NMC	Calculation Signature Sheet

Document Information

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Facility: ☐ MT ☐ PB ☐ PI ☒ PL ☐ HU/FT	Unit: ☒ 1 ☐ 2
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Major Revisions

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(continued on next page)

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NOTE:	This table is used for data entry into the PassPort Controlled Documents Module, reference tables. If the calculation references and inputs are all listed in the calculation directly, then only the inputs and outputs need to be listed here. If the calculation invokes this form for the list of references and inputs, then list them all here. Only the input and output references need to be entered in PassPort.

Associated Document References:

#	Document Name	Document Number	Doc Revision	Control Doc and Doc Type (i.e. in Pass-Port) :	Type (input, output, general ref):
1	ISFSI, Final Grading, Drainage, and Fencing Plan	Drawing No. C-3057, sh. 1	0	☐	Input
2	"Report of Geotechnical Investigation, proposed ISFSI site, Palisades Nuclear Plant", Material Testing Consultants, Inc., October 15, 2001.			☐	Input
3	Soil Mechanics, Naval Facilities Engineering Command, DM 7.01, September 1986.			☐	Gen Ref
4	"Development of Criteria for Seismic Review of Selected Nuclear Power Plants", May 1978	NUREG-CR-0098		☐	Gen Ref
5	Soil-Structure Interaction Analysis	Calculation EA-EAR-2000-0309-13	1	☐	Input
6	Palisades Nuclear Plant Final Safety Analysis Report (FSAR) Update			☒	Gen Ref
7	Final Acceptance Evaluation of Soils Beneath the Palisades ISFSI	Calculation EA-EAR-2000-309-15	1	☐	Input

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8	Reevaluation of ISFSI Foundation Pad for revised load due to 24PTH Sy	Calculation EA-EC7408-01	0	☐	Input
9				☐	
10				☐	
11				☐	
12				☐	
13				☐	
14				☐	

Add additional lines if needed.

Associated Equipment or System References:

#	Facility	Unit	System	Equipment Type	Equipment Number
1					
2					
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Add additional lines if needed.

Superseded Calculations

Facility	Calc Document Number	Title
PL	EA-EAR-2000-0309-2	Slope Stability Analysis Superceded sections pertaining to ISFSI pad stability - This calculation will be revised to show the superceded sections as part of EC-7408.

Add additional lines if needed.

ISSUE SUMMARY
Form SOP-0402-07, Revision 7A

DESIGN CONTROL SUMMARY

CLIENT:	Nuclear Management Company	UNIT NO.:	Page No.: 1
PROJECT NAME:	**Palisades Nuclear Plant - ISFSI Pad**		
PROJECT NO.:		☒ NUCLEAR SAFETY- RELATED	
CALC. NO.:	EA-EC7408-02	☐ NOT NUCLEAR SAFETY-RELATED	
TITLE:	Reevaluation of Slope Stability under the ISFSI Pad for Revised Load due to 24PTH System		
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NOTE: PRINT AND SIGN IN THE SIGNATURE AREAS

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1.0 PURPOSE

An Independent Spent Fuel Storage Installation (ISFSI) facility has been constructed at the Palisades Nuclear Plant site. The ISFSI will allow additional on-site spent fuel storage capability. The foundation slab for the outside storage casks are supported by two rectangular reinforced concrete pads, one on the north side of the access road and the other one is on the south side of the road. The existing design calculation for these pads included loads from the following casks:

1. BNFL FuelSolutions W150 storage casks;
2. Transnuclear West (TN) Standardized NUHOMS 32PT DSC system Storage Casks;
3. Sierra Nuclear VSC-24 storage casks.

Recently NMC has decided that they would like to use only NUHOMS 24PTH DSC system casks for all remaining casks that have not been installed yet. The new NUHOMS HSM-H casks for the 24 PTH DSC system are much heavier than the existing NUHOMS HSM modules.

The purpose of this calculation is to determine the stability of the soil/structure system that consists of the existing foundation pad and the densified soil beneath the pad for the revised loads due to the NUHOMS HSM modules and the thicker shield walls. This calculation supercedes portions of Reference 9 pertaining to the stability of the ISFSI pads.

2.0 METHODOLOGY

Computer program SLOPE/W Version 5.11 (Program No. 03.7.747-5.11) is used to perform the stability analysis. This program, accessed on the LAN via computer #ZD1511, has been validated per the S&L software verification and validation procedures for the program functions used in these calculations.

The basic approach to calculate the Factor of Safety of a soil mass in two-dimensional space consists of comparing the moments about a common center of rotation generated by the mobilizing and resisting forces along a potential slip surface through the soil layers involved. The resisting forces are due to the internal shear strength of the soil (cohesive, or frictional). Conventionally, the Factor of Safety (FS) is the ratio of the resisting moments to the mobilizing moments. However, the modern methods developed during the last 30 to 40 years take the approach of adjusting the soil shear strength parameters (cohesion, or the tangent of the internal friction angle) until the resisting and

mobilizing moments are equal. The adjustment ratio applied to the strength parameters is the FS value.

The slip surfaces are generally considered to have the form of a circular arc unless there is a reason that a non-circular slip plane may yield a more critical stability condition. The soil mass within each slip surface is divided (discretized) into several slices to obtain better accuracy in the representation of different soil layers, the groundwater conditions, and irregularities in the geometry of the soil surface. Using this approach, several authors developed analytical methods that are generally similar. However, largely due to the differences in the manner these methods handle the internal equilibrium among slices, there may be some small differences in the FS values obtained from these methods. For circular slip planes, the modern methods of analysis yield very similar results. In this calculation, the Simplified Bishop method option of the software was used. Discretization of the soil mass into slices is handled by the computer program.

To ensure that the minimum FS value is determined, a large number of centers of rotation are generated, and for each center, a number of potential slip circles with different radii are analyzed to cover different depths (See Figure 1 for critical circle search intervals used). The limits are input for the computer run. The centers of rotation are located at each node point of a rectangular mesh set up in space above the slope analyzed.

The minimum FS value is determined for each center, and contour lines of FS (lines of equal FS) are generated within the area of the rectangular mesh. The potential slip surface that is associated with the lowest of all the FS values determined using the FS contours on the mesh is the most critical stability surface.

The most critical potential slip surfaces in this analysis are those that are located immediately outside and inside the ISFSI pad area. The slip circle that corresponds to this condition was determined, for each grid point (See rectangle marked by Points 11, 12, and 13 on Figure 1), by checking the proximity of the slip circles to the pad. The factor of safety for the circle that intersects the top of soil grade closest to the pad is used. The slip circles that are farther out may have lower factors of safety (because they are located largely through natural soil) but they will not influence the stability of the pad due to the densified soil around the pad. The surfaces that intersect the pad further inward under the pad area are also not as critical as more of the potential slip surfaces are located within the densified soil with higher shear strength, resulting in higher FS values.

Two different soil conditions are evaluated. These two soil conditions encompass the predicted unit weight of the densified soil and the actual average unit weight that was determined based on the verification tests. This variation in

unit weights also takes into account some variance in the soil unit weight within the soil mass.

The concrete pad was represented by a mass having a unit weight of 150 pcf. The shear strength of the pad concrete was ignored during the analyses.

The earthquake (pseudo-static) analyses are performed similarly. In addition to the weight of the soil mass (vertical downward), the moment equilibrium includes horizontal and vertical force components due to the accelerations that arise from the earthquake. These components are determined for each slice by multiplying the weight by the lateral or vertical earthquake accelerations (a_h, a_v) assigned for the location of the site. The critical direction for the horizontal loading is when it is directed outward from the slope. The critical direction for the vertical loading is usually when it is directed upward, although both upward and downward directions are generally considered in the analysis.

In this calculation, only the seismic loading of the ISFSI storage pad when fully loaded was considered. Due to the flat geometry of the slope analyzed, the static factor of safety is very large. Reference 7 addresses the effect of densification on the allowable bearing capacity of the soil. Since the slopes adjacent to the ISFSI pad are nearly level, there is no detrimental effect from the slope on the bearing capacity. Thus, the static slope stability analysis is encompassed by the bearing capacity calculation.

3.0 ACCEPTANCE CRITERIA

The minimum acceptable factor of safety against failure of the in-situ soil along a slip circle that is located immediately outside the pad, or along a circle that intersects the pad, is 1.15 for the earthquake loading condition (Ref. 3, p. 7.1-329).

4.0 INPUTS

1. General layout of the ISFSI configuration is shown on Reference 1 (Drawing No. C-3057, See also Attachment A).

2. Soil properties are taken from References 2 and 7.

3. Reference 2 indicated groundwater at an elevation between 605' and 608.5'. Because of a survey adjustment in elevations to the plant system, these elevations were adjusted by adding 1.55' to the original surveyed elevations.

Thus groundwater is considered at Elevation 611' for this analysis, one foot above the measured water level.

4. The maximum intensity uniform dead load for the casks is 1.608 KSF per Reference 8. A uniform load of 1.62 KSF was used in the analyses per Reference 8.

5. Based on the results of the soil-structure interaction analysis (Reference 5), the SSE peak horizontal acceleration of the densified soil varies from 0.13g at 55 feet below grade level to 0.25g at the surface. For the evaluation of the slope stability of the soil beneath and adjacent to the pads, an average value (See Section 7.2) has been used.

5.0 REFERENCES

1. Consumers Energy Drawing No. C-3057, Sheet 1, Revision 0, Titled, " ISFSI, Final Grading, Drainage, and Fencing Plan".

2. "Report of Geotechnical Investigation, proposed ISFSI site, Palisades Nuclear Plant", Material Testing Consultants, Inc., October 15, 2001.

3. Soil Mechanics, Naval Facilities Engineering Command, DM 7.01, September 1986.

4. NUREG-CR-0098, "Development of Criteria for Seismic Review of Selected Nuclear Power Plants", May 1978.

5. Calculation EA-EAR-2000-0309-13, Rev. 1, "Soil-Structure Interaction Analysis".

6. Palisades Nuclear Plant Final Safety Analysis Report (FSAR) Update.

7. Calculation EA-EAR-2000-309-15, Rev. 1, "Final Acceptance Evaluation of Soils Beneath the Palisades ISFSI".

8. Calculation EA-EC7408-01, Rev. 0, "Reevaluation of ISFSI Foundation Pad for revised load due to 24PTH System".

9. Calculation EA-EAR-2000-0309-2, Rev. 5, "Slope Stability Analysis" (Superceded sections pertaining to ISFSI pad stability).

6.0 ASSUMPTIONS

None. Soil parameters used in the analyses for the revised load condition are based on as-built information. There are no assumptions that require verification.

7.0 ANALYSIS

7.1 Condition Analyzed:

The soil beneath the storage pads and for a distance of approximately 55 feet beyond the ISFSI pad limits was densified using the vibro-compaction technique. This is modeled by a near-vertical line 55 feet from the edge of the pad. The soil on the pad side of this line is considered densified. The soil beneath the pad was considered to be compacted to an average of 80% relative density. The soil density obtained in the laboratory at this level of compaction was used in the analyses. Verification of the in-situ compaction after densification (Reference 7) showed that the soils beneath the pad have been densified to approximately 88% relative density. Beyond the limit of densification, the natural in situ soils are present.

Only the seismic loading condition is considered for the ISFSI pad. Because the slopes around the perimeter of the ISFSI pad are generally less than 3%, they are considered nearly flat. Therefore, a static slope stability analysis is not warranted since the surrounding natural hills are at a much steeper angle than the area around the ISFSI pad, and are still stable as discussed in 7.3.2.

7.2 Seismic Loading:

As noted in Reference 5, the SSE peak horizontal acceleration of the densified soil varies from 0.13g at a depth of 55 feet to 0.25g at the ground surface. The same values were also used for the natural soil adjacent to the densified soil mass. Figure 2 shows a plot of the peak horizontal acceleration versus depth.

From the curve in Figure 2, the average horizontal acceleration is calculated as 0.209g for the entire soil profile (See Figure 2). The vertical acceleration of 0.17g was used to account for the inertial effect of the vertical component of the earthquake motions on the apparent weight of the in-situ soil and the ISFSI pad (and the loads) during an earthquake (Reference 5). This analysis takes into account the presence of the pad through a soil-structure interaction analysis shown in Reference 5.

Per Section 5.7.1.1 of Reference 6, the design basis Safe Shutdown Earthquake (SSE) accelerations for the free-field condition (no consideration for the weight of the pad and interaction between the site soils and the pad) are as follows:

SSE – Horizontal = 0.2g
SSE – Vertical = 0.133g (two-thirds of horizontal)

In reality, the free-field accelerations affect the potential slip circles located largely through the undensified, natural, in-situ soils. Therefore, the horizontal and vertical accelerations used in the stability analyses are higher and thus more conservative than the free-field accelerations calculated in Reference 6.

The acceleration values for combined effects of horizontal and vertical excitation are calculated using the 100% - 40% -40% rule as recommended in NUREG-CR-0098 (Reference 4). As stated in Reference 4, "It is conservative, simpler and much readily defined and calculated to take the combined effects as 100 percent of the effects due to motion in one particular direction and 40 percent of the effects corresponding to the two directions of motion at right angles to the principal motion direction".

A. Resultant of two horizontal accelerations with one horizontal 100% and other horizontal 40%, a_{rH}: (Case 1 in Table 1 of Section 7.4.1)

$a_{rH} = [\ (0.209)^2 + (0.209 \times 0.4)^2\ ]^{1/2} = 0.225g$ (Vector sum in any horizontal direction. This gives the maximum horizontal acceleration)

Corresponding vertical acceleration, $a_v = 0.40 \times 0.17 = 0.068g$

B. Vertical 100 % and two horizontal 40% each: (Case 2 in Table 1 of Section 7.4.1)

$a_v = 0.17g$
$a_{rH} = [\ (0.209 \times 0.4)^2 + (0.209 \times 0.4)^2\ ]^{1/2} = 0.118g$ (Vector sum in any horizontal direction – resultant of two horizontal accelerations)

The stability analyses were performed using the a_v and the resultant a_{rH} values from both cases.

7.3 Soil Parameters:

Data from Reference 2 (pages 3 and 4) and Reference 7 (pages 30 through 33) is used (See also a typical stability input file included on pages 40 through 43).

7.3.1 Densified Soil:

From tests performed on samples recompacted to 80% relative density, the corresponding dry density is approximately 106 PCF. Considering a moisture content of 6% for a moist condition,

γ_{moist} = 106 x 1.06 = 112.36 use γ moist = 112 PCF

Tests indicate a moisture content of 15% to 20% for saturated conditions. Use 15%.

$\gamma_{saturated}$ = 106 x 1.15 = 121.9 use 120 PCF for densified soil below the groundwater level.

Since the moisture content will vary due to precipitation and elevation of the groundwater, there will be some variability in these values.

Reference 7 summarizes the results of field evaluation of the in-situ soil density. Based on the results shown in Reference 7, the average total unit weights of the in-situ undensified soils are 111 pcf above the water table, and 127 pcf below the water table.

The as-built soil input parameter file is shown in Attachment C.

Based on these values, two conditions are investigated to evaluate the effect of the variations in the soil density.

Condition 1: Original Unit Weights of Densified soil (Attachment B)

Above Water Table: 112 pcf

Below Water Table: 120 pcf

Condition 2: As-built Unit Weights of Densified Soil (Attachment C)

Above Water Table: 111 pcf

Below Water Table: 127 pcf

The average angle of internal friction of representative samples densified to 85% relative density is (Reference 2):

Average Friction Angle = (36.6° + 36.3° + 36.1°)/3 = 36.33° (Use 36°)

Since the in-situ material is a dune sand with a fairly consistent gradation, the triaxial test results were also consistent. Since the as-built average relative density is approximately 88 percent, the use of 36 degrees for the densified soil is considered appropriate for both analyses.

7.3.2 Natural Soil:

For the initial evaluation, considering the tests performed on samples compacted to 75% relative density, the dry density ranged from 103.4 PCF to 105.5 PCF.

Use γ_{dry} = 100 PCF

Considering a moisture content of 6%

γ_{moist} = 100 x 1.06 = 106 PCF

For saturated soil, use a moisture content of 20%, since the saturated moisture content for tests performed on 75% relative density tests ranged from 21.6% to 22%.

γ_{total} = 100 x 1.2 = 120 PCF. Use this value for the soil beneath the groundwater level.

Angle of Internal Friction:

No tests were performed on undisturbed samples. However, to estimate the friction angle for the natural soil, consider that the existing slope has a factor of safety of 1.0. Thus, the angle of the existing slope would then be considered as the internal angle of friction of the material.

The existing slope adjacent to the ISFSI is approximately 15 feet vertical to 30 feet horizontal.

Thus, $TAN^{-1}(15/30) = 26.57°$, Use 26.5°

This is not the steepest slope, thus value is conservative. Note, the location and degree of this slope will have no effect on the ISFSI facility.

The natural sand at a depth of approximately 55' is very dense and is considered to be equivalent to the densified sand. This is represented by the standard penetration test (SPT) N- value greater than 25. Thus, γ total = 120 PCF, Φ = 36°, the same values as used for the original densified soil condition.

The above-listed values were thus used during the initial analyses for the various soil layers shown on Figure 1. The soil parameters used for each layer are shown in Attachments B and C for Cases 1 and 2, respectively.

7.3.3 Loads:

The normal dead load for the casks is 1.62 KSF (Reference 8). For the computer analysis, the load of the casks and pad was considered as a uniform load distributed in a 3-foot thick ISFSI pad. Thus, for the static condition, the equivalent density of the pad material is (1.62 + 3x0.15)/3ft = 0.69 KCF. This is the input density value for the pad.

The apparent weight of the pad, casks, and the in-situ soil varies in response to the vertical acceleration during the earthquake. The values of the horizontal and vertical acceleration were input separately into the computer program used in the stability analyses. The analyses were performed for both upward and downward vertical acceleration values determined in Section 7.2 to obtain the critical stability condition during the earthquake.

7.4 Results and Discussion:

7.4.1 ISFSI Pad Area

The area to be densified was based on obtaining a minimum factor of safety of 1.15.

To evaluate the stability of the pad on the densified soil, the north side is considered to be the most critical because there is the potential for the soil to move laterally away from the pad. Figure 1 shows the subsoil model for this analysis. Figure B-1 shows the point locations for the model. As previously stated, the densified soil extends approximately 55 feet away from the edge of the pad. Only the pseudo-static case is evaluated since the area north of the pad is relatively flat and there is no potential for loss of stability due to the weight of the pad under static conditions.

Table 1 summarizes the results of the stability analyses performed with the original and as-built soil density parameters, as well as vertical earthquake acceleration in the upward and downward directions. The factors of safety are also shown for a potential failure plane located immediately outside the pad footprint, and another plane that intersects the pad. The printout of the input file, as well as typical output files are included in Attachment C for one of the analyses as examples. Attachment B presents the graphical output of the computer analyses performed using the original soil parameters. Attachment C presents the graphical output of the analyses performed using the as-built soil parameters.

TABLE 1

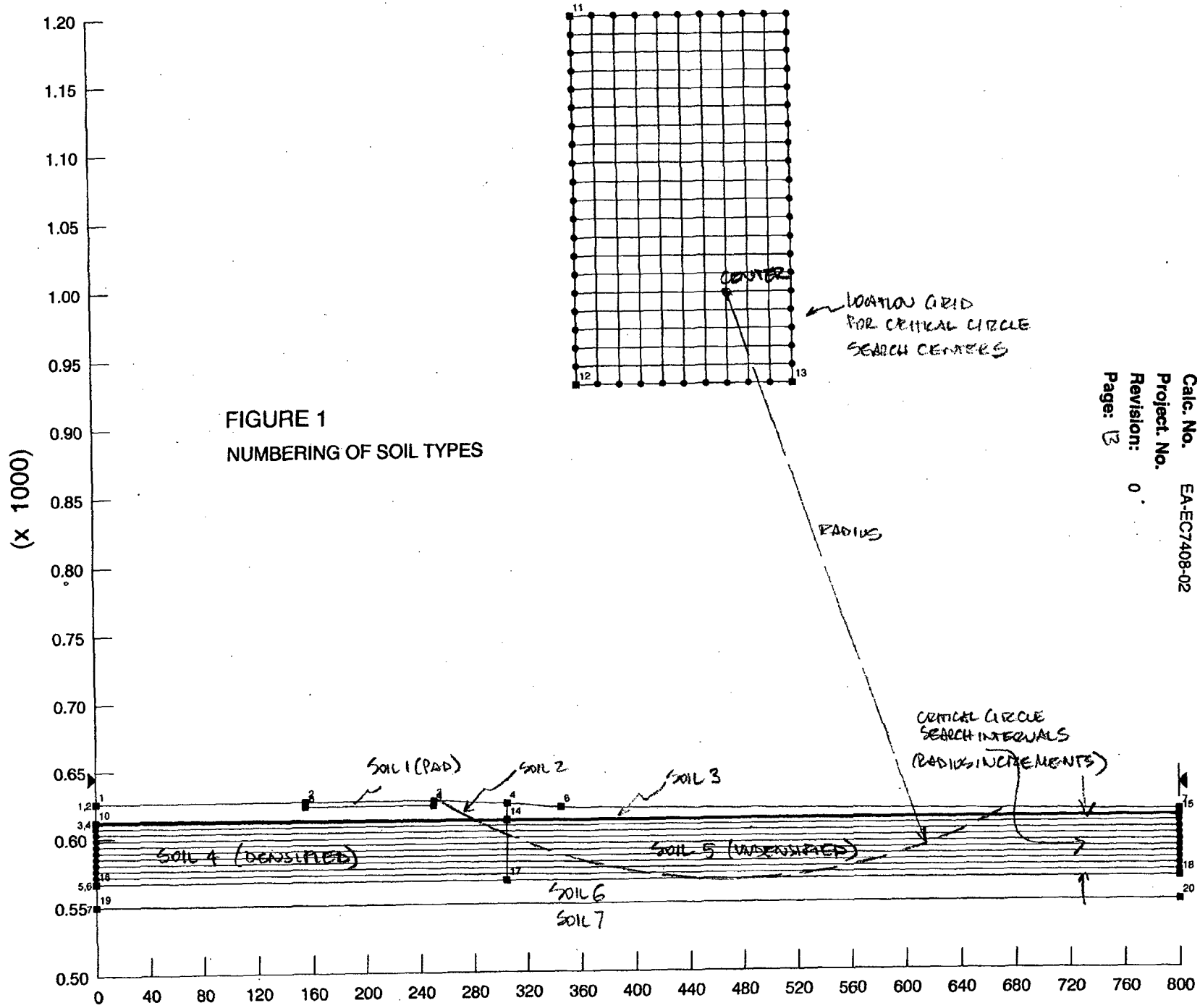
Location of Plane	Direction of Vertical Acceleration	Lateral and Vertical Accelerations	Case	FS w/Original Soil Parameters	Figure No.	FS w/As-built Soil Parameters	Figure No.
Immediately Outside Pad Footprint	Up	0.225g (H) 0.068g (V)	1	1.16	B-2	1.15	C-1
		0.118g (H) 0.17g (V)	2	1.71	B-6	1.69	C-5
	Down	0.225g (H) 0.068g (V)	1	1.45	B-4	1.44	C-3
		0.118g (H) 0.17g (V)	2	3.01	B-9	2.99	C-8
Through Pad	Up	0.225g (H) 0.068g (V)	1	1.17	B-3	1.16	C-2
		0.118g (H) 0.17g (V)	2	1.71	B-7	1.69	C-6
	Down	0.225g (H) 0.068g (V)	1	1.46	B-5	1.45	C-4
		0.118g (H) 0.17g (V)	2	2.94	B-8	2.91	C-7

As shown in Table 1, differences in the factors of safety obtained for the original and as-built soil parameter conditions are minimal. In frictional soils, the primary factor that determines the factor of safety is the friction angle. The unit weight of the soil is normally not a significant factor, as the unit weight affects both the mobilizing and resisting forces by the same ratio.

The minimum factor of safety for the densified soil is 1.16 for a plane that is located just inside the toe of the pad. This value corresponds to a combination of 0.225g horizontal and 0.068g vertical (upward) acceleration. The circular surface that yielded this value extends from immediately outside the base of the pad into the densified and undensified natural soils, and is deep-seated. Therefore, all of the circular arcs beneath the pad have a factor of safety greater than 1.16. Thus, the densified soil immediately below the pad is stable. Likewise, the minimum factor of safety just outside of the pad is 1.15.

The vertical earthquake acceleration applied in the downward direction increases the factors of safety in each case analyzed as compared to the effect of the upward load direction.

FIGURE 1
NUMBERING OF SOIL TYPES



Elevation (ft)	ah (g)	Area under Curve
567.5	0.13	
578.6	0.18	1.7205
589	0.21	2.028
600	0.22	2.365
611	0.24	2.53
623	0.25	2.94
	Total =	11.5835
	Average a_h =	0.209g
	a_v =	0.17g

40%-40%-100% Method:

Case 1:
Horizontal = 0.225g
Vertical = 0.068g

Case 2:
Horizontal = 0.118g
Vertical = 0.170g

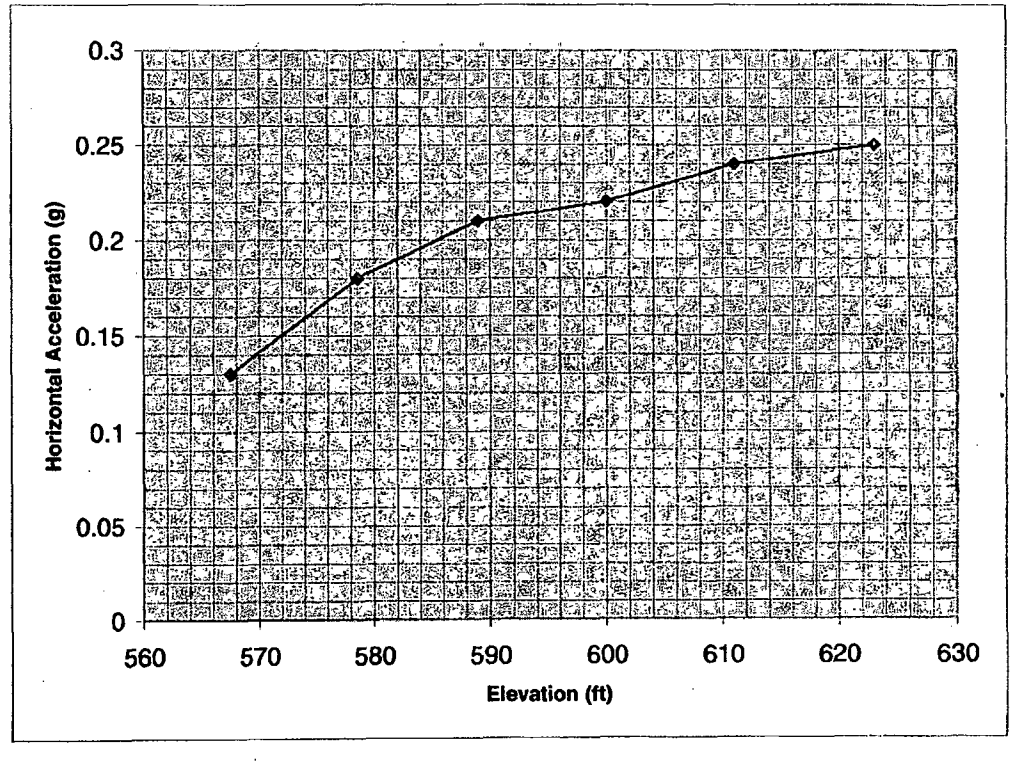


FIGURE 2
HORIZONTAL AND VERTICAL ACCELERATIONS USED IN STABILITY ANALYSES

8.0 SUMMARY AND CONCLUSIONS

After densification to a distance of 55 feet beyond the edge of the ISFSI storage pads, the minimum factor of safety for the earthquake condition was found to be 1.15, which is equal to the minimum acceptable factor of safety. This point is very near the toe of the pad. All of the other failure arcs beneath the pad had factors of safety greater than 1.15. In the stability analysis, the pad was represented by a material with zero shear strength.

Variations in the unit weight of the soil had minimal effect on the calculated factors of safety. Thus, any minor change in the unit weight within the soil mass will have little effect on the stability of the ISFSI Pads. Therefore, the pads are considered to be stable for all loading conditions.

9.0 ATTACHMENTS

ATTACHMENT A

GENERAL LAYOUT OF THE ISFSI

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ATTACHMENT B

SLOPE STABILITY ANALYSES FOR ISFSI PAD

(ANALYSES WITH ORIGINAL SOIL UNIT WEIGHTS)

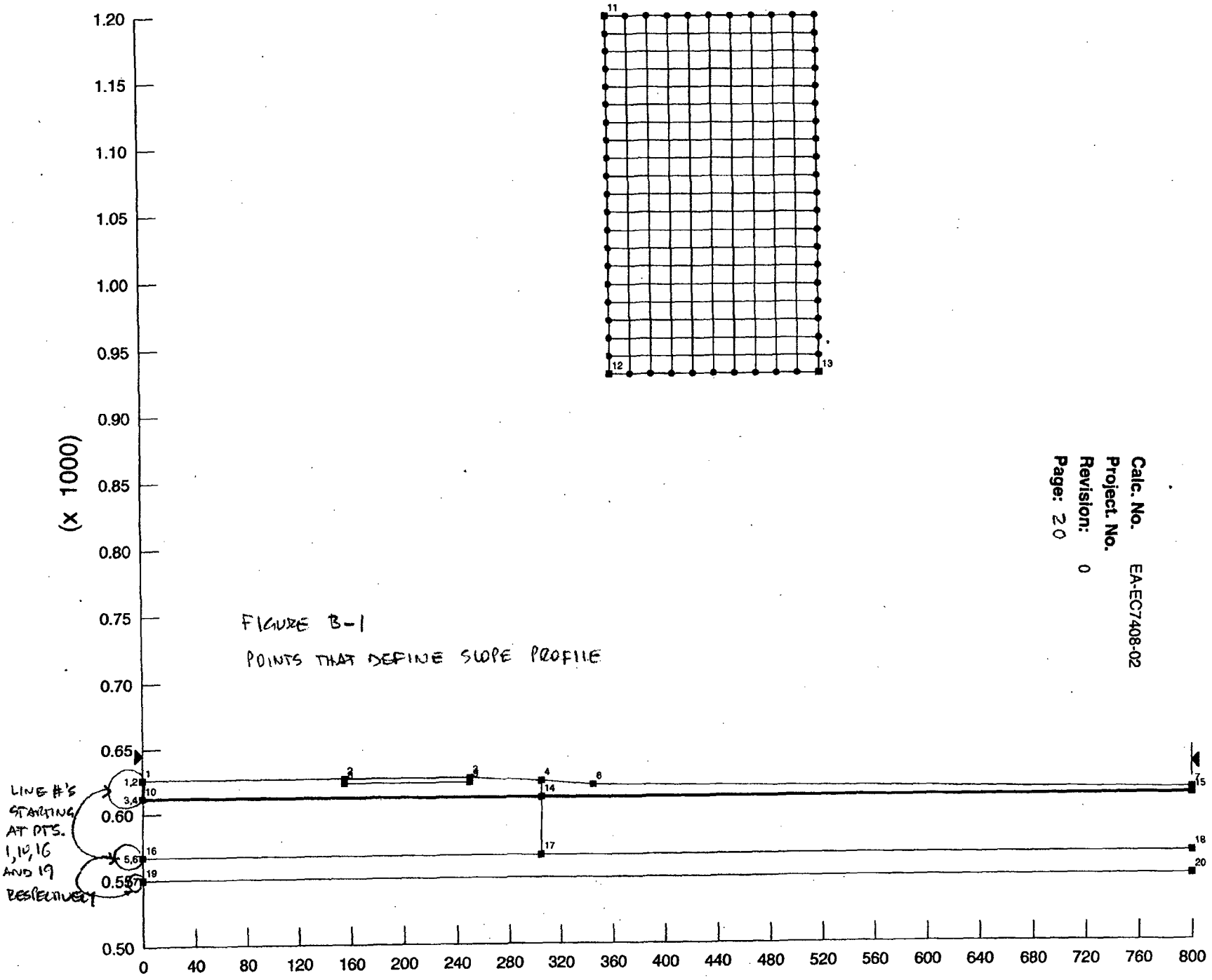

FIGURE B-1

POINTS THAT DEFINE SLOPE PROFILE

Calc. No. EA-EC7408-02

Project. No.

Revision: 0

Page: 20

```
All Soils
Soil 1
SOIL 1
Soil Model          Mohr-Coulomb
Unit Weight         690
Cohesion            0
Phi                 0
Piezometric Line #          1
Ru          0
Pore-Air Pressure           0

Soil 2
SOIL 2
Soil Model          Mohr-Coulomb
Unit Weight         112
Cohesion            0
Phi         36
Piezometric Line #          1
Ru          0
Pore-Air Pressure           0

Soil 3
SOIL 3
Soil Model          Mohr-Coulomb
Unit Weight         106
Cohesion            0
Phi         26.5
Piezometric Line #          1
Ru          0
Pore-Air Pressure           0

Soil 4
SOIL 4
Soil Model          Mohr-Coulomb
Unit Weight         120
Cohesion            0
Phi         36
Piezometric Line #          1
Ru          0
Pore-Air Pressure           0

Soil 5
SOIL 5
Soil Model          Mohr-Coulomb
Unit Weight         120
Cohesion            0
Phi         26.5
Piezometric Line #          1
Ru          0
Pore-Air Pressure           0

Soil 6
SOIL 6
Soil Model          Mohr-Coulomb
Unit Weight         120
Cohesion            0
Phi         36
Piezometric Line #          1
Ru          0
Pore-Air Pressure           0

Soil 7
SOIL 7
Soil Model          Mohr-Coulomb
Unit Weight         120
Cohesion            0
Phi         36
Piezometric Line #          1
Ru          0
Pore-Air Pressure           0
```

ORIGINAL SOIL PARAMETERS FILE REVISED TO INCLUDE NEW SOIL CONDITION (CHANGE IN UNIT WEIGHT HANDLED BY SOFTWARE BASED ON DIRECTION OF VERTICAL ACCELERATION)

$(1.62 + 3 \times 0.15)/3 = 0.69$ ksf (690 PSF)

EQUIVALENT UNIT WEIGHT OF 3'-THICK PAD

SHEAR STRENGTH PARAMETERS OF PAD MATERIAL.

Calc. No. EA-EC7408-02
Project. No.
Revision: 0
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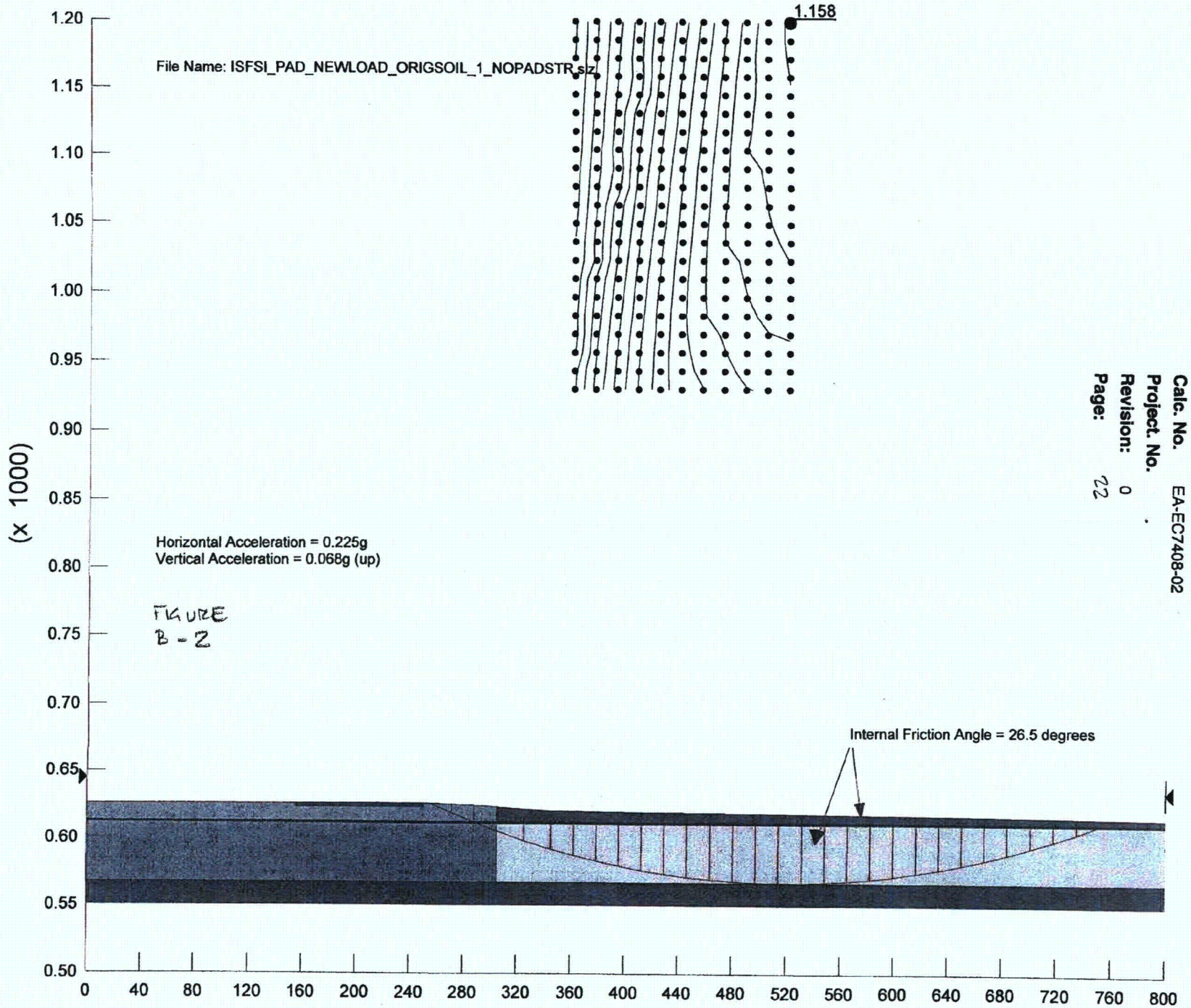
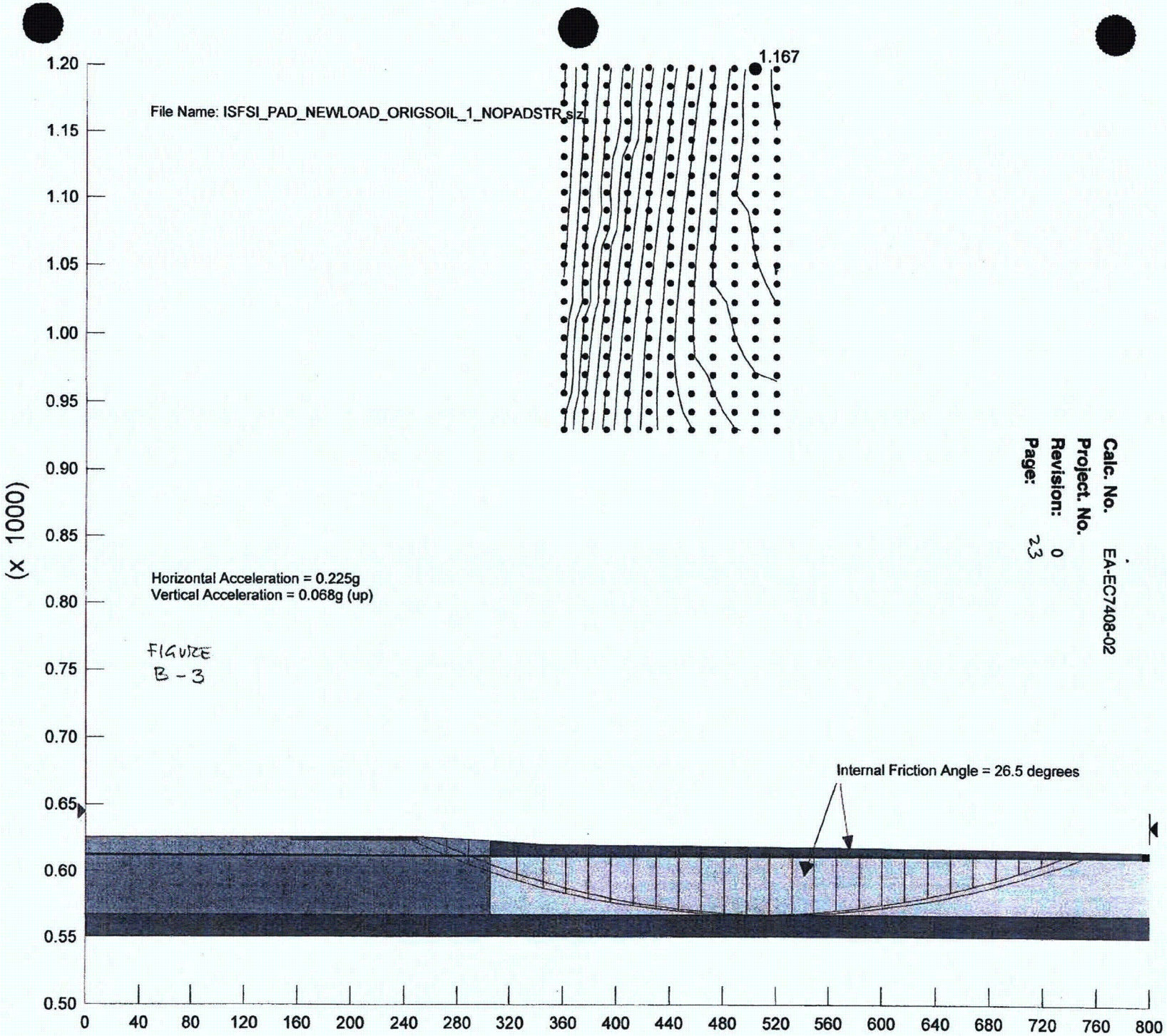
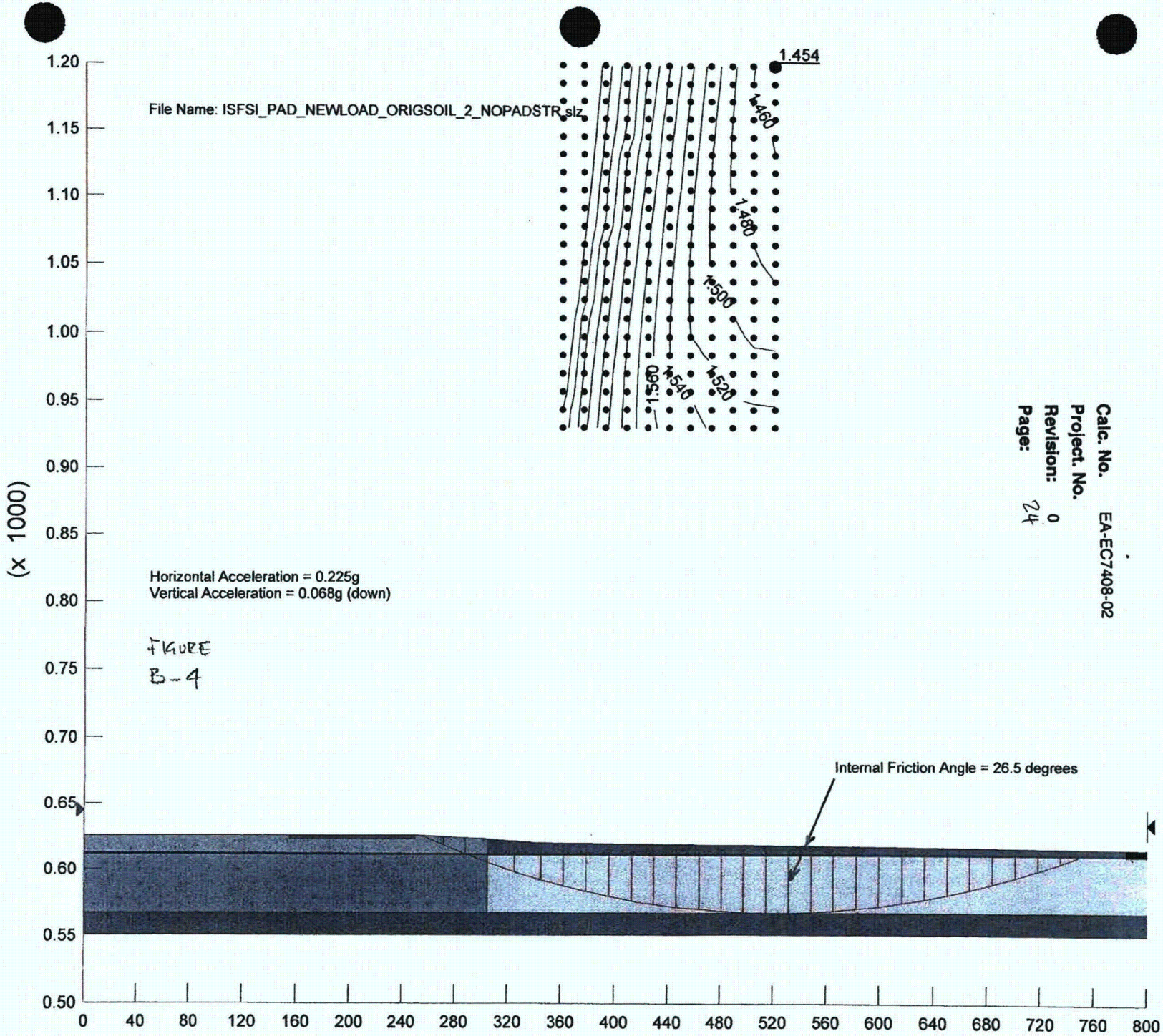


Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 22


1.167
File Name: ISFSI_PAD_NEWLOAD_ORIGSOIL_1_NOPADSTR.siz
(x 1000)
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0
40
80
120
160
200
240
280
320
360
400
440
480
520
560
600
640
680
720
760
800
Horizontal Acceleration = 0.225g
Vertical Acceleration = 0.068g (up)
FIGURE
B-3
Internal Friction Angle = 26.5 degrees
Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 23



Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 24

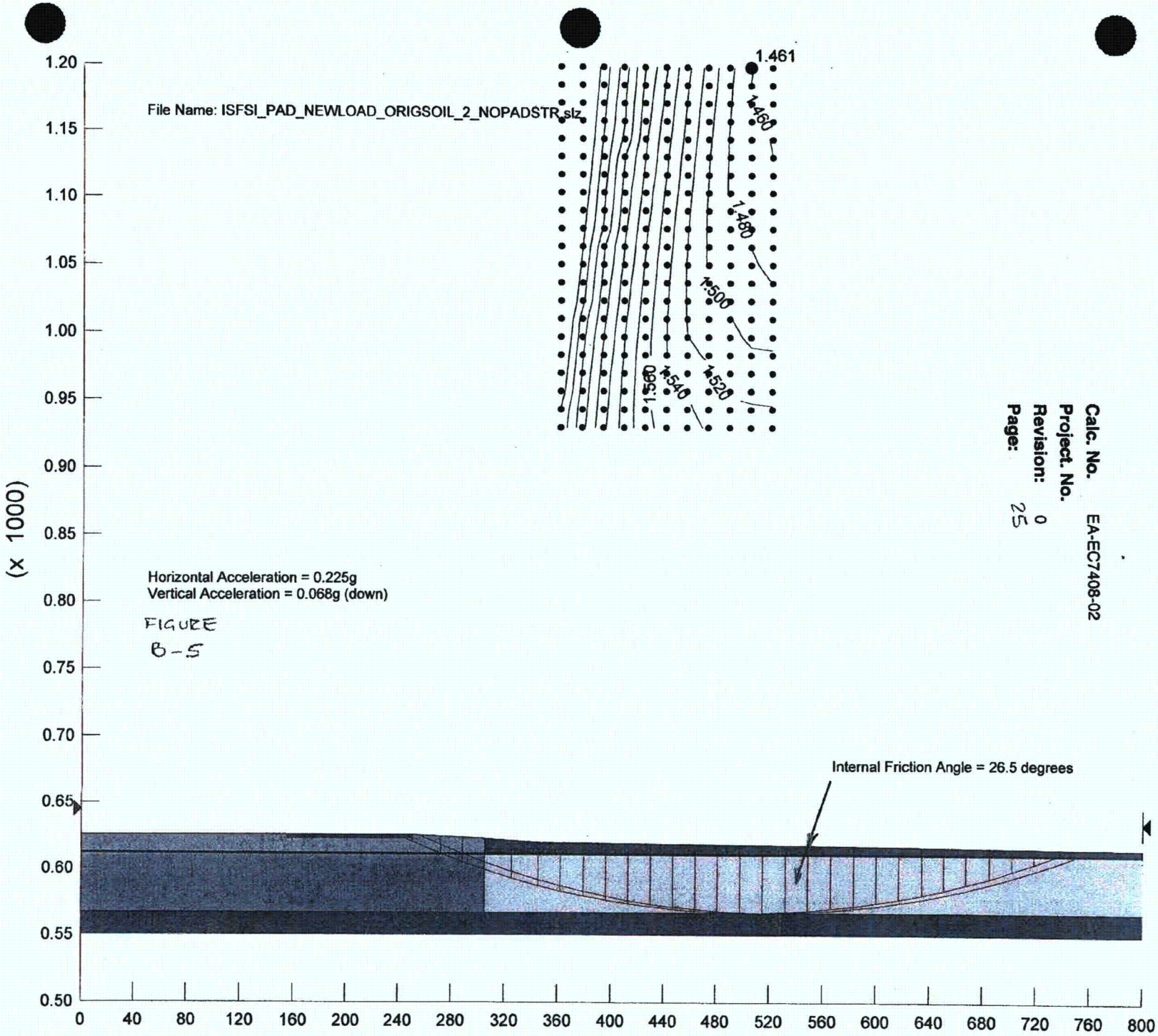


FIGURE
B-5

Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 25

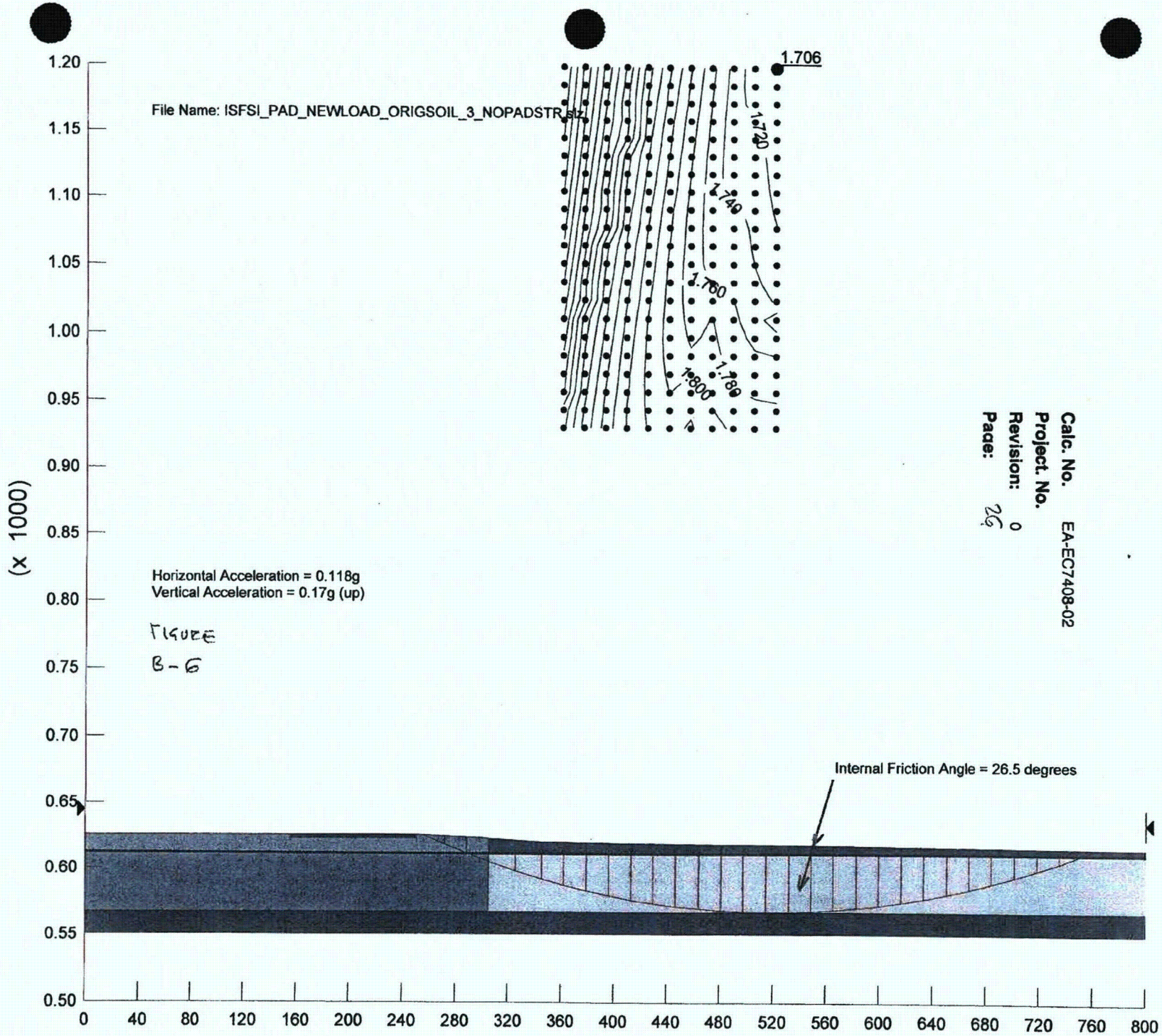


Figure
B-6

Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 26

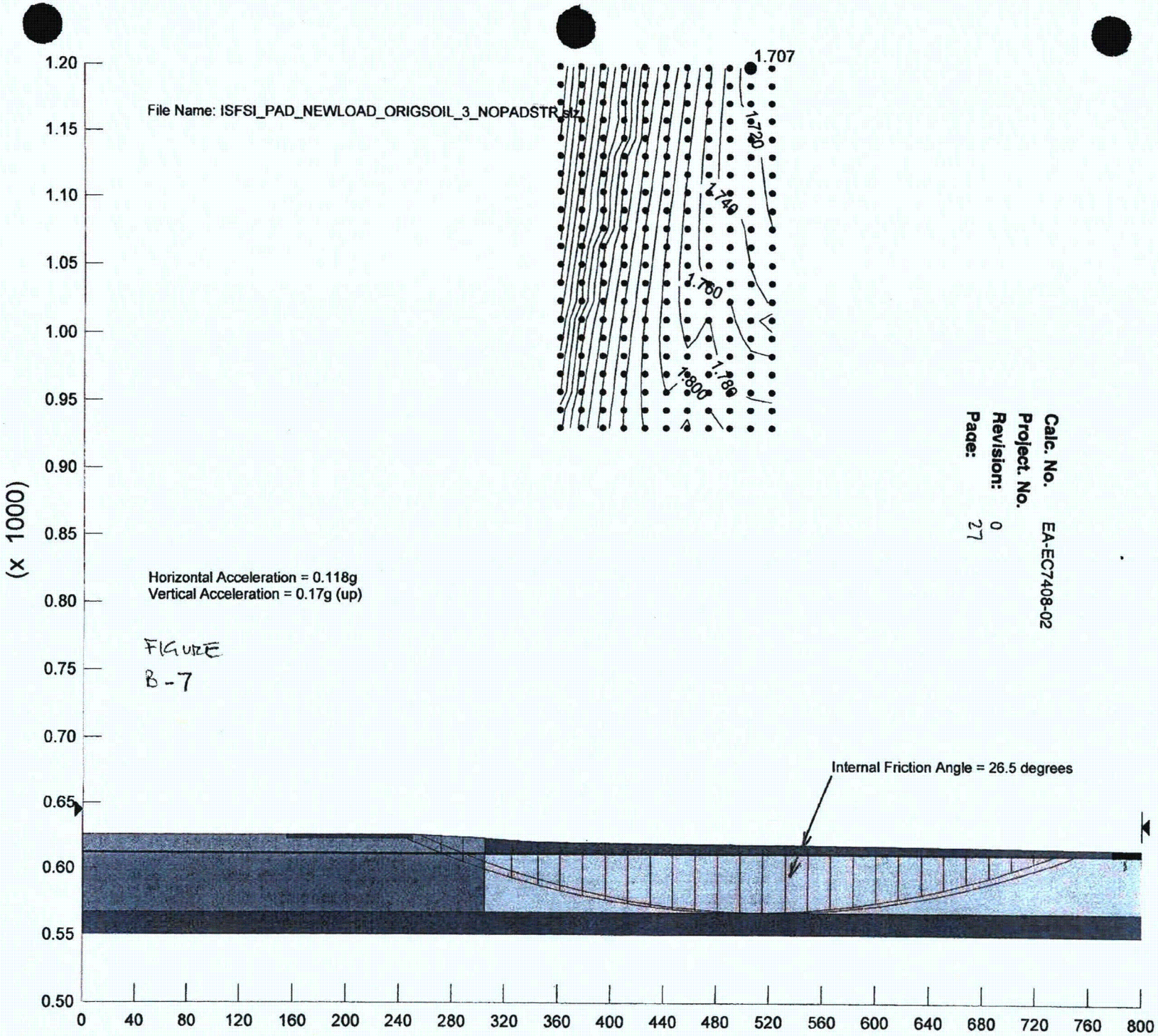
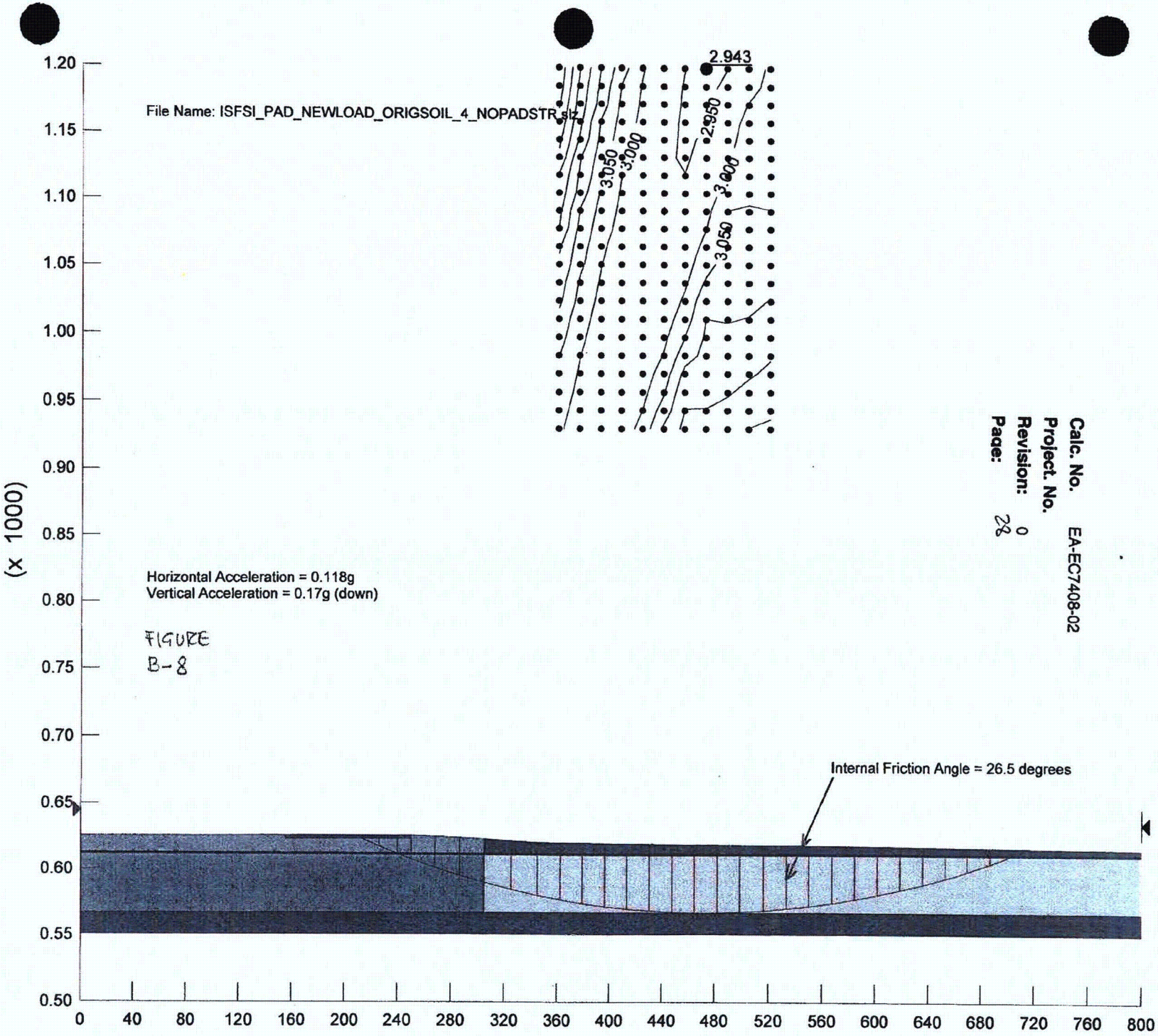


FIGURE
B-7

Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 27



Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 28

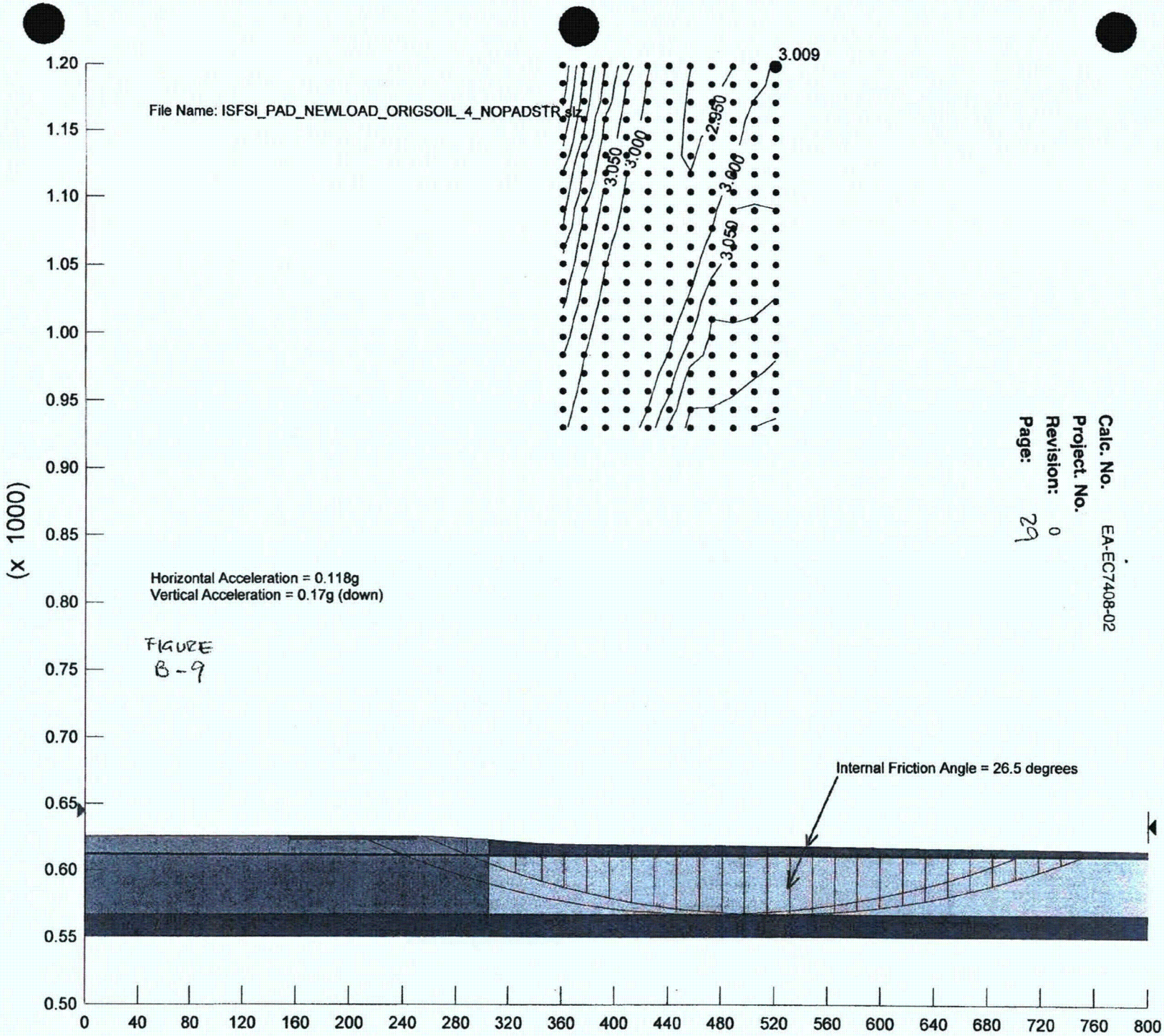


FIGURE
B-9

Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 29

ATTACHMENT C

SLOPE STABILITY ANALYSES FOR ISFSI PAD

(ANALYSES WITH AS-BUILT SOIL UNIT WEIGHTS)

All Soils
Soil 1
SOIL 1
Soil Model Mohr-Coulomb
Unit Weight 690
Cohesion 0
Phi 0
Piezometric Line # 1
Ru 0
Pore-Air Pressure 0

Soil 2
SOIL 2
Soil Model Mohr-Coulomb
Unit Weight 111
Cohesion 0
Phi 36
Piezometric Line # 1
Ru 0
Pore-Air Pressure 0

Soil 3
SOIL 3
Soil Model Mohr-Coulomb
Unit Weight 104
Cohesion 0
Phi 26.5
Piezometric Line # 1
Ru 0
Pore-Air Pressure 0

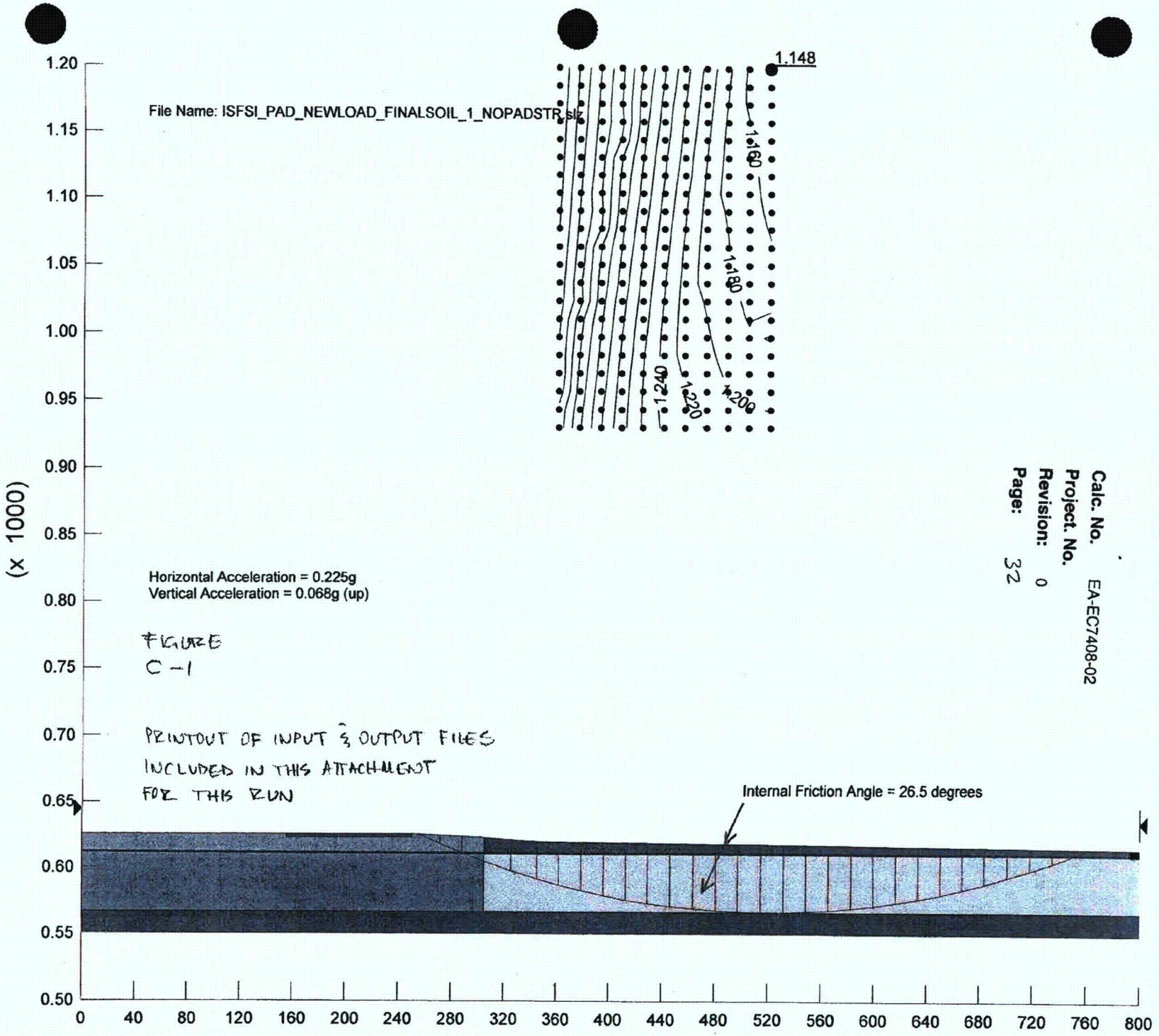
Soil 4
SOIL 4
Soil Model Mohr-Coulomb
Unit Weight 127
Cohesion 0
Phi 36
Piezometric Line # 1
Ru 0
Pore-Air Pressure 0

Soil 5
SOIL 5
Soil Model Mohr-Coulomb
Unit Weight 119
Cohesion 0
Phi 26.5
Piezometric Line # 1
Ru 0
Pore-Air Pressure 0

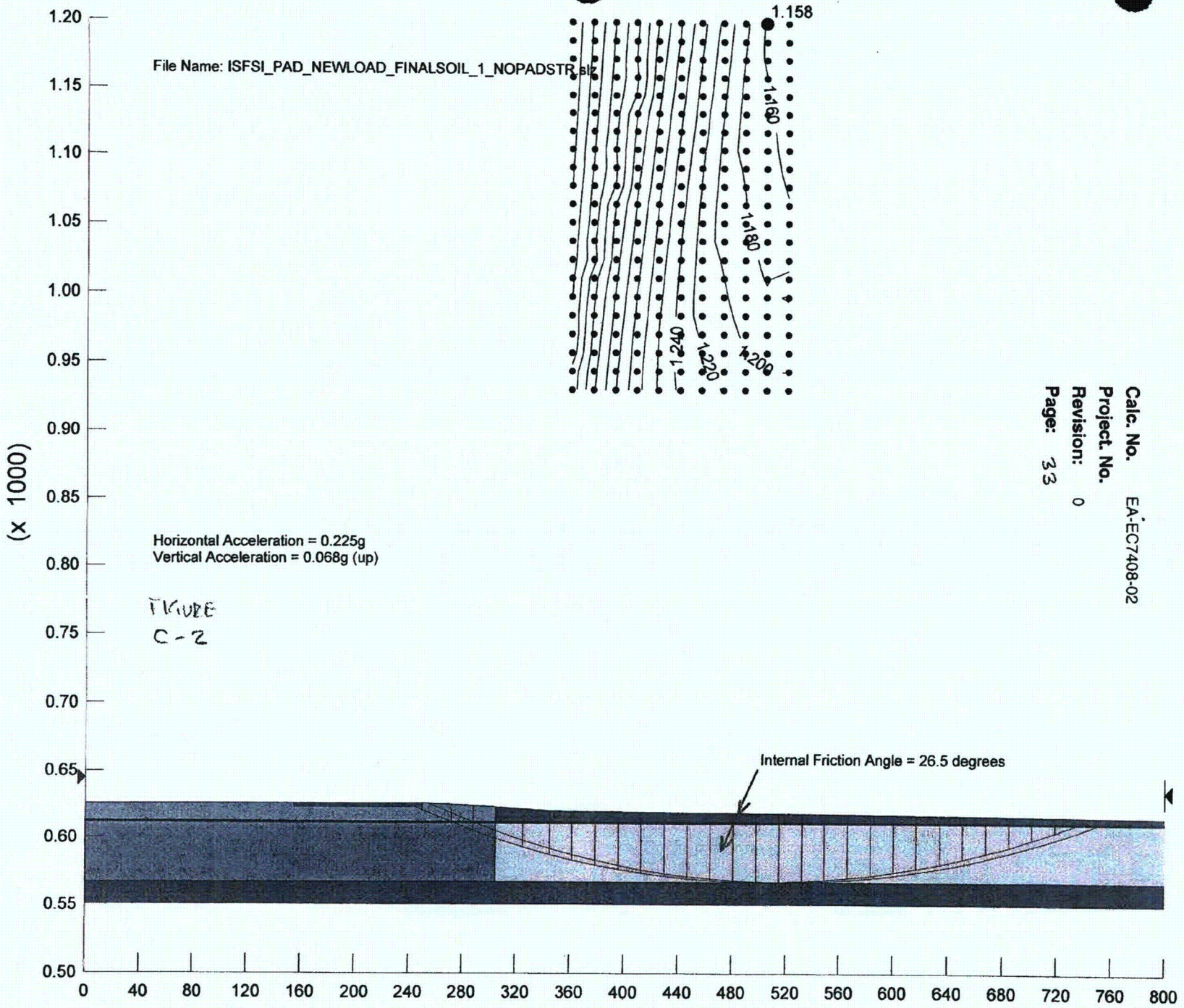
Soil 6
SOIL 6
Soil Model Mohr-Coulomb
Unit Weight 120
Cohesion 0
Phi 36
Piezometric Line # 1
Ru 0
Pore-Air Pressure 0

Soil 7
SOIL 7
Soil Model Mohr-Coulomb
Unit Weight 120
Cohesion 0
Phi 36
Piezometric Line # 1
Ru 0
Pore-Air Pressure 0

AS-BUILT SOIL PARAMETER FILE



Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 32



Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 33

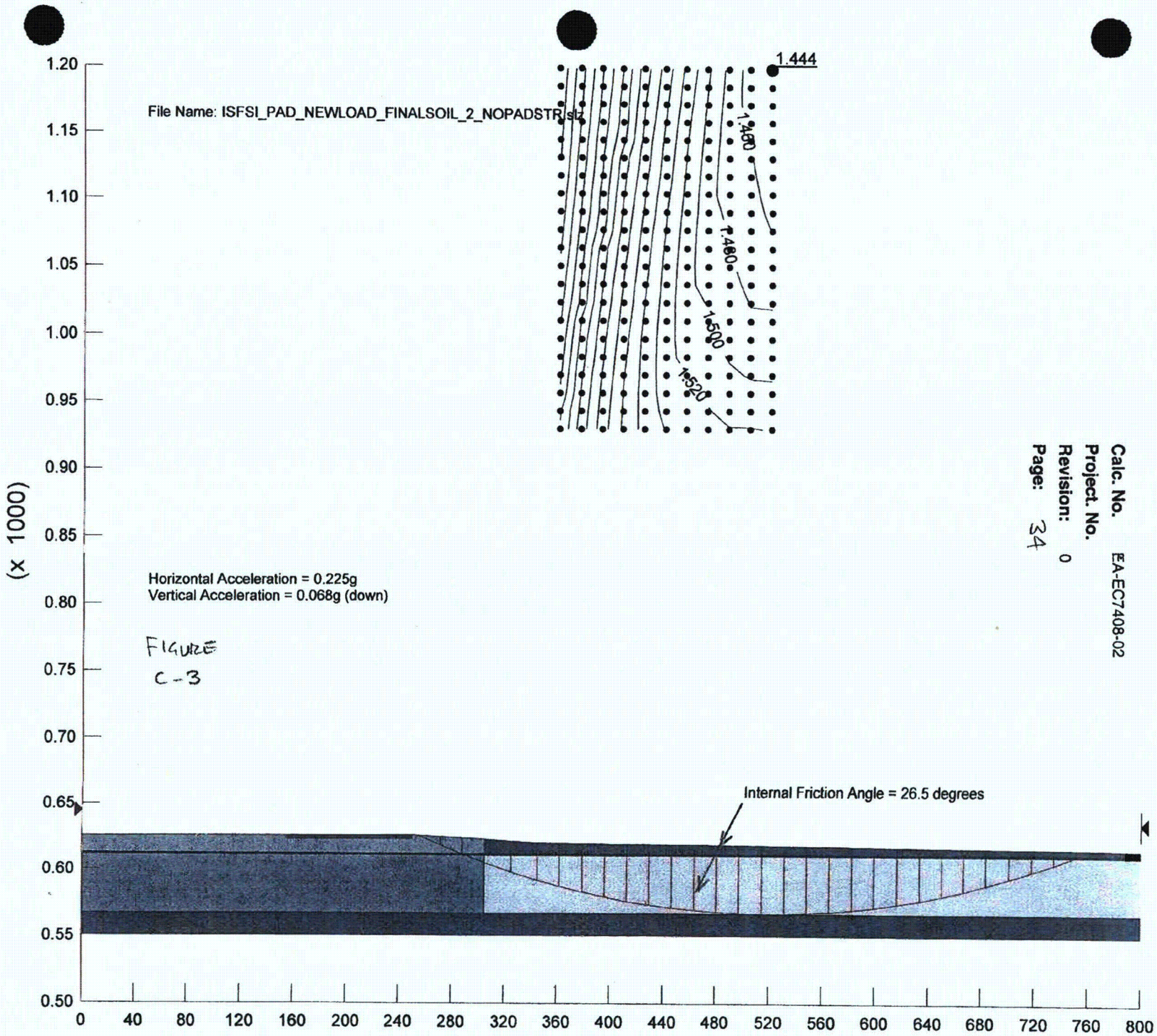


FIGURE C-3

Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 34

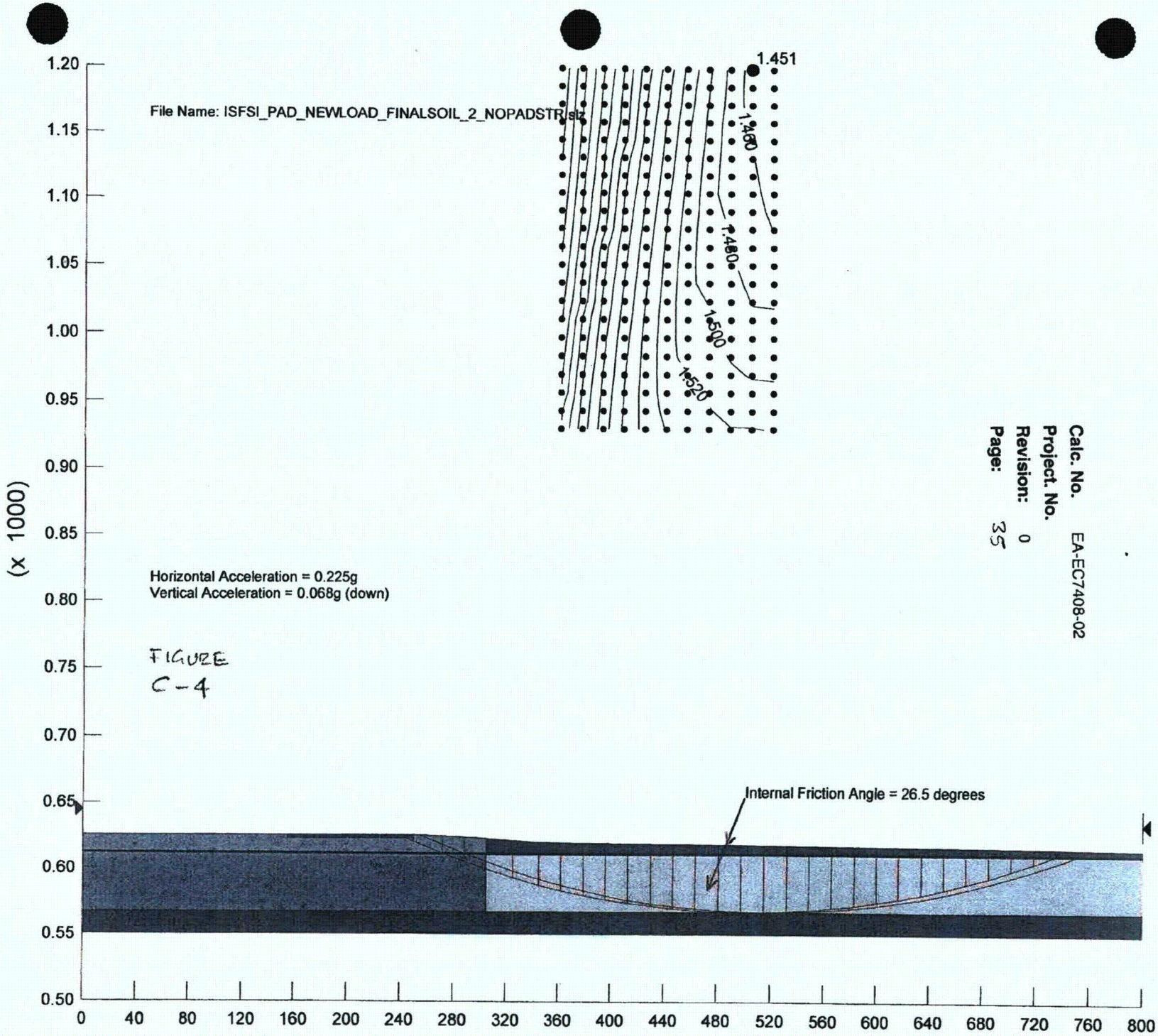
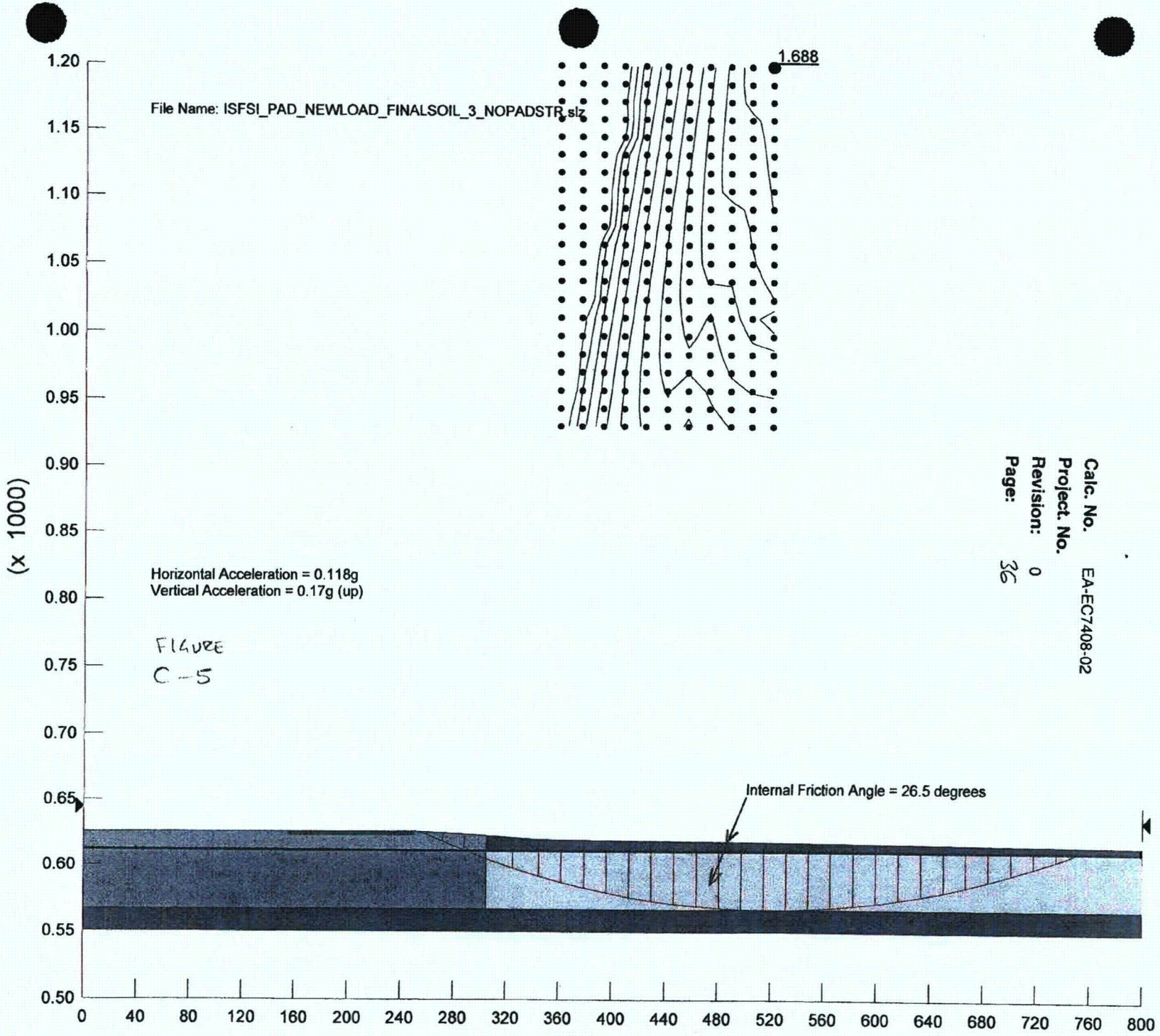
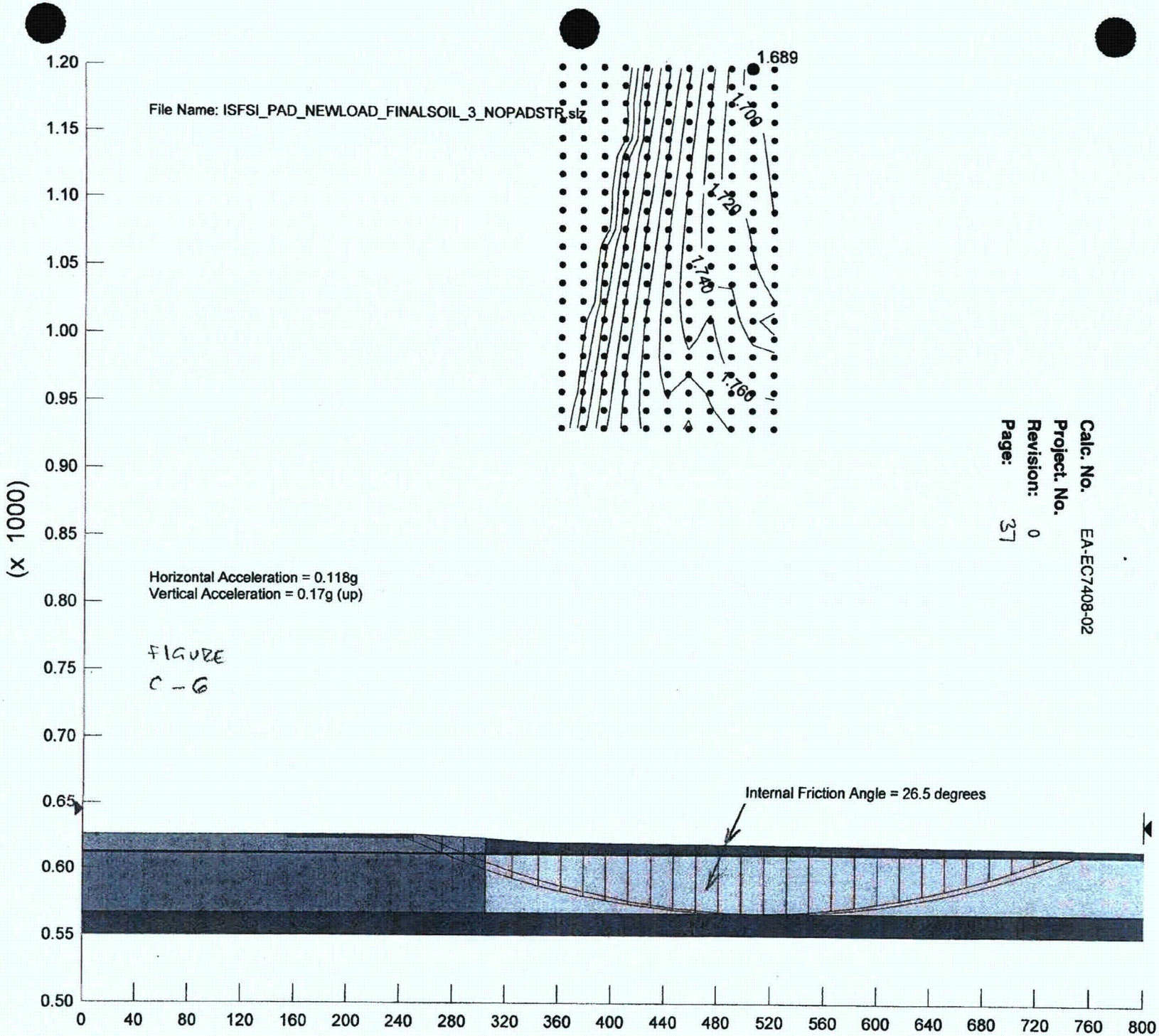


FIGURE
C-4

Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 35



Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 36


1.689
1.709
1.729
1.740
1.760
File Name: ISFSI_PAD_NEWLOAD_FINALSOIL_3_NOPADSTR.slz
Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 37
(x 1000)
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
Horizontal Acceleration = 0.118g
Vertical Acceleration = 0.17g (up)
FIGURE
C-6
Internal Friction Angle = 26.5 degrees
0
40
80
120
160
200
240
280
320
360
400
440
480
520
560
600
640
680
720
760
800

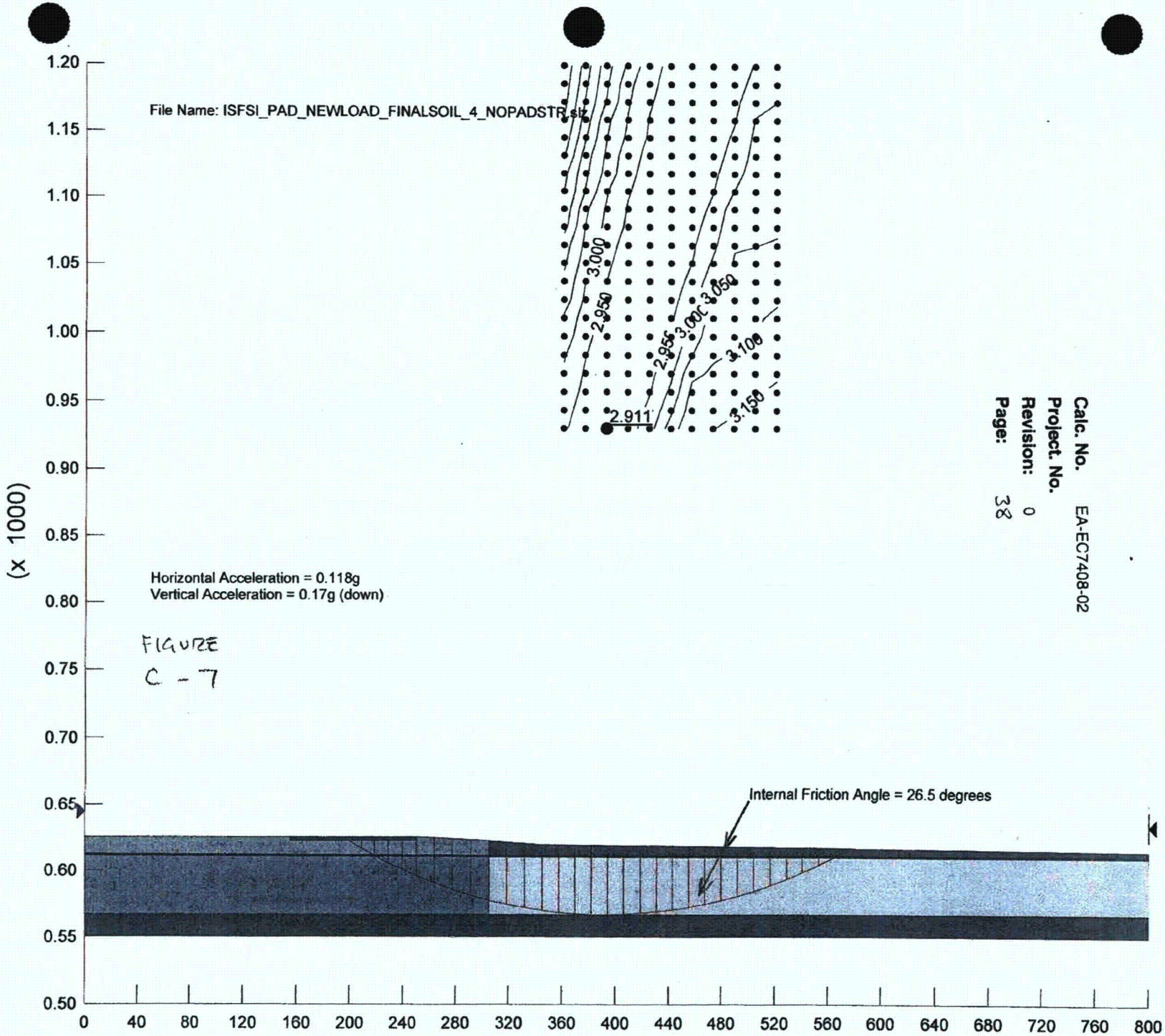


FIGURE
C - 7

Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 38

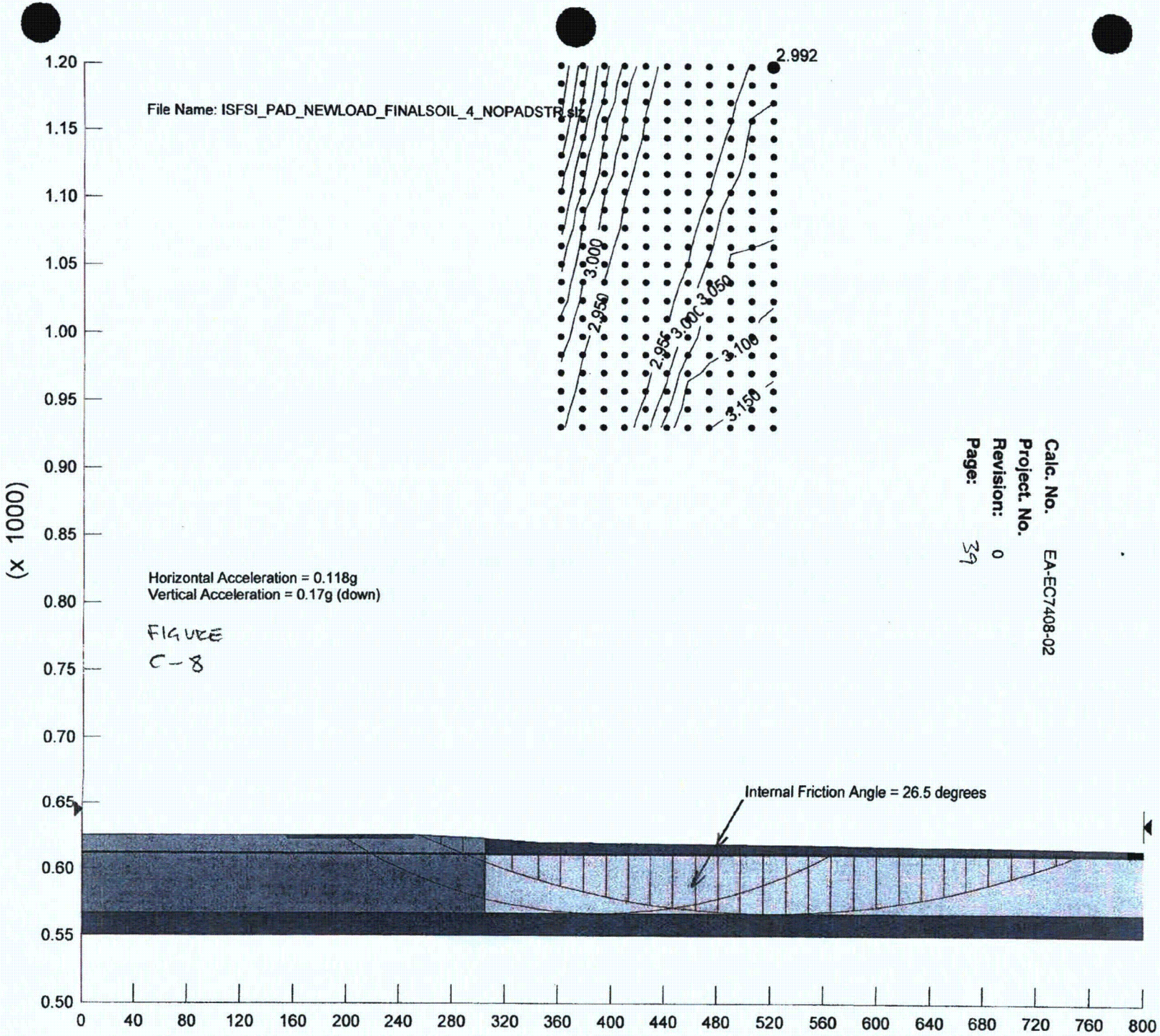


FIGURE
C-8

Calc. No. EA-EC7408-02
Project. No.
Revision: 0
Page: 39

INPUT DATA FILE

ISFSI_PAD_NEWLOAD_FINALSOIL_1_NOPADSTR.slp


```
FILEINFO
SLOPEW 5.11
TITLE

DATESTAMP 9/11/2006
TIMESTAMP 11:14:35 AM
ANALYSIS
     3     2     1 +6.2400e+001     0     0     0
CONVERGE
    30 +1.0000e-002  1000 +2.0000e+000 0 0 0
SIDE
     2
LAMBDA
0 999 0 0 0 0 0 0 0 0 0
SOIL      (γ)  7        (C)        (φ)
     1 +6.9000e+002 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000   1  0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000   0   0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
SOIL 1
     2 +1.1100e+002 +0.0000e+000 +3.6000e+001 +0.0000e+000 +0.0000e+000 +0.0000e+000   1  0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000   0   0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
SOIL 2
     3 +1.0400e+002 +0.0000e+000 +2.6500e+001 +0.0000e+000 +0.0000e+000 +0.0000e+000   1  0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000   0   0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
SOIL 3
     4 +1.2700e+002 +0.0000e+000 +3.6000e+001 +0.0000e+000 +0.0000e+000 +0.0000e+000   1  0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000   0   0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
SOIL 4
     5 +1.1900e+002 +0.0000e+000 +2.6500e+001 +0.0000e+000 +0.0000e+000 +0.0000e+000   1  0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000   0   0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
SOIL 5
     6 +1.2000e+002 +0.0000e+000 +3.6000e+001 +0.0000e+000 +0.0000e+000 +0.0000e+000   1  0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000   0   0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
SOIL 6
     7 +1.2000e+002 +0.0000e+000 +3.6000e+001 +0.0000e+000 +0.0000e+000 +0.0000e+000   1  0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000   0   0
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
       +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000 +0.0000e+000
SOIL 7
SFUNCTION       0
AFUNCTION       0
POINT          24
     1 +0.0000e+000 +6.2550e+002
     2 +1.5500e+002 +6.2550e+002
     3 +2.5000e+002 +6.2550e+002
     4 +3.0485e+002 +6.2300e+002
     5 +3.0490e+002 +6.2250e+002
     6 +3.4500e+002 +6.2000e+002
     7 +8.0000e+002 +6.1500e+002
     8 +1.5510e+002 +6.2250e+002
     9 +2.4990e+002 +6.2250e+002
    10 +0.0000e+000 +6.1200e+002
    11 +3.6000e+002 +1.2000e+003
    12 +3.6000e+002 +9.3000e+002
    13 +5.2000e+002 +9.3000e+002
    14 +3.0480e+002 +6.1100e+002
    15 +8.0000e+002 +6.1100e+002
    16 +0.0000e+000 +5.6700e+002
    17 +3.0475e+002 +5.6700e+002
    18 +8.0000e+002 +5.6700e+002
    19 +0.0000e+000 +5.5000e+002
    20 +8.0000e+002 +5.5000e+002
    21 +2.0000e+002 +6.1200e+002
    22 +8.0000e+002 +6.1200e+002
    23 +2.0000e+002 +5.5000e+002
    24 +8.0000e+002 +5.5000e+002
LINE            7
```

PAD MATERIAL

SOIL PARAMETERS

SLOPE GEOMETRY

← # OF LINES

LINE# (1) 7 ← # OF POINTS
1
2
3
4
5
6
7
ALONG LINE
POINT #'s ALONG LINE

(2) 9
1
2
8
9
3
4
5
6
7

(3) 5
10
14
5
6
7

(4) 3
10
14
15

(5) 4
16
17
14
15

(6) 3
16
17
18

(7) 2
19
20

LINES DEFINING BOUNDARIES BETWEEN DIFFERENT SOIL TYPES

Calc. No. EA-EC7408-02
Project. No.
Revision: 0
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```
TENSION
    0 +6.2400e+001 +0.0000e+000 +0.0000e+000      0
GRID
   12    13    11    10    20 0 +0.0000e+000 0 +0.0000e+000
RADIUS
   10    15    16    18    10    10    15
AXIS
    0
LIMIT
0 +0.0000e+000 +8.0000e+002
SLIP            0
BLOCK
    0     0     0     0     0 +1.3500e+002 +1.3500e+002 0 0
    0     0     0     0     0 +4.5000e+001 +4.5000e+001 0 0
PORU            7
    1 +0.0000e+000      0 +0.0000e+000
    2 +0.0000e+000      0 +0.0000e+000
    3 +0.0000e+000      0 +0.0000e+000
    4 +0.0000e+000      0 +0.0000e+000
    5 +0.0000e+000      0 +0.0000e+000
    6 +0.0000e+000      0 +0.0000e+000
    7 +0.0000e+000      0 +0.0000e+000
PBBAR           7
    1 +0.0000e+000      0 +0.0000e+000
    2 +0.0000e+000      0 +0.0000e+000
    3 +0.0000e+000      0 +0.0000e+000
    4 +0.0000e+000      0 +0.0000e+000
    5 +0.0000e+000      0 +0.0000e+000
    6 +0.0000e+000      0 +0.0000e+000
    7 +0.0000e+000      0 +0.0000e+000
PIEZ            7 +0.0000e+000      0
   (1)    3     1
   10
   14
   15
   (2)    3     1
   10
   14
   15
```

CIRCULAR SURFACE SEARCH DATA

PORE WATER PRESSURE OPTIONS NOT USED

PIEZOMETRIC DATA FOR EACH SOIL TYPE

(2) ← SOIL LAYER

```
     3      3      1
    10
    14
    15
     4      3      1
    10
    14
    15
     5      3      1
    10
    14
    15
     6      3      1
    10
    14
    15
     7      3      1
    10
    14
    15
PCON             0
POGH             0
POGP             0
POGR             0
PORA             7
     1 +0.0000e+000
     2 +0.0000e+000
     3 +0.0000e+000
     4 +0.0000e+000
     5 +0.0000e+000
     6 +0.0000e+000
     7 +0.0000e+000
LOAD             0
ANCHOR           0
PBOUNDARY        0
SEISMIC
+2.2500e-001 +0.0000e+000 -6.8000e-002 +0.0000e+000    <- SEISMIC DATA
INTEGRATION
              HORIZONTAL  VERTICAL
  -1

  -1
ENGINEERING
FT
MATLCOLOR        7
     1     0   128   128
     2   255   128     0
     3   128    64    64
     4   128   128   255
     5   128   255   255
     6   128    64    64
     7   191   128   255
```

SUMMARY OF FS VALUES FOR ALL POTENTIAL SLIP CIRCLES ANALYZED.

Untitled

DATESTAMP 9/11/2006
TIMESTAMP 11:14:35 AM
3=METHOD 2541=NO. OF SLIP SURFACES 11=NO. OF RADII 2=SIDE FUNCTION TYPE

SLIP NO.	X-COORD.	Y-COORD.	RADIUS	ITERATION NO.	LAMBDA	FACTOR OF SAFETY (MOMENT)	(FORCE)
1	360.000	930.000	318.450	1	0.0000	1.9034889	1.8875011
1	360.000	930.000	318.450	3	0.0000	1.9269001	1.9068154
1	360.000	930.000	318.450	3	0.2911	1.9261607	1.9270583
2	360.000	930.000	322.905	1	0.0000	1.7845084	1.7597126
2	360.000	930.000	322.905	3	0.0000	1.8159198	1.7887951
2	360.000	930.000	322.905	3	0.3158	1.8147334	1.8164734
3	360.000	930.000	327.360	1	0.0000	1.5971506	1.5617270
3	360.000	930.000	327.360	3	0.0000	1.6313965	1.5987528
3	360.000	930.000	327.360	3	0.3059	1.6299442	1.6308687
4	360.000	930.000	331.815	1	0.0000	1.5496031	1.5083380
4	360.000	930.000	331.815	3	0.0000	1.5877160	1.5525028
4	360.000	930.000	331.815	3	0.2891	1.5864815	1.5848380
5	360.000	930.000	336.270	1	0.0000	1.4992653	1.4531991
5	360.000	930.000	336.270	3	0.0000	1.5447533	1.5058233
5	360.000	930.000	336.270	3	0.2801	1.5432500	1.5405139
6	360.000	930.000	340.725	1	0.0000	1.4538345	1.4035224
6	360.000	930.000	340.725	3	0.0000	1.5082494	1.4650404
6	360.000	930.000	340.725	3	0.2781	1.5063590	1.5036341
7	360.000	930.000	345.180	1	0.0000	1.4140217	1.3598294
7	360.000	930.000	345.180	3	0.0000	1.4783414	1.4305704
7	360.000	930.000	345.180	3	0.2801	1.4760510	1.4742563
8	360.000	930.000	349.635	1	0.0000	1.3802790	1.3223675
8	360.000	930.000	349.635	3	0.0000	1.4551216	1.4027343
8	360.000	930.000	349.635	3	0.2840	1.4524718	1.4524398
9	360.000	930.000	354.090	1	0.0000	1.3507491	1.2893799
9	360.000	930.000	354.090	3	0.0000	1.4363242	1.3791599
9	360.000	930.000	354.090	3	0.2900	1.4333503	1.4357053
10	360.000	930.000	358.545	1	0.0000	1.3248881	1.2602069
10	360.000	930.000	358.545	3	0.0000	1.4214128	1.3594384
10	360.000	930.000	358.545	3	0.2964	1.4181709	1.4234649
11	360.000	930.000	363.000	1	0.0000	1.3017506	1.2339167
11	360.000	930.000	363.000	3	0.0000	1.4093959	1.3425872
11	360.000	930.000	363.000	3	0.3027	1.4059472	1.4145691
12	376.000	930.000	318.470	1	0.0000	1.8893565	1.8742490
12	376.000	930.000	318.470	3	0.0000	1.9137145	1.8939152
12	376.000	930.000	318.470	3	0.2664	1.9147194	1.9159370
13	376.000	930.000	322.923	1	0.0000	1.7375394	1.7139192
13	376.000	930.000	322.923	3	0.0000	1.7707171	1.7446742
13	376.000	930.000	322.923	3	0.2876	1.7716993	1.7738674
14	376.000	930.000	327.376	1	0.0000	1.5910512	1.5603539
14	376.000	930.000	327.376	3	0.0000	1.6319795	1.6012181
14	376.000	930.000	327.376	3	0.2993	1.6333585	1.6364719
15	376.000	930.000	331.829	1	0.0000	1.4642747	1.4258554
15	376.000	930.000	331.829	3	0.0000	1.5126747	1.4765704
15	376.000	930.000	331.829	3	0.3024	1.5139891	1.5181213
16	376.000	930.000	336.282	1	0.0000	1.4125242	1.3681325
16	376.000	930.000	336.282	3	0.0000	1.4655695	1.4264301
16	376.000	930.000	336.282	3	0.2920	1.4667476	1.4696037
17	376.000	930.000	340.735	1	0.0000	1.3776039	1.3287354
17	376.000	930.000	340.735	3	0.0000	1.4380859	1.3954168
17	376.000	930.000	340.735	3	0.2864	1.4390540	1.4413717
18	376.000	930.000	345.188	1	0.0000	1.3456327	1.2927523
18	376.000	930.000	345.188	3	0.0000	1.4150941	1.3683938
18	376.000	930.000	345.188	3	0.2854	1.4158214	1.4186199
19	376.000	930.000	349.641	1	0.0000	1.3178622	1.2611931
19	376.000	930.000	349.641	3	0.0000	1.3972364	1.3463156
19	376.000	930.000	349.641	3	0.2871	1.3977522	1.4018929
20	376.000	930.000	354.094	1	0.0000	1.2927084	1.2325851
20	376.000	930.000	354.094	3	0.0000	1.3824230	1.3270220
20	376.000	930.000	354.094	3	0.2911	1.3827616	1.3888707
21	376.000	930.000	358.547	1	0.0000	1.2707693	1.2073101
21	376.000	930.000	358.547	3	0.0000	1.3710861	1.3111426
21	376.000	930.000	358.547	3	0.2957	1.3712980	1.3798629
22	376.000	930.000	363.000	1	0.0000	1.2511039	1.1844643
22	376.000	930.000	363.000	3	0.0000	1.3622295	1.2976872
22	376.000	930.000	363.000	3	0.2556	1.3623138	1.3604816
23	392.000	930.000	318.490	1	0.0000	1.9376905	1.9214032
23	392.000	930.000	318.490	3	0.0000	1.9605831	1.9406341
23	392.000	930.000	318.490	3	0.2737	1.9618955	1.9634644
24	392.000	930.000	322.941	1	0.0000	1.7210639	1.6979220
24	392.000	930.000	322.941	3	0.0000	1.7550374	1.7290133
24	392.000	930.000	322.941	3	0.2780	1.7571685	1.7598612
25	392.000	930.000	327.392	1	0.0000	1.5521210	1.5225271

25	392.000	930.000	327.392	3	0.0000	1.5951354	1.5649831
25	392.000	930.000	327.392	3	0.2853	1.5979473	1.6017738
26	392.000	930.000	331.843	1	0.0000	1.4496165	1.4141117
26	392.000	930.000	331.843	3	0.0000	1.5014236	1.4668919
26	392.000	930.000	331.843	3	0.2909	1.5049290	1.5098901
27	392.000	930.000	336.294	1	0.0000	1.3772853	1.3365233
27	392.000	930.000	336.294	3	0.0000	1.4391416	1.4000129
27	392.000	930.000	336.294	3	0.2946	1.4430328	1.4493431
28	392.000	930.000	340.745	1	0.0000	1.3105688	1.2632756
28	392.000	930.000	340.745	3	0.0000	1.3790962	1.3356135
28	392.000	930.000	340.745	3	0.2994	1.3831431	1.3911509
29	392.000	930.000	345.196	1	0.0000	1.2851836	1.2337312
29	392.000	930.000	345.196	3	0.0000	1.3612611	1.3144409
29	392.000	930.000	345.196	3	0.2958	1.3652367	1.3733110
30	392.000	930.000	349.647	1	0.0000	1.2624772	1.2071343
30	392.000	930.000	349.647	3	0.0000	1.3475190	1.2969912
30	392.000	930.000	349.647	3	0.2942	1.3514223	1.3602910
31	392.000	930.000	354.098	1	0.0000	1.2415377	1.1826612
31	392.000	930.000	354.098	3	0.0000	1.3362332	1.2816366
31	392.000	930.000	354.098	3	0.2489	1.3394097	1.3378923
32	392.000	930.000	358.549	1	0.0000	1.2227579	1.1605241
32	392.000	930.000	358.549	3	0.0000	1.3275884	1.2687681
32	392.000	930.000	358.549	3	0.2470	1.3307041	1.3288681
33	392.000	930.000	363.000	1	0.0000	1.2058247	1.1404151
33	392.000	930.000	363.000	3	0.0000	1.3211479	1.2579918
33	392.000	930.000	363.000	3	0.2450	1.3242242	1.3220355
34	408.000	930.000	318.510	1	0.0000	1.9806846	1.9631391
34	408.000	930.000	318.510	3	0.0000	2.0019643	1.9821780
34	408.000	930.000	318.510	3	0.2878	2.0032687	2.0051448
35	408.000	930.000	322.959	1	0.0000	1.7411495	1.7168375
35	408.000	930.000	322.959	3	0.0000	1.7740124	1.7478957
35	408.000	930.000	322.959	3	0.2849	1.7763566	1.7796577
36	408.000	930.000	327.408	1	0.0000	1.5364210	1.5071635
36	408.000	930.000	327.408	3	0.0000	1.5802969	1.5500352
36	408.000	930.000	327.408	3	0.2831	1.5838277	1.5883843
37	408.000	930.000	331.857	1	0.0000	1.4192854	1.3848350
37	408.000	930.000	331.857	3	0.0000	1.4731339	1.4388628
37	408.000	930.000	331.857	3	0.2856	1.4777104	1.4836126
38	408.000	930.000	336.306	1	0.0000	1.3463958	1.3067680
38	408.000	930.000	336.306	3	0.0000	1.4098144	1.3713251
38	408.000	930.000	336.306	3	0.2881	1.4153410	1.4225480
39	408.000	930.000	340.755	1	0.0000	1.2931774	1.2488547
39	408.000	930.000	340.755	3	0.0000	1.3670081	1.3240725
39	408.000	930.000	340.755	3	0.2904	1.3732245	1.3817965
40	408.000	930.000	345.204	1	0.0000	1.2422375	1.1925010
40	408.000	930.000	345.204	3	0.0000	1.3263812	1.2786908
40	408.000	930.000	345.204	3	0.2405	1.3318602	1.3303800
41	408.000	930.000	349.653	1	0.0000	1.2151303	1.1610478
41	408.000	930.000	349.653	3	0.0000	1.3068407	1.2556487
41	408.000	930.000	349.653	3	0.2397	1.3124609	1.3106828
42	408.000	930.000	354.102	1	0.0000	1.1971971	1.1395463
42	408.000	930.000	354.102	3	0.0000	1.2976866	1.2429066
42	408.000	930.000	354.102	3	0.2389	1.3033829	1.3014033
43	408.000	930.000	358.551	1	0.0000	1.1810323	1.1199953
43	408.000	930.000	358.551	3	0.0000	1.2910093	1.2323937
43	408.000	930.000	358.551	3	0.2379	1.2967641	1.2945556
44	408.000	930.000	363.000	1	0.0000	1.1658743	1.1017227
44	408.000	930.000	363.000	3	0.0000	1.2859418	1.2232772
44	408.000	930.000	363.000	3	0.2369	1.2917513	1.2893054
45	424.000	930.000	318.530	1	0.0000	1.9894205	1.9718353
45	424.000	930.000	318.530	3	0.0000	2.0099795	1.9905353
45	424.000	930.000	318.530	3	0.2954	2.0112829	2.0134184
46	424.000	930.000	322.977	1	0.0000	1.7574400	1.7321641
46	424.000	930.000	322.977	3	0.0000	1.7891174	1.7632385
46	424.000	930.000	322.977	3	0.2943	1.7914910	1.7953822
47	424.000	930.000	327.424	1	0.0000	1.5449752	1.5147448
47	424.000	930.000	327.424	3	0.0000	1.5880249	1.5577887
47	424.000	930.000	327.424	3	0.2909	1.5917161	1.5971994
48	424.000	930.000	331.871	1	0.0000	1.4083836	1.3740831
48	424.000	930.000	331.871	3	0.0000	1.4628450	1.4284247
48	424.000	930.000	331.871	3	0.2874	1.4679059	1.4746750
49	424.000	930.000	336.318	1	0.0000	1.3237876	1.2851078
49	424.000	930.000	336.318	3	0.0000	1.3889591	1.3505002
49	424.000	930.000	336.318	3	0.2878	1.3953175	1.4036136
50	424.000	930.000	340.765	1	0.0000	1.2688184	1.2255644
50	424.000	930.000	340.765	3	0.0000	1.3440570	1.3014283
50	424.000	930.000	340.765	3	0.2888	1.3515792	1.3612712
51	424.000	930.000	345.212	1	0.0000	1.2288327	1.1811465
51	424.000	930.000	345.212	3	0.0000	1.3147655	1.2679011

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51	424.000	930.000	345.212	3	0.2343	1.3215098	1.3202174
52	424.000	930.000	349.659	1	0.0000	1.1966603	1.1449257
52	424.000	930.000	349.659	3	0.0000	1.2937766	1.2424915
52	424.000	930.000	349.659	3	0.2337	1.3010585	1.2995477
53	424.000	930.000	354.106	1	0.0000	1.1607032	1.1040111
53	424.000	930.000	354.106	3	0.0000	1.2675261	1.2116425
53	424.000	930.000	354.106	3	0.2324	1.2753113	1.2730718
54	424.000	930.000	358.553	1	0.0000	1.1459894	1.0859859
54	424.000	930.000	358.553	3	0.0000	1.2615410	1.2022512
54	424.000	930.000	358.553	3	0.2317	1.2695474	1.2671306
55	424.000	930.000	363.000	1	0.0000	1.1320881	1.0690464
55	424.000	930.000	363.000	3	0.0000	1.2571740	1.1941854
55	424.000	930.000	363.000	3	0.2314	1.2653763	1.2628147
56	440.000	930.000	318.550	1	0.0000	1.9890209	1.9717995
56	440.000	930.000	318.550	3	0.0000	2.0091556	1.9901138
56	440.000	930.000	318.550	3	0.2950	2.0104304	2.0124912
57	440.000	930.000	322.995	1	0.0000	1.7566378	1.7313704
57	440.000	930.000	322.995	3	0.0000	1.7876361	1.7621618
57	440.000	930.000	322.995	3	0.3029	1.7900562	1.7946471
58	440.000	930.000	327.440	1	0.0000	1.5492000	1.5183714
58	440.000	930.000	327.440	3	0.0000	1.5913599	1.5614144
58	440.000	930.000	327.440	3	0.3002	1.5951457	1.6016334
59	440.000	930.000	331.885	1	0.0000	1.4124340	1.3773165
59	440.000	930.000	331.885	3	0.0000	1.4661358	1.4318672
59	440.000	930.000	331.885	3	0.2967	1.4713811	1.4795075
60	440.000	930.000	336.330	1	0.0000	1.3180418	1.2792120
60	440.000	930.000	336.330	3	0.0000	1.3833773	1.3448182
60	440.000	930.000	336.330	3	0.2914	1.3900625	1.3992632
61	440.000	930.000	340.775	1	0.0000	1.2534972	1.2109351
61	440.000	930.000	340.775	3	0.0000	1.3299660	1.2872606
61	440.000	930.000	340.775	3	0.2328	1.3363628	1.3351735
62	440.000	930.000	345.220	1	0.0000	1.2101428	1.1634424
62	440.000	930.000	345.220	3	0.0000	1.2973199	1.2505496
62	440.000	930.000	345.220	3	0.2304	1.3046889	1.3032864
63	440.000	930.000	349.665	1	0.0000	1.1781835	1.1274350
63	440.000	930.000	349.665	3	0.0000	1.2758574	1.2248550
63	440.000	930.000	349.665	3	0.2295	1.2841081	1.2825012
64	440.000	930.000	354.110	1	0.0000	1.1520874	1.0975333
64	440.000	930.000	354.110	3	0.0000	1.2608972	1.2055865
64	440.000	930.000	354.110	3	0.2289	1.2698789	1.2680939
65	440.000	930.000	358.555	1	0.0000	1.1302285	1.0721228
65	440.000	930.000	358.555	3	0.0000	1.2506173	1.1909323
65	440.000	930.000	358.555	3	0.2285	1.2601997	1.2582723
66	440.000	930.000	363.000	1	0.0000	1.1055532	1.0431554
66	440.000	930.000	363.000	3	0.0000	1.2356293	1.1716149
66	440.000	930.000	363.000	3	0.2278	1.2458148	1.2432982
67	456.000	930.000	318.570	1	0.0000	1.9886216	1.9717638
67	456.000	930.000	318.570	3	0.0000	2.0083323	1.9896925
67	456.000	930.000	318.570	3	0.2947	2.0095786	2.0115660
68	456.000	930.000	323.013	1	0.0000	1.7499522	1.7250918
68	456.000	930.000	323.013	3	0.0000	1.7805027	1.7554860
68	456.000	930.000	323.013	3	0.3026	1.7828959	1.7873722
69	456.000	930.000	327.456	1	0.0000	1.5437871	1.5131653
69	456.000	930.000	327.456	3	0.0000	1.5853809	1.5558647
69	456.000	930.000	327.456	3	0.3095	1.5892766	1.5968408
70	456.000	930.000	331.899	1	0.0000	1.4114232	1.3760245
70	456.000	930.000	331.899	3	0.0000	1.4644159	1.4304777
70	456.000	930.000	331.899	3	0.3080	1.4698604	1.4795964
71	456.000	930.000	336.342	1	0.0000	1.3192270	1.2798067
71	456.000	930.000	336.342	3	0.0000	1.3838404	1.3455438
71	456.000	930.000	336.342	3	0.2349	1.3891221	1.3879446
72	456.000	930.000	340.785	1	0.0000	1.2515633	1.2085757
72	456.000	930.000	340.785	3	0.0000	1.3277405	1.2850827
72	456.000	930.000	340.785	3	0.2317	1.3341805	1.3327795
73	456.000	930.000	345.228	1	0.0000	1.2008535	1.1544718
73	456.000	930.000	345.228	3	0.0000	1.2885919	1.2417285
73	456.000	930.000	345.228	3	0.2290	1.2961744	1.2946516
74	456.000	930.000	349.671	1	0.0000	1.1645135	1.1145388
74	456.000	930.000	349.671	3	0.0000	1.2631579	1.2121246
74	456.000	930.000	349.671	3	0.2273	1.2718102	1.2700842
75	456.000	930.000	354.114	1	0.0000	1.1379919	1.0842779
75	456.000	930.000	354.114	3	0.0000	1.2472161	1.1920107
75	456.000	930.000	354.114	3	0.2263	1.2568559	1.2549676
76	456.000	930.000	358.557	1	0.0000	1.1163466	1.0590545
76	456.000	930.000	358.557	3	0.0000	1.2365607	1.1771191
76	456.000	930.000	358.557	3	0.2258	1.2470851	1.2450839
77	456.000	930.000	363.000	1	0.0000	1.0982755	1.0375379
77	456.000	930.000	363.000	3	0.0000	1.2298235	1.1661178
77	456.000	930.000	363.000	3	0.2255	1.2411146	1.2390603

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78	472.000	930.000	318.590	1	0.0000	1.9882227	1.9717281
78	472.000	930.000	318.590	3	0.0000	2.0075095	1.9892715
78	472.000	930.000	318.590	3	0.2943	2.0087275	2.0106428
79	472.000	930.000	323.031	1	0.0000	1.7430220	1.7185692
79	472.000	930.000	323.031	3	0.0000	1.7731216	1.7485621
79	472.000	930.000	323.031	3	0.3023	1.7754883	1.7798517
80	472.000	930.000	327.472	1	0.0000	1.5356491	1.5054752
80	472.000	930.000	327.472	3	0.0000	1.5767871	1.5477343
80	472.000	930.000	327.472	3	0.3092	1.5806583	1.5880668
81	472.000	930.000	331.913	1	0.0000	1.4042399	1.3692317
81	472.000	930.000	331.913	3	0.0000	1.4567517	1.4232582
81	472.000	930.000	331.913	3	0.2390	1.4608764	1.4597915
82	472.000	930.000	336.354	1	0.0000	1.3154414	1.2760289
82	472.000	930.000	336.354	3	0.0000	1.3794685	1.3415406
82	472.000	930.000	336.354	3	0.2336	1.3847149	1.3832663
83	472.000	930.000	340.795	1	0.0000	1.2500959	1.2068158
83	472.000	930.000	340.795	3	0.0000	1.3256611	1.2833100
83	472.000	930.000	340.795	3	0.2307	1.3320658	1.3304336
84	472.000	930.000	345.236	1	0.0000	1.1999135	1.1531179
84	472.000	930.000	345.236	3	0.0000	1.2871567	1.2404840
84	472.000	930.000	345.236	3	0.2278	1.2947184	1.2929089
85	472.000	930.000	349.677	0	0.0000	993.0000000	993.0000000
85	472.000	930.000	349.677	0	0.0000	993.0000000	993.0000000
85	472.000	930.000	349.677	0	0.0000	993.0000000	993.0000000
86	472.000	930.000	354.118	1	0.0000	1.1284289	1.0752992
86	472.000	930.000	354.118	3	0.0000	1.2382965	1.1830095
86	472.000	930.000	354.118	3	0.2253	1.2481785	1.2461699
87	472.000	930.000	358.559	1	0.0000	1.1053951	1.0488282
87	472.000	930.000	358.559	3	0.0000	1.2260364	1.1665949
87	472.000	930.000	358.559	3	0.2244	1.2369810	1.2348832
88	472.000	930.000	363.000	1	0.0000	1.0872556	1.0272536
88	472.000	930.000	363.000	3	0.0000	1.2185808	1.1549662
88	472.000	930.000	363.000	3	0.2239	1.2305222	1.2284011
89	488.000	930.000	318.610	1	0.0000	1.9878240	1.9716924
89	488.000	930.000	318.610	3	0.0000	2.0066874	1.9888509
89	488.000	930.000	318.610	3	0.2940	2.0078771	2.0097217
90	488.000	930.000	323.049	1	0.0000	1.7360458	1.7119942
90	488.000	930.000	323.049	3	0.0000	1.7657162	1.7416218
90	488.000	930.000	323.049	3	0.3017	1.7680559	1.7723078
91	488.000	930.000	327.488	1	0.0000	1.5273543	1.4976314
91	488.000	930.000	327.488	3	0.0000	1.5680942	1.5395200
91	488.000	930.000	327.488	3	0.3084	1.5719397	1.5791937
92	488.000	930.000	331.927	1	0.0000	1.3962306	1.3616971
92	488.000	930.000	331.927	3	0.0000	1.4482849	1.4152523
92	488.000	930.000	331.927	3	0.2390	1.4523980	1.4513296
93	488.000	930.000	336.366	1	0.0000	1.3082481	1.2692971
93	488.000	930.000	336.366	3	0.0000	1.3717991	1.3343263
93	488.000	930.000	336.366	3	0.2332	1.3770285	1.3755070
94	488.000	930.000	340.805	1	0.0000	1.2447884	1.2017765
94	488.000	930.000	340.805	3	0.0000	1.3198516	1.2779054
94	488.000	930.000	340.805	3	0.2290	1.3262096	1.3242198
95	488.000	930.000	345.244	1	0.0000	1.1969382	1.1500810
95	488.000	930.000	345.244	3	0.0000	1.2836097	1.2372812
95	488.000	930.000	345.244	3	0.2265	1.2911262	1.2890001
96	488.000	930.000	349.683	1	0.0000	1.1583579	1.1080766
96	488.000	930.000	349.683	3	0.0000	1.2564628	1.2057245
96	488.000	930.000	349.683	3	0.2252	1.2651570	1.2629322
97	488.000	930.000	354.122	1	0.0000	1.1268184	1.0733493
97	488.000	930.000	354.122	3	0.0000	1.2362747	1.1811694
97	488.000	930.000	354.122	3	0.2243	1.2461471	1.2438553
98	488.000	930.000	358.561	1	0.0000	1.1005487	1.0440719
98	488.000	930.000	358.561	3	0.0000	1.2212183	1.1617906
98	488.000	930.000	358.561	3	0.2239	1.2322749	1.2300740
99	488.000	930.000	363.000	1	0.0000	1.0790091	1.0196179
99	488.000	930.000	363.000	3	0.0000	1.2107323	1.1470672
99	488.000	930.000	363.000	3	0.2234	1.2229308	1.2207304
100	504.000	930.000	318.630	1	0.0000	1.9874256	1.9716567
100	504.000	930.000	318.630	3	0.0000	2.0058660	1.9884304
100	504.000	930.000	318.630	3	0.2936	2.0070274	2.0088027
101	504.000	930.000	323.067	1	0.0000	1.7286400	1.7049980
101	504.000	930.000	323.067	3	0.0000	1.7578580	1.7342203
101	504.000	930.000	323.067	3	0.3014	1.7601715	1.7643132
102	504.000	930.000	327.504	1	0.0000	1.5188351	1.4895623
102	504.000	930.000	327.504	3	0.0000	1.5591158	1.5310032
102	504.000	930.000	327.504	3	0.3081	1.5629376	1.5700388
103	504.000	930.000	331.941	1	0.0000	1.3883182	1.3542326
103	504.000	930.000	331.941	3	0.0000	1.4399798	1.4074358
103	504.000	930.000	331.941	3	0.2386	1.4440780	1.4430278
104	504.000	930.000	336.378	1	0.0000	1.3007127	1.2622579

104	504.000	930.000	336.378	3	0.0000	1.3638053	1.3267883
104	504.000	930.000	336.378	3	0.2332	1.3690277	1.3675259
105	504.000	930.000	340.815	1	0.0000	1.2378915	1.1953865
105	504.000	930.000	340.815	3	0.0000	1.3124960	1.2710039
105	504.000	930.000	340.815	3	0.2290	1.3188504	1.3168831
106	504.000	930.000	345.252	1	0.0000	1.1911339	1.1446956
106	504.000	930.000	345.252	3	0.0000	1.2773125	1.2314176
106	504.000	930.000	345.252	3	0.2254	1.2847916	1.2824016
107	504.000	930.000	349.689	1	0.0000	1.1541078	1.1040421
107	504.000	930.000	349.689	3	0.0000	1.2517198	1.2013603
107	504.000	930.000	349.689	3	0.2237	1.2603586	1.2577218
108	504.000	930.000	354.126	1	0.0000	1.1240739	1.0705815
108	504.000	930.000	354.126	3	0.0000	1.2330208	1.1782495
108	504.000	930.000	354.126	3	0.2232	1.2428515	1.2402592
109	504.000	930.000	358.563	1	0.0000	1.0988665	1.0421751
109	504.000	930.000	358.563	3	0.0000	1.2190472	1.1599136
109	504.000	930.000	358.563	3	0.2228	1.2300657	1.2275462
110	504.000	930.000	363.000	1	0.0000	1.0771257	1.0175015
110	504.000	930.000	363.000	3	0.0000	1.2084811	1.1449923
110	504.000	930.000	363.000	3	0.2227	1.2206935	1.2182949
111	520.000	930.000	318.650	1	0.0000	1.9870276	1.9716210
111	520.000	930.000	318.650	3	0.0000	2.0050451	1.9880103
111	520.000	930.000	318.650	3	0.2933	2.0061784	2.0078857
112	520.000	930.000	323.085	1	0.0000	1.7208220	1.6976009
112	520.000	930.000	323.085	3	0.0000	1.7495973	1.7264159
112	520.000	930.000	323.085	3	0.3011	1.7518847	1.7559163
113	520.000	930.000	327.520	1	0.0000	1.5101180	1.4812967
113	520.000	930.000	327.520	3	0.0000	1.5499396	1.5222881
113	520.000	930.000	327.520	3	0.3079	1.5537381	1.5606878
114	520.000	930.000	331.955	1	0.0000	1.3800053	1.3463989
114	520.000	930.000	331.955	3	0.0000	1.4312053	1.3991188
114	520.000	930.000	331.955	3	0.2387	1.4352928	1.4342585
115	520.000	930.000	336.390	1	0.0000	1.2930695	1.2551120
115	520.000	930.000	336.390	3	0.0000	1.3557040	1.3191419
115	520.000	930.000	336.390	3	0.2333	1.3609197	1.3594374
116	520.000	930.000	340.825	1	0.0000	1.2309110	1.1889139
116	520.000	930.000	340.825	3	0.0000	1.3050573	1.2640184
116	520.000	930.000	340.825	3	0.2291	1.3114086	1.3094637
117	520.000	930.000	345.260	1	0.0000	1.1847094	1.1387929
117	520.000	930.000	345.260	3	0.0000	1.2704212	1.2249732
117	520.000	930.000	345.260	3	0.2255	1.2779008	1.2755341
118	520.000	930.000	349.695	1	0.0000	1.1484680	1.0988659
118	520.000	930.000	349.695	3	0.0000	1.2455750	1.1956708
118	520.000	930.000	349.695	3	0.2233	1.2541997	1.2514858
119	520.000	930.000	354.130	1	0.0000	1.1193985	1.0662546
119	520.000	930.000	354.130	3	0.0000	1.2278218	1.1734803
119	520.000	930.000	354.130	3	0.2220	1.2376028	1.2346676
120	520.000	930.000	358.565	1	0.0000	1.0953310	1.0388165
120	520.000	930.000	358.565	3	0.0000	1.2150095	1.1562516
120	520.000	930.000	358.565	3	0.2218	1.2259864	1.2231440
121	520.000	930.000	363.000	1	0.0000	1.0745414	1.0149359
121	520.000	930.000	363.000	3	0.0000	1.2054158	1.1422649
121	520.000	930.000	363.000	3	0.2221	1.2176072	1.2150102
122	360.000	943.500	331.950	1	0.0000	1.9097859	1.8943030
122	360.000	943.500	331.950	3	0.0000	1.9320068	1.9127029
122	360.000	943.500	331.950	3	0.2941	1.9310859	1.9318904
123	360.000	943.500	336.405	1	0.0000	1.7911035	1.7671475
123	360.000	943.500	336.405	3	0.0000	1.8208538	1.7947396
123	360.000	943.500	336.405	3	0.3194	1.8195098	1.8210791
124	360.000	943.500	340.860	1	0.0000	1.6164423	1.5819899
124	360.000	943.500	340.860	3	0.0000	1.6471264	1.6162718
124	360.000	943.500	340.860	3	0.3026	1.6456775	1.6455580
125	360.000	943.500	345.315	1	0.0000	1.5665910	1.5264614
125	360.000	943.500	345.315	3	0.0000	1.6012212	1.5676666
125	360.000	943.500	345.315	3	0.2862	1.5999462	1.5973274
126	360.000	943.500	349.770	1	0.0000	1.5145553	1.4697430
126	360.000	943.500	349.770	3	0.0000	1.5563658	1.5190982
126	360.000	943.500	349.770	3	0.2775	1.5547933	1.5510751
127	360.000	943.500	354.225	1	0.0000	1.4678323	1.4188768
127	360.000	943.500	354.225	3	0.0000	1.5182844	1.4767995
127	360.000	943.500	354.225	3	0.2755	1.5162978	1.5125025
128	360.000	943.500	358.680	1	0.0000	1.4269664	1.3742200
128	360.000	943.500	358.680	3	0.0000	1.4869860	1.4410355
128	360.000	943.500	358.680	3	0.2774	1.4845709	1.4815502
129	360.000	943.500	363.135	1	0.0000	1.3923297	1.3359514
129	360.000	943.500	363.135	3	0.0000	1.4625091	1.4120502
129	360.000	943.500	363.135	3	0.2813	1.4597028	1.4582457
130	360.000	943.500	367.590	1	0.0000	1.3620076	1.3022372
130	360.000	943.500	367.590	3	0.0000	1.4425380	1.3874293

PORTIONS OF THE OUTPUT FILE BETWEEN SLIP CIRCLES 130 AND 2448 WERE OMITTED DUE TO LARGE SIZE OF THE FILE.

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45 1 0.0000 1.5235568 1.4919019

2448	392.000	1200.000	610.745	3	0.0000	1.5399413	1.5175146
2448	392.000	1200.000	610.745	3	0.2695	1.5407939	1.5342848
2449	392.000	1200.000	615.196	1	0.0000	1.4817191	1.4473468
2449	392.000	1200.000	615.196	3	0.0000	1.5032376	1.4780743
2449	392.000	1200.000	615.196	3	0.2648	1.5036016	1.4965668
2450	392.000	1200.000	619.647	1	0.0000	1.4448572	1.4079745
2450	392.000	1200.000	619.647	3	0.0000	1.4719383	1.4439360
2450	392.000	1200.000	619.647	3	0.2636	1.4718158	1.4645537
2451	392.000	1200.000	624.098	0	0.0000	995.0000000	995.0000000
2451	392.000	1200.000	624.098	0	0.0000	995.0000000	995.0000000
2451	392.000	1200.000	624.098	0	0.0000	995.0000000	995.0000000
2452	392.000	1200.000	628.549	1	0.0000	1.3837213	1.3428639
2452	392.000	1200.000	628.549	3	0.0000	1.4250110	1.3908571
2452	392.000	1200.000	628.549	3	0.3062	1.4237422	1.4214601
2453	392.000	1200.000	633.000	1	0.0000	1.3516995	1.3086976
2453	392.000	1200.000	633.000	3	0.0000	1.4005806	1.3630417
2453	392.000	1200.000	633.000	3	0.3109	1.3987472	1.3979742
2454	408.000	1200.000	588.510	1	0.0000	1.9241343	1.9157912
2454	408.000	1200.000	588.510	3	0.0000	1.9366507	1.9263013
2454	408.000	1200.000	588.510	3	0.0173	1.9366817	1.9270245
2455	408.000	1200.000	592.959	1	0.0000	1.7451996	1.7321958
2455	408.000	1200.000	592.959	3	0.0000	1.7615104	1.7479562
2455	408.000	1200.000	592.959	3	0.2877	1.7622260	1.7630182
2456	408.000	1200.000	597.408	1	0.0000	1.5758330	1.5583673
2456	408.000	1200.000	597.408	3	0.0000	1.5944414	1.5782615
2456	408.000	1200.000	597.408	3	0.3004	1.5954538	1.5962613
2457	408.000	1200.000	601.857	1	0.0000	1.5093598	1.4862983
2457	408.000	1200.000	601.857	3	0.0000	1.5251571	1.5073292
2457	408.000	1200.000	601.857	3	0.2882	1.5267037	1.5255947
2458	408.000	1200.000	606.306	1	0.0000	1.4818100	1.4547455
2458	408.000	1200.000	606.306	3	0.0000	1.4982356	1.4786352
2458	408.000	1200.000	606.306	3	0.2769	1.5000372	1.4970541
2459	408.000	1200.000	610.755	1	0.0000	1.4485383	1.4182073
2459	408.000	1200.000	610.755	3	0.0000	1.4680819	1.4461957
2459	408.000	1200.000	610.755	3	0.2685	1.4697342	1.4655282
2460	408.000	1200.000	615.204	1	0.0000	1.4160531	1.3828500
2460	408.000	1200.000	615.204	3	0.0000	1.4400944	1.4156955
2460	408.000	1200.000	615.204	3	0.2634	1.4414447	1.4365142
2461	408.000	1200.000	619.653	1	0.0000	1.3864288	1.3506032
2461	408.000	1200.000	619.653	3	0.0000	1.4156004	1.3885377
2461	408.000	1200.000	619.653	3	0.2620	1.4166104	1.4113227
2462	408.000	1200.000	624.102	1	0.0000	1.3597547	1.3214775
2462	408.000	1200.000	624.102	3	0.0000	1.3945397	1.3647413
2462	408.000	1200.000	624.102	3	0.2626	1.3951992	1.3898754
2463	408.000	1200.000	628.551	0	0.0000	993.0000000	993.0000000
2463	408.000	1200.000	628.551	0	0.0000	993.0000000	993.0000000
2463	408.000	1200.000	628.551	0	0.0000	993.0000000	993.0000000
2464	408.000	1200.000	633.000	1	0.0000	1.3166146	1.2743496
2464	408.000	1200.000	633.000	3	0.0000	1.3649263	1.3294005
2464	408.000	1200.000	633.000	3	0.2957	1.3648638	1.3639797
2465	424.000	1200.000	588.530	1	0.0000	1.9569035	1.9480111
2465	424.000	1200.000	588.530	3	0.0000	1.9685648	1.9581951
2465	424.000	1200.000	588.530	3	0.0128	1.9685926	1.9587102
2466	424.000	1200.000	592.977	1	0.0000	1.7253371	1.7126427
2466	424.000	1200.000	592.977	3	0.0000	1.7424850	1.7289297
2466	424.000	1200.000	592.977	3	0.2776	1.7435734	1.7445990
2467	424.000	1200.000	597.424	1	0.0000	1.5536292	1.5372520
2467	424.000	1200.000	597.424	3	0.0000	1.5743626	1.5586033
2467	424.000	1200.000	597.424	3	0.2909	1.5758973	1.5772245
2468	424.000	1200.000	601.871	1	0.0000	1.4419231	1.4217503
2468	424.000	1200.000	601.871	3	0.0000	1.4656955	1.4474076
2468	424.000	1200.000	601.871	3	0.2958	1.4676715	1.4691180
2469	424.000	1200.000	606.318	1	0.0000	1.3947259	1.3697088
2469	424.000	1200.000	606.318	3	0.0000	1.4175099	1.3974743
2469	424.000	1200.000	606.318	3	0.2843	1.4197550	1.4197521
2470	424.000	1200.000	610.765	1	0.0000	1.3758974	1.3471852
2470	424.000	1200.000	610.765	3	0.0000	1.3999926	1.3781434
2470	424.000	1200.000	610.765	3	0.2748	1.4023782	1.4008738
2471	424.000	1200.000	615.212	1	0.0000	1.3534589	1.3216062
2471	424.000	1200.000	615.212	3	0.0000	1.3809823	1.3569383
2471	424.000	1200.000	615.212	3	0.2681	1.3832760	1.3808181
2472	424.000	1200.000	619.659	1	0.0000	1.3307336	1.2961134
2472	424.000	1200.000	619.659	3	0.0000	1.3627544	1.3362622
2472	424.000	1200.000	619.659	3	0.2653	1.3648663	1.3618832
2473	424.000	1200.000	624.106	1	0.0000	1.3094865	1.2723063
2473	424.000	1200.000	624.106	3	0.0000	1.3466698	1.3176136
2473	424.000	1200.000	624.106	3	0.2649	1.3485646	1.3454222
2474	424.000	1200.000	628.553	1	0.0000	1.2897538	1.2501740

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2474	424.000	1200.000	628.553	3	0.0000	1.3325539	1.3008591
2474	424.000	1200.000	628.553	3	0.2663	1.3342199	1.3312304
2475	424.000	1200.000	633.000	1	0.0000	1.2715617	1.2297158
2475	424.000	1200.000	633.000	3	0.0000	1.3203003	1.2859157
2475	424.000	1200.000	633.000	3	0.2688	1.3217409	1.3191866
2476	440.000	1200.000	588.550	1	0.0000	1.9787609	1.9695325
2476	440.000	1200.000	588.550	3	0.0000	1.9896525	1.9794110
2476	440.000	1200.000	588.550	3	0.0087	1.9896704	1.9797419
2477	440.000	1200.000	592.995	0	0.0000	993.0000000	993.0000000
2477	440.000	1200.000	592.995	0	0.0000	993.0000000	993.0000000
2477	440.000	1200.000	592.995	0	0.0000	993.0000000	993.0000000
2478	440.000	1200.000	597.440	1	0.0000	1.5299980	1.5140478
2478	440.000	1200.000	597.440	3	0.0000	1.5519388	1.5361813
2478	440.000	1200.000	597.440	3	0.2842	1.5537127	1.5553604
2479	440.000	1200.000	601.885	1	0.0000	1.4195161	1.4003743
2479	440.000	1200.000	601.885	3	0.0000	1.4455002	1.4275385
2479	440.000	1200.000	601.885	3	0.2896	1.4478497	1.4498470
2480	440.000	1200.000	606.330	1	0.0000	1.3458746	1.3234674
2480	440.000	1200.000	606.330	3	0.0000	1.3756854	1.3552746
2480	440.000	1200.000	606.330	3	0.2933	1.3785779	1.3808866
2481	440.000	1200.000	610.775	1	0.0000	1.3053451	1.2786256
2481	440.000	1200.000	610.775	3	0.0000	1.3357709	1.3133984
2481	440.000	1200.000	610.775	3	0.2859	1.3388591	1.3403703
2482	440.000	1200.000	615.220	1	0.0000	1.2931411	1.2629079
2482	440.000	1200.000	615.220	3	0.0000	1.3253903	1.3012317
2482	440.000	1200.000	615.220	3	0.2779	1.3286031	1.3289785
2483	440.000	1200.000	619.665	1	0.0000	1.2776162	1.2443810
2483	440.000	1200.000	619.665	3	0.0000	1.3133699	1.2870556
2483	440.000	1200.000	619.665	3	0.2732	1.3165673	1.3162284
2484	440.000	1200.000	624.110	1	0.0000	1.2616088	1.2256730
2484	440.000	1200.000	624.110	3	0.0000	1.3018907	1.2732210
2484	440.000	1200.000	624.110	3	0.2712	1.3050099	1.3043587
2485	440.000	1200.000	628.555	1	0.0000	1.2460316	1.2075963
2485	440.000	1200.000	628.555	3	0.0000	1.2914786	1.2603369
2485	440.000	1200.000	628.555	3	0.2712	1.2944907	1.2938685
2486	440.000	1200.000	633.000	1	0.0000	1.2314408	1.1906424
2486	440.000	1200.000	633.000	3	0.0000	1.2824552	1.2487704
2486	440.000	1200.000	633.000	3	0.2727	1.2853538	1.2850649
2487	456.000	1200.000	588.570	1	0.0000	1.9800695	1.9709934
2487	456.000	1200.000	588.570	3	0.0000	1.9906934	1.9806590
2487	456.000	1200.000	588.570	3	0.0073	1.9907079	1.9809295
2488	456.000	1200.000	593.013	1	0.0000	1.7361885	1.7229184
2488	456.000	1200.000	593.013	3	0.0000	1.7524780	1.7390237
2488	456.000	1200.000	593.013	3	0.2903	1.7536889	1.7550793
2489	456.000	1200.000	597.456	1	0.0000	1.5222321	1.5062699
2489	456.000	1200.000	597.456	3	0.0000	1.5444214	1.5286251
2489	456.000	1200.000	597.456	3	0.2859	1.5463020	1.5482011
2490	456.000	1200.000	601.899	1	0.0000	1.3972729	1.3786276
2490	456.000	1200.000	601.899	3	0.0000	1.4246159	1.4066465
2490	456.000	1200.000	601.899	3	0.2863	1.4271625	1.4295562
2491	456.000	1200.000	606.342	1	0.0000	1.3225522	1.3010273
2491	456.000	1200.000	606.342	3	0.0000	1.3543313	1.3341122
2491	456.000	1200.000	606.342	3	0.2891	1.3575265	1.3603465
2492	456.000	1200.000	610.785	1	0.0000	1.2725845	1.2481717
2492	456.000	1200.000	610.785	3	0.0000	1.3088036	1.2862085
2492	456.000	1200.000	610.785	3	0.2919	1.3126101	1.3158764
2493	456.000	1200.000	615.228	1	0.0000	1.2349550	1.2066636
2493	456.000	1200.000	615.228	3	0.0000	1.2734451	1.2486736
2493	456.000	1200.000	615.228	3	0.2900	1.2775523	1.2808957
2494	456.000	1200.000	619.671	1	0.0000	1.2267001	1.1950922
2494	456.000	1200.000	619.671	3	0.0000	1.2672775	1.2407131
2494	456.000	1200.000	619.671	3	0.2843	1.2715419	1.2740892
2495	456.000	1200.000	624.114	1	0.0000	1.2161432	1.1816168
2495	456.000	1200.000	624.114	3	0.0000	1.2603108	1.2316587
2495	456.000	1200.000	624.114	3	0.2806	1.2646411	1.2667388
2496	456.000	1200.000	628.557	1	0.0000	1.2046014	1.1674438
2496	456.000	1200.000	628.557	3	0.0000	1.2533136	1.2223891
2496	456.000	1200.000	628.557	3	0.2790	1.2576612	1.2596503
2497	456.000	1200.000	633.000	1	0.0000	1.1932467	1.1536264
2497	456.000	1200.000	633.000	3	0.0000	1.2470692	1.2137643
2497	456.000	1200.000	633.000	3	0.2791	1.2514149	1.2536097
2498	472.000	1200.000	588.590	1	0.0000	1.9798567	1.9709741
2498	472.000	1200.000	588.590	3	0.0000	1.9902545	1.9804340
2498	472.000	1200.000	588.590	3	0.0073	1.9902687	1.9806988
2499	472.000	1200.000	593.031	1	0.0000	1.7333937	1.7201806
2499	472.000	1200.000	593.031	3	0.0000	1.7493093	1.7360698
2499	472.000	1200.000	593.031	3	0.2952	1.7505254	1.7520338
2500	472.000	1200.000	597.472	1	0.0000	1.5228577	1.5066676
2500	472.000	1200.000	597.472	3	0.0000	1.5445480	1.5288921

2500	472.000	1200.000	597.472	3	0.2928	1.5464625	1.5486284
2501	472.000	1200.000	601.913	1	0.0000	1.3875921	1.3690383
2501	472.000	1200.000	601.913	3	0.0000	1.4153314	1.3973400
2501	472.000	1200.000	601.913	3	0.2884	1.4179869	1.4206868
2502	472.000	1200.000	606.354	1	0.0000	1.3032027	1.2821973
2502	472.000	1200.000	606.354	3	0.0000	1.3363271	1.3160892
2502	472.000	1200.000	606.354	3	0.2884	1.3397212	1.3430014
2503	472.000	1200.000	610.795	1	0.0000	1.2503532	1.2266329
2503	472.000	1200.000	610.795	3	0.0000	1.2883415	1.2658629
2503	472.000	1200.000	610.795	3	0.2889	1.2924330	1.2962250
2504	472.000	1200.000	615.236	1	0.0000	1.2134445	1.1870353
2504	472.000	1200.000	615.236	3	0.0000	1.2562119	1.2313737
2504	472.000	1200.000	615.236	3	0.2906	1.2609509	1.2652458
2505	472.000	1200.000	619.677	1	0.0000	1.1782908	1.1485558
2505	472.000	1200.000	619.677	3	0.0000	1.2249369	1.1976808
2505	472.000	1200.000	619.677	3	0.2955	1.2302199	1.2355684
2506	472.000	1200.000	624.118	1	0.0000	1.1730130	1.1400890
2506	472.000	1200.000	624.118	3	0.0000	1.2219828	1.1929628
2506	472.000	1200.000	624.118	3	0.2914	1.2274826	1.2323958
2507	472.000	1200.000	628.559	1	0.0000	1.1655269	1.1297877
2507	472.000	1200.000	628.559	3	0.0000	1.2181833	1.1871329
2507	472.000	1200.000	628.559	3	0.2886	1.2238308	1.2285515
2508	472.000	1200.000	633.000	1	0.0000	1.1572533	1.1189275
2508	472.000	1200.000	633.000	3	0.0000	1.2144198	1.1811793
2508	472.000	1200.000	633.000	3	0.2872	1.2201783	1.2249839
2509	488.000	1200.000	588.610	1	0.0000	1.9796440	1.9709548
2509	488.000	1200.000	588.610	3	0.0000	1.9898158	1.9802091
2509	488.000	1200.000	588.610	3	0.0073	1.9898296	1.9804683
2510	488.000	1200.000	593.049	1	0.0000	1.7264817	1.7134861
2510	488.000	1200.000	593.049	3	0.0000	1.7421457	1.7291498
2510	488.000	1200.000	593.049	3	0.2953	1.7433491	1.7448225
2511	488.000	1200.000	597.488	1	0.0000	1.5181006	1.5019579
2511	488.000	1200.000	597.488	3	0.0000	1.5394160	1.5239688
2511	488.000	1200.000	597.488	3	0.2988	1.5413602	1.5437894
2512	488.000	1200.000	601.927	1	0.0000	1.3851804	1.3664935
2512	488.000	1200.000	601.927	3	0.0000	1.4125315	1.3946837
2512	488.000	1200.000	601.927	3	0.2949	1.4152464	1.4183215
2513	488.000	1200.000	606.366	1	0.0000	1.2942400	1.2733589
2513	488.000	1200.000	606.366	3	0.0000	1.3277415	1.3075061
2513	488.000	1200.000	606.366	3	0.2911	1.3312499	1.3348767
2514	488.000	1200.000	610.805	1	0.0000	1.2340486	1.2108441
2514	488.000	1200.000	610.805	3	0.0000	1.2732603	1.2507577
2514	488.000	1200.000	610.805	3	0.2901	1.2775613	1.2818596
2515	488.000	1200.000	615.244	1	0.0000	1.1942289	1.1684991
2515	488.000	1200.000	615.244	3	0.0000	1.2385173	1.2137246
2515	488.000	1200.000	615.244	3	0.2908	1.2435699	1.2484741
2516	488.000	1200.000	619.683	1	0.0000	1.1658209	1.1375345
2516	488.000	1200.000	619.683	3	0.0000	1.2151400	1.1880050
2516	488.000	1200.000	619.683	3	0.2916	1.2208882	1.2263729
2517	488.000	1200.000	624.122	1	0.0000	1.1373174	1.1062520
2517	488.000	1200.000	624.122	3	0.0000	1.1918337	1.1621986
2517	488.000	1200.000	624.122	3	0.2983	1.1983200	1.2053042
2518	488.000	1200.000	628.561	1	0.0000	1.1287244	1.0945574
2518	488.000	1200.000	628.561	3	0.0000	1.1860974	1.1545764
2518	488.000	1200.000	628.561	3	0.2979	1.1929525	1.2002554
2519	488.000	1200.000	633.000	1	0.0000	1.1234747	1.0865642
2519	488.000	1200.000	633.000	3	0.0000	1.1845682	1.1510778
2519	488.000	1200.000	633.000	3	0.2957	1.1916568	1.1990139
2520	504.000	1200.000	588.630	1	0.0000	1.9794315	1.9709355
2520	504.000	1200.000	588.630	3	0.0000	1.9893772	1.9799843
2520	504.000	1200.000	588.630	3	0.0073	1.9893907	1.9802378
2521	504.000	1200.000	593.067	1	0.0000	1.7193330	1.7065552
2521	504.000	1200.000	593.067	3	0.0000	1.7347447	1.7219925
2521	504.000	1200.000	593.067	3	0.2955	1.7359354	1.7373744
2522	504.000	1200.000	597.504	1	0.0000	1.5098397	1.4939378
2522	504.000	1200.000	597.504	3	0.0000	1.5308958	1.5156951
2522	504.000	1200.000	597.504	3	0.2991	1.5328307	1.5352241
2523	504.000	1200.000	601.941	1	0.0000	1.3795365	1.3609358
2523	504.000	1200.000	601.941	3	0.0000	1.4065501	1.3889088
2523	504.000	1200.000	601.941	3	0.3012	1.4093207	1.4127735
2524	504.000	1200.000	606.378	1	0.0000	1.2907473	1.2697986
2524	504.000	1200.000	606.378	3	0.0000	1.3239050	1.3038260
2524	504.000	1200.000	606.378	3	0.2980	1.3275041	1.3316427
2525	504.000	1200.000	610.815	0	0.0000	993.0000000	993.0000000
2525	504.000	1200.000	610.815	0	0.0000	993.0000000	993.0000000
2525	504.000	1200.000	610.815	0	0.0000	993.0000000	993.0000000
2526	504.000	1200.000	615.252	1	0.0000	1.1807688	1.1555304
2526	504.000	1200.000	615.252	3	0.0000	1.2261023	1.2012926
2526	504.000	1200.000	615.252	3	0.2931	1.2313710	1.2368114

2527	504.000	1200.000	619.689	1	0.0000	1.1495053	1.1218960
2527	504.000	1200.000	619.689	3	0.0000	1.2002137	1.1730984
2527	504.000	1200.000	619.689	3	0.2931	1.2062771	1.2124006
2528	504.000	1200.000	624.126	1	0.0000	1.1270223	1.0969626
2528	504.000	1200.000	624.126	3	0.0000	1.1829360	1.1534975
2528	504.000	1200.000	624.126	3	0.2933	1.1897388	1.1965037
2529	504.000	1200.000	628.563	1	0.0000	1.1083492	1.0759407
2529	504.000	1200.000	628.563	3	0.0000	1.1699120	1.1380919
2529	504.000	1200.000	628.563	3	0.2946	1.1773894	1.1849780
2530	504.000	1200.000	633.000	1	0.0000	1.0919810	1.0565848
2530	504.000	1200.000	633.000	3	0.0000	1.1576248	1.1235793
2530	504.000	1200.000	633.000	3	0.3030	1.1658923	1.1754498
2531	520.000	1200.000	588.650	1	0.0000	1.9792190	1.9709162
2531	520.000	1200.000	588.650	3	0.0000	1.9889389	1.9797595
2531	520.000	1200.000	588.650	3	0.0073	1.9889520	1.9800074
2532	520.000	1200.000	593.085	1	0.0000	1.7119362	1.6993768
2532	520.000	1200.000	593.085	3	0.0000	1.7270949	1.7145865
2532	520.000	1200.000	593.085	3	0.2957	1.7282730	1.7296778
2533	520.000	1200.000	597.520	1	0.0000	1.5013891	1.4857282
2533	520.000	1200.000	597.520	3	0.0000	1.5221848	1.5072304
2533	520.000	1200.000	597.520	3	0.2993	1.5241090	1.5264555
2534	520.000	1200.000	601.955	1	0.0000	1.3716163	1.3532632
2534	520.000	1200.000	601.955	3	0.0000	1.3983593	1.3809618
2534	520.000	1200.000	601.955	3	0.3023	1.4011316	1.4045950
2535	520.000	1200.000	606.390	1	0.0000	1.2850385	1.2642060
2535	520.000	1200.000	606.390	3	0.0000	1.3178775	1.2980074
2535	520.000	1200.000	606.390	3	0.3050	1.3215657	1.3262262
2536	520.000	1200.000	610.825	1	0.0000	1.2227118	1.1996054
2536	520.000	1200.000	610.825	3	0.0000	1.2618393	1.2395372
2536	520.000	1200.000	610.825	3	0.3012	1.2663893	1.2717537
2537	520.000	1200.000	615.260	1	0.0000	1.1751524	1.1499679
2537	520.000	1200.000	615.260	3	0.0000	1.2205412	1.1958015
2537	520.000	1200.000	615.260	3	0.2992	1.2259816	1.2321093
2538	520.000	1200.000	619.695	1	0.0000	1.1390642	1.1118492
2538	520.000	1200.000	619.695	3	0.0000	1.1905390	1.1634246
2538	520.000	1200.000	619.695	3	0.2962	1.1968173	1.2034955
2539	520.000	1200.000	624.130	1	0.0000	1.1136670	1.0842150
2539	520.000	1200.000	624.130	3	0.0000	1.1707556	1.1413228
2539	520.000	1200.000	624.130	3	0.2958	1.1778666	1.1852918
2540	520.000	1200.000	628.565	1	0.0000	1.0949581	1.0631951
2540	520.000	1200.000	628.565	3	0.0000	1.1574581	1.1257023
2540	520.000	1200.000	628.565	3	0.2953	1.1653473	1.1734513
2541	520.000	1200.000	633.000	1	0.0000	1.0799121	1.0458603
2541	520.000	1200.000	633.000	3	0.0000	1.1480530	1.1139511
2541	520.000	1200.000	633.000	3	0.2950	1.1566326	1.1653952

SUMMARY OF MINIMUM FACTORS OF SAFETY

MOMENT EQUILIBRIUM: FELLENIUS OR ORDINARY METHOD
520.0000=X-COOR. 1024.5000=Y-COOR. 457.5000=RADIUS 1.0689407=F.S. 968=SLIP#
MOMENT EQUILIBRIUM: BISHOP SIMPLIFIED METHOD
520.0000=X-COOR. 1200.0000=Y-COOR. 633.0000=RADIUS 1.1480530=F.S. 2541=SLIP# ←
FORCE EQUILIBRIUM: JANBU SIMPLIFIED METHOD (NO fo FACTOR)
520.0000=X-COOR. 1146.0000=Y-COOR. 579.0000=RADIUS 1.1133587=F.S. 2057=SLIP#
MOMENT AND FORCE EQUILIBRIUM: MORGENSTERN-PRICE METHOD
520.0000=X-COOR. 1200.0000=Y-COOR. 633.0000=RADIUS 1.1566326=F.S. 2541=SLIP#

NORMAL TERMINATION OF SLOPE

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DETAILED INFORMATION FOR THE POTENTIAL SLIP SURFACE (MIN F.S.)

DATESTAMP 9/11/2006
TIMESTAMP 11:14:35 AM

Center_X	Center_Y	Radius	Slip_Surface	Method
5.200000e+002	1.200000e+003	6.330000e+002	2541	3

← LOCATION OF MIN. F.S. CIRCLE

SL#	X_Left	Y_L_Top	Y_L_Bottom	X_Right	Y_R_Top	Y_R_Bottom	Mid_Height
1	2.546823e+002	6.252866e+002	6.252866e+002	2.713314e+002	6.245277e+002	6.178892e+002	3.390979e+000
2	2.713314e+002	6.245277e+002	6.178892e+002	2.879806e+002	6.237689e+002	6.110552e+002	9.745249e+000
3	2.879806e+002	6.237689e+002	6.110552e+002	3.047928e+002	6.230026e+002	6.047061e+002	1.557330e+001
4	3.047928e+002	6.230026e+002	6.047061e+002	3.248964e+002	6.212533e+002	5.978176e+002	2.071244e+001
5	3.248964e+002	6.212533e+002	5.978176e+002	3.450000e+002	6.200000e+002	5.916711e+002	2.597354e+001
6	3.450000e+002	6.200000e+002	5.916711e+002	3.625000e+002	6.198077e+002	5.869072e+002	3.068199e+001
7	3.625000e+002	6.198077e+002	5.869072e+002	3.800000e+002	6.196154e+002	5.826759e+002	3.498582e+001
8	3.800000e+002	6.196154e+002	5.826759e+002	3.975000e+002	6.194231e+002	5.789664e+002	3.876267e+001
9	3.975000e+002	6.194231e+002	5.789664e+002	4.150000e+002	6.192308e+002	5.757693e+002	4.202263e+001
10	4.150000e+002	6.192308e+002	5.757693e+002	4.325000e+002	6.190385e+002	5.730768e+002	4.477424e+001
11	4.325000e+002	6.190385e+002	5.730768e+002	4.500000e+002	6.188462e+002	5.708824e+002	4.702466e+001
12	4.500000e+002	6.188462e+002	5.708824e+002	4.675000e+002	6.186538e+002	5.691809e+002	4.877971e+001
13	4.675000e+002	6.186538e+002	5.691809e+002	4.850000e+002	6.184615e+002	5.679684e+002	5.004398e+001
14	4.850000e+002	6.184615e+002	5.679684e+002	5.025000e+002	6.182692e+002	5.672419e+002	5.082087e+001
15	5.025000e+002	6.182692e+002	5.672419e+002	5.200000e+002	6.180769e+002	5.670000e+002	5.111260e+001
16	5.200000e+002	6.180769e+002	5.670000e+002	5.365628e+002	6.178949e+002	5.672167e+002	5.093174e+001
17	5.365628e+002	6.178949e+002	5.672167e+002	5.531256e+002	6.177129e+002	5.678673e+002	5.031617e+001
18	5.531256e+002	6.177129e+002	5.678673e+002	5.696884e+002	6.175309e+002	5.689532e+002	4.926615e+001
19	5.696884e+002	6.175309e+002	5.689532e+002	5.862512e+002	6.173489e+002	5.704765e+002	4.777988e+001
20	5.862512e+002	6.173489e+002	5.704765e+002	6.028140e+002	6.171669e+002	5.724406e+002	4.585464e+001
21	6.028140e+002	6.171669e+002	5.724406e+002	6.193768e+002	6.169849e+002	5.748494e+002	4.348678e+001
22	6.193768e+002	6.169849e+002	5.748494e+002	6.359396e+002	6.168029e+002	5.777083e+002	4.067163e+001
23	6.359396e+002	6.168029e+002	5.777083e+002	6.525024e+002	6.166209e+002	5.810233e+002	3.740351e+001
24	6.525024e+002	6.166209e+002	5.810233e+002	6.690653e+002	6.164388e+002	5.848020e+002	3.367562e+001
25	6.690653e+002	6.164388e+002	5.848020e+002	6.856281e+002	6.162568e+002	5.890529e+002	2.947999e+001
26	6.856281e+002	6.162568e+002	5.890529e+002	7.021909e+002	6.160748e+002	5.937859e+002	2.480735e+001
27	7.021909e+002	6.160748e+002	5.937859e+002	7.187537e+002	6.158928e+002	5.990125e+002	1.964707e+001
28	7.187537e+002	6.158928e+002	5.990125e+002	7.353165e+002	6.157108e+002	6.047456e+002	1.398697e+001
29	7.353165e+002	6.157108e+002	6.047456e+002	7.518793e+002	6.155288e+002	6.110000e+002	7.813176e+000
30	7.518793e+002	6.155288e+002	6.110000e+002	7.627805e+002	6.154090e+002	6.154090e+002	2.293855e+000

SL#	L_Load_X	L_Load_Y	A_Load_X	A_Load_Y	P_Load_X	P_Load_Y	A_Modifier	AS_Load_X	AS_Load_Y
1	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
2	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
3	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
4	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
5	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
6	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
7	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
8	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
9	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
10	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
11	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
12	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
13	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
14	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
15	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
16	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000

17	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
18	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
19	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
20	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
21	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
22	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
23	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
24	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
25	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
26	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
27	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
28	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
29	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000
30	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	1.0000e+000	0.0000e+000	0.0000e+000

SL#	Weight	Pore_Water	Alpha	Force Fn.	Seismic_F	Seismic_Y	Pore_Air	Phi_B	Liquified
1	5.8406e+003	0.0000e+000	2.3956e+001	1.0276e-001	1.4100e+003	6.2321e+002	0.0000e+000	0.0000e+000	0
2	1.6785e+004	0.0000e+000	2.2317e+001	2.0443e-001	4.0522e+003	6.1928e+002	0.0000e+000	0.0000e+000	0
3	2.7892e+004	3.6056e+003	2.0689e+001	3.0490e-001	6.7336e+003	6.1560e+002	0.0000e+000	0.0000e+000	0
4	4.3124e+004	1.3039e+004	1.8914e+001	4.2063e-001	1.0411e+004	6.1152e+002	0.0000e+000	0.0000e+000	0
5	5.5206e+004	2.1445e+004	1.7001e+001	5.2986e-001	1.3328e+004	6.0764e+002	0.0000e+000	0.0000e+000	0
6	5.7372e+004	2.4648e+004	1.5228e+001	6.1835e-001	1.3851e+004	6.0456e+002	0.0000e+000	0.0000e+000	0
7	6.5772e+004	2.9519e+004	1.3593e+001	6.9961e-001	1.5879e+004	6.0222e+002	0.0000e+000	0.0000e+000	0
8	7.3150e+004	3.3761e+004	1.1968e+001	7.7268e-001	1.7660e+004	6.0014e+002	0.0000e+000	0.0000e+000	0
9	7.9524e+004	3.7406e+004	1.0353e+001	8.3671e-001	1.9198e+004	5.9832e+002	0.0000e+000	0.0000e+000	0
10	8.4912e+004	4.0483e+004	8.7468e+000	8.9096e-001	2.0499e+004	5.9675e+002	0.0000e+000	0.0000e+000	0
11	8.9327e+004	4.3014e+004	7.1472e+000	9.3479e-001	2.1565e+004	5.9543e+002	0.0000e+000	0.0000e+000	0
12	9.2780e+004	4.5017e+004	5.5532e+000	9.6768e-001	2.2399e+004	5.9436e+002	0.0000e+000	0.0000e+000	0
13	9.5281e+004	4.6508e+004	3.9636e+000	9.8925e-001	2.3002e+004	5.9354e+002	0.0000e+000	0.0000e+000	0
14	9.6836e+004	4.7496e+004	2.3769e+000	9.9926e-001	2.3378e+004	5.9295e+002	0.0000e+000	0.0000e+000	0
15	9.7449e+004	4.7988e+004	7.9210e-001	9.9757e-001	2.3526e+004	5.9262e+002	0.0000e+000	0.0000e+000	0
16	9.1941e+004	4.5424e+004	-7.4967e-001	9.8523e-001	2.2196e+004	5.9252e+002	0.0000e+000	0.0000e+000	0
17	9.0853e+004	4.5007e+004	-2.2495e+000	9.6256e-001	2.1933e+004	5.9265e+002	0.0000e+000	0.0000e+000	0
18	8.8966e+004	4.4170e+004	-3.7509e+000	9.2981e-001	2.1478e+004	5.9299e+002	0.0000e+000	0.0000e+000	0
19	8.6278e+004	4.2907e+004	-5.2549e+000	8.8731e-001	2.0829e+004	5.9355e+002	0.0000e+000	0.0000e+000	0
20	8.2784e+004	4.1212e+004	-6.7626e+000	8.3552e-001	1.9985e+004	5.9433e+002	0.0000e+000	0.0000e+000	0
21	7.8476e+004	3.9073e+004	-8.2749e+000	7.7497e-001	1.8945e+004	5.9533e+002	0.0000e+000	0.0000e+000	0
22	7.3347e+004	3.6476e+004	-9.7931e+000	7.0630e-001	1.7707e+004	5.9656e+002	0.0000e+000	0.0000e+000	0
23	6.7386e+004	3.3405e+004	-1.1318e+001	6.3023e-001	1.6268e+004	5.9801e+002	0.0000e+000	0.0000e+000	0
24	6.0580e+004	2.9838e+004	-1.2852e+001	5.4756e-001	1.4625e+004	5.9969e+002	0.0000e+000	0.0000e+000	0
25	5.2915e+004	2.5750e+004	-1.4394e+001	4.5915e-001	1.2775e+004	6.0161e+002	0.0000e+000	0.0000e+000	0
26	4.4374e+004	2.1113e+004	-1.5948e+001	3.6593e-001	1.0713e+004	6.0376e+002	0.0000e+000	0.0000e+000	0
27	3.4937e+004	1.5892e+004	-1.7514e+001	2.6887e-001	8.4343e+003	6.0616e+002	0.0000e+000	0.0000e+000	0
28	2.4581e+004	1.0046e+004	-1.9093e+001	1.6900e-001	5.9344e+003	6.0881e+002	0.0000e+000	0.0000e+000	0
29	1.3283e+004	3.5280e+003	-2.0687e+001	6.7352e-002	3.2067e+003	6.1171e+002	0.0000e+000	0.0000e+000	0
30	2.4238e+003	0.0000e+000	-2.2021e+001	2.6698e-008	5.8514e+002	6.1432e+002	0.0000e+000	0.0000e+000	0

Ordinary_Method_Fm= 1.0799121 Applied_Lambda= 0.0000

SL#	Normal_M	ShearMob	Phi_Angle	Cohesion
1	4.7650e+003	-3.2058e+003	3.6000e+001	0.0000e+000
2	1.3989e+004	-9.4116e+003	3.6000e+001	0.0000e+000
3	2.3714e+004	-1.3529e+004	3.6000e+001	0.0000e+000
4	3.7421e+004	-1.1257e+004	2.6500e+001	0.0000e+000
5	4.8897e+004	-1.2674e+004	2.6500e+001	0.0000e+000
6	5.1719e+004	-1.2499e+004	2.6500e+001	0.0000e+000
7	6.0198e+004	-1.4164e+004	2.6500e+001	0.0000e+000
8	6.7898e+004	-1.5761e+004	2.6500e+001	0.0000e+000
9	7.4779e+004	-1.7255e+004	2.6500e+001	0.0000e+000
10	8.0807e+004	-1.8617e+004	2.6500e+001	0.0000e+000

11	8.5949e+004	-1.9823e+004	2.6500e+001	0.0000e+000
12	9.0177e+004	-2.0850e+004	2.6500e+001	0.0000e+000
13	9.3463e+004	-2.1679e+004	2.6500e+001	0.0000e+000
14	9.5783e+004	-2.2294e+004	2.6500e+001	0.0000e+000
15	9.7114e+004	-2.2681e+004	2.6500e+001	0.0000e+000
16	9.2224e+004	-2.1607e+004	2.6500e+001	0.0000e+000
17	9.1644e+004	-2.1532e+004	2.6500e+001	0.0000e+000
18	9.0181e+004	-2.1243e+004	2.6500e+001	0.0000e+000
19	8.7823e+004	-2.0737e+004	2.6500e+001	0.0000e+000
20	8.4561e+004	-2.0014e+004	2.6500e+001	0.0000e+000
21	8.0386e+004	-1.9074e+004	2.6500e+001	0.0000e+000
22	7.5290e+004	-1.7920e+004	2.6500e+001	0.0000e+000
23	6.9268e+004	-1.6558e+004	2.6500e+001	0.0000e+000
24	6.2315e+004	-1.4995e+004	2.6500e+001	0.0000e+000
25	5.4429e+004	-1.3241e+004	2.6500e+001	0.0000e+000
26	4.5609e+004	-1.1310e+004	2.6500e+001	0.0000e+000
27	3.5855e+004	-9.2169e+003	2.6500e+001	0.0000e+000
28	2.5170e+004	-6.9827e+003	2.6500e+001	0.0000e+000
29	1.3559e+004	-4.6312e+003	2.6500e+001	0.0000e+000
30	2.4663e+003	-1.1387e+003	2.6500e+001	0.0000e+000

Bishop_Method_Fm= 1.1480530 Applied_Lambda= 0.0000

SL#	Normal_M	ShearMob	Phi_Angle	Cohesion	SideLeft	ShearLeft	SideRight	ShearRight
1	4.9887e+003	-3.1571e+003	3.6000e+001	0.0000e+000	0.0000e+000	0.0000e+000	-4.4392e+002	0.0000e+000
2	1.4403e+004	-9.1152e+003	3.6000e+001	0.0000e+000	4.4392e+002	0.0000e+000	-1.2191e+003	0.0000e+000
3	2.4760e+004	-1.3388e+004	3.6000e+001	0.0000e+000	1.2191e+003	0.0000e+000	-3.7071e+003	0.0000e+000
4	4.1370e+004	-1.2304e+004	2.6500e+001	0.0000e+000	3.7071e+003	0.0000e+000	-1.5480e+004	0.0000e+000
5	5.3477e+004	-1.3911e+004	2.6500e+001	0.0000e+000	1.5480e+004	0.0000e+000	-3.0670e+004	0.0000e+000
6	5.5780e+004	-1.3520e+004	2.6500e+001	0.0000e+000	3.0670e+004	0.0000e+000	-4.5663e+004	0.0000e+000
7	6.4043e+004	-1.4993e+004	2.6500e+001	0.0000e+000	4.5663e+004	0.0000e+000	-6.1499e+004	0.0000e+000
8	7.1319e+004	-1.6311e+004	2.6500e+001	0.0000e+000	6.1499e+004	0.0000e+000	-7.7422e+004	0.0000e+000
9	7.7648e+004	-1.7477e+004	2.6500e+001	0.0000e+000	7.7422e+004	0.0000e+000	-9.2771e+004	0.0000e+000
10	8.3066e+004	-1.8493e+004	2.6500e+001	0.0000e+000	9.2771e+004	0.0000e+000	-1.0697e+005	0.0000e+000
11	8.7599e+004	-1.9363e+004	2.6500e+001	0.0000e+000	1.0697e+005	0.0000e+000	-1.1955e+005	0.0000e+000
12	9.1265e+004	-2.0085e+004	2.6500e+001	0.0000e+000	1.1955e+005	0.0000e+000	-1.3008e+005	0.0000e+000
13	9.4078e+004	-2.0659e+004	2.6500e+001	0.0000e+000	1.3008e+005	0.0000e+000	-1.3826e+005	0.0000e+000
14	9.6044e+004	-2.1084e+004	2.6500e+001	0.0000e+000	1.3826e+005	0.0000e+000	-1.4384e+005	0.0000e+000
15	9.7163e+004	-2.1356e+004	2.6500e+001	0.0000e+000	1.4384e+005	0.0000e+000	-1.4663e+005	0.0000e+000
16	9.2215e+004	-2.0321e+004	2.6500e+001	0.0000e+000	1.4663e+005	0.0000e+000	-1.4662e+005	0.0000e+000
17	9.1720e+004	-2.0287e+004	2.6500e+001	0.0000e+000	1.4662e+005	0.0000e+000	-1.4402e+005	0.0000e+000
18	9.0475e+004	-2.0110e+004	2.6500e+001	0.0000e+000	1.4402e+005	0.0000e+000	-1.3887e+005	0.0000e+000
19	8.8461e+004	-1.9783e+004	2.6500e+001	0.0000e+000	1.3887e+005	0.0000e+000	-1.3128e+005	0.0000e+000
20	8.5652e+004	-1.9299e+004	2.6500e+001	0.0000e+000	1.3128e+005	0.0000e+000	-1.2143e+005	0.0000e+000
21	8.2013e+004	-1.8648e+004	2.6500e+001	0.0000e+000	1.2143e+005	0.0000e+000	-1.0958e+005	0.0000e+000
22	7.7507e+004	-1.7819e+004	2.6500e+001	0.0000e+000	1.0958e+005	0.0000e+000	-9.6042e+004	0.0000e+000
23	7.2084e+004	-1.6798e+004	2.6500e+001	0.0000e+000	9.6042e+004	0.0000e+000	-8.1244e+004	0.0000e+000
24	6.5688e+004	-1.5569e+004	2.6500e+001	0.0000e+000	8.1244e+004	0.0000e+000	-6.5686e+004	0.0000e+000
25	5.8252e+004	-1.4115e+004	2.6500e+001	0.0000e+000	6.5686e+004	0.0000e+000	-4.9973e+004	0.0000e+000
26	4.9696e+004	-1.2413e+004	2.6500e+001	0.0000e+000	4.9973e+004	0.0000e+000	-3.4823e+004	0.0000e+000
27	3.9928e+004	-1.0439e+004	2.6500e+001	0.0000e+000	3.4823e+004	0.0000e+000	-2.1077e+004	0.0000e+000
28	2.8836e+004	-8.1604e+003	2.6500e+001	0.0000e+000	2.1077e+004	0.0000e+000	-9.7208e+003	0.0000e+000
29	1.6291e+004	-5.5426e+003	2.6500e+001	0.0000e+000	9.7208e+003	0.0000e+000	-1.8997e+003	0.0000e+000
30	3.1714e+003	-1.3773e+003	2.6500e+001	0.0000e+000	1.8997e+003	0.0000e+000	3.0000e-005	0.0000e+000

Janbu_Method_Ff= 1.1139511 Applied_Lambda= 0.0000

SL#	Normal_F	ShearMob	Phi_Angle	Cohesion	SideLeft	ShearLeft	SideRight	ShearRight
1	4.9520e+003	-3.2298e+003	3.6000e+001	0.0000e+000	0.0000e+000	0.0000e+000	-4.4392e+002	0.0000e+000
2	1.4304e+004	-9.3291e+003	3.6000e+001	0.0000e+000	4.4392e+002	0.0000e+000	-1.2191e+003	0.0000e+000
3	2.4623e+004	-1.3708e+004	3.6000e+001	0.0000e+000	1.2191e+003	0.0000e+000	-3.7071e+003	0.0000e+000

4	4.1246e+004	-1.2625e+004	2.6500e+001	0.0000e+000	3.7071e+003	0.0000e+000	-1.5480e+004	0.0000e+000
5	5.3350e+004	-1.4280e+004	2.6500e+001	0.0000e+000	1.5480e+004	0.0000e+000	-3.0670e+004	0.0000e+000
6	5.5669e+004	-1.3884e+004	2.6500e+001	0.0000e+000	3.0670e+004	0.0000e+000	-4.5663e+004	0.0000e+000
7	6.3933e+004	-1.5403e+004	2.6500e+001	0.0000e+000	4.5663e+004	0.0000e+000	-6.1499e+004	0.0000e+000
8	7.1212e+004	-1.6762e+004	2.6500e+001	0.0000e+000	6.1499e+004	0.0000e+000	-7.7422e+004	0.0000e+000
9	7.7548e+004	-1.7967e+004	2.6500e+001	0.0000e+000	7.7422e+004	0.0000e+000	-9.2771e+004	0.0000e+000
10	8.2976e+004	-1.9019e+004	2.6500e+001	0.0000e+000	9.2771e+004	0.0000e+000	-1.0697e+005	0.0000e+000
11	8.7521e+004	-1.9921e+004	2.6500e+001	0.0000e+000	1.0697e+005	0.0000e+000	-1.1955e+005	0.0000e+000
12	9.1202e+004	-2.0671e+004	2.6500e+001	0.0000e+000	1.1955e+005	0.0000e+000	-1.3008e+005	0.0000e+000
13	9.4031e+004	-2.1271e+004	2.6500e+001	0.0000e+000	1.3008e+005	0.0000e+000	-1.3826e+005	0.0000e+000
14	9.6015e+004	-2.1716e+004	2.6500e+001	0.0000e+000	1.3826e+005	0.0000e+000	-1.4384e+005	0.0000e+000
15	9.7153e+004	-2.2005e+004	2.6500e+001	0.0000e+000	1.4384e+005	0.0000e+000	-1.4663e+005	0.0000e+000
16	9.2224e+004	-2.0947e+004	2.6500e+001	0.0000e+000	1.4663e+005	0.0000e+000	-1.4662e+005	0.0000e+000
17	9.1747e+004	-2.0920e+004	2.6500e+001	0.0000e+000	1.4662e+005	0.0000e+000	-1.4402e+005	0.0000e+000
18	9.0521e+004	-2.0746e+004	2.6500e+001	0.0000e+000	1.4402e+005	0.0000e+000	-1.3887e+005	0.0000e+000
19	8.8526e+004	-2.0418e+004	2.6500e+001	0.0000e+000	1.3887e+005	0.0000e+000	-1.3128e+005	0.0000e+000
20	8.5733e+004	-1.9927e+004	2.6500e+001	0.0000e+000	1.3128e+005	0.0000e+000	-1.2143e+005	0.0000e+000
21	8.2111e+004	-1.9263e+004	2.6500e+001	0.0000e+000	1.2143e+005	0.0000e+000	-1.0958e+005	0.0000e+000
22	7.7619e+004	-1.8415e+004	2.6500e+001	0.0000e+000	1.0958e+005	0.0000e+000	-9.6042e+004	0.0000e+000
23	7.2209e+004	-1.7368e+004	2.6500e+001	0.0000e+000	9.6042e+004	0.0000e+000	-8.1244e+004	0.0000e+000
24	6.5822e+004	-1.6106e+004	2.6500e+001	0.0000e+000	8.1244e+004	0.0000e+000	-6.5686e+004	0.0000e+000
25	5.8390e+004	-1.4609e+004	2.6500e+001	0.0000e+000	6.5686e+004	0.0000e+000	-4.9973e+004	0.0000e+000
26	4.9834e+004	-1.2855e+004	2.6500e+001	0.0000e+000	4.9973e+004	0.0000e+000	-3.4823e+004	0.0000e+000
27	4.0058e+004	-1.0816e+004	2.6500e+001	0.0000e+000	3.4823e+004	0.0000e+000	-2.1077e+004	0.0000e+000
28	2.8950e+004	-8.4609e+003	2.6500e+001	0.0000e+000	2.1077e+004	0.0000e+000	-9.7208e+003	0.0000e+000
29	1.6376e+004	-5.7505e+003	2.6500e+001	0.0000e+000	9.7208e+003	0.0000e+000	-1.8997e+003	0.0000e+000
30	3.1944e+003	-1.4298e+003	2.6500e+001	0.0000e+000	1.8997e+003	0.0000e+000	3.0000e-005	0.0000e+000

M-P_Method_Fm= 1.1566326 Applied_Lambda= 0.2950

SL#	Normal_M	ShearMob	Phi_Angle	Cohesion	SideLeft	ShearLeft	SideRight	ShearRight
1	4.9812e+003	-3.1289e+003	3.6000e+001	0.0000e+000	0.0000e+000	0.0000e+000	-5.9312e+002	1.7978e+001
2	1.4346e+004	-9.0115e+003	3.6000e+001	0.0000e+000	5.9312e+002	-1.7978e+001	-1.8144e+003	1.0940e+002
3	2.4494e+004	-1.3121e+004	3.6000e+001	0.0000e+000	1.8144e+003	-1.0940e+002	-5.0114e+003	4.5070e+002
4	3.9813e+004	-1.1541e+004	2.6500e+001	0.0000e+000	5.0114e+003	-4.5070e+002	-1.7487e+004	2.1696e+003
5	5.0646e+004	-1.2588e+004	2.6500e+001	0.0000e+000	1.7487e+004	-2.1696e+003	-3.3670e+004	5.2622e+003
6	5.2252e+004	-1.1899e+004	2.6500e+001	0.0000e+000	3.3670e+004	-5.2622e+003	-4.9844e+004	9.0909e+003
7	5.9615e+004	-1.2973e+004	2.6500e+001	0.0000e+000	4.9844e+004	-9.0909e+003	-6.7209e+004	1.3869e+004
8	6.6184e+004	-1.3977e+004	2.6500e+001	0.0000e+000	6.7209e+004	-1.3869e+004	-8.5011e+004	1.9375e+004
9	7.2076e+004	-1.4945e+004	2.6500e+001	0.0000e+000	8.5011e+004	-1.9375e+004	-1.0256e+005	2.5310e+004
10	7.7378e+004	-1.5904e+004	2.6500e+001	0.0000e+000	1.0256e+005	-2.5310e+004	-1.1920e+005	3.1325e+004
11	8.2149e+004	-1.6870e+004	2.6500e+001	0.0000e+000	1.1920e+005	-3.1325e+004	-1.3434e+005	3.7042e+004
12	8.6416e+004	-1.7846e+004	2.6500e+001	0.0000e+000	1.3434e+005	-3.7042e+004	-1.4744e+005	4.2084e+004
13	9.0175e+004	-1.8823e+004	2.6500e+001	0.0000e+000	1.4744e+005	-4.2084e+004	-1.5800e+005	4.6104e+004
14	9.3390e+004	-1.9783e+004	2.6500e+001	0.0000e+000	1.5800e+005	-4.6104e+004	-1.6560e+005	4.8809e+004
15	9.5993e+004	-2.0693e+004	2.6500e+001	0.0000e+000	1.6560e+005	-4.8809e+004	-1.6989e+005	4.9989e+004
16	9.2606e+004	-2.0338e+004	2.6500e+001	0.0000e+000	1.6989e+005	-4.9989e+004	-1.7067e+005	4.9598e+004
17	9.3602e+004	-2.0948e+004	2.6500e+001	0.0000e+000	1.7067e+005	-4.9598e+004	-1.6816e+005	4.7743e+004
18	9.3787e+004	-2.1388e+004	2.6500e+001	0.0000e+000	1.6816e+005	-4.7743e+004	-1.6234e+005	4.4522e+004
19	9.3042e+004	-2.1611e+004	2.6500e+001	0.0000e+000	1.6234e+005	-4.4522e+004	-1.5333e+005	4.0129e+004
20	9.1249e+004	-2.1569e+004	2.6500e+001	0.0000e+000	1.5333e+005	-4.0129e+004	-1.4136e+005	3.4838e+004
21	8.8297e+004	-2.1219e+004	2.6500e+001	0.0000e+000	1.4136e+005	-3.4838e+004	-1.2683e+005	2.8991e+004
22	8.4091e+004	-2.0525e+004	2.6500e+001	0.0000e+000	1.2683e+005	-2.8991e+004	-1.1023e+005	2.2964e+004
23	7.8558e+004	-1.9464e+004	2.6500e+001	0.0000e+000	1.1023e+005	-2.2964e+004	-9.2199e+004	1.7139e+004
24	7.1654e+004	-1.8025e+004	2.6500e+001	0.0000e+000	9.2199e+004	-1.7139e+004	-7.3494e+004	1.1870e+004
25	6.3361e+004	-1.6212e+004	2.6500e+001	0.0000e+000	7.3494e+004	-1.1870e+004	-5.4964e+004	7.4438e+003
26	5.3691e+004	-1.4043e+004	2.6500e+001	0.0000e+000	5.4964e+004	-7.4438e+003	-3.7539e+004	4.0517e+003
27	4.2681e+004	-1.1548e+004	2.6500e+001	0.0000e+000	3.7539e+004	-4.0517e+003	-2.2204e+004	1.7609e+003
28	3.0384e+004	-8.7671e+003	2.6500e+001	0.0000e+000	2.2204e+004	-1.7609e+003	-9.9779e+003	4.9737e+002
29	1.6860e+004	-5.7469e+003	2.6500e+001	0.0000e+000	9.9779e+003	-4.9737e+002	-1.8946e+003	3.7639e+001
30	3.2158e+003	-1.3862e+003	2.6500e+001	0.0000e+000	1.8946e+003	-3.7639e+001	3.0000e-005	-2.3625e-013

Slip_Surface_Summary

Analysis	Volume	Weight	Res_Moment	Act_Moment	Res_Force	Act_Force	FOS
Ordinary Method	1.7327e+004	2.0111e+006	3.1164e+008	2.8858e+008			1.0799121
Bishop Method	1.7327e+004	2.0111e+006	3.3131e+008	2.8858e+008			1.1480530
Janbu Method	1.7327e+004	2.0111e+006			5.1313e+005	4.6064e+005	1.1139511
M-P Method	1.7327e+004	2.0111e+006	3.3378e+008	2.8858e+008	5.1693e+005	4.4357e+005	1.1566326

NMC
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Fleet Modification Process

External Design Document Suitability Review Checklist

External Design Document Being Reviewed:

Title: **Re-evaluation of Slope Stability under ISFSI Pad for Revised load Due to 24PTH System**

Number: EA-EC7408-02 Rev: 0 Date: 10/19/06

This design document was received from:

Organization Name: Sargent & Lundy PO or DIA Reference: Contract 985, Rel 28

The purpose of the suitability review is to ensure that a calculation, analysis or other design document provided by an External Design Organization complies with the conditions of the purchase order and/or Design Interface Agreement (DIA) and is appropriate for its intended use. The suitability review does not serve as an independent verification. Independent verification of the design document supplied by the External Design Organization should be evident in the document, if required.

The reviewer should use the criteria below as a guide to assess the overall quality, completeness and usefulness of the design document. The reviewer is not required to check calculations in detail.

REVIEW		**Check**
1.	Design inputs correspond to those that were transmitted to the External Design Organization.	☒
2.	Assumptions are described and reasonable.	☒
3.	Applicable codes, standards and regulations are identified and met.	☒
4.	Applicable construction and operating experience is considered.	☒
5.	Applicable structure(s), system(s), and component(s) are listed.	☒
6.	Formulae and equations are documented. Unusual symbols are defined.	☒
7.	Acceptance criteria are identified, adequate and satisfied.	☒
8.	Results are reasonable compared to inputs.	☒
9.	Source documents are referenced.	☒
10.	The document is appropriate for its intended use.	☒
11.	The document complies with the terms of the Purchase Order and/or DIA.	☒
12.	Inputs, assumptions, outputs, etc. which could affect plant operation are enforced by adequate procedural controls. List any affected procedures.	☒
13.	Plant impact has been identified and either implemented or controlled. (e.g., For piping analyses, the piping and support database is updated or a tracking item has been initiated.)	☒

Completed by: _____ Date: 10/19/06