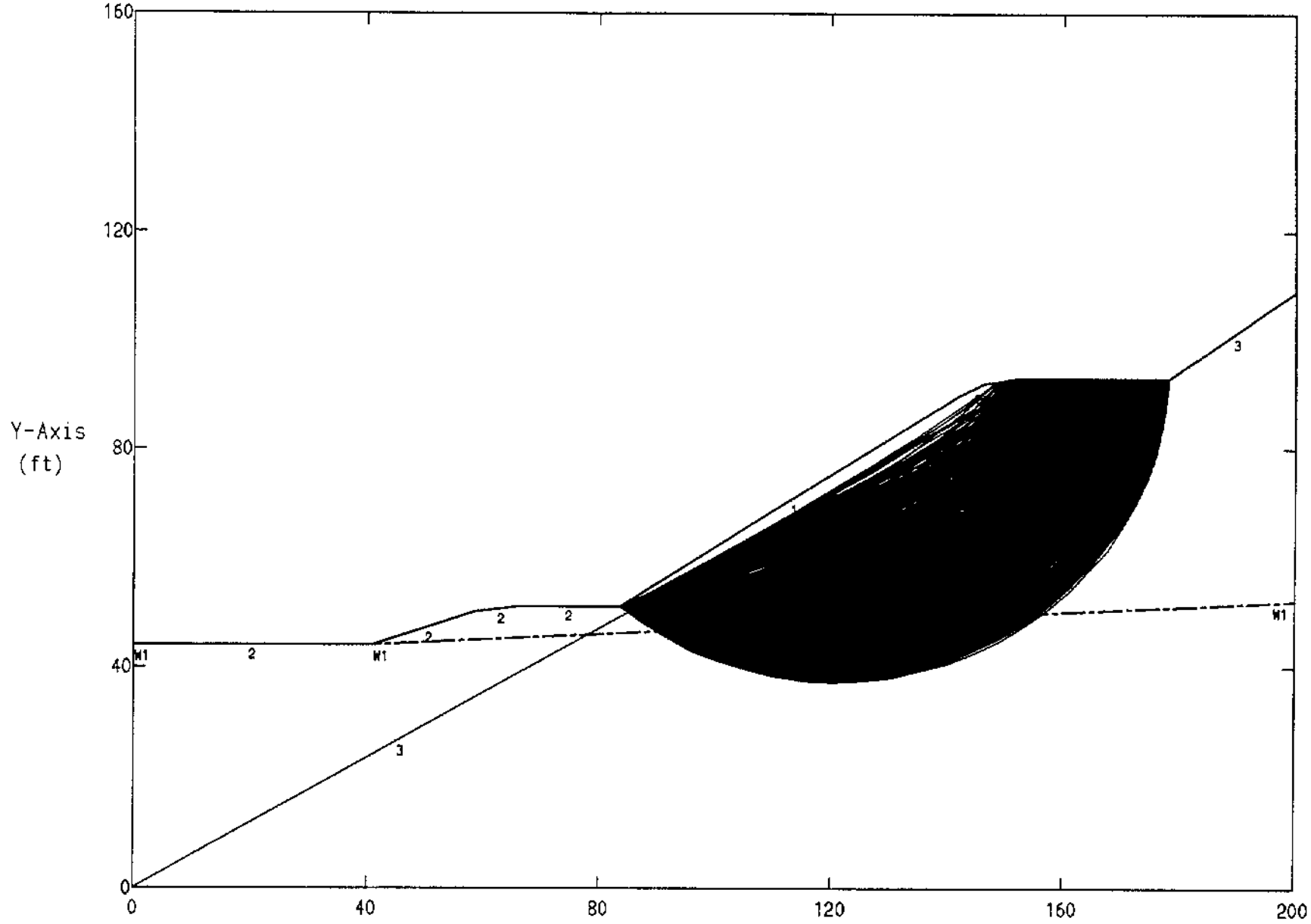
Y-Axis (ft)

PCSTABL5M/SI FSmin=1.07 X-Axis (ft) SEISMIC

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD Water-filled Tunnel, 1.5:1 Slope

All surfaces evaluated. C:TRIALS.PLT By: TWA 10/23/2001 3:05pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	10/23/2001
Time of Run:	3:05pm
Run By:	TWA
Input Data Filename:	C:TRIALS
Output Filename:	C:TRIALS.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:TRIALS.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD
Water-filled Tunnel, 1.5:1 Slope

BOUNDARY COORDINATES

9 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	51.00	2
4	66.00	51.00	83.50	51.00	2
5	83.50	51.00	142.00	90.00	1
6	142.00	90.00	146.00	92.00	1
7	146.00	92.00	152.00	93.00	1
8	152.00	93.00	178.00	93.00	1
9	178.00	93.00	200.00	109.00	3
10	83.50	51.00	90.00	53.00	2
11	.00	.00	90.00	53.00	3
12	90.00	53.00	125.00	73.00	3
13	125.00	73.00	127.00	75.00	3
14	127.00	75.00	153.00	87.00	3
15	148.00	75.00	153.00	87.00	4
16	153.00	87.00	166.90	87.00	4
17	166.90	87.00	167.00	92.00	3
18	148.00	75.00	166.50	75.00	3
19	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

---

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	200.00	52.00

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 (psf)

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

1000 Trial Surfaces Have Been Generated.

1000 Surfaces Initiate From Each Of 1 Points Equally Spaced
Along The Ground Surface Between X = 83.50 ft.
and X = 83.50 ft.

Each Surface Terminates Between X = 148.00 ft.
and X = 178.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

5.00 ft. Line Segments Define Each Trial Failure Surface.

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 22 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	83.50	51.00
2	88.38	52.07
3	93.24	53.25
4	98.08	54.54
5	102.88	55.93
6	107.65	57.43
7	112.38	59.04
8	117.08	60.75
9	121.74	62.56
10	126.36	64.48
11	130.93	66.50
12	135.46	68.62
13	139.94	70.84
14	144.37	73.16
15	148.75	75.57
16	153.07	78.09
17	157.33	80.70
18	161.54	83.40
19	165.68	86.20
20	169.77	89.08
21	173.78	92.06
22	174.99	93.00

Circle Center At X = 37.8 ; Y = 271.2 and Radius, 224.9

*** 1.073 ***

Individual data on the 34 slices

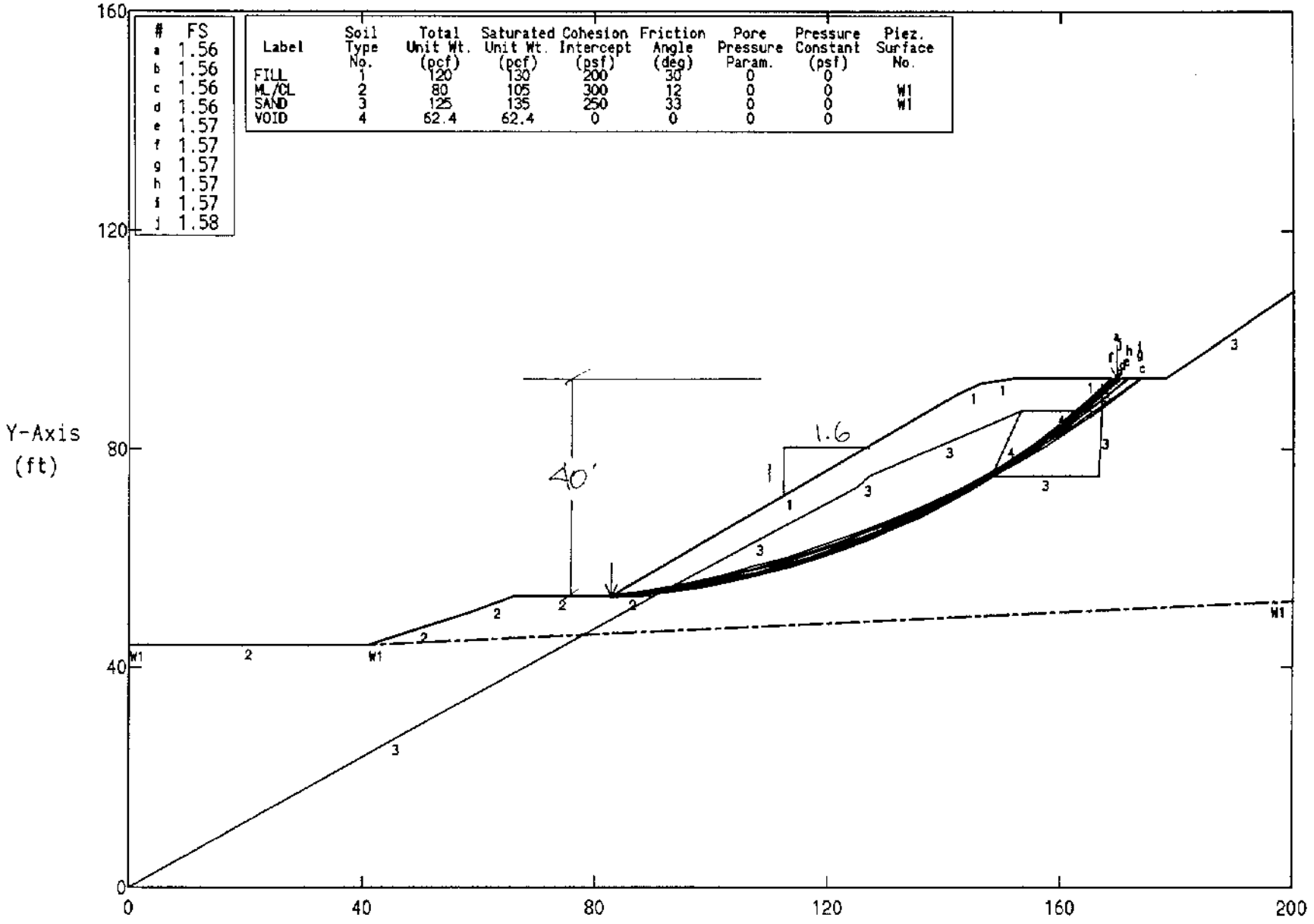
Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	4.9	598.2	.0	.0	.0	.0	89.7	.0	.0
3	.1	15.9	.0	.0	.0	.0	2.4	.0	.0
4	1.6	461.5	.0	.0	.0	.0	69.2	.0	.0
5	3.2	1402.2	.0	.0	.0	.0	210.3	.0	.0
6	4.8	3079.0	.0	.0	.0	.0	461.9	.0	.0
7	4.8	4172.1	.0	.0	.0	.0	625.8	.0	.0
8	4.8	5173.0	.0	.0	.0	.0	776.0	.0	.0
9	4.7	6081.2	.0	.0	.0	.0	912.2	.0	.0
10	4.7	6896.5	.0	.0	.0	.0	1034.5	.0	.0
11	4.7	7619.0	.0	.0	.0	.0	1142.8	.0	.0
12	3.3	5755.6	.0	.0	.0	.0	863.3	.0	.0
13	1.4	2495.5	.0	.0	.0	.0	374.3	.0	.0
14	.6	1201.7	.0	.0	.0	.0	180.3	.0	.0
15	3.9	7600.7	.0	.0	.0	.0	1140.1	.0	.0
16	4.5	9239.0	.0	.0	.0	.0	1385.8	.0	.0
17	4.5	9585.9	.0	.0	.0	.0	1437.9	.0	.0
18	2.1	4538.5	.0	.0	.0	.0	680.8	.0	.0
19	2.4	5250.6	.0	.0	.0	.0	787.6	.0	.0
20	1.6	3599.7	.0	.0	.0	.0	540.0	.0	.0
21	2.1	4494.7	.0	.0	.0	.0	674.2	.0	.0
22	.7	1349.6	.0	.0	.0	.0	202.4	.0	.0
23	3.3	5629.6	.0	.0	.0	.0	844.4	.0	.0
24	1.0	1370.7	.0	.0	.0	.0	205.6	.0	.0
25	.1	86.8	.0	.0	.0	.0	13.0	.0	.0
26	4.3	5095.6	.0	.0	.0	.0	764.3	.0	.0
27	4.2	4327.9	.0	.0	.0	.0	649.2	.0	.0
28	4.1	3553.8	.0	.0	.0	.0	533.1	.0	.0
29	1.1	846.0	.0	.0	.0	.0	126.9	.0	.0
30	.1	58.2	.0	.0	.0	.0	8.7	.0	.0
31	.1	71.3	.0	.0	.0	.0	10.7	.0	.0
32	2.8	1624.7	.0	.0	.0	.0	243.7	.0	.0
33	4.0	1169.9	.0	.0	.0	.0	175.5	.0	.0
34	1.2	68.0	.0	.0	.0	.0	10.2	.0	.0

Failure Surface Specified By 22 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	83.50	51.00
2	88.40	51.98
3	93.28	53.08
4	98.13	54.30
5	102.95	55.64
6	107.73	57.10
7	112.47	58.69
8	117.17	60.39

PLAYA VISTA CABRORA RD Water-filled Tunnel, 1.6:1 Slope **SECTION C-C**

Ten Most Critical. C:TRIALS.PLT By: TWA 10/23/2001 3:19pm

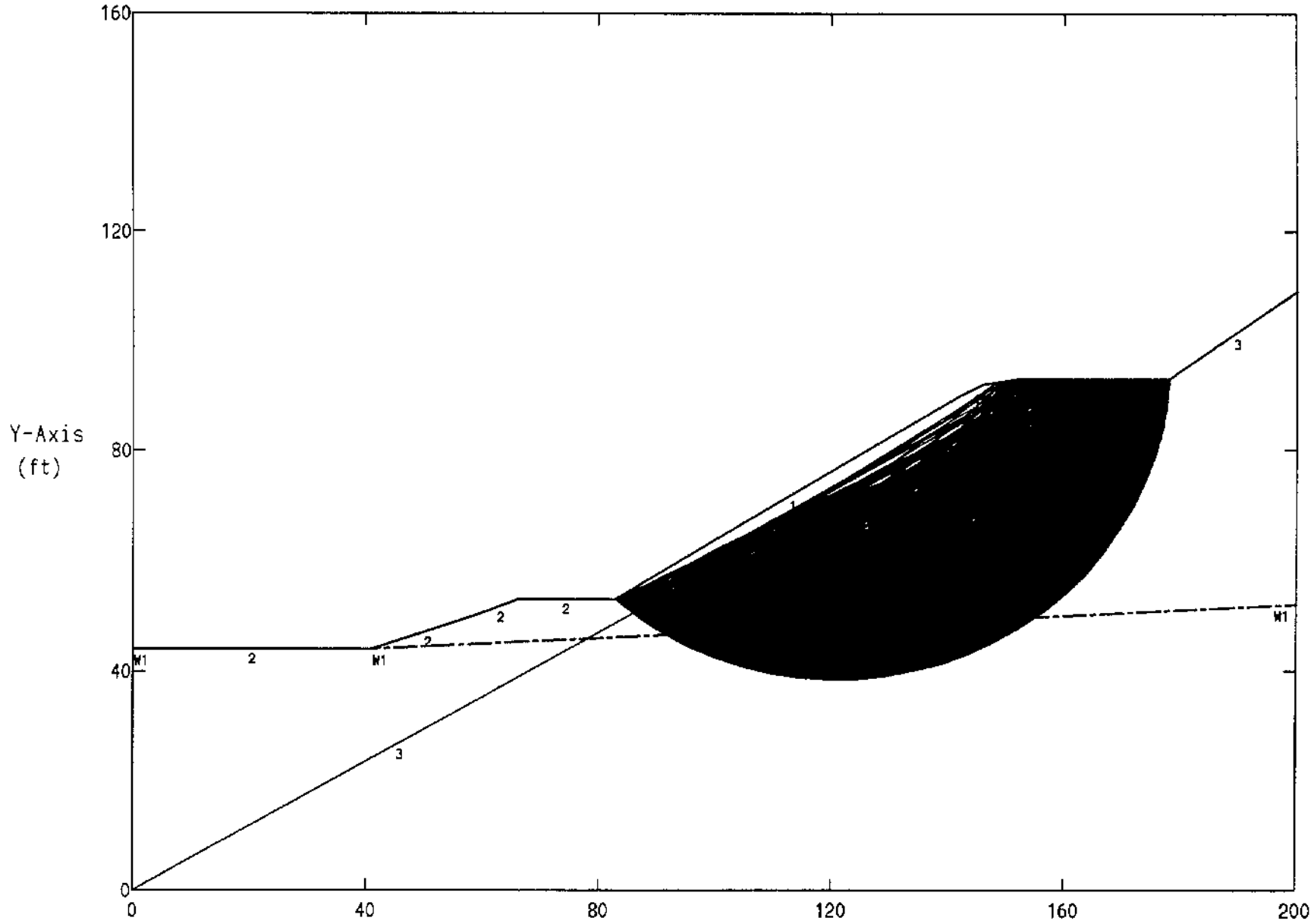


PCSTABL5M/SI FSmin=1.56 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD Water-filled Tunnel, 1.6:1 Slope

All surfaces evaluated. C:TRIALS.PLT By: TWA 10/23/2001 3:19pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	10/23/2001
Time of Run:	3:19pm
Run By:	TWA
Input Data Filename:	C:TRIALS
Output Filename:	C:TRIALS.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:TRIALS.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD
Water-filled Tunnel, 1.6:1 Slope

BOUNDARY COORDINATES

9 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	53.00	2
4	66.00	53.00	82.80	53.00	2
5	82.80	53.00	142.00	90.00	1
6	142.00	90.00	146.00	92.00	1
7	146.00	92.00	152.00	93.00	1
8	152.00	93.00	178.00	93.00	1
9	178.00	93.00	200.00	109.00	3
10	82.80	53.00	90.00	53.00	2
11	.00	.00	90.00	53.00	3
12	90.00	53.00	125.00	73.00	3
13	125.00	73.00	127.00	75.00	3
14	127.00	75.00	153.00	87.00	3
15	148.00	75.00	153.00	87.00	4
16	153.00	87.00	166.90	87.00	4
17	166.90	87.00	167.00	92.00	3
18	148.00	75.00	166.50	75.00	3
19	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	200.00	52.00

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

1000 Trial Surfaces Have Been Generated.

1000 Surfaces Initiate From Each Of 1 Points Equally Spaced Along The Ground Surface Between X = 82.80 ft.
and X = 82.80 ft.

Each Surface Terminates Between X = 148.00 ft.
and X = 178.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

5.00 ft. Line Segments Define Each Trial Failure Surface.

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	82.80	53.00
2	87.78	53.41
3	92.75	54.00
4	97.69	54.79
5	102.59	55.76
6	107.46	56.91
7	112.27	58.25
8	117.04	59.77
9	121.74	61.47
10	126.37	63.35
11	130.93	65.40
12	135.41	67.62
13	139.80	70.01
14	144.10	72.56
15	148.30	75.28
16	152.39	78.15
17	156.37	81.18
18	160.24	84.35
19	163.98	87.67
20	167.59	91.13
21	169.40	93.00

Circle Center At X = 74.6 ; Y = 184.7 and Radius, 131.9

*** 1.557 ***

Individual data on the 31 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	5.0	809.6	.0	.0	.0	.0	.0	.0	.0
2	3.7	1620.8	.0	.0	.0	.0	.0	.0	.0

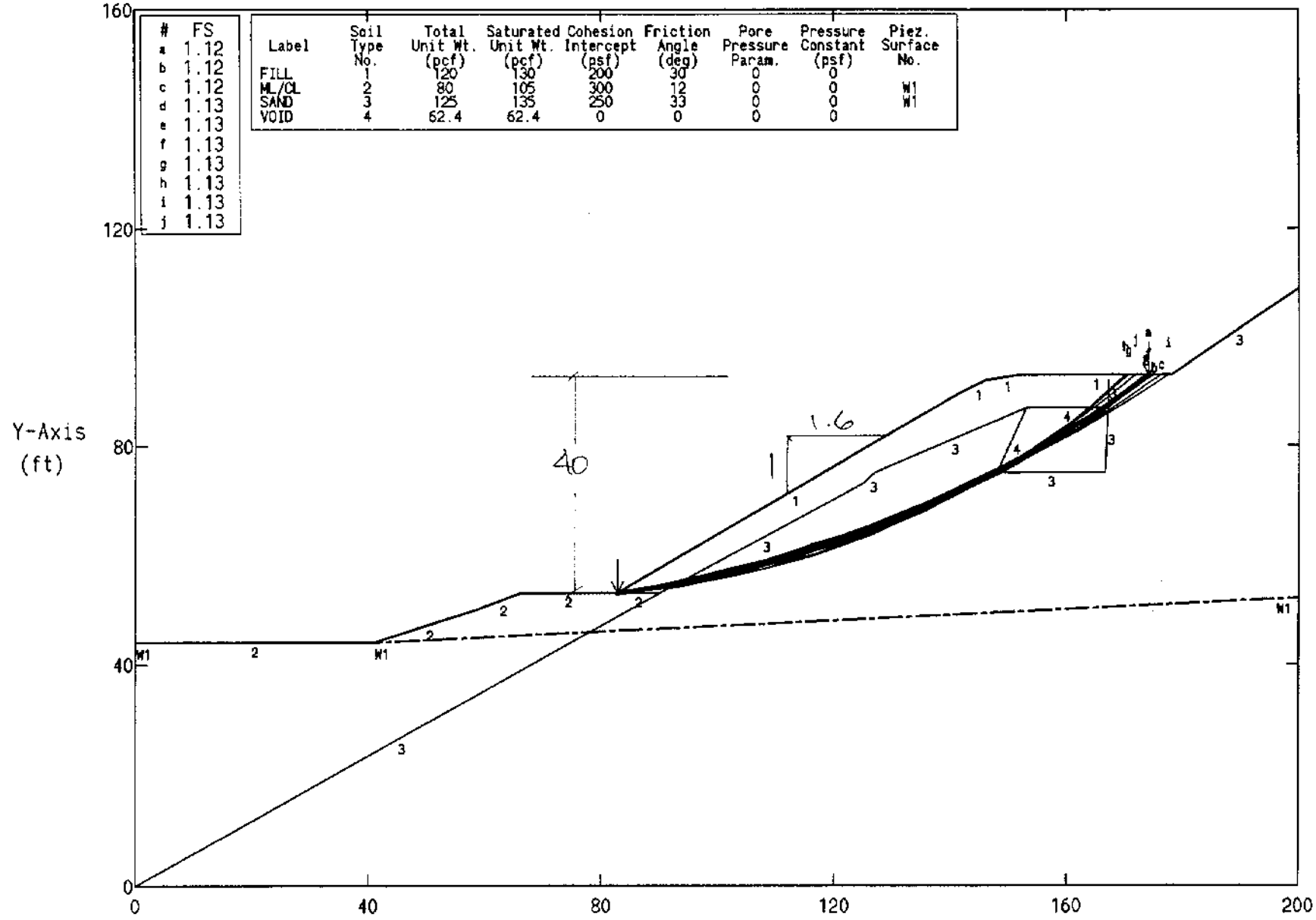
3	1.3	740.9	.0	.0	.0	.0	.0	.0	.0
4	4.9	3812.1	.0	.0	.0	.0	.0	.0	.0
5	4.9	5128.6	.0	.0	.0	.0	.0	.0	.0
6	4.9	6290.7	.0	.0	.0	.0	.0	.0	.0
7	4.8	7294.6	.0	.0	.0	.0	.0	.0	.0
8	4.8	8138.1	.0	.0	.0	.0	.0	.0	.0
9	4.7	8820.4	.0	.0	.0	.0	.0	.0	.0
10	3.3	6511.0	.0	.0	.0	.0	.0	.0	.0
11	1.4	2833.0	.0	.0	.0	.0	.0	.0	.0
12	.6	1307.5	.0	.0	.0	.0	.0	.0	.0
13	3.9	8412.1	.0	.0	.0	.0	.0	.0	.0
14	4.5	9916.3	.0	.0	.0	.0	.0	.0	.0
15	4.4	9962.6	.0	.0	.0	.0	.0	.0	.0
16	2.2	5031.4	.0	.0	.0	.0	.0	.0	.0
17	2.1	4800.6	.0	.0	.0	.0	.0	.0	.0
18	1.9	4273.5	.0	.0	.0	.0	.0	.0	.0
19	2.0	4454.9	.0	.0	.0	.0	.0	.0	.0
20	.3	529.1	.0	.0	.0	.0	.0	.0	.0
21	3.7	6491.5	.0	.0	.0	.0	.0	.0	.0
22	.4	550.0	.0	.0	.0	.0	.0	.0	.0
23	.6	790.7	.0	.0	.0	.0	.0	.0	.0
24	3.4	3924.0	.0	.0	.0	.0	.0	.0	.0
25	3.9	3801.7	.0	.0	.0	.0	.0	.0	.0
26	3.0	2393.4	.0	.0	.0	.0	.0	.0	.0
27	.8	514.8	.0	.0	.0	.0	.0	.0	.0
28	3.0	1399.5	.0	.0	.0	.0	.0	.0	.0
29	.0	8.7	.0	.0	.0	.0	.0	.0	.0
30	.6	151.4	.0	.0	.0	.0	.0	.0	.0
31	1.8	203.0	.0	.0	.0	.0	.0	.0	.0

Failure Surface Specified By 21 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	82.80	53.00
2	87.78	53.47
3	92.74	54.12
4	97.67	54.95
5	102.56	55.95
6	107.42	57.14
7	112.24	58.49
8	116.99	60.02
9	121.70	61.73
10	126.33	63.60
11	130.90	65.64
12	135.39	67.84
13	139.79	70.20
14	144.11	72.72
15	148.34	75.40
16	152.46	78.22
17	156.48	81.20
18	160.39	84.31
19	164.18	87.57
20	167.86	90.96
21	169.91	93.00

PLAYA VISTA CABRORA RD Water-filled Tunnel, 1.6:1 Slope **SECTION C-C**

Ten Most Critical. C:TRIALS.PLT By: TWA 10/23/2001 3:20pm

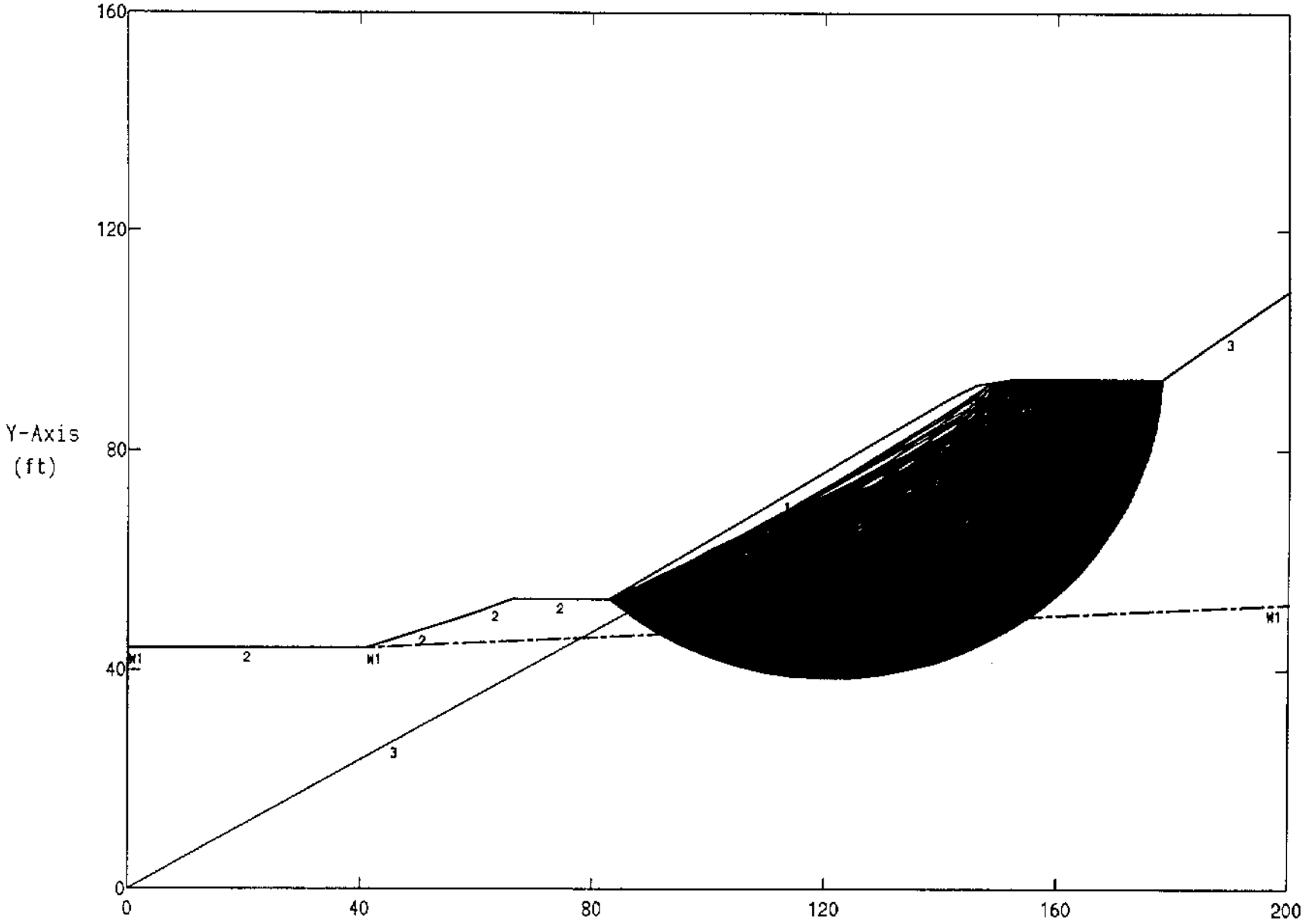


PCSTABL5M/SI FSmin=1.12 X-Axis (ft) SEISMIC

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD Water-filled Tunnel, 1.6:1 Slope

All surfaces evaluated. C:TRIALS.PLT By: TWA 10/23/2001 3:20pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	10/23/2001
Time of Run:	3:20pm
Run By:	TWA
Input Data Filename:	C:TRIALS
Output Filename:	C:TRIALS.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:TRIALS.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD
Water-filled Tunnel, 1.6:1 Slope

BOUNDARY COORDINATES

9 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	53.00	2
4	66.00	53.00	82.80	53.00	2
5	82.80	53.00	142.00	90.00	1
6	142.00	90.00	146.00	92.00	1
7	146.00	92.00	152.00	93.00	1
8	152.00	93.00	178.00	93.00	1
9	178.00	93.00	200.00	109.00	3
10	82.80	53.00	90.00	53.00	2
11	.00	.00	90.00	53.00	3
12	90.00	53.00	125.00	73.00	3
13	125.00	73.00	127.00	75.00	3
14	127.00	75.00	153.00	87.00	3
15	148.00	75.00	153.00	87.00	4
16	153.00	87.00	166.90	87.00	4
17	166.90	87.00	167.00	92.00	3
18	148.00	75.00	166.50	75.00	3
19	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	200.00	52.00

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 (psf)

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

1000 Trial Surfaces Have Been Generated.

1000 Surfaces Initiate From Each Of 1 Points Equally Spaced Along The Ground Surface Between X = 82.80 ft.
and X = 82.80 ft.

Each Surface Terminates Between X = 148.00 ft.
and X = 178.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

5.00 ft. Line Segments Define Each Trial Failure Surface.

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 22 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	82.80	53.00
2	87.75	53.72
3	92.67	54.58
4	97.57	55.58
5	102.44	56.71
6	107.28	57.98
7	112.08	59.39
8	116.83	60.92
9	121.55	62.60
10	126.21	64.40
11	130.82	66.34
12	135.37	68.40
13	139.87	70.59
14	144.30	72.91
15	148.66	75.35
16	152.96	77.91
17	157.18	80.59
18	161.32	83.39
19	165.39	86.30
20	169.37	89.33
21	173.26	92.46
22	173.89	93.00

Circle Center At X = 59.7 ; Y = 229.4 and Radius, 177.9

*** 1.115 ***

Individual data on the 33 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	4.9	704.3	.0	.0	.0	.0	105.7	.0	.0
2	4.9	2058.5	.0	.0	.0	.0	308.8	.0	.0
3	.1	76.5	.0	.0	.0	.0	11.5	.0	.0
4	4.8	3251.8	.0	.0	.0	.0	487.8	.0	.0
5	4.9	4511.5	.0	.0	.0	.0	676.7	.0	.0
6	4.8	5580.8	.0	.0	.0	.0	837.1	.0	.0
7	4.8	6534.6	.0	.0	.0	.0	980.2	.0	.0
8	4.8	7372.0	.0	.0	.0	.0	1105.8	.0	.0
9	4.7	8092.9	.0	.0	.0	.0	1213.9	.0	.0
10	3.5	6379.3	.0	.0	.0	.0	956.9	.0	.0
11	1.2	2319.6	.0	.0	.0	.0	347.9	.0	.0
12	.8	1538.8	.0	.0	.0	.0	230.8	.0	.0
13	3.8	7662.5	.0	.0	.0	.0	1149.4	.0	.0
14	4.6	9565.4	.0	.0	.0	.0	1434.8	.0	.0
15	4.5	9817.0	.0	.0	.0	.0	1472.6	.0	.0
16	2.1	4759.7	.0	.0	.0	.0	714.0	.0	.0
17	2.3	5160.1	.0	.0	.0	.0	774.0	.0	.0
18	1.7	3795.3	.0	.0	.0	.0	569.3	.0	.0
19	2.0	4358.3	.0	.0	.0	.0	653.7	.0	.0
20	.0	95.5	.0	.0	.0	.0	14.3	.0	.0
21	.6	1284.9	.0	.0	.0	.0	192.7	.0	.0
22	3.3	5824.2	.0	.0	.0	.0	873.6	.0	.0
23	1.0	1325.8	.0	.0	.0	.0	198.9	.0	.0
24	.0	52.6	.0	.0	.0	.0	7.9	.0	.0
25	4.2	5027.9	.0	.0	.0	.0	754.2	.0	.0
26	4.1	4279.4	.0	.0	.0	.0	641.9	.0	.0
27	4.1	3472.4	.0	.0	.0	.0	520.9	.0	.0
28	.9	682.5	.0	.0	.0	.0	102.4	.0	.0
29	.6	417.2	.0	.0	.0	.0	62.6	.0	.0
30	.1	61.1	.0	.0	.0	.0	9.2	.0	.0
31	2.4	1298.7	.0	.0	.0	.0	194.8	.0	.0
32	3.9	983.2	.0	.0	.0	.0	147.5	.0	.0
33	.6	20.2	.0	.0	.0	.0	3.0	.0	.0

Failure Surface Specified By 22 Coordinate Points

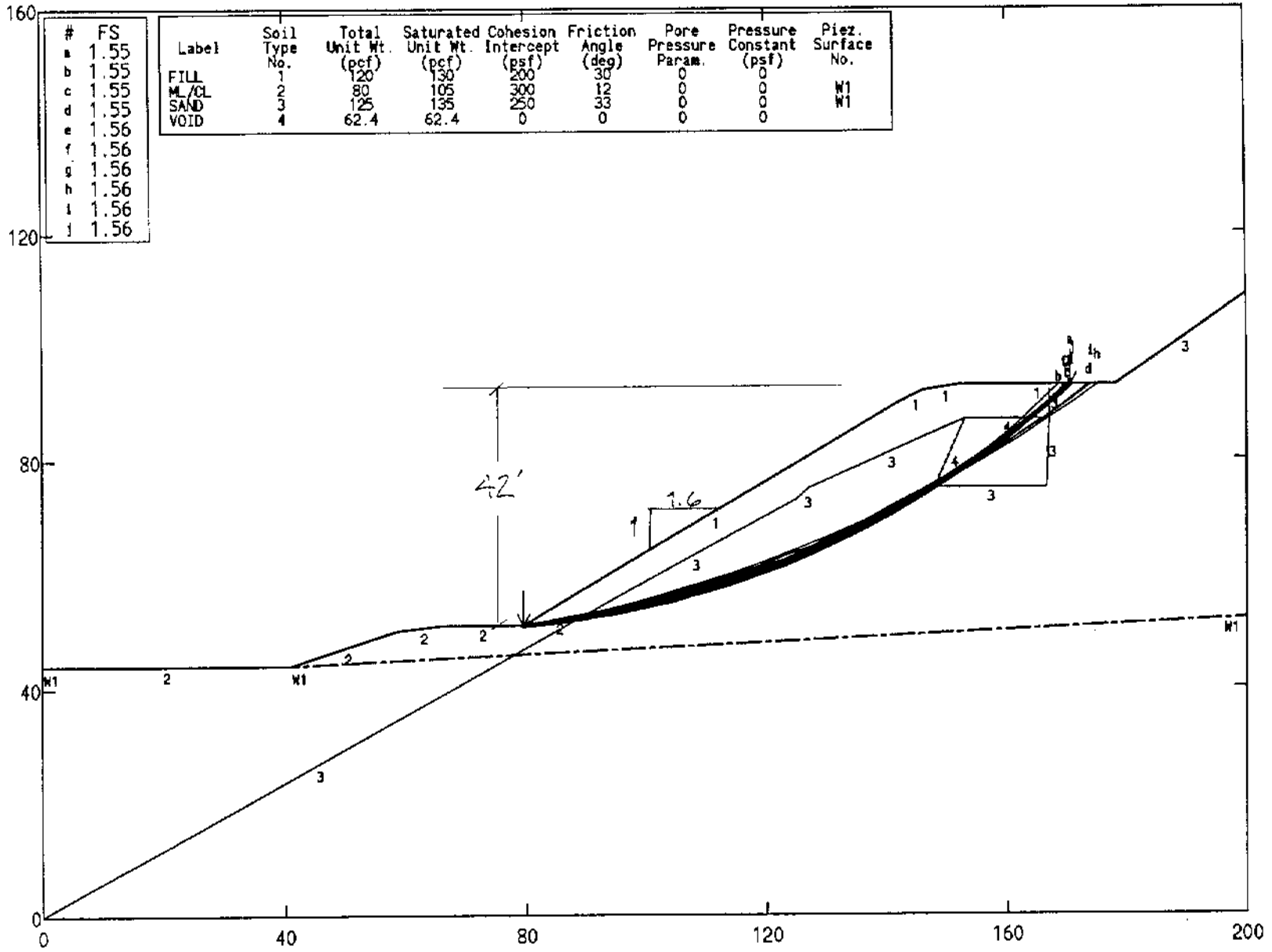
Point No.	X-Surf (ft)	Y-Surf (ft)
1	82.80	53.00
2	87.72	53.91
3	92.61	54.94
4	97.48	56.09
5	102.32	57.34
6	107.13	58.71
7	111.90	60.19
8	116.64	61.78
9	121.34	63.49

PLAYA VISTA CABRORA RD SECTION N1 Water-filled Tunnel, 1.6:1 Slope **SECTION C-C**

Ten Most Critical. C:TRIALS.PLT By: TWA 10/23/2001 1:46pm

#	FS
a	1.55
b	1.55
c	1.55
d	1.55
e	1.56
f	1.56
g	1.56
h	1.56
i	1.56
j	1.56

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.
FILL	1	120	130	200	30	0	0	
ML/CL	2	80	105	300	12	0	0	W1
SAND	3	125	135	250	33	0	0	W1
VOID	4	62.4	62.4	0	0	0	0	

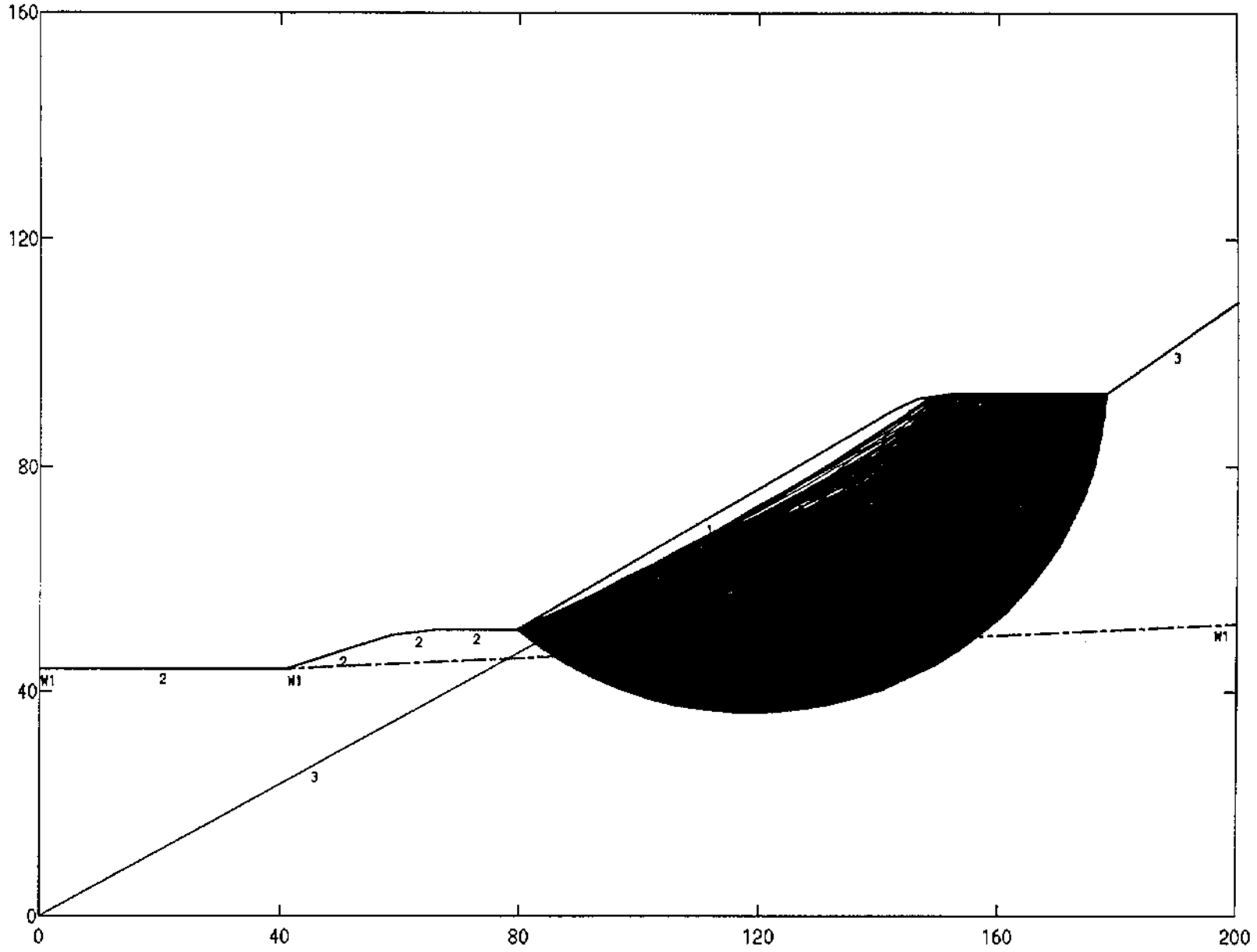


PCSTABL5M/SI FSmin=1.55 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION N1 Water-filled Tunnel, 1.5:1 Slope

All surfaces evaluated. C:TRIALS.PLT By: TWA 10/23/2001 1:46pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	10/23/2001
Time of Run:	1:46pm
Run By:	TWA
Input Data Filename:	C:TRIALS
Output Filename:	C:TRIALS.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:TRIALS.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION N1
Water-filled Tunnel, 1.5:1 Slope

BOUNDARY COORDINATES

9 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	51.00	2
4	66.00	51.00	79.60	51.00	2
5	79.60	51.00	142.00	90.00	1
6	142.00	90.00	146.00	92.00	1
7	146.00	92.00	152.00	93.00	1
8	152.00	93.00	178.00	93.00	1
9	178.00	93.00	200.00	109.00	3
10	79.60	51.00	90.00	53.00	2
11	.00	.00	90.00	53.00	3
12	90.00	53.00	125.00	73.00	3
13	125.00	73.00	127.00	75.00	3
14	127.00	75.00	153.00	87.00	3
15	148.00	75.00	153.00	87.00	4
16	153.00	87.00	166.90	87.00	4
17	166.90	87.00	167.00	92.00	3
18	148.00	75.00	166.50	75.00	3
19	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	200.00	52.00

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

1000 Trial Surfaces Have Been Generated.

1000 Surfaces Initiate From Each Of 1 Points Equally Spaced Along The Ground Surface Between X = 79.60 ft.
and X = 79.60 ft.

Each Surface Terminates Between X = 148.00 ft.
and X = 178.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

5.00 ft. Line Segments Define Each Trial Failure Surface.

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 22 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	79.60	51.00
2	84.57	51.54
3	89.52	52.25
4	94.44	53.13
5	99.33	54.17
6	104.19	55.37
7	109.00	56.73
8	113.76	58.25
9	118.47	59.93
10	123.12	61.76
11	127.71	63.75
12	132.23	65.89
13	136.68	68.18
14	141.04	70.61
15	145.33	73.19
16	149.52	75.91
17	153.62	78.77
18	157.63	81.77
19	161.53	84.89
20	165.33	88.15
21	169.01	91.52
22	170.52	93.00

Circle Center At X = 65.8 ; Y = 200.3 and Radius, 150.0

*** 1.546 ***

Individual data on the 35 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	.0	.0	.0	.0	.0	.0	.0	.0	.0

2	5.0	723.2	.0	.0	.0	.0	.0	.0	.0
3	3.9	1564.8	.0	.0	.0	.0	.0	.0	.0
4	1.0	570.1	.0	.0	.0	.0	.0	.0	.0
5	.5	290.5	.0	.0	.0	.0	.0	.0	.0
6	4.4	3315.4	.0	.0	.0	.0	.0	.0	.0
7	4.9	4868.6	.0	.0	.0	.0	.0	.0	.0
8	4.9	5994.0	.0	.0	.0	.0	.0	.0	.0
9	4.8	6981.5	.0	.0	.0	.0	.0	.0	.0
10	4.8	7829.5	.0	.0	.0	.0	.0	.0	.0
11	4.7	8537.3	.0	.0	.0	.0	.0	.0	.0
12	4.7	9105.3	.0	.0	.0	.0	.0	.0	.0
13	1.9	3838.5	.0	.0	.0	.0	.0	.0	.0
14	2.0	4188.5	.0	.0	.0	.0	.0	.0	.0
15	.7	1515.1	.0	.0	.0	.0	.0	.0	.0
16	4.5	9840.3	.0	.0	.0	.0	.0	.0	.0
17	4.4	9989.6	.0	.0	.0	.0	.0	.0	.0
18	4.4	10010.7	.0	.0	.0	.0	.0	.0	.0
19	1.0	2211.0	.0	.0	.0	.0	.0	.0	.0
20	3.3	7614.6	.0	.0	.0	.0	.0	.0	.0
21	.7	1524.4	.0	.0	.0	.0	.0	.0	.0
22	2.0	4392.9	.0	.0	.0	.0	.0	.0	.0
23	.1	241.3	.0	.0	.0	.0	.0	.0	.0
24	1.4	2808.1	.0	.0	.0	.0	.0	.0	.0
25	2.5	4126.5	.0	.0	.0	.0	.0	.0	.0
26	1.0	1356.2	.0	.0	.0	.0	.0	.0	.0
27	.6	776.4	.0	.0	.0	.0	.0	.0	.0
28	4.0	4565.0	.0	.0	.0	.0	.0	.0	.0
29	3.9	3703.7	.0	.0	.0	.0	.0	.0	.0
30	2.5	1932.4	.0	.0	.0	.0	.0	.0	.0
31	1.3	870.7	.0	.0	.0	.0	.0	.0	.0
32	1.6	802.1	.0	.0	.0	.0	.0	.0	.0
33	.0	19.2	.0	.0	.0	.0	.0	.0	.0
34	2.0	578.6	.0	.0	.0	.0	.0	.0	.0
35	1.5	133.3	.0	.0	.0	.0	.0	.0	.0

Failure Surface Specified By 22 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	79.60	51.00
2	84.58	51.45
3	89.54	52.09
4	94.47	52.90
5	99.37	53.90
6	104.23	55.07
7	109.05	56.43
8	113.81	57.95
9	118.51	59.66
10	123.14	61.53
11	127.71	63.57
12	132.20	65.77
13	136.60	68.14
14	140.91	70.67
15	145.13	73.36
16	149.25	76.20
17	153.26	79.18

18	157.15	82.32
19	160.93	85.59
20	164.59	89.00
21	168.12	92.54
22	168.55	93.00

Circle Center At X = 69.8 ; Y = 187.0 and Radius, 136.4

*** 1.550 ***

Failure Surface Specified By 22 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	79.60	51.00
2	84.58	51.48
3	89.53	52.14
4	94.46	52.97
5	99.36	53.97
6	104.23	55.14
7	109.04	56.48
8	113.81	57.98
9	118.52	59.65
10	123.17	61.49
11	127.76	63.49
12	132.27	65.64
13	136.70	67.95
14	141.05	70.42
15	145.31	73.03
16	149.48	75.80
17	153.55	78.70
18	157.52	81.75
19	161.37	84.93
20	165.11	88.25
21	168.74	91.69
22	170.02	93.00

Circle Center At X = 68.3 ; Y = 193.6 and Radius, 143.1

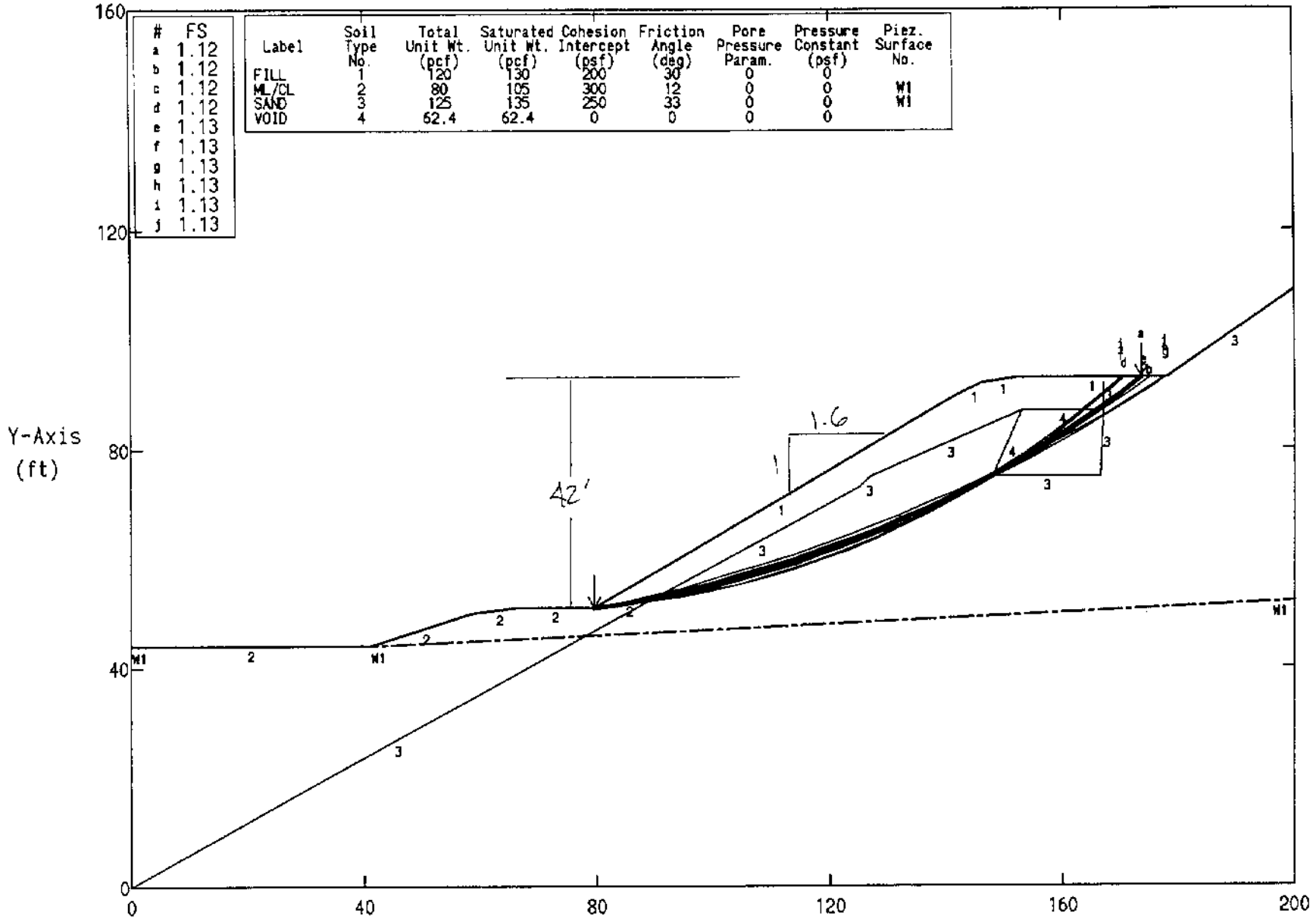
*** 1.551 ***

Failure Surface Specified By 22 Coordinate Points

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

PLAYA VISTA CABRORA RD Water-filled Tunnel, 1.6:1 Slope SECTION C-C

Ten Most Critical. C:TRIALS.PLT By: TWA 10/23/2001 3:07pm

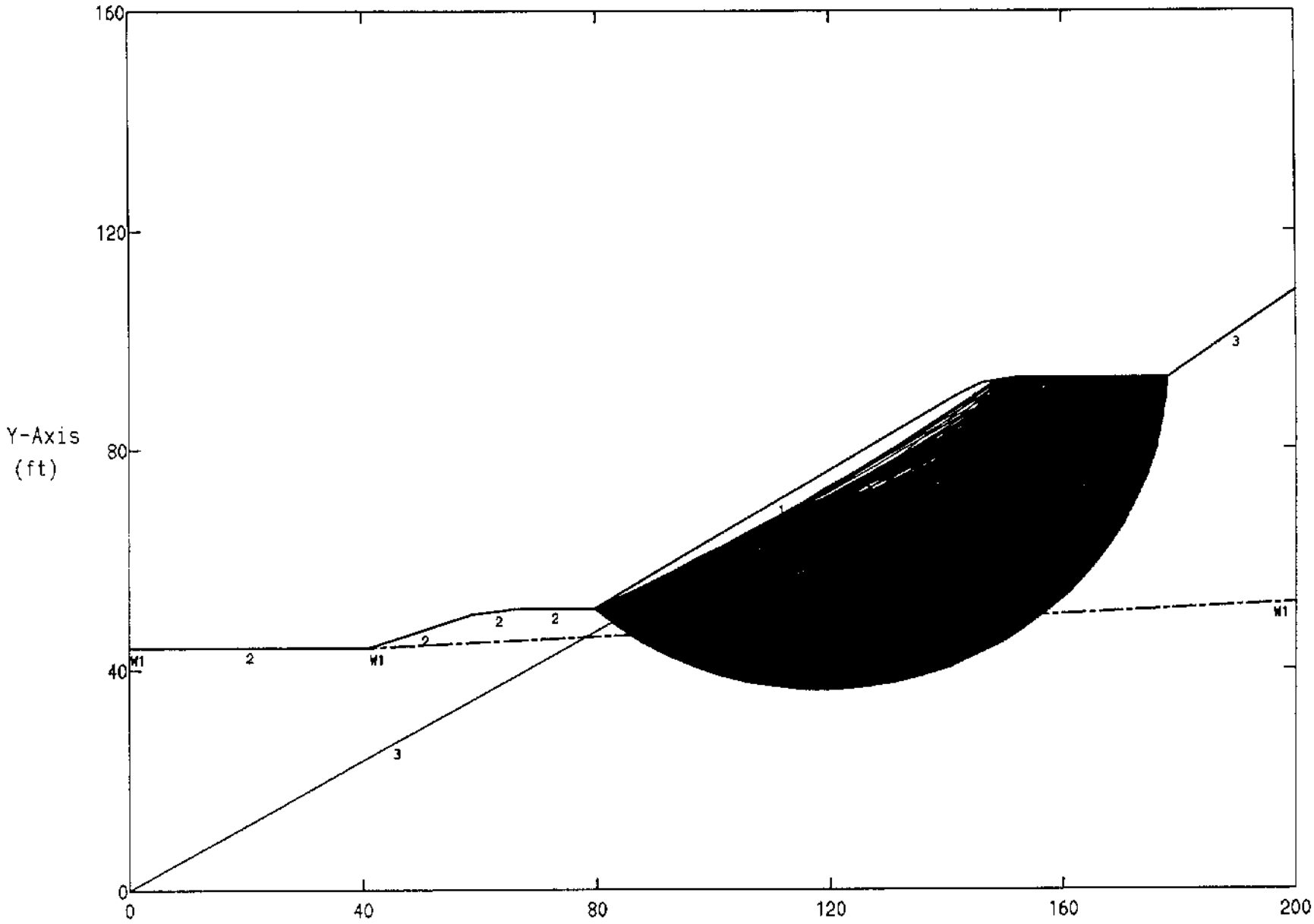


PCSTABL5M/SI FSmin=1.12 X-Axis (ft) SEISMIC

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD Water-filled Tunnel, 1.6:1 Slope

All surfaces evaluated. C:TRIALS.PLT By: TWA 10/23/2001 3:07pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	10/23/2001
Time of Run:	3:07pm
Run By:	TWA
Input Data Filename:	C:TRIALS
Output Filename:	C:TRIALS.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:TRIALS.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD
Water-filled Tunnel, 1.6:1 Slope

BOUNDARY COORDINATES

9 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	51.00	2
4	66.00	51.00	79.60	51.00	2
5	79.60	51.00	142.00	90.00	1
6	142.00	90.00	146.00	92.00	1
7	146.00	92.00	152.00	93.00	1
8	152.00	93.00	178.00	93.00	1
9	178.00	93.00	200.00	109.00	3
10	79.60	51.00	90.00	53.00	2
11	.00	.00	90.00	53.00	3
12	90.00	53.00	125.00	73.00	3
13	125.00	73.00	127.00	75.00	3
14	127.00	75.00	153.00	87.00	3
15	148.00	75.00	153.00	87.00	4
16	153.00	87.00	166.90	87.00	4
17	166.90	87.00	167.00	92.00	3
18	148.00	75.00	166.50	75.00	3
19	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

---

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	200.00	52.00

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 (psf)

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

1000 Trial Surfaces Have Been Generated.

1000 Surfaces Initiate From Each Of 1 Points Equally Spaced
Along The Ground Surface Between X = 79.60 ft.
and X = 79.60 ft.

Each Surface Terminates Between X = 148.00 ft.
and X = 178.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

5.00 ft. Line Segments Define Each Trial Failure Surface.

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 22 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	79.60	51.00
2	84.53	51.83
3	89.44	52.78
4	94.32	53.86
5	99.17	55.07
6	104.00	56.39
7	108.78	57.84
8	113.53	59.42
9	118.23	61.11
10	122.89	62.92
11	127.50	64.85
12	132.06	66.90
13	136.57	69.07
14	141.02	71.34
15	145.41	73.74
16	149.74	76.24
17	154.00	78.85
18	158.20	81.57
19	162.32	84.40
20	166.37	87.34
21	170.34	90.37
22	173.61	93.00

Circle Center At X = 49.7 ; Y = 244.1 and Radius, 195.4

*** 1.116 ***

Individual data on the 34 slices

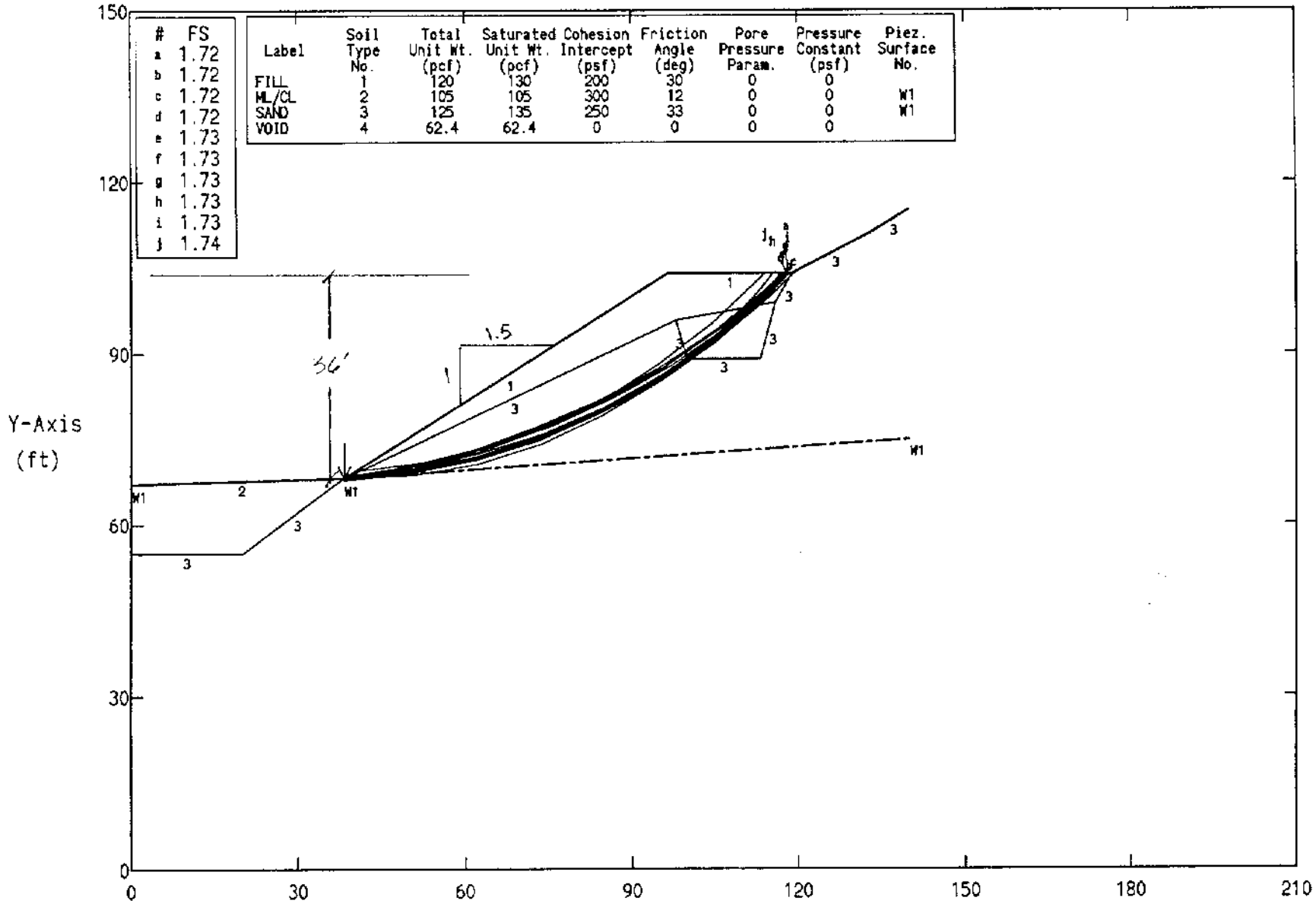
Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	4.9	654.9	.0	.0	.0	.0	98.2	.0	.0
3	4.9	1927.2	.0	.0	.0	.0	289.1	.0	.0
4	.3	161.5	.0	.0	.0	.0	24.2	.0	.0
5	.3	138.1	.0	.0	.0	.0	20.7	.0	.0
6	4.3	2853.2	.0	.0	.0	.0	428.0	.0	.0
7	4.9	4282.4	.0	.0	.0	.0	642.4	.0	.0
8	4.8	5306.5	.0	.0	.0	.0	796.0	.0	.0
9	4.8	6226.0	.0	.0	.0	.0	933.9	.0	.0
10	4.7	7040.3	.0	.0	.0	.0	1056.0	.0	.0
11	4.7	7749.3	.0	.0	.0	.0	1162.4	.0	.0
12	4.7	8353.2	.0	.0	.0	.0	1253.0	.0	.0
13	2.1	3980.5	.0	.0	.0	.0	597.1	.0	.0
14	2.0	3884.3	.0	.0	.0	.0	582.6	.0	.0
15	.5	994.4	.0	.0	.0	.0	149.2	.0	.0
16	4.6	9261.9	.0	.0	.0	.0	1389.3	.0	.0
17	4.5	9545.6	.0	.0	.0	.0	1431.8	.0	.0
18	4.5	9730.3	.0	.0	.0	.0	1459.5	.0	.0
19	1.0	2171.8	.0	.0	.0	.0	325.8	.0	.0
20	3.4	7559.2	.0	.0	.0	.0	1133.9	.0	.0
21	.6	1293.7	.0	.0	.0	.0	194.0	.0	.0
22	2.1	4566.8	.0	.0	.0	.0	685.0	.0	.0
23	1.6	3162.1	.0	.0	.0	.0	474.3	.0	.0
24	2.3	3706.8	.0	.0	.0	.0	556.0	.0	.0
25	1.0	1359.8	.0	.0	.0	.0	204.0	.0	.0
26	1.0	1251.7	.0	.0	.0	.0	187.8	.0	.0
27	4.2	4796.1	.0	.0	.0	.0	719.4	.0	.0
28	4.1	4001.0	.0	.0	.0	.0	600.2	.0	.0
29	3.6	2873.4	.0	.0	.0	.0	431.0	.0	.0
30	.5	323.8	.0	.0	.0	.0	48.6	.0	.0
31	.5	356.2	.0	.0	.0	.0	53.4	.0	.0
32	.1	54.1	.0	.0	.0	.0	8.1	.0	.0
33	3.3	1568.2	.0	.0	.0	.0	235.2	.0	.0
34	3.3	515.5	.0	.0	.0	.0	77.3	.0	.0

Failure Surface Specified By 23 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	79.60	51.00
2	84.51	51.92
3	89.41	52.96
4	94.27	54.11
5	99.11	55.36
6	103.92	56.73
7	108.70	58.21
8	113.44	59.79

Playa Vista Cabrora Rd Section D_D from Psomas Remediation Exhibit

Ten Most Critical. C:PSMSD_D.PLT By: TWA 10/23/2001 11:56am

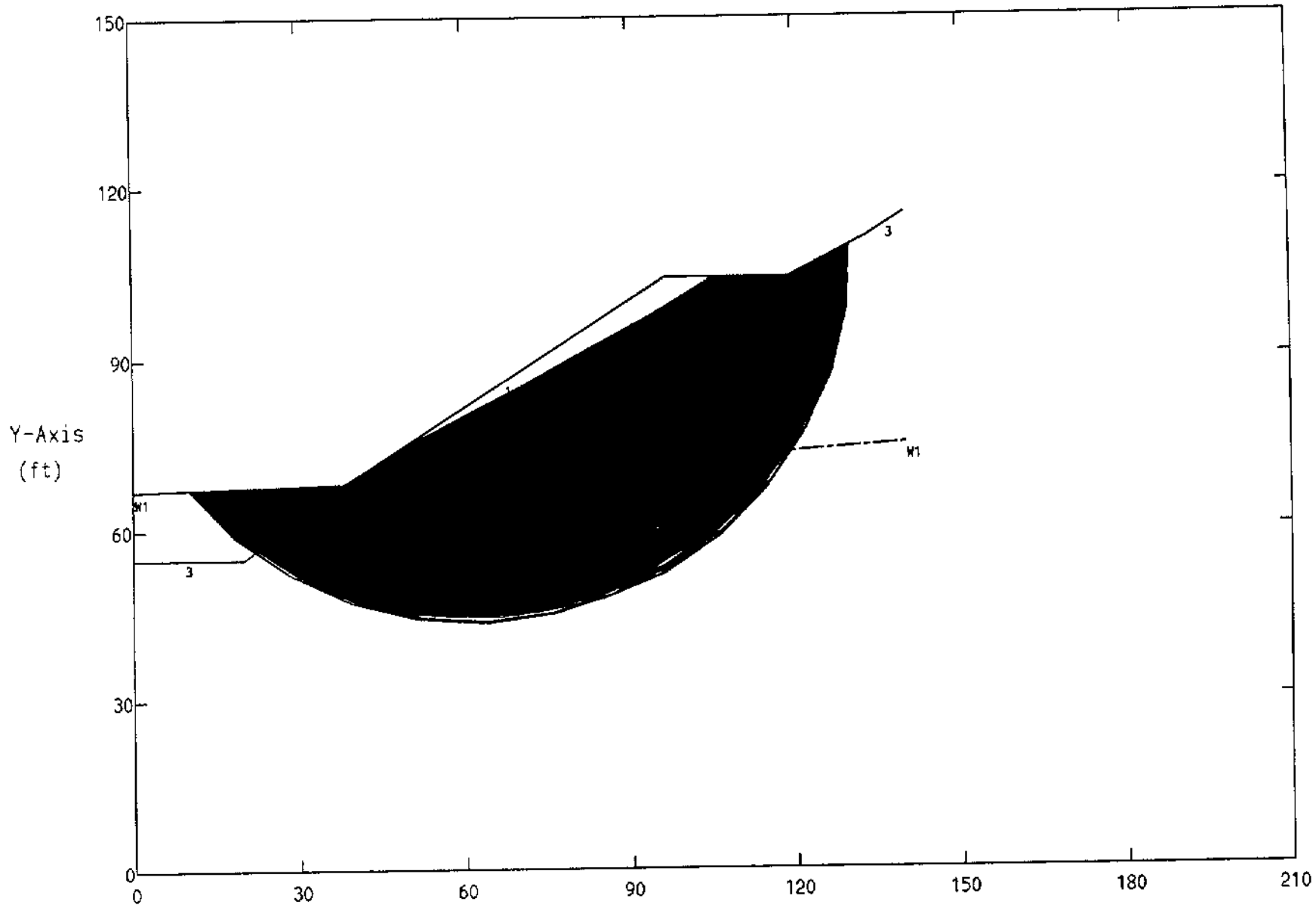


PCSTABL5M/SI FSmin=1.72 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

Playa Vista Cabrora Rd Section D_D from Psomas Remediation Exhibit

All surfaces evaluated. C:PSMSD_D.PLT By: TWA 10/23/2001 11:56am



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	10/23/2001
Time of Run:	11:56am
Run By:	TWA
Input Data Filename:	C:PSMSD_D
Output Filename:	C:PSMSD_D.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:PSMSD_D.PLT

PROBLEM DESCRIPTION Playa Vista Cabrora Rd Section D_D
from Psomas Remediation Exhibit

BOUNDARY COORDINATES

5 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	38.00	68.00	2
2	38.00	68.00	96.50	104.00	1
3	96.50	104.00	119.00	104.00	1
4	119.00	104.00	133.00	111.00	3
5	133.00	111.00	140.00	115.00	3
6	.00	55.00	20.00	55.00	3
7	20.00	55.00	38.00	68.00	3
8	38.00	68.00	98.00	96.00	3
9	98.00	96.00	116.00	99.00	4
10	116.00	99.00	119.00	104.00	3
11	98.00	96.00	100.00	89.00	3
12	100.00	89.00	113.00	89.00	3
13	113.00	89.00	116.00	99.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	105.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	67.00
2	38.00	68.00
3	140.00	75.00

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

5000 Trial Surfaces Have Been Generated.

50 Surfaces Initiate From Each Of100 Points Equally Spaced Along The Ground Surface Between X = 10.00 ft.
and X = 50.00 ft.

Each Surface Terminates Between X = 105.00 ft.
and X = 130.00 ft.

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

12.00 ft. Line Segments Define Each Trial Failure Surface.

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 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	38.28	68.17
2	50.23	69.33
3	62.00	71.68
4	73.47	75.20
5	84.53	79.85
6	95.06	85.60
7	104.97	92.37
8	114.14	100.11
9	117.91	104.00

Circle Center At X = 32.8 ; Y = 187.2 and Radius, 119.2

*** 1.718 ***

Individual data on the 14 slices

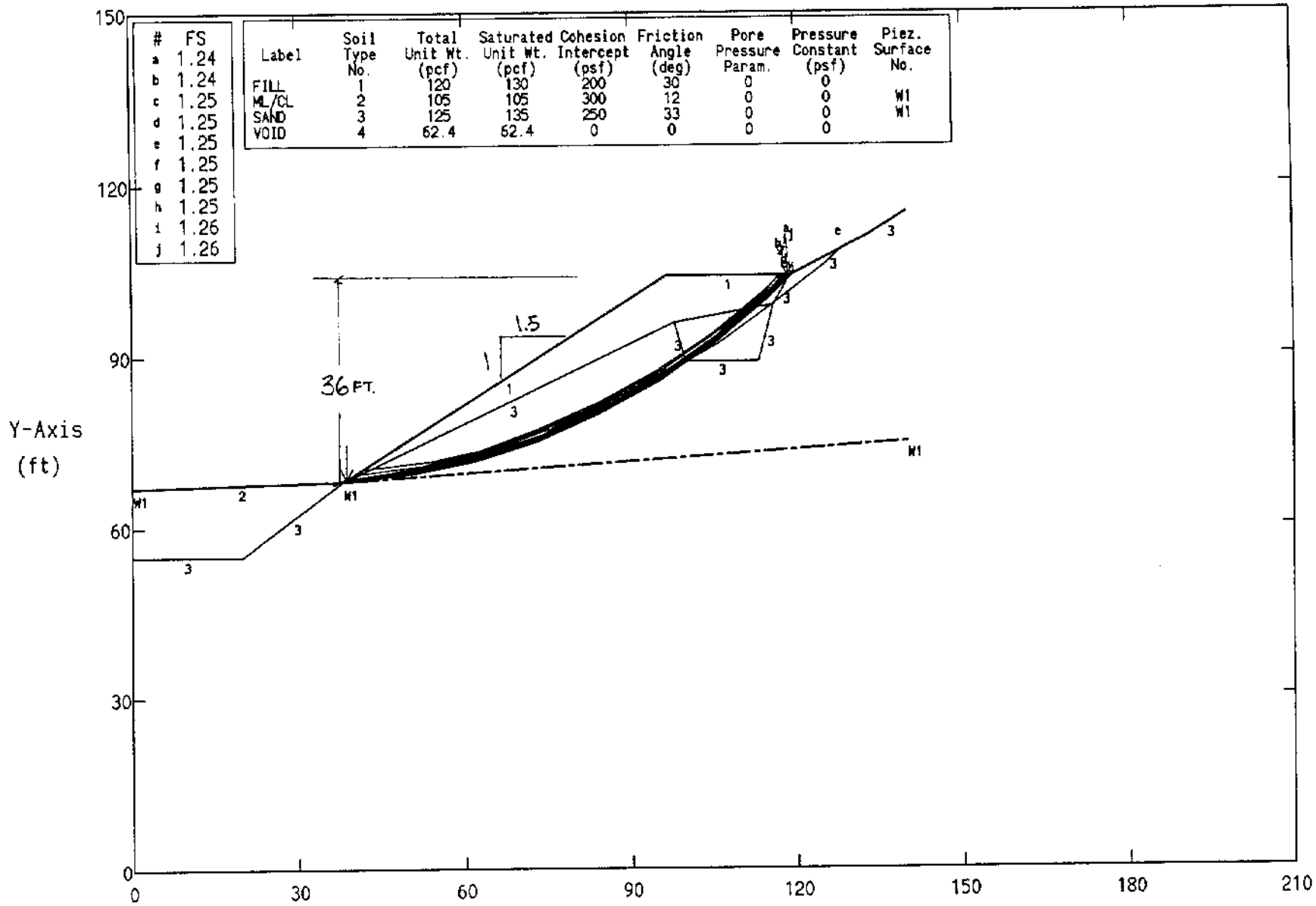
Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	.1	.4	.0	.0	.0	.0	.0	.0	.0
2	11.8	4570.4	.0	.0	.0	.0	.0	.0	.0
3	11.8	12556.6	.0	.0	.0	.0	.0	.0	.0
4	11.5	18188.6	.0	.0	.0	.0	.0	.0	.0
5	11.1	21376.2	.0	.0	.0	.0	.0	.0	.0
6	10.5	22181.5	.0	.0	.0	.0	.0	.0	.0
7	1.4	3074.6	.0	.0	.0	.0	.0	.0	.0
8	1.5	3107.8	.0	.0	.0	.0	.0	.0	.0
9	2.0	3390.6	.0	.0	.0	.0	.0	.0	.0
10	.0	56.8	.0	.0	.0	.0	.0	.0	.0
11	4.9	6151.6	.0	.0	.0	.0	.0	.0	.0
12	7.1	6367.7	.0	.0	.0	.0	.0	.0	.0
13	2.1	1199.4	.0	.0	.0	.0	.0	.0	.0
14	3.8	881.1	.0	.0	.0	.0	.0	.0	.0

Failure Surface Specified By 9 Coordinate Points

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

Playa Vista Cabrora Rd Section D_D from Psomas Remediation Exhibit

Ten Most Critical. C:PSMSD_D.PLT By: TWA 10/31/2001 4:15pm



#	FS
a	1.24
b	1.24
c	1.25
d	1.25
e	1.25
f	1.25
g	1.25
h	1.25
i	1.26
j	1.26

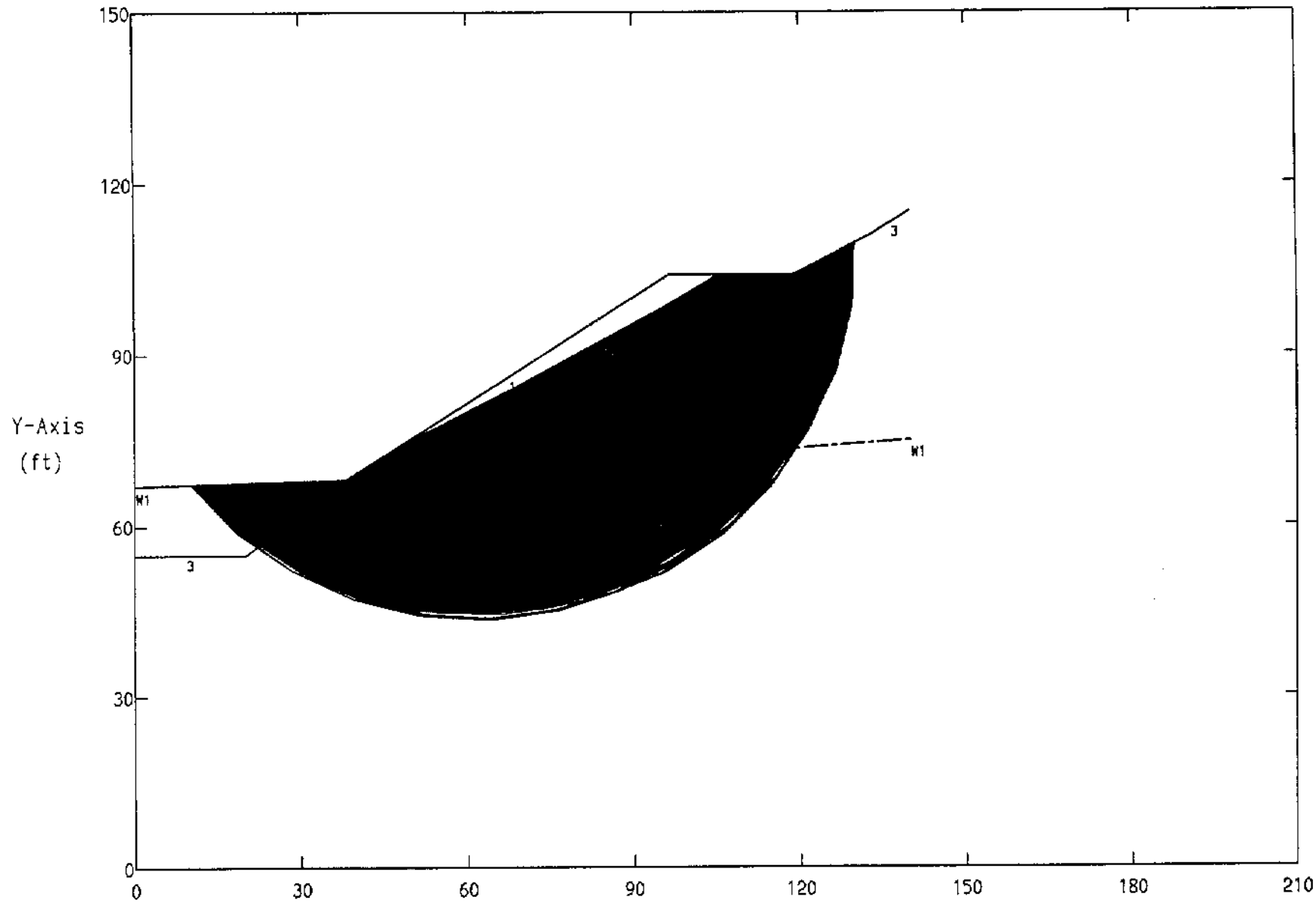
Label	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
FILL	1	120	130	200	30	0	0	
ML/CL	2	105	105	300	12	0	0	W1
SAND	3	125	135	250	33	0	0	W1
VOID	4	62.4	62.4	0	0	0	0	

PCSTABL5M/SI FSmin=1.24 X-Axis (ft) SEISMIC

Factors Of Safety Calculated By The Modified Bishop Method

Playa Vista Cabrora Rd Section D_D from Psomas Remediation Exhibit

All surfaces evaluated. C:PSMSD_D.PLT By: TWA 10/31/2001 4:15pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	10/31/2001
Time of Run:	4:15pm
Run By:	TWA
Input Data Filename:	C:PSMSD_D
Output Filename:	C:PSMSD_D.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:PSMSD_D.PLT

PROBLEM DESCRIPTION Playa Vista Cabrora Rd Section D_D
from Psomas Remediation Exhibit

BOUNDARY COORDINATES

5 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	38.00	68.00	2
2	38.00	68.00	96.50	104.00	1
3	96.50	104.00	119.00	104.00	1
4	119.00	104.00	133.00	111.00	3
5	133.00	111.00	140.00	115.00	3
6	.00	55.00	20.00	55.00	3
7	20.00	55.00	38.00	68.00	3
8	38.00	68.00	98.00	96.00	3
9	98.00	96.00	116.00	99.00	4
10	116.00	99.00	119.00	104.00	3
11	98.00	96.00	100.00	89.00	3
12	100.00	89.00	113.00	89.00	3
13	113.00	89.00	116.00	99.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	105.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	67.00
2	38.00	68.00
3	140.00	75.00

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 (psf)

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

5000 Trial Surfaces Have Been Generated.

50 Surfaces Initiate From Each Of100 Points Equally Spaced
Along The Ground Surface Between X = 10.00 ft.
and X = 50.00 ft.

Each Surface Terminates Between X = 105.00 ft.
and X = 130.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation

At Which A Surface Extends Is Y = .00 ft.

12.00 ft. Line Segments Define Each Trial Failure Surface.

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 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	38.69	68.42
2	50.61	69.81
3	62.34	72.30
4	73.80	75.89
5	84.86	80.54
6	95.44	86.20
7	105.44	92.84
8	114.77	100.38
9	118.48	104.00

Circle Center At X = 29.9 ; Y = 195.8 and Radius, 127.7

*** 1.243 ***

Individual data on the 13 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	.3	2.5	.0	.0	.0	.0	.4	.0	.0
2	11.6	4372.0	.0	.0	.0	.0	655.8	.0	.0
3	11.7	12036.4	.0	.0	.0	.0	1805.5	.0	.0
4	11.5	17501.9	.0	.0	.0	.0	2625.3	.0	.0
5	11.1	20703.7	.0	.0	.0	.0	3105.6	.0	.0
6	10.6	21698.8	.0	.0	.0	.0	3254.8	.0	.0
7	1.1	2226.3	.0	.0	.0	.0	333.9	.0	.0
8	1.5	3048.7	.0	.0	.0	.0	457.3	.0	.0
9	1.9	3245.9	.0	.0	.0	.0	486.9	.0	.0
10	5.5	6735.2	.0	.0	.0	.0	1010.3	.0	.0

11	6.9	6039.8	.0	.0	.0	.0	906.0	.0	.0
12	2.5	1368.8	.0	.0	.0	.0	205.3	.0	.0
13	3.7	805.2	.0	.0	.0	.0	120.8	.0	.0

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	38.28	68.17
2	50.21	69.51
3	61.96	71.96
4	73.43	75.49
5	84.52	80.07
6	95.13	85.66
7	105.18	92.22
8	114.57	99.69
9	119.13	104.06

Circle Center At X = 29.9 ; Y = 196.6 and Radius, 128.7

*** 1.243 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	38.28	68.17
2	50.23	69.33
3	62.00	71.68
4	73.47	75.20
5	84.53	79.85
6	95.06	85.60
7	104.97	92.37
8	114.14	100.11
9	117.91	104.00

Circle Center At X = 32.8 ; Y = 187.2 and Radius, 119.2

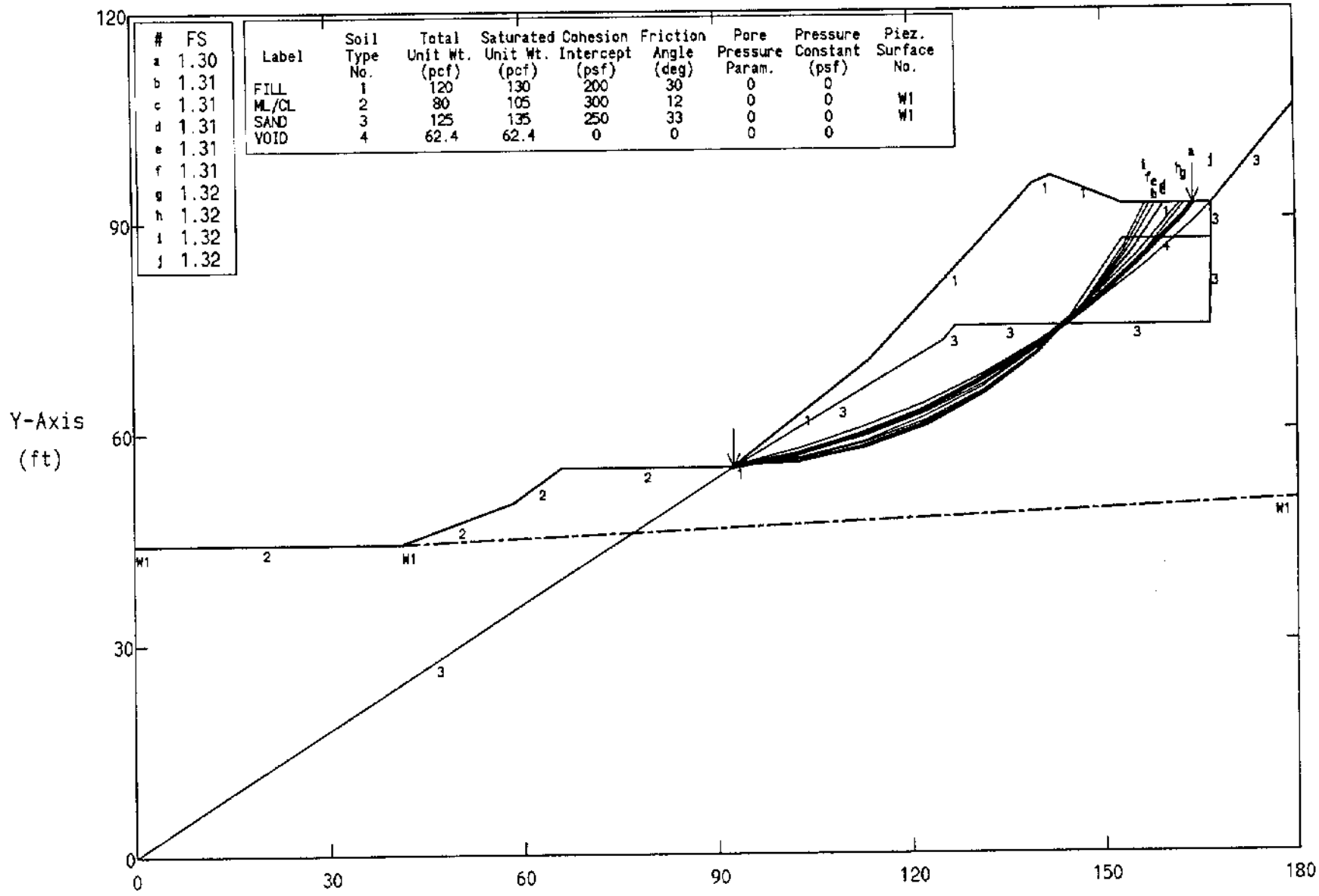
*** 1.247 ***

Failure Surface Specified By 9 Coordinate Points

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

PLAYA VISTA CABRORA RD SECTION S5R Water-filled Tunnel Void Included.

Ten Most Critical. C:S5RCAB.PLT By: TWA 11/01/2001 5:56pm



#	FS
a	1.30
b	1.31
c	1.31
d	1.31
e	1.31
f	1.31
g	1.32
h	1.32
i	1.32
j	1.32

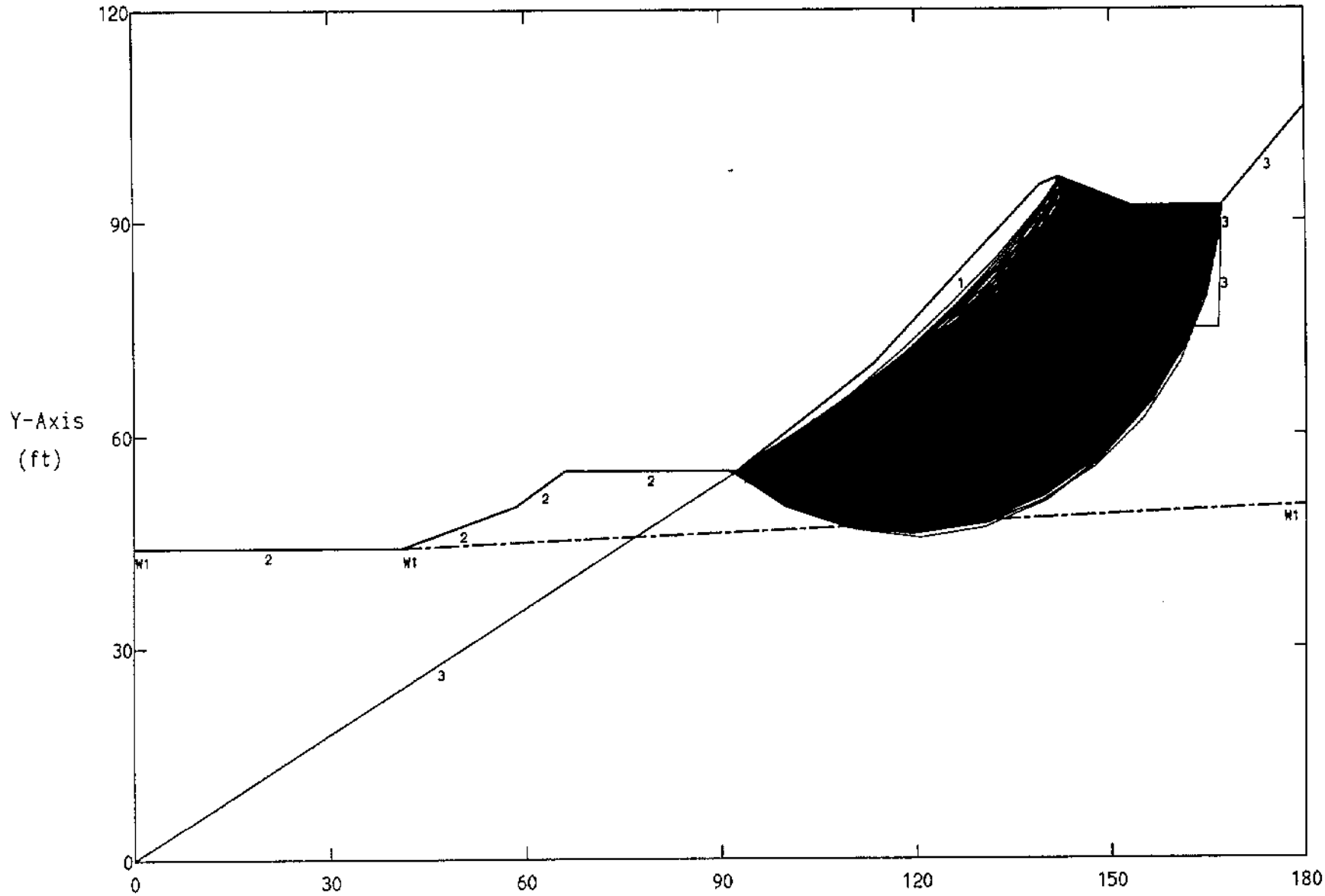
Label	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
FILL	1	120	130	200	30	0	0	
ML/CL	2	80	105	300	12	0	0	W1
SAND	3	125	135	250	33	0	0	W1
VOID	4	62.4	62.4	0	0	0	0	

PCSTABL5M/SI FSmin=1.30 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION S5R Water-filled Tunnel Void Included.

All surfaces evaluated. C:S5RCAB.PLT By: TWA 11/01/2001 5:56pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	11/01/2001
Time of Run:	5:56pm
Run By:	TWA
Input Data Filename:	C:S5RCAB
Output Filename:	C:S5RCAB.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:S5RCAB.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION S5R
Water-filled Tunnel Void Included.

BOUNDARY COORDINATES

11 Top Boundaries
20 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	55.00	2
4	66.00	55.00	92.50	55.00	2
5	92.50	55.00	93.20	55.50	1
6	93.20	55.50	113.50	70.00	1
7	113.50	70.00	139.00	95.00	1
8	139.00	95.00	142.00	96.00	1
9	142.00	96.00	153.00	92.00	1
10	153.00	92.00	167.00	92.00	1
11	167.00	92.00	180.00	106.00	3
12	.00	.00	92.50	55.00	3
13	92.50	55.00	125.00	73.00	3
14	125.00	73.00	127.00	75.00	3
15	127.00	75.00	144.00	75.00	3
16	144.00	75.00	153.00	87.00	4
17	153.00	87.00	166.90	87.00	4
18	166.90	87.00	167.00	92.00	3
19	144.00	75.00	166.50	75.00	3
20	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	180.00	50.00

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

5000 Trial Surfaces Have Been Generated.

50 Surfaces Initiate From Each Of100 Points Equally Spaced Along The Ground Surface Between X = 91.00 ft.
and X = 93.20 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

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 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.51	55.01
2	102.35	56.81
3	112.00	59.42
4	121.41	62.80
5	130.51	66.95
6	139.24	71.83
7	147.53	77.42
8	155.35	83.66
9	162.62	90.53
10	163.94	92.00

Circle Center At X = 75.7 ; Y = 175.0 and Radius, 121.1

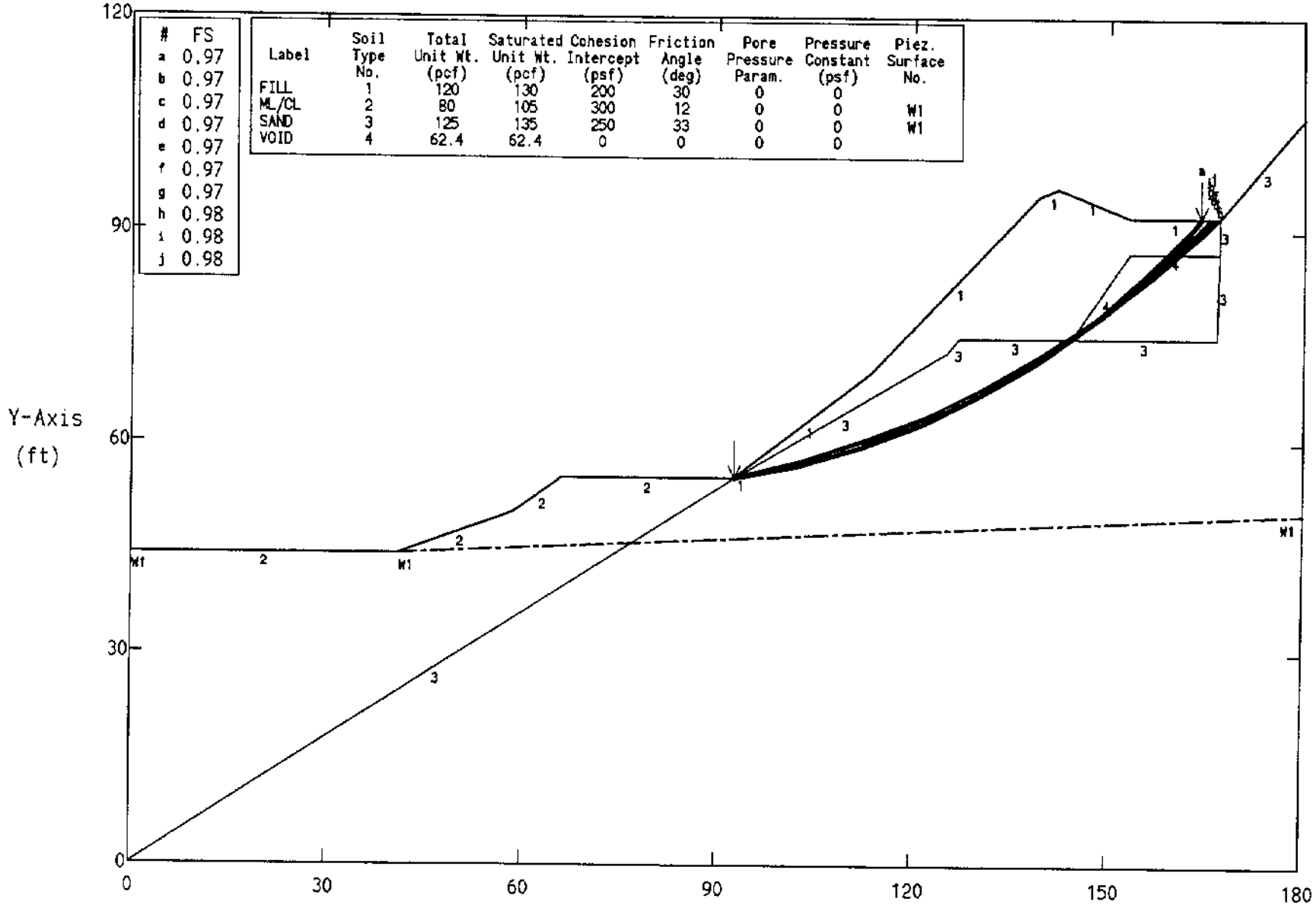
*** 1.299 ***

Individual data on the 20 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	.7	15.5	.0	.0	.0	.0	.0	.0	.0
3	9.1	3156.5	.0	.0	.0	.0	.0	.0	.0
4	9.7	8779.9	.0	.0	.0	.0	.0	.0	.0
5	1.5	1806.0	.0	.0	.0	.0	.0	.0	.0
6	7.9	12160.7	.0	.0	.0	.0	.0	.0	.0
7	3.6	6994.7	.0	.0	.0	.0	.0	.0	.0
8	2.0	4257.2	.0	.0	.0	.0	.0	.0	.0
9	3.5	8075.6	.0	.0	.0	.0	.0	.0	.0
10	8.5	22156.1	.0	.0	.0	.0	.0	.0	.0
11	.2	666.7	.0	.0	.0	.0	.0	.0	.0
12	2.8	7581.4	.0	.0	.0	.0	.0	.0	.0

PLAYA VISTA CABRORA RD SECTION S5R Water-filled Tunnel Void Included.

Ten Most Critical. C:S5RCAB.PLT By: TWA 11/01/2001 5:57pm

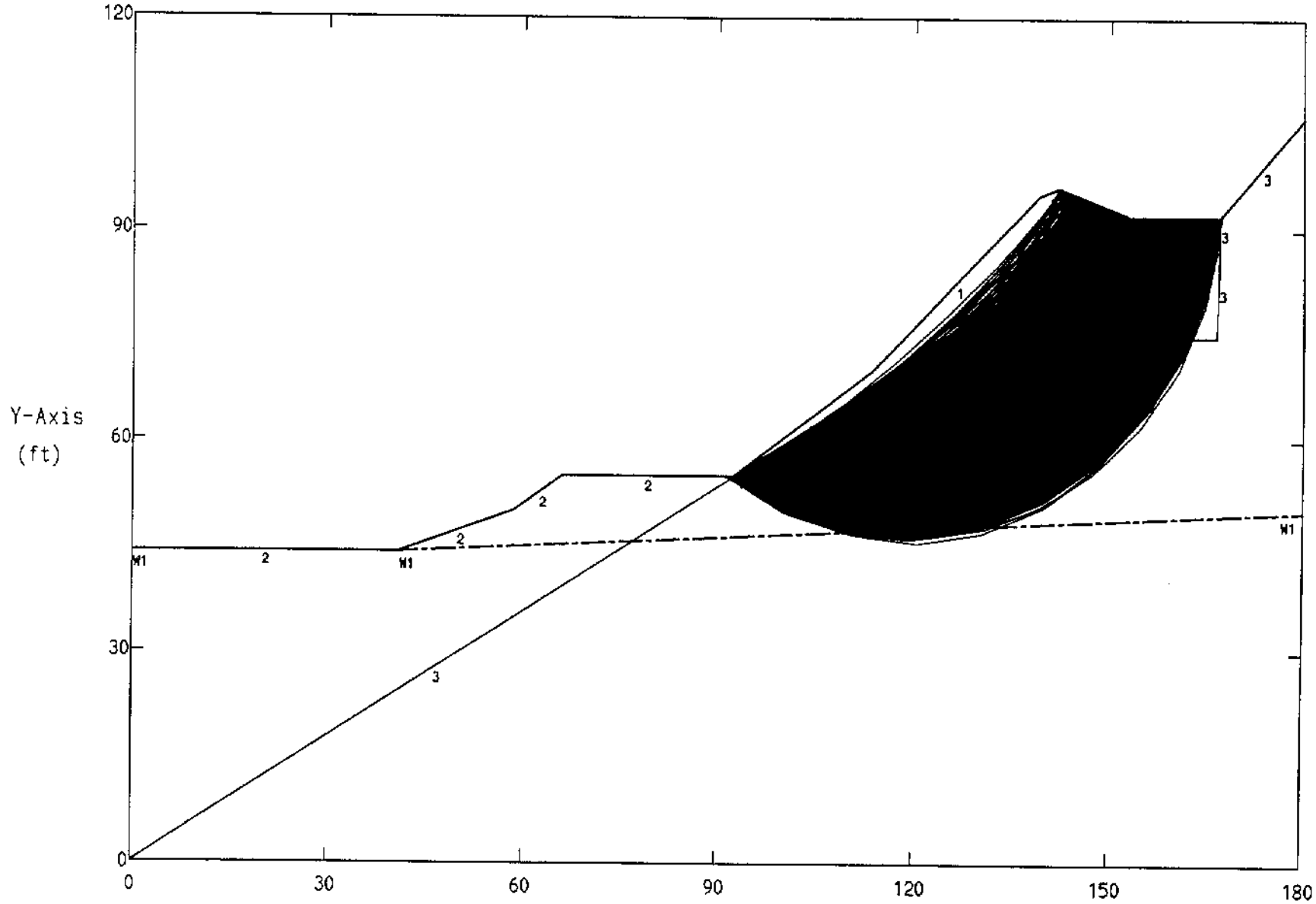


PCSTABL5M/SI FSmin=0.97 X-Axis (ft) SEISMIC

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION S5R Water-filled Tunnel Void Included.

All surfaces evaluated. C:S5RCAB.PLT By: TWA 11/01/2001 5:57pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	11/01/2001
Time of Run:	5:57pm
Run By:	TWA
Input Data Filename:	C:S5RCAB
Output Filename:	C:S5RCAB.OUT
Unit:	ENGLTSH
Plotted Output Filename:	C:S5RCAB.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION S5R
Water-filled Tunnel Void Included.

BOUNDARY COORDINATES

11 Top Boundaries
20 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	55.00	2
4	66.00	55.00	92.50	55.00	2
5	92.50	55.00	93.20	55.50	1
6	93.20	55.50	113.50	70.00	1
7	113.50	70.00	139.00	95.00	1
8	139.00	95.00	142.00	96.00	1
9	142.00	96.00	153.00	92.00	1
10	153.00	92.00	167.00	92.00	1
11	167.00	92.00	180.00	106.00	3
12	.00	.00	92.50	55.00	3
13	92.50	55.00	125.00	73.00	3
14	125.00	73.00	127.00	75.00	3
15	127.00	75.00	144.00	75.00	3
16	144.00	75.00	153.00	87.00	4
17	153.00	87.00	166.90	87.00	4
18	166.90	87.00	167.00	92.00	3
19	144.00	75.00	166.50	75.00	3
20	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

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1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	180.00	50.00

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 (psf)

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

5000 Trial Surfaces Have Been Generated.

50 Surfaces Initiate From Each Of100 Points Equally Spaced
Along The Ground Surface Between X = 91.00 ft.
and X = 93.20 ft.

Each Surface Terminates Between X = 142.00 ft.
and X = 167.10 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

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 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.51	55.01
2	102.35	56.81
3	112.00	59.42
4	121.41	62.80
5	130.51	66.95
6	139.24	71.83
7	147.53	77.42
8	155.35	83.66
9	162.62	90.53
10	163.94	92.00

Circle Center At X = 75.7 ; Y = 175.0 and Radius, 121.1

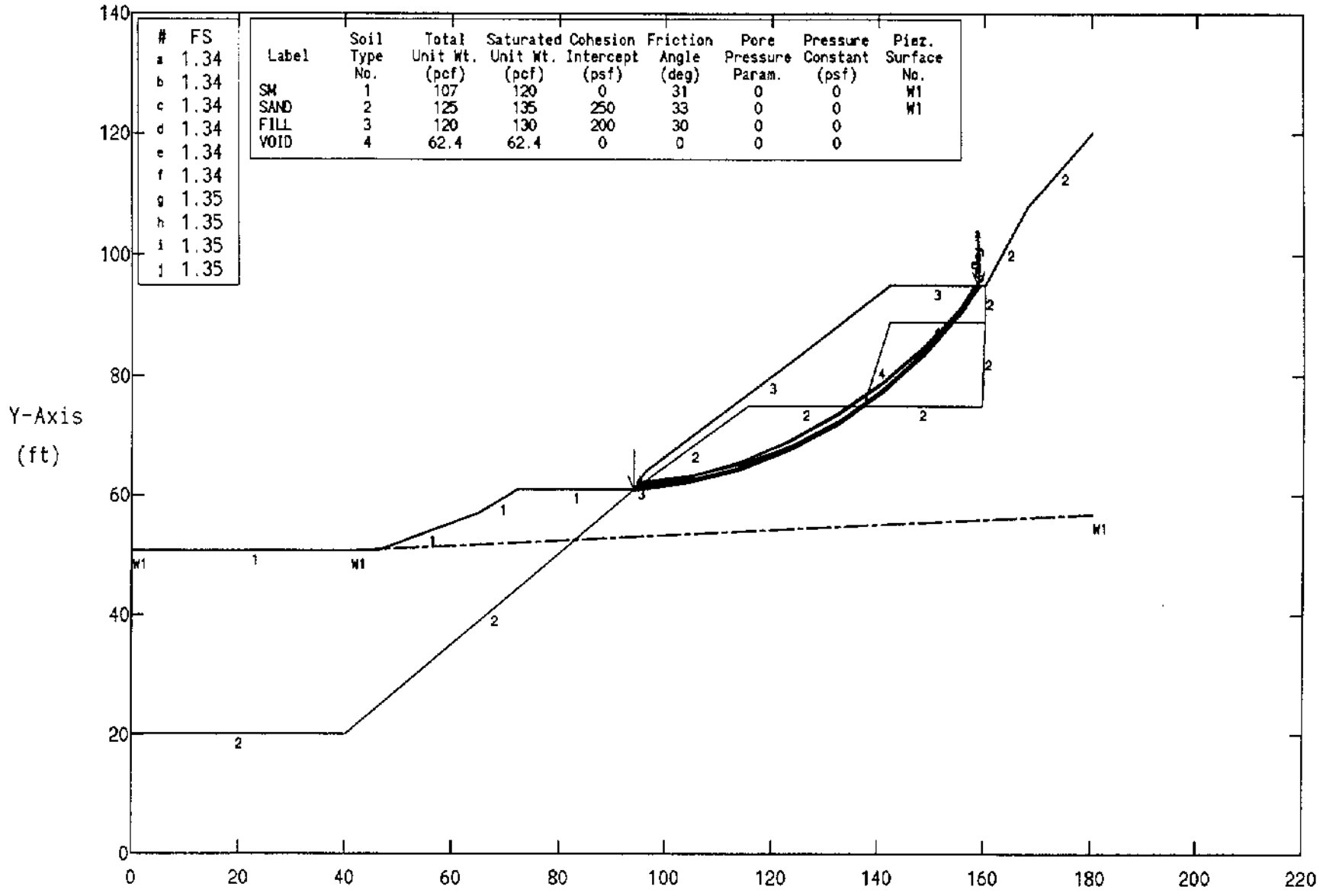
*** .965 ***

Individual data on the 20 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	.7	15.5	.0	.0	.0	.0	2.3	.0	.0

PLAYA VISTA CABRORA RD SECTION SR7 Water-Filled Tunnel Void Included.

Ten Most Critical. C:SR7CAB.PLT By: TWA 11/01/2001 6:02pm



#	FS
a	1.34
b	1.34
c	1.34
d	1.34
e	1.34
f	1.34
g	1.35
h	1.35
i	1.35
j	1.35

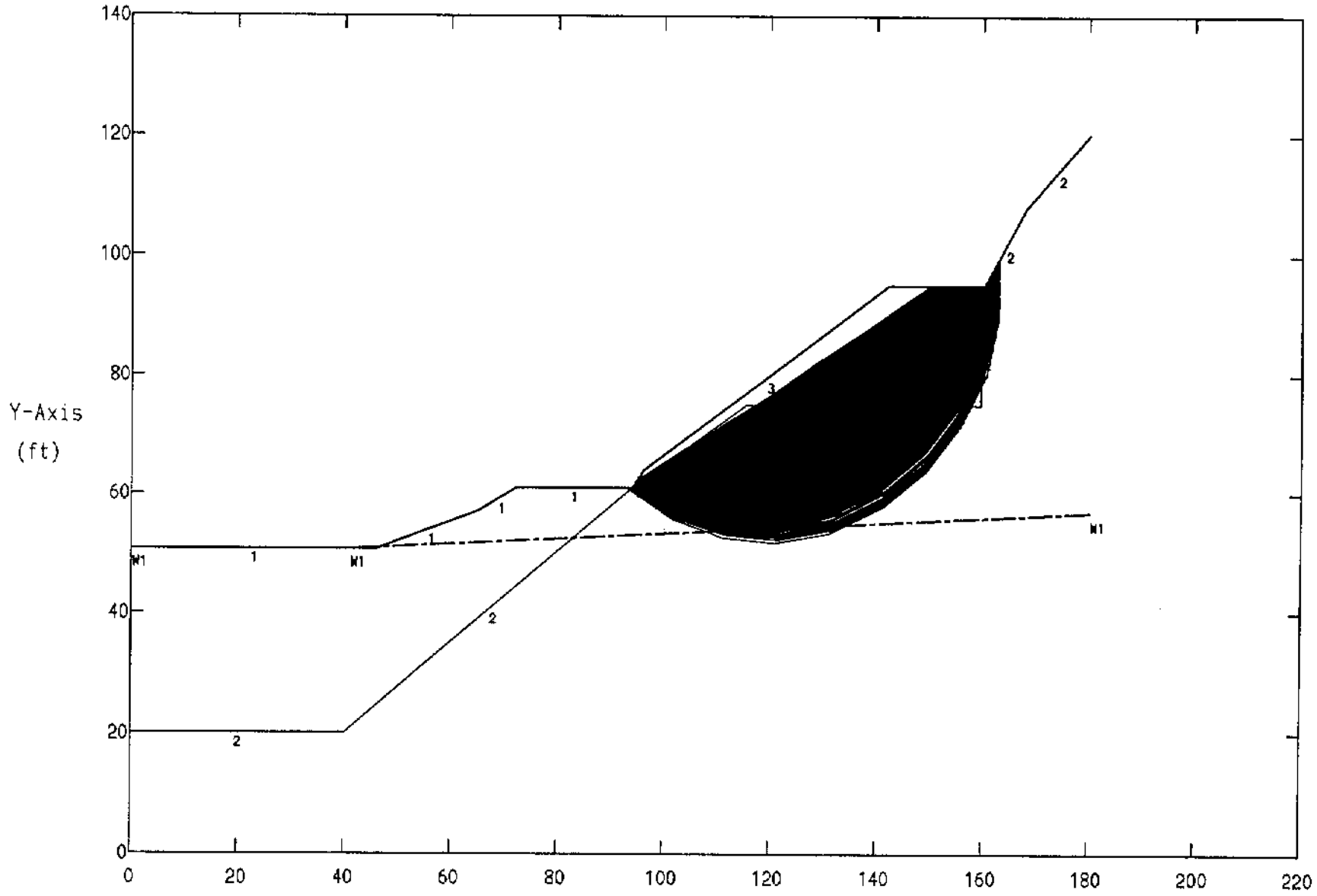
Label	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
SM	1	107	120	0	31	0	0	W1
SAND	2	125	135	250	33	0	0	W1
FILL	3	120	130	200	30	0	0	
VOID	4	62.4	62.4	0	0	0	0	

PCSTABL5M/SI FSmin=1.34 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION SR7 Water-Filled Tunnel Void Included.

All surfaces evaluated. C:SR7CAB.PLT By: TWA 11/01/2001 6:02pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	11/01/2001
Time of Run:	6:02pm
Run By:	TWA
Input Data Filename:	C:SR7CAB
Output Filename:	C:SR7CAB.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:SR7CAB.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION SR7
Water-Filled Tunnel Void Included.

BOUNDARY COORDINATES

10 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	50.75	46.00	50.75	1
2	46.00	50.75	65.00	57.00	1
3	65.00	57.00	72.00	61.00	1
4	72.00	61.00	94.00	61.00	1
5	94.00	61.00	95.00	62.50	3
6	95.00	62.50	96.00	64.00	3
7	96.00	64.00	142.00	95.00	3
8	142.00	95.00	160.00	95.00	3
9	160.00	95.00	168.00	108.00	2
10	168.00	108.00	180.00	120.00	2
11	.00	20.00	40.00	20.00	2
12	40.00	20.00	94.00	61.00	2
13	94.00	61.00	115.35	75.00	2
14	115.35	75.00	137.00	75.00	2
15	137.00	75.00	142.00	89.00	4
16	142.00	89.00	159.90	89.00	4
17	159.90	89.00	160.00	95.00	2
18	137.00	75.00	159.50	75.00	2
19	159.50	75.00	159.90	89.00	2

ISOTROPIC SOIL PARAMETERS

4 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	107.0	120.0	.0	31.0	.00	.0	1
2	125.0	135.0	250.0	33.0	.00	.0	1
3	120.0	130.0	200.0	30.0	.00	.0	0
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	50.75
2	41.00	50.75
3	180.00	56.75

Searching Routine Will Be Limited To An Area Defined By 2 Boundaries Of Which The First 2 Boundaries Will Deflect Surfaces Upward

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)
1	95.00	62.50	96.00	64.00
2	96.00	64.00	142.00	95.00

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

1600 Trial Surfaces Have Been Generated.

40 Surfaces Initiate From Each Of 40 Points Equally Spaced Along The Ground Surface Between X = 93.00 ft.

and X = 94.90 ft.

Each Surface Terminates Between X = 150.01 ft.
and X = 163.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

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 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	94.07	61.11
2	104.01	62.22
3	113.76	64.46
4	123.19	67.78
5	132.18	72.16
6	140.62	77.52
7	148.40	83.81
8	155.41	90.94
9	158.58	95.00

Circle Center At X = 89.2 ; Y = 149.0 and Radius, 88.0

*** 1.335 ***

Individual data on the 16 slices

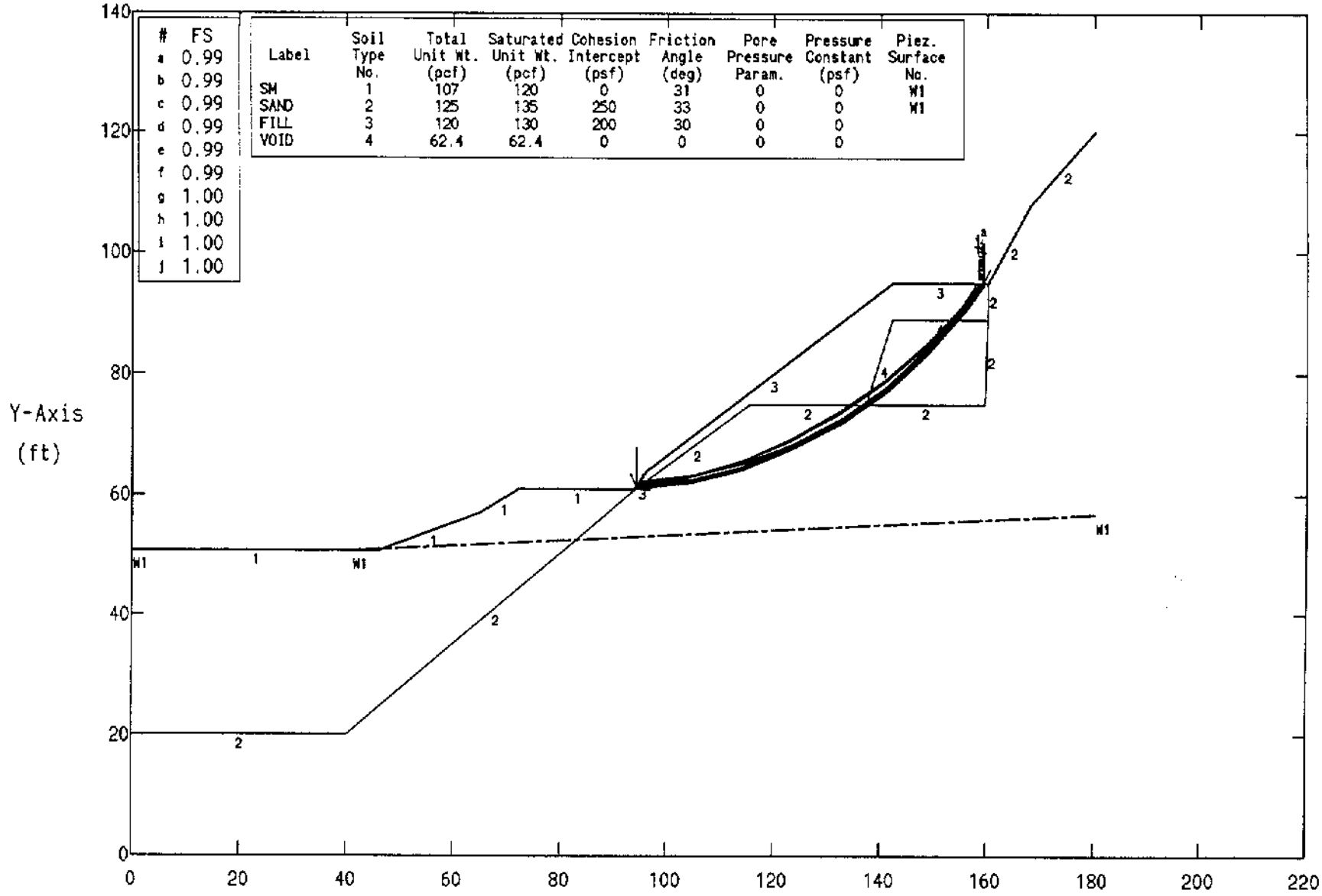
Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	.1	1.1	.0	.0	.0	.0	.0	.0	.0
2	.8	71.5	.0	.0	.0	.0	.0	.0	.0

PLAYA VISTA CABRORA RD SECTION SR7 Water-Filled Tunnel Void Included.

Ten Most Critical. C:SR7CAB.PLT By: TWA 11/01/2001 6:03pm

#	FS
a	0.99
b	0.99
c	0.99
d	0.99
e	0.99
f	0.99
g	1.00
h	1.00
i	1.00
j	1.00

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.
SM	1	107	120	0	31	0	0	W1
SAND	2	125	135	250	33	0	0	W1
FILL	3	120	130	200	30	0	0	
VOID	4	62.4	62.4	0	0	0	0	

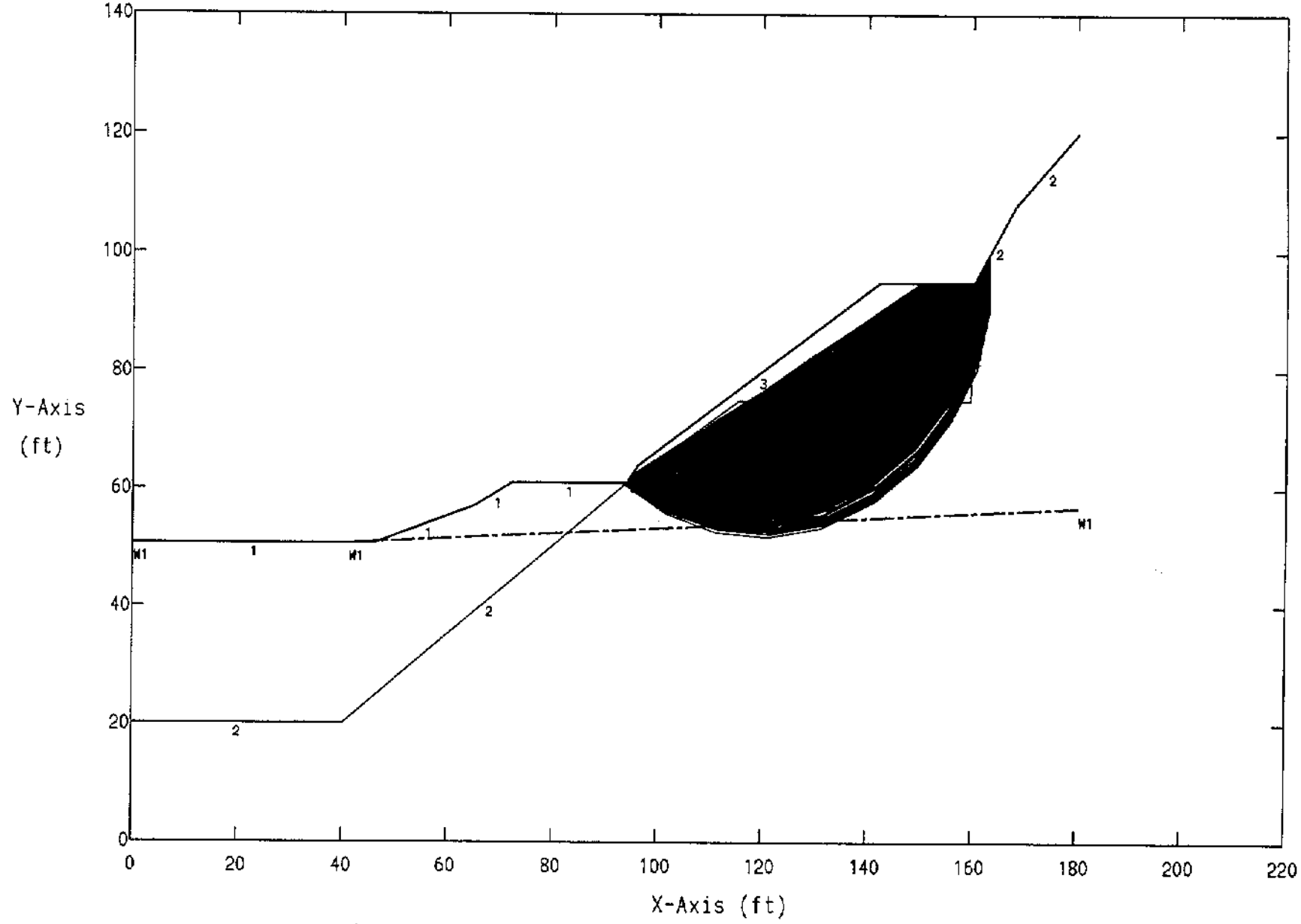


PCSTABL5M/SI FSmin=0.99 X-Axis (ft) SEISMIC

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION SR7 Water-Filled Tunnel Void Included.

All surfaces evaluated. C:SR7CAB.PLT By: TWA 11/01/2001 6:03pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	11/01/2001
Time of Run:	6:03pm
Run By:	TWA
Input Data Filename:	C:SR7CAB
Output Filename:	C:SR7CAB.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:SR7CAB.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION SR7
Water-Filled Tunnel Void Included.

BOUNDARY COORDINATES

10 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	50.75	46.00	50.75	1
2	46.00	50.75	65.00	57.00	1
3	65.00	57.00	72.00	61.00	1
4	72.00	61.00	94.00	61.00	1
5	94.00	61.00	95.00	62.50	3
6	95.00	62.50	96.00	64.00	3
7	96.00	64.00	142.00	95.00	3
8	142.00	95.00	160.00	95.00	3
9	160.00	95.00	168.00	108.00	2
10	168.00	108.00	180.00	120.00	2
11	.00	20.00	40.00	20.00	2
12	40.00	20.00	94.00	61.00	2
13	94.00	61.00	115.35	75.00	2
14	115.35	75.00	137.00	75.00	2
15	137.00	75.00	142.00	89.00	4
16	142.00	89.00	159.90	89.00	4
17	159.90	89.00	160.00	95.00	2
18	137.00	75.00	159.50	75.00	2
19	159.50	75.00	159.90	89.00	2

ISOTROPIC SOIL PARAMETERS

4 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	107.0	120.0	.0	31.0	.00	.0	1
2	125.0	135.0	250.0	33.0	.00	.0	1
3	120.0	130.0	200.0	30.0	.00	.0	0
4	62.4	62.4	.0	.0	.00	.0	0

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1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	50.75
2	41.00	50.75
3	180.00	56.75

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 (psf)

Searching Routine Will Be Limited To An Area Defined By 2 Boundaries
Of Which The First 2 Boundaries Will Deflect Surfaces Upward

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)
1	95.00	62.50	96.00	64.00
2	96.00	64.00	142.00	95.00

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

1600 Trial Surfaces Have Been Generated.

40 Surfaces Initiate From Each Of 40 Points Equally Spaced Along The Ground Surface Between X = 93.00 ft.
and X = 94.90 ft.

Each Surface Terminates Between X = 150.01 ft.
and X = 163.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

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 9 Coordinate Points

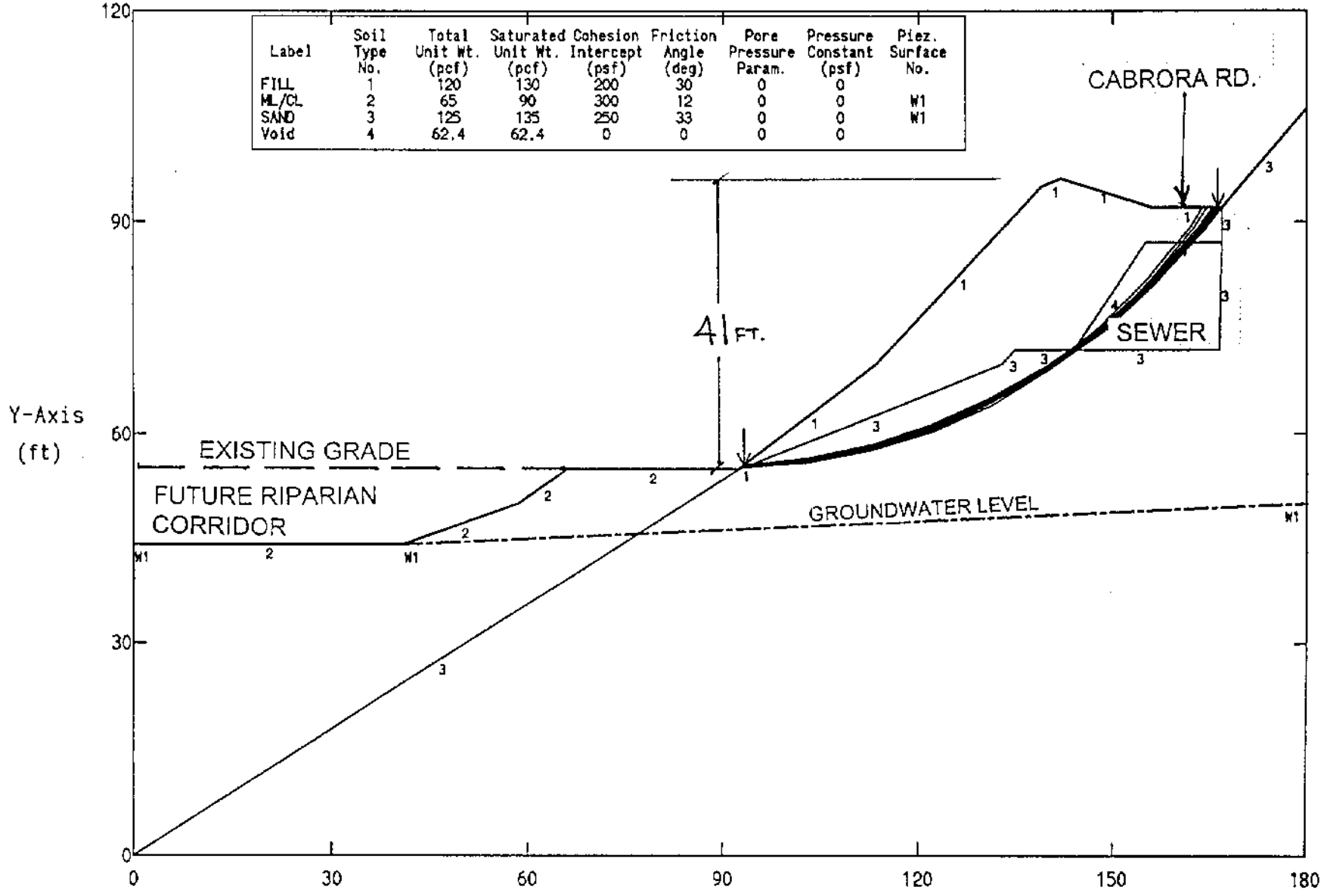
Point No.	X-Surf (ft)	Y-Surf (ft)
1	94.22	61.33
2	104.16	62.36
3	113.93	64.53
4	123.38	67.78
5	132.41	72.09
6	140.88	77.40
7	148.70	83.64
8	155.76	90.72
9	159.14	95.00

Circle Center At X = 90.1 ; Y = 149.1 and Radius, 87.8

*** .987 ***

PLAYA VISTA CABRORA RD SECTION S5R Water-filled Tunnel Void Included.

Ten Most Critical. C:S5RCAB.PLT By: TWA 2/22/2001 10:36am

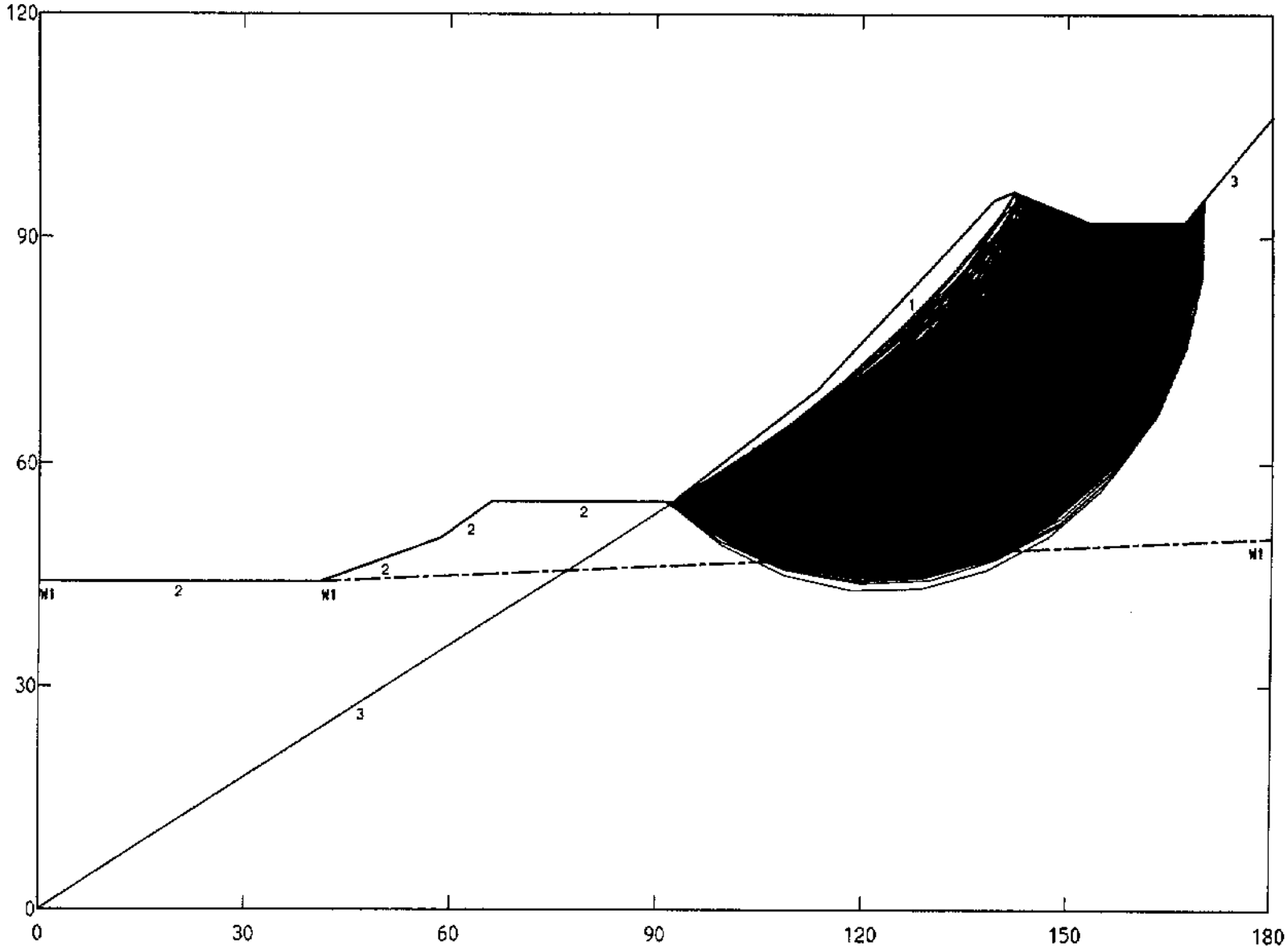


PCSTABL5M/SI FSmin=1.3 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION S5R Water-filled Tunnel Void Included.

All surfaces evaluated. C:S5RCAB.PLT By: TWA 11/12/2001 11:52am



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	11/12/2001
Time of Run:	11:52am
Run By:	TWA
Input Data Filename:	C:S5RCAB
Output Filename:	C:S5RCAB.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:S5RCAB.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION S5R
Water-filled Tunnel Void Included.

BOUNDARY COORDINATES

11 Top Boundaries
20 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	55.00	2
4	66.00	55.00	92.50	55.00	2
5	92.50	55.00	93.20	55.50	1
6	93.20	55.50	113.50	70.00	1
7	113.50	70.00	139.00	95.00	1
8	139.00	95.00	142.00	96.00	1
9	142.00	96.00	153.00	92.00	1
10	153.00	92.00	167.00	92.00	1
11	167.00	92.00	180.00	106.00	3
12	.00	.00	92.50	55.00	3
13	92.50	55.00	125.00	73.00	3
14	125.00	73.00	127.00	75.00	3
15	127.00	75.00	144.00	75.00	3
16	144.00	75.00	153.00	87.00	4
17	153.00	87.00	166.90	87.00	4
18	166.90	87.00	167.00	92.00	3
19	144.00	75.00	166.50	75.00	3
20	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

---

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	180.00	50.00

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

5000 Trial Surfaces Have Been Generated.

50 Surfaces Initiate From Each Of100 Points Equally Spaced Along The Ground Surface Between X = 91.00 ft.
and X = 93.20 ft.

Each Surface Terminates Between X = 142.00 ft.
and X = 170.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

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 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	93.18	55.48
2	103.07	56.99
3	112.77	59.42
4	122.19	62.75
5	131.26	66.96
6	139.89	72.01
7	148.01	77.85
8	155.54	84.44
9	162.41	91.70
10	162.64	92.00

Circle Center At X = 82.3 ; Y = 160.5 and Radius, 105.6

*** 1.299 ***

Individual data on the 20 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	.2	2.5	.0	.0	.0	.0	.0	.0	.0
3	9.6	3388.8	.0	.0	.0	.0	.0	.0	.0
4	9.7	9350.3	.0	.0	.0	.0	.0	.0	.0
5	.7	923.5	.0	.0	.0	.0	.0	.0	.0
6	8.7	13951.8	.0	.0	.0	.0	.0	.0	.0
7	2.8	5680.4	.0	.0	.0	.0	.0	.0	.0
8	2.0	4351.7	.0	.0	.0	.0	.0	.0	.0
9	4.3	10092.9	.0	.0	.0	.0	.0	.0	.0
10	7.7	20632.7	.0	.0	.0	.0	.0	.0	.0
11	.9	2526.5	.0	.0	.0	.0	.0	.0	.0
12	2.1	5804.1	.0	.0	.0	.0	.0	.0	.0

13	2.0	5141.0	.0	.0	.0	.0	.0	.0	.0
14	.0	112.1	.0	.0	.0	.0	.0	.0	.0
15	4.0	8322.4	.0	.0	.0	.0	.0	.0	.0
16	5.0	6661.5	.0	.0	.0	.0	.0	.0	.0
17	2.5	2103.8	.0	.0	.0	.0	.0	.0	.0
18	2.4	1647.9	.0	.0	.0	.0	.0	.0	.0
19	4.4	1413.6	.0	.0	.0	.0	.0	.0	.0
20	.2	4.1	.0	.0	.0	.0	.0	.0	.0

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.56	55.04
2	102.42	56.67
3	112.11	59.16
4	121.53	62.50
5	130.62	66.67
6	139.31	71.62
7	147.52	77.33
8	155.20	83.74
9	162.27	90.81
10	163.27	92.00

Circle Center At X = 79.3 ; Y = 166.5 and Radius, 112.2

*** 1.303 ***

Failure Surface Specified By 10 Coordinate Points

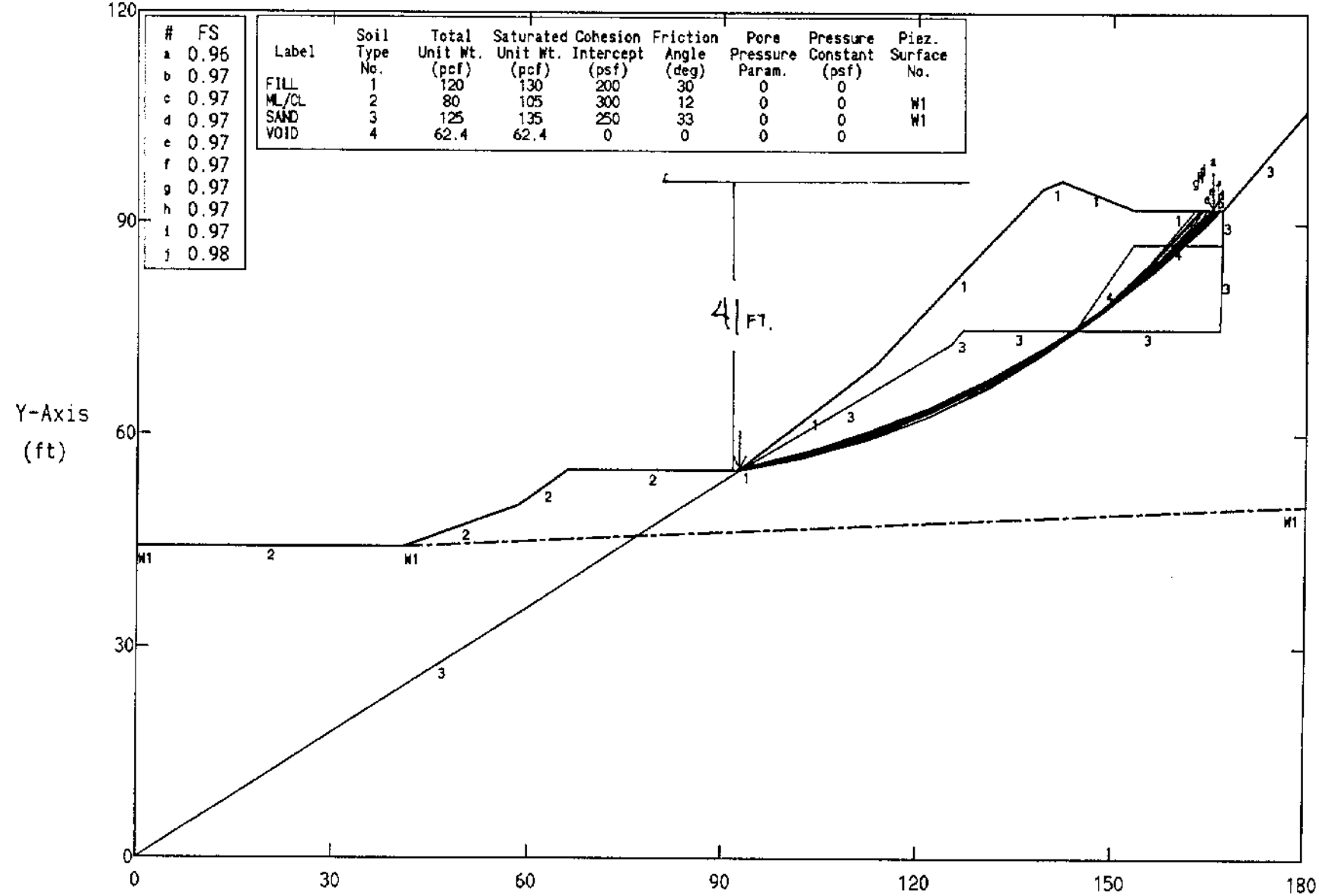
Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.53	55.02
2	102.34	57.01
3	111.96	59.71
4	121.37	63.11
5	130.49	67.20
6	139.29	71.95
7	147.72	77.34
8	155.72	83.33
9	163.26	89.90
10	165.35	92.00

Circle Center At X = 70.8 ; Y = 188.0 and Radius, 134.7

*** 1.305 ***

PLAYA VISTA CABRORA RD SECTION S5R Water-filled Tunnel Void Included.

Ten Most Critical. C:S5RCAB.PLT By: TWA 11/12/2001 11:53am

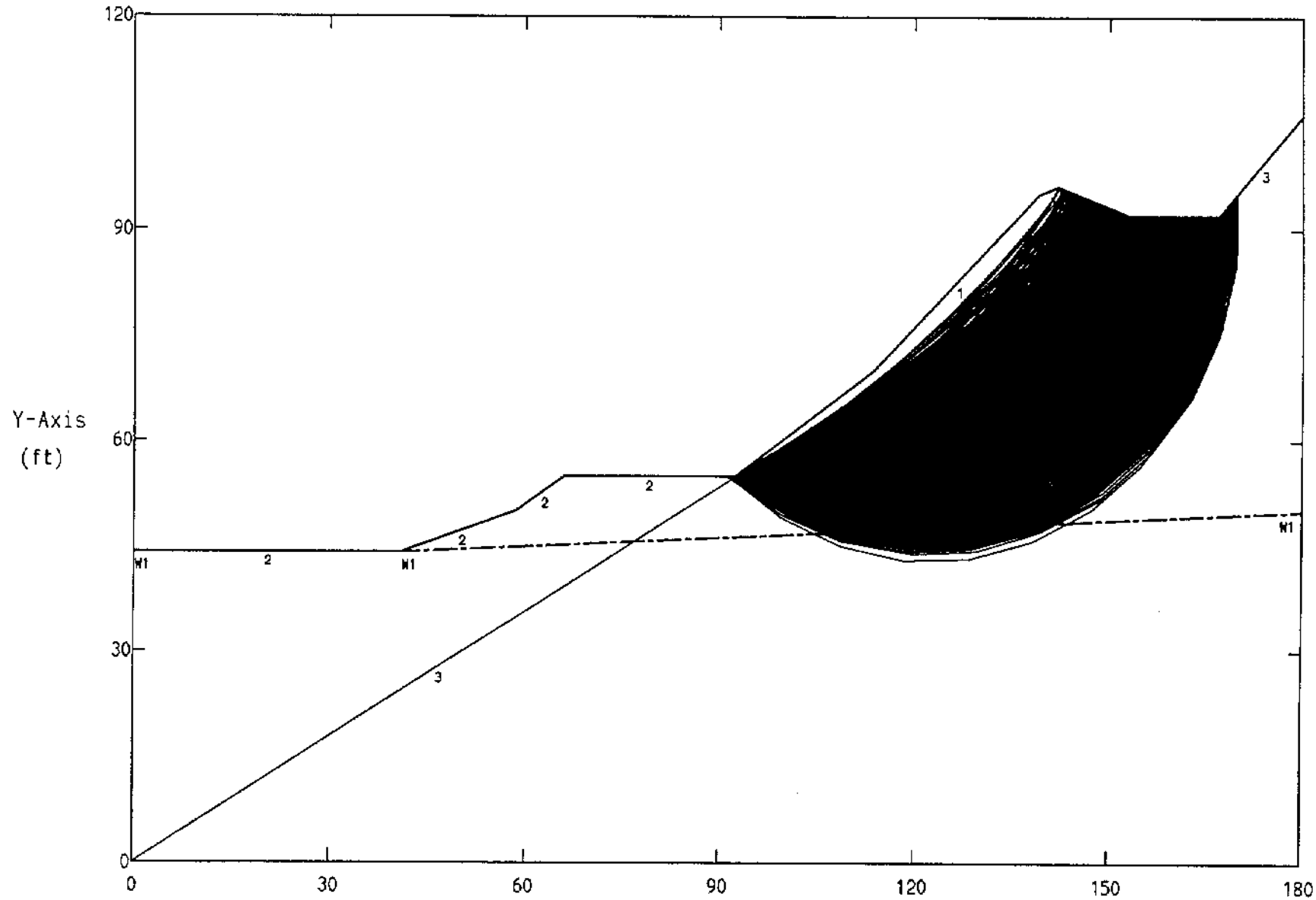


PCSTABL5M/SI FSmin=0.96 X-Axis (ft) SEISMIC

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION S5R Water-filled Tunnel Void Included.

All surfaces evaluated. C:S5RCAB.PLT By: TWA 11/12/2001 11:53am



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	11/12/2001
Time of Run:	11:53am
Run By:	TWA
Input Data Filename:	C:S5RCAB
Output Filename:	C:S5RCAB.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:S5RCAB.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION S5R
Water-filled Tunnel Void Included.

BOUNDARY COORDINATES

11 Top Boundaries
20 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	44.00	41.00	44.00	2
2	41.00	44.00	58.50	50.00	2
3	58.50	50.00	66.00	55.00	2
4	66.00	55.00	92.50	55.00	2
5	92.50	55.00	93.20	55.50	1
6	93.20	55.50	113.50	70.00	1
7	113.50	70.00	139.00	95.00	1
8	139.00	95.00	142.00	96.00	1
9	142.00	96.00	153.00	92.00	1
10	153.00	92.00	167.00	92.00	1
11	167.00	92.00	180.00	106.00	3
12	.00	.00	92.50	55.00	3
13	92.50	55.00	125.00	73.00	3
14	125.00	73.00	127.00	75.00	3
15	127.00	75.00	144.00	75.00	3
16	144.00	75.00	153.00	87.00	4
17	153.00	87.00	166.90	87.00	4
18	166.90	87.00	167.00	92.00	3
19	144.00	75.00	166.50	75.00	3
20	166.50	75.00	166.90	87.00	3

ISOTROPIC SOIL PARAMETERS

4 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	120.0	130.0	200.0	30.0	.00	.0	0
2	80.0	105.0	300.0	12.0	.00	.0	1
3	125.0	135.0	250.0	33.0	.00	.0	1
4	62.4	62.4	.0	.0	.00	.0	0

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1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	44.00
2	41.00	44.00
3	180.00	50.00

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 (psf)

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

5000 Trial Surfaces Have Been Generated.

50 Surfaces Initiate From Each Of100 Points Equally Spaced
Along The Ground Surface Between X = 91.00 ft.
and X = 93.20 ft.

Each Surface Terminates Between X = 142.00 ft.
and X = 170.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

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 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.53	55.02
2	102.34	57.01
3	111.96	59.71
4	121.37	63.11
5	130.49	67.20
6	139.29	71.95
7	147.72	77.34
8	155.72	83.33
9	163.26	89.90
10	165.35	92.00

Circle Center At X = 70.8 ; Y = 188.0 and Radius, 134.7

*** .963 ***

Individual data on the 20 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	.7	14.0	.0	.0	.0	.0	2.1	.0	.0

3	9.1	3020.2	.0	.0	.0	.0	453.0	.0	.0
4	9.6	8437.1	.0	.0	.0	.0	1265.6	.0	.0
5	1.5	1792.8	.0	.0	.0	.0	268.9	.0	.0
6	7.9	11763.2	.0	.0	.0	.0	1764.5	.0	.0
7	3.6	6934.0	.0	.0	.0	.0	1040.1	.0	.0
8	2.0	4183.6	.0	.0	.0	.0	627.5	.0	.0
9	3.5	7913.4	.0	.0	.0	.0	1187.0	.0	.0
10	8.5	22011.3	.0	.0	.0	.0	3301.7	.0	.0
11	.3	816.3	.0	.0	.0	.0	122.4	.0	.0
12	2.7	7416.3	.0	.0	.0	.0	1112.4	.0	.0
13	2.0	5121.9	.0	.0	.0	.0	768.3	.0	.0
14	.1	142.3	.0	.0	.0	.0	21.3	.0	.0
15	3.7	7802.1	.0	.0	.0	.0	1170.3	.0	.0
16	5.3	7382.8	.0	.0	.0	.0	1107.4	.0	.0
17	2.7	2430.1	.0	.0	.0	.0	364.5	.0	.0
18	4.2	3009.9	.0	.0	.0	.0	451.5	.0	.0
19	3.3	1418.4	.0	.0	.0	.0	212.8	.0	.0
20	2.1	262.4	.0	.0	.0	.0	39.4	.0	.0

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.85	55.25
2	102.62	57.34
3	112.23	60.10
4	121.64	63.51
5	130.78	67.56
6	139.63	72.21
7	148.14	77.46
8	156.27	83.28
9	163.99	89.65
10	166.48	92.00

Circle Center At X = 67.3 ; Y = 198.5 and Radius, 145.5

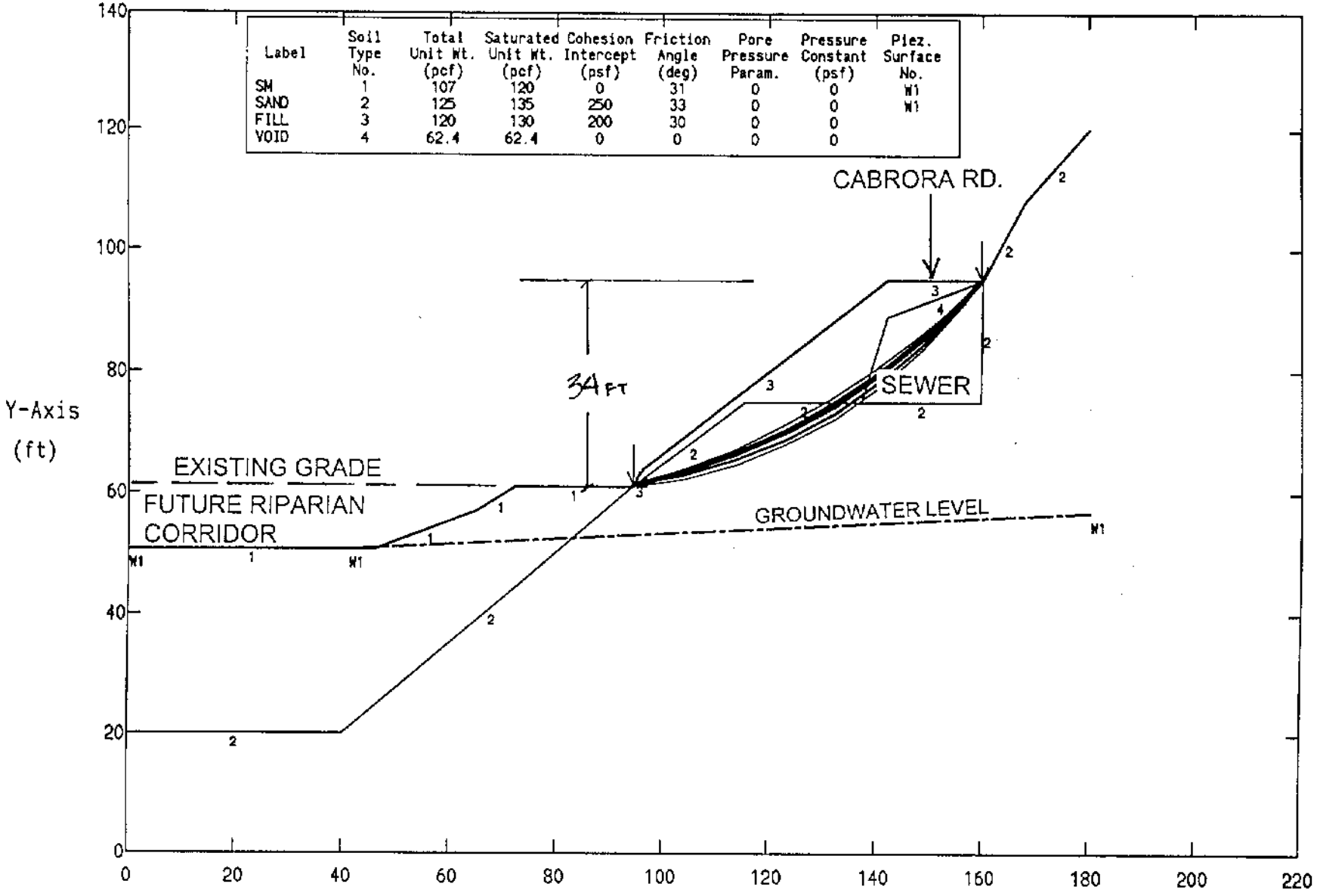
*** .966 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.69	55.14
2	102.50	57.06
3	112.14	59.73
4	121.54	63.14
5	130.65	67.27
6	139.41	72.10
7	147.77	77.58

PLAYA VISTA CABRORA RD SECTION SR7 Water-Filled Tunnel Void Included.

Ten Most Critical. C:SR7CAB.PLT By: TWA 2/22/2001 11:16am

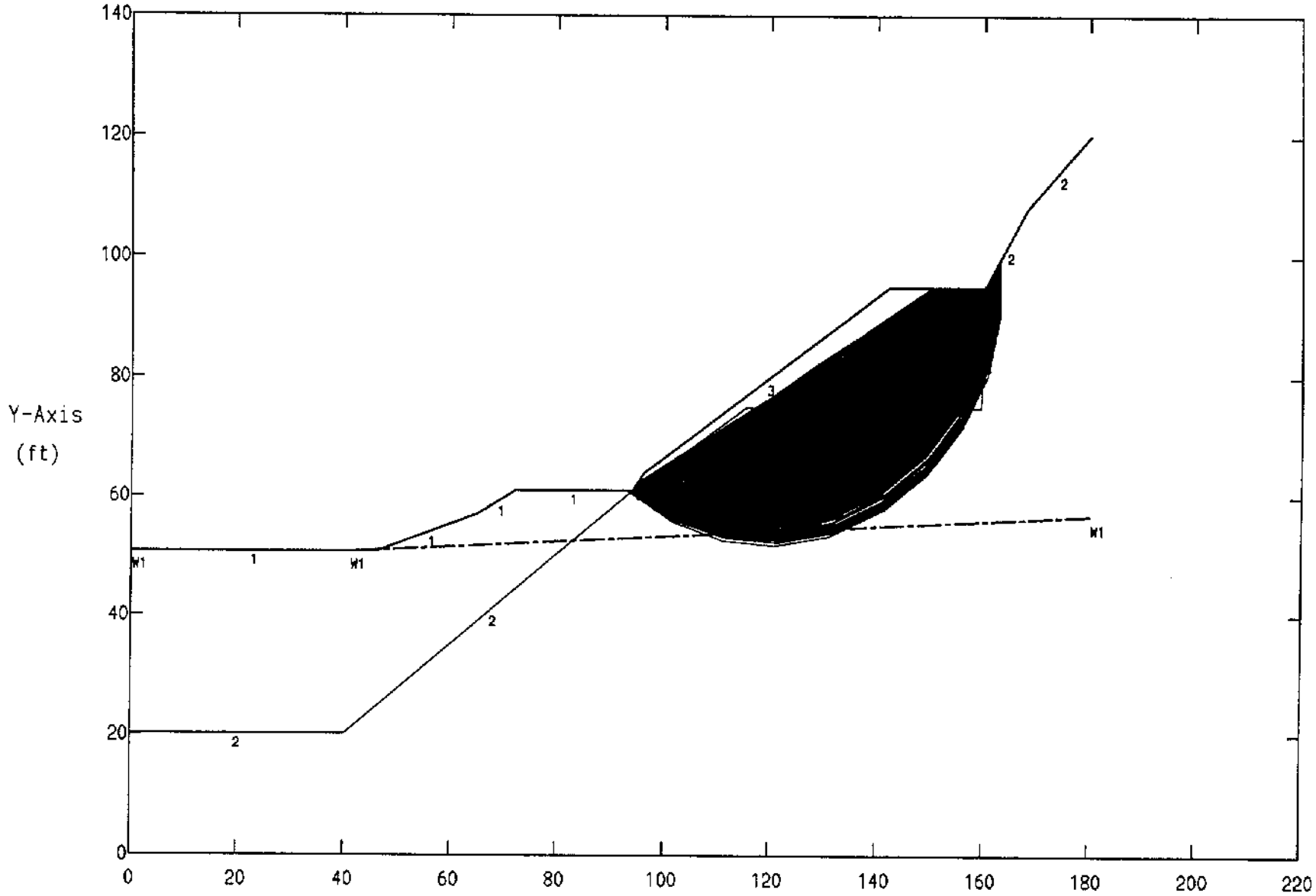


PCSTABL5M/SI FSmin=1.3 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION SR7 Water-Filled Tunnel Void Included.

All surfaces evaluated. C:SR7CAB.PLT By: TWA 11/12/2001 12:08pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	11/12/2001
Time of Run:	12:08pm
Run By:	TWA
Input Data Filename:	C:SR7CAB
Output Filename:	C:SR7CAB.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:SR7CAB.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION SR7
Water-Filled Tunnel Void Included.

BOUNDARY COORDINATES

10 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	50.75	46.00	50.75	1
2	46.00	50.75	65.00	57.00	1
3	65.00	57.00	72.00	61.00	1
4	72.00	61.00	94.00	61.00	1
5	94.00	61.00	95.00	62.50	3
6	95.00	62.50	96.00	64.00	3
7	96.00	64.00	142.00	95.00	3
8	142.00	95.00	160.00	95.00	3
9	160.00	95.00	168.00	108.00	2
10	168.00	108.00	180.00	120.00	2
11	.00	20.00	40.00	20.00	2
12	40.00	20.00	94.00	61.00	2
13	94.00	61.00	115.35	75.00	2
14	115.35	75.00	137.00	75.00	2
15	137.00	75.00	142.00	89.00	4
16	142.00	89.00	159.90	89.00	4
17	159.90	89.00	160.00	95.00	2
18	137.00	75.00	159.50	75.00	2
19	159.50	75.00	159.90	89.00	2

ISOTROPIC SOIL PARAMETERS

4 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	107.0	120.0	.0	31.0	.00	.0	1
2	125.0	135.0	250.0	33.0	.00	.0	1
3	120.0	130.0	200.0	30.0	.00	.0	0
4	62.4	62.4	.0	.0	.00	.0	0

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	50.75
2	41.00	50.75
3	180.00	56.75

Searching Routine Will Be Limited To An Area Defined By 2 Boundaries Of Which The First 2 Boundaries Will Deflect Surfaces Upward

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)
1	95.00	62.50	96.00	64.00
2	96.00	64.00	142.00	95.00

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

1600 Trial Surfaces Have Been Generated.

40 Surfaces Initiate From Each Of 40 Points Equally Spaced Along The Ground Surface Between X = 93.00 ft.

and X = 94.90 ft.

Each Surface Terminates Between X = 150.01 ft.
and X = 163.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

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 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	94.07	61.11
2	104.01	62.22
3	113.76	64.46
4	123.19	67.78
5	132.18	72.16
6	140.62	77.52
7	148.40	83.81
8	155.41	90.94
9	158.58	95.00

Circle Center At X = 89.2 ; Y = 149.0 and Radius, 88.0

*** 1.335 ***

Individual data on the 16 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	.1	1.1	.0	.0	.0	.0	.0	.0	.0
2	.8	71.5	.0	.0	.0	.0	.0	.0	.0

3	1.0	241.3	.0	.0	.0	.0	.0	.0	.0
4	8.0	4861.0	.0	.0	.0	.0	.0	.0	.0
5	9.7	11289.3	.0	.0	.0	.0	.0	.0	.0
6	1.6	2326.3	.0	.0	.0	.0	.0	.0	.0
7	7.8	12828.8	.0	.0	.0	.0	.0	.0	.0
8	9.0	16827.4	.0	.0	.0	.0	.0	.0	.0
9	4.5	8788.5	.0	.0	.0	.0	.0	.0	.0
10	.4	879.7	.0	.0	.0	.0	.0	.0	.0
11	3.5	6187.4	.0	.0	.0	.0	.0	.0	.0
12	1.4	2010.6	.0	.0	.0	.0	.0	.0	.0
13	6.4	7708.9	.0	.0	.0	.0	.0	.0	.0
14	5.1	4503.6	.0	.0	.0	.0	.0	.0	.0
15	1.9	1150.8	.0	.0	.0	.0	.0	.0	.0
16	3.2	773.9	.0	.0	.0	.0	.0	.0	.0

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	94.22	61.33
2	104.16	62.36
3	113.93	64.53
4	123.38	67.78
5	132.41	72.09
6	140.88	77.40
7	148.70	83.64
8	155.76	90.72
9	159.14	95.00

Circle Center At X = 90.1 ; Y = 149.1 and Radius, 87.8

*** 1.337 ***

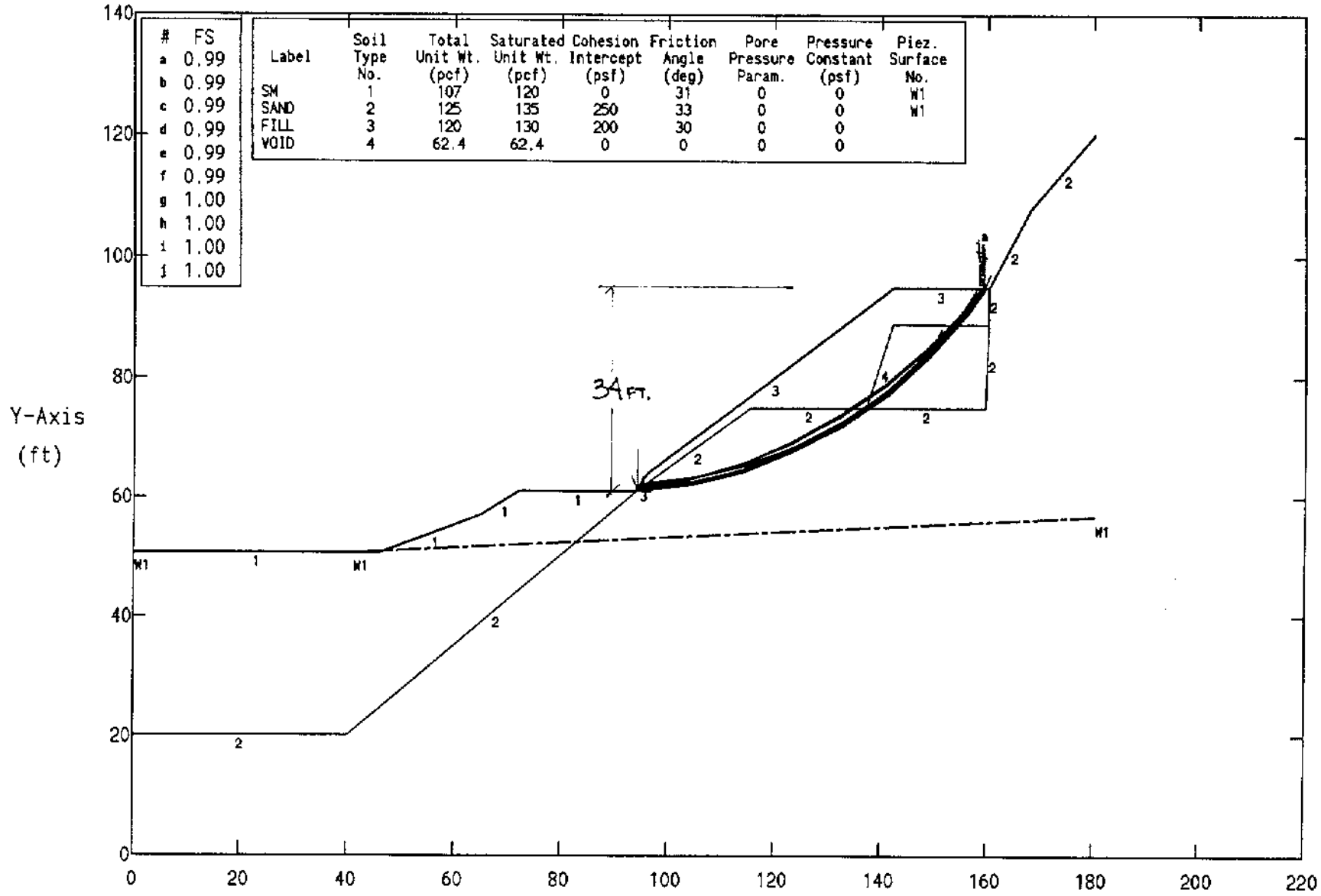
Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	94.22	61.33
2	104.09	62.93
3	113.76	65.49
4	123.12	69.00
5	132.09	73.41
6	140.59	78.69
7	148.52	84.78
8	155.81	91.63
9	158.76	95.00

Circle Center At X = 83.0 ; Y = 161.9 and Radius, 101.2

PLAYA VISTA CABRORA RD SECTION SR7 Water-Filled Tunnel Void Included.

Ten Most Critical. C:SR7CAB.PLT By: TWA 11/12/2001 12:09pm

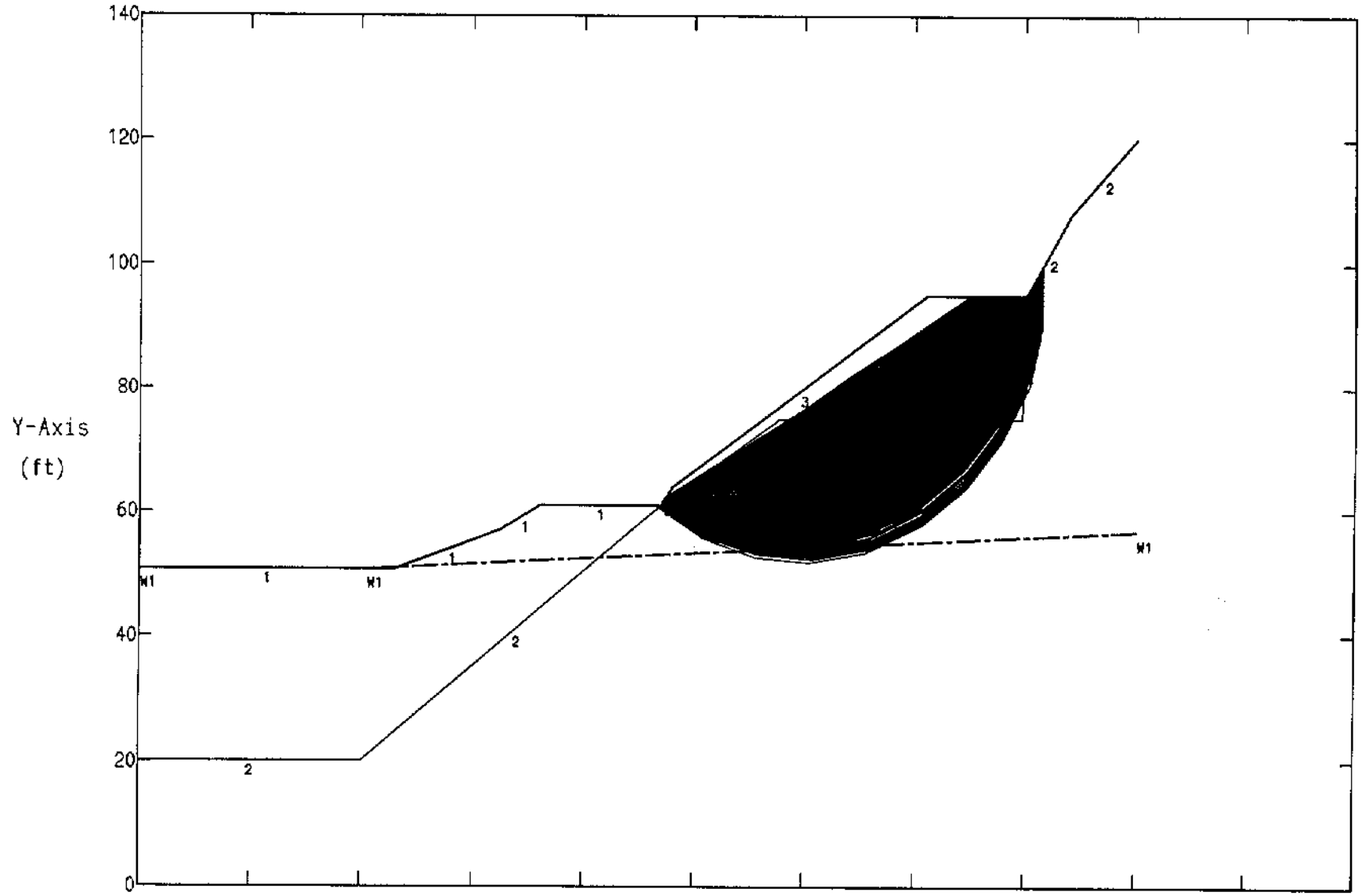


PCSTABL5M/SI FSmin=0.99 X-Axis (ft)

Factors Of Safety Calculated By The Modified Bishop Method

PLAYA VISTA CABRORA RD SECTION SR7 Water-Filled Tunnel Void Included.

All surfaces evaluated. C:SR7CAB.PLT By: TWA 11/12/2001 12:09pm



Factors Of Safety Calculated By The Modified Bishop Method

** PCSTABL5M **

by
Purdue University

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

Run Date:	11/12/2001
Time of Run:	12:09pm
Run By:	TWA
Input Data Filename:	C:SR7CAB
Output Filename:	C:SR7CAB.OUT
Unit:	ENGLISH
Plotted Output Filename:	C:SR7CAB.PLT

PROBLEM DESCRIPTION PLAYA VISTA CABRORA RD SECTION SR7
Water-Filled Tunnel Void Included.

BOUNDARY COORDINATES

10 Top Boundaries
19 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	50.75	46.00	50.75	1
2	46.00	50.75	65.00	57.00	1
3	65.00	57.00	72.00	61.00	1
4	72.00	61.00	94.00	61.00	1
5	94.00	61.00	95.00	62.50	3
6	95.00	62.50	96.00	64.00	3
7	96.00	64.00	142.00	95.00	3
8	142.00	95.00	160.00	95.00	3
9	160.00	95.00	168.00	108.00	2
10	168.00	108.00	180.00	120.00	2
11	.00	20.00	40.00	20.00	2
12	40.00	20.00	94.00	61.00	2
13	94.00	61.00	115.35	75.00	2
14	115.35	75.00	137.00	75.00	2
15	137.00	75.00	142.00	89.00	4
16	142.00	89.00	159.90	89.00	4
17	159.90	89.00	160.00	95.00	2
18	137.00	75.00	159.50	75.00	2
19	159.50	75.00	159.90	89.00	2

ISOTROPIC SOIL PARAMETERS

4 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	107.0	120.0	.0	31.0	.00	.0	1
2	125.0	135.0	250.0	33.0	.00	.0	1
3	120.0	130.0	200.0	30.0	.00	.0	0
4	62.4	62.4	.0	.0	.00	.0	0

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1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 3 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	.00	50.75
2	41.00	50.75
3	180.00	56.75

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned

Cavitation Pressure = .0 (psf)

Searching Routine Will Be Limited To An Area Defined By 2 Boundaries
Of Which The First 2 Boundaries Will Deflect Surfaces Upward

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)
1	95.00	62.50	96.00	64.00
2	96.00	64.00	142.00	95.00

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

1600 Trial Surfaces Have Been Generated.

40 Surfaces Initiate From Each Of 40 Points Equally Spaced Along The Ground Surface Between X = 93.00 ft.
and X = 94.90 ft.

Each Surface Terminates Between X = 150.01 ft.
and X = 163.00 ft.

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 1.00 ft.

10.00 ft. Line Segments Define Each Trial Failure Surface.

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 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	94.22	61.33
2	104.16	62.36
3	113.93	64.53
4	123.38	67.78
5	132.41	72.09
6	140.88	77.40
7	148.70	83.64
8	155.76	90.72
9	159.14	95.00

Circle Center At X = 90.1 ; Y = 149.1 and Radius, 87.8

*** .987 ***

Individual data on the 16 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	.3	9.4	.0	.0	.0	.0	1.4	.0	.0
2	.4	42.0	.0	.0	.0	.0	6.3	.0	.0
3	1.0	217.2	.0	.0	.0	.0	32.6	.0	.0
4	8.2	4839.2	.0	.0	.0	.0	725.9	.0	.0
5	9.8	11314.2	.0	.0	.0	.0	1697.1	.0	.0
6	1.4	2080.8	.0	.0	.0	.0	312.1	.0	.0
7	8.0	13214.0	.0	.0	.0	.0	1982.1	.0	.0
8	9.0	17075.0	.0	.0	.0	.0	2561.3	.0	.0
9	4.6	9157.3	.0	.0	.0	.0	1373.6	.0	.0
10	.1	101.8	.0	.0	.0	.0	15.3	.0	.0
11	3.8	6752.9	.0	.0	.0	.0	1012.9	.0	.0
12	1.1	1633.3	.0	.0	.0	.0	245.0	.0	.0
13	6.7	8182.6	.0	.0	.0	.0	1227.4	.0	.0
14	5.3	4741.4	.0	.0	.0	.0	711.2	.0	.0
15	1.7	1057.1	.0	.0	.0	.0	158.6	.0	.0
16	3.4	869.7	.0	.0	.0	.0	130.5	.0	.0

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	94.07	61.11
2	104.01	62.22
3	113.76	64.46
4	123.19	67.78
5	132.18	72.16
6	140.62	77.52
7	148.40	83.81
8	155.41	90.94
9	158.58	95.00

Circle Center At X = 89.2 ; Y = 149.0 and Radius, 88.0

*** .988 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	94.22	61.33
2	104.09	62.93