EVALUATION OF GEOTEXTILE REINFORCED
EMBANKMENTS ON THE FARMER'S LOOP ROAD IN
FAIRBANKS, ALASKA

A SPECIAL RESEARCH PROBLEM
PRESENTED TO
THE FACULTY OF THE SCHOOL OF CIVIL ENGINEERING

BY

GEORGE PAPAIOANOU

IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE





JUNE, 1986

GEORGIA INSTITUTE OF TECHNOLOGY
A UNIT OF THE UNIVERSITY SYSTEM OF GEORGIA
SCHOOL OF CIVIL ENGINEERING
ATLANTA, GEORGIA 30332

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A-1

QUALITY INSPECTED 3

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# CHAPTER I

# INTRODUCTION

Geotextiles have increasingly become an integral part of many civil engineering applications in recent years. Slope reinforcement, retaining walls, road construction, and drainage nets are a few among the many applications of these materials (3,12,16,19). One area which has been receiving more and more attention is the reinforcement of road embankments overlying soft subgrade soils (3,12,16,18,19). Much of the literature relating to the effect of geotextiles upon the performance of these embankments is conceptual in nature and have not been fully supported by experimental and theoretical studies (16). These analyses have primarily focused upon an embankment overlying one particular soft/weak subgrade soil. The analysis of an embankment overlying more than one subgrade soil has generally not been required, but has direct application to certain areas of the country.

## 1.1 Statement of the Problem

The effect of frozen ground on engineering considerations must allow deviations to conventional design practices. Normally one of two broad principles can be followed based on whether or not the frozen foundation soils are thaw-stable or thaw-unstable (14). When foundation soils are thaw-stable, conventional design and construction methods may be used (14). Where foundations soils are thaw-unstable, conventional design and construction methods must be modified to attain sufficient functional and economic use of the facility. Previous studies by the Alaska Department of Highways of roadways constructed over permafrost have shown that progressively deeper thawing generally occurs beneath annually snow covered roadway side slopes (9). The insulating effect of snow-covered side slopes prevents the complete refreeze of the underlying soils during the winter which results in a progressive propagation of unfrozen ground or talik to occur annually (22). The degradation of this talik can be further accentuated by drifted or plowed snow accumulating on the road- way side slopes (14). The resulting decrease in shear strength and loss of bearing capacity results in consolidation and slope settlement in the thaw-unstable permafrost or talik (9,22). The thaw settlement which results due to these effects usually show up as lateral cracking on the wearing surface of the roadway (22). (See Figure 1.1)

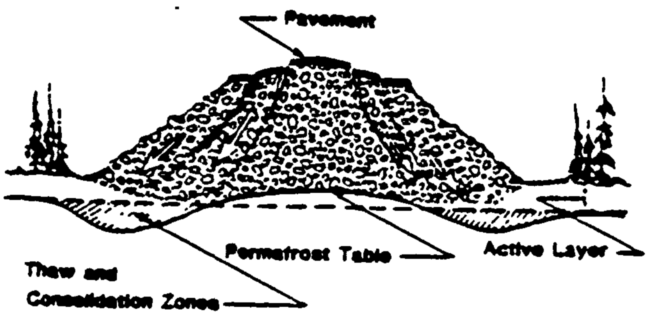



Figure 1.1 Typical roadway distress from thaw beneath slopes.

Methods such as the use of a peat underlay, placement of insulation layers within the embankment, toe berms, and air duct systems have been used to try and prevent and/or maintain the foundation soils in a frozen state (9,10,22). These methods have aided in the short term maintenance of roadway integrity but have not solved the problems of long term thaw related settlements.

The use of geotextiles as a means of facilitating the construction of embankments on soft/weak foundations has gained in popularity (16). The mechanisms by which the fabric affects the behavior and performance of conventional aggregate-fabric-subgrade systems include the following:

(1) Separation of the aggregate and subgrade soil

(2) Provision of a filter medium to facilitate drainage

(3) Confinement and reinforcement of the aggregate layer

(4) Alteration of the failure mechanism in the subgrade soil (19)

The application of these principles in permafrost regions take on a slightly altered meaning. Separation of the aggregate and subgrade soil would primarily be affected over the talik zones. Although frozen soil may exhibit deformation and separation upon loading, the area of greatest concern would be over the thaw-unstable talik zone. The fabric overlying the thaw zone would prevent the aggregate and thawed subgrade soil from intermixing, which would tend to reduce the effective depth and load distributing capability of the aggregate fill (19).

The presence of a geotextile fabric may induce the formation of a natural filter in the subgrade soil. This process is initiated with the migration of some soil particles through the fabric as a result of fluid flow. Creation of the filter depends upon the soil grain size distribution, the porosity, opening size and opening size distribution of the geotextile, and the hydraulic gradient of the flow (19). The hydraulic gradient may be influenced by the in-situ stress state of the fabric, where tensile and compressive stresses may alter the pore size distribution in a non-woven fabric (19). The filter induced by the fabric typically maintains the separation of the aggregate and subgrade soil while permitting the free flow of water (19). When the frozen soil under the toe of the embankment thaws, the resulting water is not able to drain off properly. The surrounding permafrost does not lend itself as an adequate drainage boundary so the water will tend to flow through the fabric as the outer edge of the embankment consolidates due to the loss of bearing capacity in the soil. This will result in differential settlement in the embankment causing longitudinal cracks in the pavement. This has been one of the primary failure mechanisms of roadway embankments constructed in these areas.

The primary function of the geotextile is provide tension reinforcement, transmitted from the adjacent soil by soil-geotextile shear stress. The reinforcement tensile forces resulting from shear load transfer transmit soil loads from one location (unstable zone) in a soil mass to another location (stable zone) (3). Granular materials have zero shear strength when no confinement is provided. When confined, granular materials furnish excellent load bearing capacity. The load bearing capacity of the aggregate in an embankment is limited by the shear stress which develop at the aggregate-subgrade interface (19). A layer of fabric at this location can restrain interfacial aggregate movement thereby increasing the interfacial shear strength and corresponding load bearing capactiy of the aggregate layers (19). The load bearing capacity of the aggregate is reduced differentially when talik zones develop at the toe of roadway embankments. Additional shear stress induced by the geotextile between the aggregate and talik zone provides confinement for the aggregate, thereby increasing the load bearing capacity.

## 1.2 Objective

The primary objective of this research paper is to estimate the required geotextile properties for reinforcement of the Farmers Loop Road in Fairbanks, Alaska so that surface deformations can be kept within tolerable levels. Numerical analyses are used to evaluate the effect of tensile strength, elastic modulae, and location of the geotextile on the surface deformations of the road.

## 1.3 Purpose

The purpose of this research is to provide a technically sound and economically feasible alternative solution to the long term problems associated with thaw-unstable foundation soils underlying roadway pavements in permafrost regions such as Fairbanks, Alaska. The functional life of a roadway constructed on permafrost is decreased by the varying properties inherently associated with frozen soil. Substantial changes in bearing capacity, shear strength, and volume contribute to decreasing the functional use of the pavement. Methods, previously described, have been attempted to increase the long term functional life of a roadway but have been successful only in the short run. The main purpose of this project is to evaluate the properties of a geotextile which may be used to reduce the magnitude of embankment deformations given the progressive degradation of the permafrost beneath the embankment slope areas.

## 1.4 Research Approach

The success of any method of analysis largely depends upon how well the actual conditions may be modelled. For embankments constructed over permafrost four basic failure modes may be defined:

(1) Slope failure within the embankment.

(2) Rotational failure involving the embankment and the foundation soil.

(3) Bearing capacity failure of the thaw-unstable talik.

(4) Differential settlement of embankment as a result of the consolidation of talik zone under the side slopes.

Two computer programs are used to develop the required geotextile properties to evaluate stress distributions for each of these failure modes. STABGM: A computer program for slope stability analysis with circular surfaces and geogtextile reinforcement (7) is used to evaluate the stress distributions for the first two modes of failure. Finite Element Analysis for Dams (FEADAM) and Soil Structure Interaction Program (SSTIPN) are used to analyze stress distributions and evaluate geotextile properties for the third and fourth modes of failure.

Much of the numerical analyses work to date has been applied to embankments overlying soft soils of one type. This literature will be used to develop a logical approach to the unique problems associated with roadway embankments constructed on permafrost.

# CHAPTER II

# SLOPE STABILITY ANALYSIS

The computer program for slope stability analysis with circular slip surfaces and geotextile reinforcement (STABGM) may be used to analyze internal and external stability of roadway embankments constructed on permafrost. Internal stability refers to the stability of the embankment slope alone. Thus, the circular slip analyses to be employed are restricted to failure through the toe of the embankment. External stability refers to the stability of the embankment and foundation soil combined. For embankments constructed on soft soil, this is the most likely mechanism of failure (3).

## 2.1 STABGM

The computer program STABGM is a version of the computer program STABR modified in December 1984, by J. M. Duncan and B. K. Low. In addition to the slope stability analysis capabilities provided by STABR, STABGM can be used to analyze slopes containing up to twenty layers of reinforcement, with the forces in the reinforcement layers varying along their lengths.

The program calculates the factors of safety for specified circles, or searches for the circular slip surface having the minimum factor of safety, using the Bishop's Modified Method or Ordinary Method of slices. Briefly, stability analysis using the ordinary method of slices requires trial of a large number of assumed failure surfaces. The failure zone is divided into a series of vertical slices. It is assumed that each slice acts independently of its neighbor. There is no shear developed between them, and the normal pessure on each side of a slice produced by the adjoining slices are equal (2). A series of calculations are then evaluated to determine the resisting moment, related to soil strength, and the overturning moment, related to the weight of the soil mass. A factor of safety is then evaluated for each trial failure surface. That which has the smallest factor of safety is the most critical surface, i.e., the one on which failure is most likely to occur (20). The Bishop's Modified Method is a more refined solution. The effect of forces on the sides of each slice are taken into account. Through a series of trial and error calculations, a factor of safety is found. The ordinary method of slices yields results which are too conservative (4). The Bishop's Modified Method is more representative of actual conditions and is used for the slope stability analysis on the Farmers Loop Road. The program may be used for either total or effective stress analyses, or a combination of both, and with or without seismic forces.

2.1.1 Program Operation

The program consists of a main program (STABGM) and three subroutines (BISHOP, ROOT, and SOLU). The geometry of a slope is described in an X-Y coordinate system. The X coordinate (horizontal) increases from the top to the toe of the slope and the Y coordinate (vertical) increases downward, as shown in Figure 2.1. The program is capable of handling irregular slope profiles, tension cracks, soil layers with different properties and nonuniform thickness, complicated pore pressure patterns, and irregular variations of undrained strength with depth. ....(7)

Up to 20 vertical sections may be used to define the geometry of the slope. The first and the last vertical sections, as well as the last soil layer boundary, should be well beyond the extent of any possible slip circle. The strength of the soil in a layer may be specified either by the cohesion intercept (c) and the friction angle ($\phi$) which are constant throughout the layer, or by a curve of undrained shear strength versus depth. The total number of points describing the variation of undrained strength with depth may not exceed 20. ....(7)

If a search for the critical circle is desired, the program searches for the circle having the minimum factor of safety by either the Ordinary Method of Slices or Bishop's Modified Method. Either a horizontal line to which all circles are tangent or a specific point through which all circles pass must be defined. In addition, coordinates of the center of the first circle to be analyzed, and the final grid spacing desired in the search must be specified. The search starts with calculation of factors of safety for the specified circle center and for centers spaced symmetrically around the specified center, as shown in Figure 2.2. The centers are generated in the order shown, by rotating around the specified center with a spacing whose length is equal to twice the final grid spacing. ....(7)

If a factor of safety less than that at the center of rotation

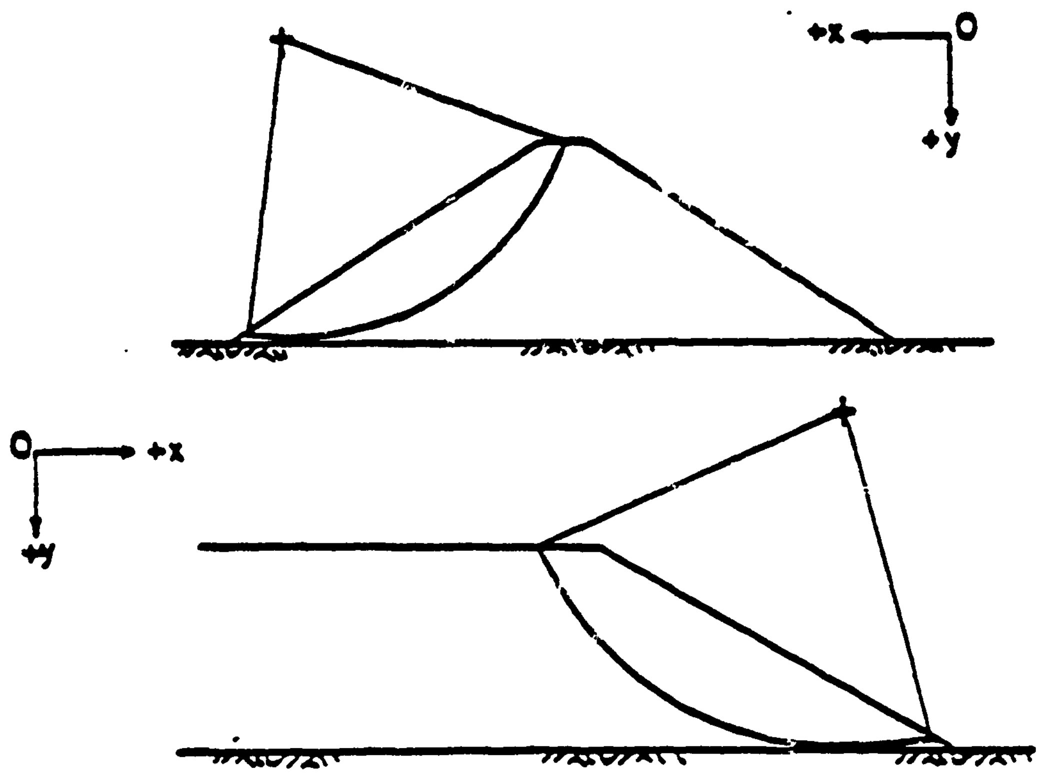



FIG. 2.1 COORDINATE SYSTEM USED IN STABGM

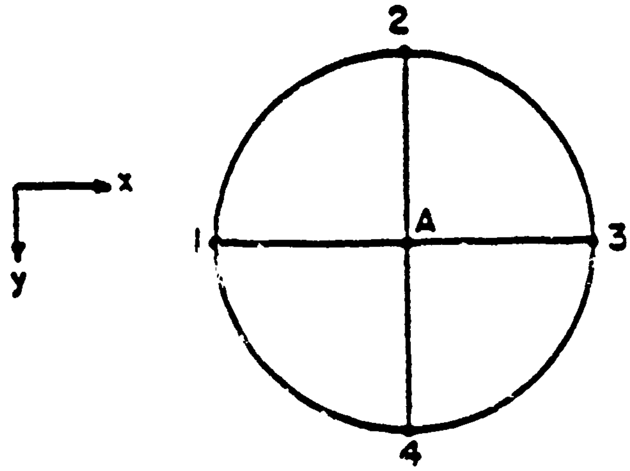



FIG. 2.2 FIRST CLOCKWISE ROTATION AROUND THE GIVEN CENTER A. THE ROTATION STARTS AT POINT 1, WITH RADIUS OF ROTATION TWICE THE FINAL GRID.

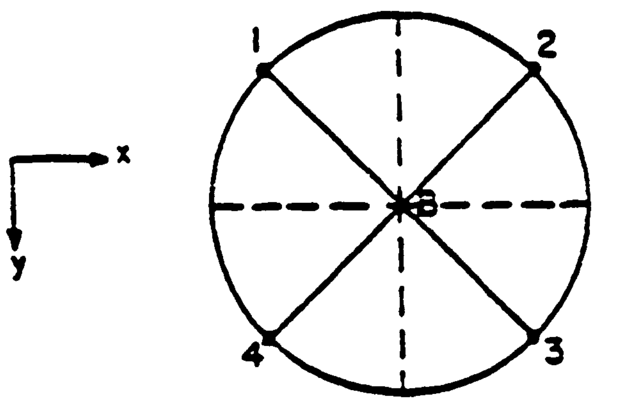



FIG. 2.3 THE 45-DEGREE CLOCKWISE ROTATION AROUND THE CENTER B. THE ROTATION STARTS AT POINT 1, WITH RADIUS OF ROTATION 1.414 TIMES THE FINAL GRID.

is found at any point, this point becomes the new center of rotation. If the difference between the factors of safety at the old and the new centers of rotation is equal to or less than 5% of the factor of safety at the new center of rotation, the spacing is reduced to the final grid spacing. If a full rotation is completed and no factor of safety smaller than that at the center of rotation has been found, a new clockwise rotation round the same center is initiated with the spacing being reduced to the final grid spacing. ....(7)

If a full rotation with the final grid spacing is completed and no factor of safety smaller than that at the center of rotation has been found, then another clockwise rotation around the same center is initiated. This rotation, however, starts at an angle of $45^{\circ}$ with the horizontal. The increments of rotation are still $90^{\circ}$, thus filling in the corners of the final grid, as shown in Figure 2.3. If no smaller factor of safety is found in this rotation, the factor of safety at the center of rotation is assumed to be the minimum factor of safety, and the search is terminated. ....(7)

If the minimum factor of safety has not been found after 51 circles have been analyzed, the search is discontinued without printing out a minimum factor of safety. The program then proceeds to search for the minimum factor of safety for the next depth limiting tangent. When this occurs, the user should rerun the problem, specifying a new starting center for the search. It is frequently desirable to specify a rather large grid spacing for the initial search, so that the center of the critical circle can be located, at least approximately, by analyzing relatively few circles. Then a finer grid spacing may be specified for a final search to locate the center of the critical circle with a higher degree of accuracy. ....(7)

With STABGM, the improvement in the factor of safety is considered to be due to the increased resisting moment provided by the reinforcement:

$$\Delta M_R = \sum_{i=1}^{N} \left[F_{Ri}(Y_{Ri} - Y_c)\right] \tag{1}$$

in which $\Delta M_R$ = resisting moment due to reinforcement

$F_{Ri}$ = force in i th layer of reinforcement where it is intersected by the slip circle being analyzed

$Y_{Ri}$ = Y - coordinate of reinforcement (down is positive)

$Y_c$ = Y - coordinate of circle center

N = number of layers of reinforcement

The factor of safety of the reinforced slope is calculated as follows:

$$F_w = F_{wo} + \frac{\Delta M_R}{M_0} \tag{2}$$

in which $F_w$ = factor of safety for a given circle with reinforcement

$F_{wo}$ = factor of safety for the same circle without reinforcement, as calculated by the Ordinary Method of slices or Bishop's Modified Method

$\Delta M_R$ = resisting moment due to reinforcement, calculated using Equation 1

$M_O$ = overturning moment for the circle

STABGM will search automatically for the circle with the minimum value of $F_W$ to locate the circle with the minimum factor of safety.

Up to twenty horizontal layers of reinforcement can be specified, with as many as nine pairs of values of X-coordinate and force for each reinforcement layer to describe the variation of force along its length.

### 2.2 Reinforcement of Embankments on Weak Foundations

Geotextile reinforcement may be use at the interface between embankments and weak foundations to prevent failure of the foundation soil (3). Two performance criteria usually considered for normal embankments constructed on weak soil are adequate stability and acceptable total and differential settlement (3). The failure mechanisms associated with embankments constructed on permafrost are similar in principle but not in sequence. Initially, embankments constructed on permafrost are very stable. Permafrost is relatively strong as a foundation soil, but once thawed, the soil becomes very weak relative to its former strength. Additionally, thawing usually occurs under the side slopes of the embankment and not under the centerline which introduces the problem of nonuniform foundation soil properties and differential settlement after construction.

Internal stability can be impaired if the embankment itself lacks internal stability or if embankment failure results from excessive deformation or failure of the foundation soil under the embankment load (3). Height of the embankment and the steepness of the side slopes govern the internal stability of an embankment. Both parameters also influence the magnitude and distribution of stresses on the foundation soil and, therefore, influence the stability of the foundation soil (3). This interrelation is directly applicable to embankments constructed over permafrost which has thawed. Upon thawing, the talik zone under the side slopes of the embankment loses bearing capacity resulting in settlement of the overlying side slopes. Consequently, the fill material may weaken and loosen thereby impairing embankment internal stability (3). Embankment internal stability can be improved by layers of reinforcement placed within the embankment (3,11,12,16,17,18,19).

The placement of a layer of reinforcement at the embankment/ foundation soil interface affects embankment internal stability two ways. Upon thawing of the frozen soil under the side slopes, the embankment soil may slide along the geotextile interface. This mechanism is more likely to occur if the interface friction angle and adhesion are relatively low between the geotextile and the embankment soil (3). If lateral sliding does not occur, the reinforcement layer will aid in reducing lateral deformations of the embankment, thereby minimizing the risk of creating voids in the fill from cracking (3). In conventional design methodology, prevention of embankment failure due to lateral sliding is the first step (3,12).

The next step is to address foundation soil stability. External failure, or failure of the foundation soil, is said to occur as a result of one of two mechanisms: slip surface failure or bearing capacity failure (3). Slip surface failure occurs when a portion of the embankment/foundation slides relative to the other stable part. If reinforced, the slip circle would likely go through the embankment, the reinforcement, and the foundation soil. A bearing capacity failure would result when the embankment punches through the foundation soil. This would occur in conventional cases when the reinforcement in the embankment is strong enough to hold the embankment together to prevent a slip surface from developing (3). In permafrost regions, the dynamic effect of frozen soil thawing under an existing embankment does not lend itself to such a structured approach. Failure of an embankment in these regions is likely to encompass a combination of all three failure mechanisms: lateral sliding, slip surface failure, and bearing capacity failure.

## 2.2 Initial Analysis

Verification of embankment stability as stated earlier must consider three failure mechanisms. For embankments constructed on permafrost, these failure mechanisms are interrelated. Once the frozen soil thaws under the side slopes of the embankment, bearing capacity is lost within the thaw-unstable talik. As the talik consolidates, failure planes may develop within the embankment. If a geotextile is present at the embankment/subgrade interface, the risk of lateral sliding on the outer part of the embankment increases and may add to the development of failure planes.

The evaluation of internal and external stability of the embankment was initially evaluated using STABGM. The analyses of toe and deep stability were evaluated based upon none, one, two, three, and four layers of reinforcement placed within the embankment. Analysis of the embankment with no layers of geotextile reinforcement was also conducted to determine at what depth the most critical slip circle surface would be located (i.e., the depth of slip circle at which the lowest factor of safety was evaluated).

In addition to critical depths of slip circles, three distinct dimensions of soft thaw zone subgrade soil were also analyzed. The geometry of the soft thawed zone which created the most critical conditions (i.e., lowest factor of safety) in conjunction with the critical slip circle depth was then used throughout the remainder of the analysis. Once this critical depth and critical dimension of thaw zone was established, further analysis of stability with geotextile reinforcement was conducted.

Ideally, reinforcement layers should be placed in the direction of maximum tensile strain (3). For steep slopes, principal compressive strains are nearly vertical and principal tensile strains are nearly horizontal (3). Therefore, reinforcement layers placed horizontally provide a high degree of efficiency. Also, reinforcement is generally placed in horizontal layers to accommodate actual construction sequences.

### 2.3.1 Assumptions

Figure 2.4 depicts the conditions of the initial analysis. The following assumptions represent the initial analysis:

1. Height of embankment = 5 feet.

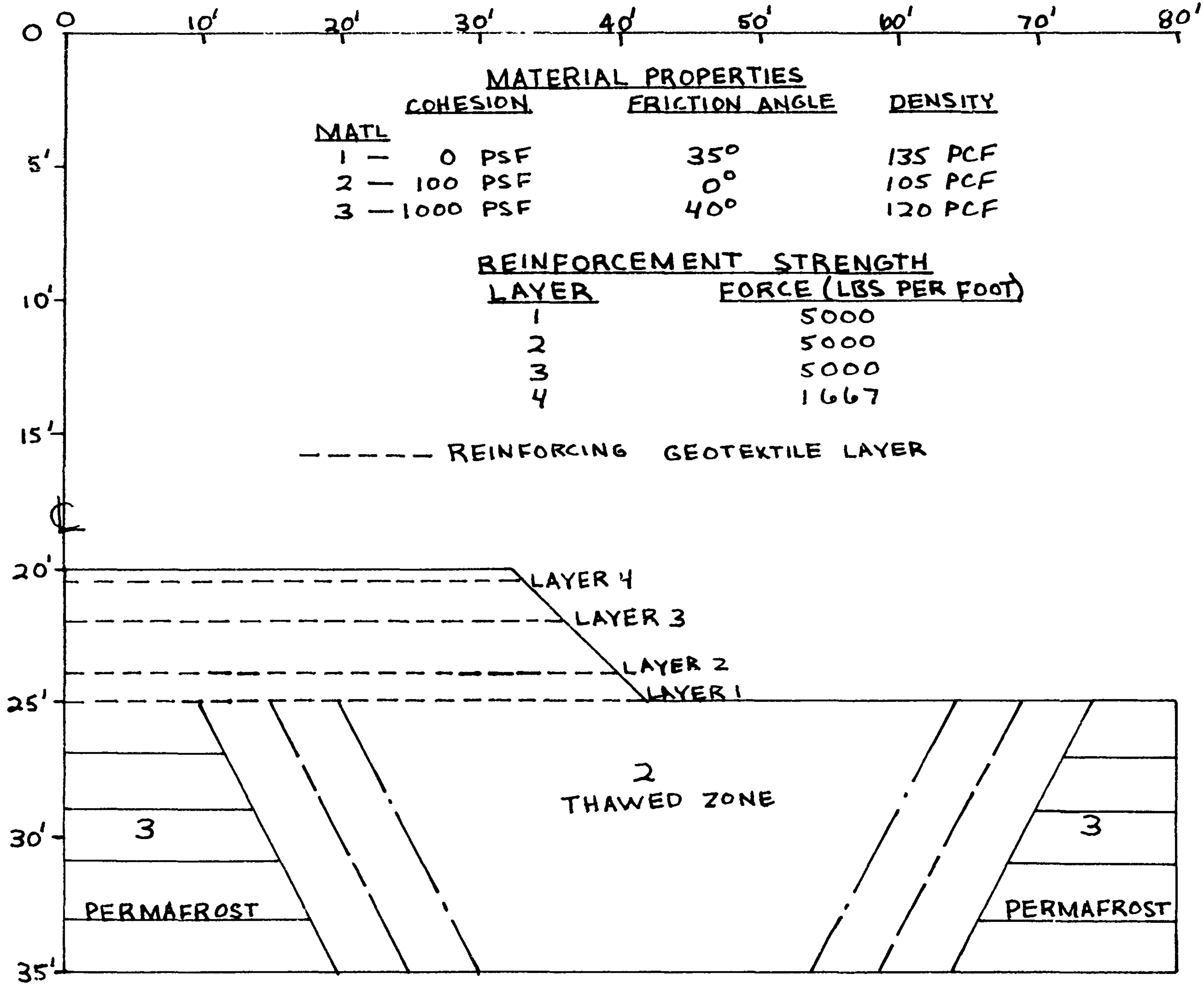



FIG. 2.4 STABGM INITIAL ANALYSIS

2. Slip circles analyzed were located tangentially at depths of 3, 5, and 10 feet below the bottom of the embankment.
3. Thaw zones (soft soil) were located 10, 15, and 20 feet from centerline, symmetric about the toe of the embankment.
4. No seismic activity was taken into account.
5. No pore pressures were taken into account (Total stress analysis).
6. Reinforced embankment stability analyses were conducted with geotextile layers located at 5, 4, 2, and 0.5 feet beneath the top of the embankment.
7. Material properties were modelled as crushed stone in the embankment, soft clay in the thaw zone, and stiff clay in the permafrost zone.

The geometry of the talik zones used in the analyses is consistent with measurements obtained by the Alaska Department of Transportation and Public Facilities (9,15,22). The material properties were modelled according to relative strength to each other. They do not represent actual material strengths. The embankment, crushed rock, was modelled as a complete unit and not separate layers of fill. The thaw zone was modelled as material with very little strength relative to the embankment and permafrost. Material properties selected are shown in Figure 2.4.

Embankment stability was initially analyzed with no layers of geotextile reinforcement. This was to evaluate at which depth and which dimensions of slip circles and thaw zones, respectively, provided critical conditions.

Analysis was then conducted with layers of geotextile reinforcement within the embankment. Embankment stability was then analyzed with one layer of reinforcement placed at the embankment/subgrade interphase. Additional analyses with two, three, and four layers of geotextile placed at 4, 2, and 0.5 feet beneath the embankment, respectively, were conducted to determine the impact on embankment stability. The geotextile reinforcement strength for the analyses with one, two, and three layers was 5,000 lbs per foot of width for each layer. The strength of the upper geotextile layer in the analysis with four layers of reinforcement was estimated to be 1667 lbs per foot of width. Mobilization of the full force in the geotextile layer close to the surface is not practical due to the minimal overburden pressure of the soil. Also, mobilization of the full force in all four layers was modelled to occur three feet from the end of each layer (i.e., zero force applied at endpoints and 5,000 lbs force applied at three feet in from each end for layer one).

### 2.3.2 Results of Initial Analysis

The analysis with no layers of reinforcement provided two important pieces of information which impacted the remaining analyses. First, the depth at which the critical slip circle occurred was 10 feet below the embankment/subgrade interphase (i.e., lowest factor of safety) (See Appendix A). Second, the dimensions of soft soil (thaw zone) at which critical slip circle conditions occurred were at both 10 and 15 feet from the centerline, symmetric about the toe (i.e., factors of safety were equal for both) (See Appendix A).

The analysis with three and four layers of reinforcement revealed that no appreciable gain in safety occurred as a result of the fourth layer.

### 2.3.3 Revisions

The following revisions were made to the initial conditions based upon the results obtained (See Figure 2.5):

1. Embankment depth was increased to seven feet.
2. Analysis was conducted with the thaw zone located 10 feet from centerline, symmetric about the toe of the embankment.
3. Analyses were conducted with none, one, two, and three layers of geotextile.
4. Stability analyses were conducted with slip circles located at a depth of 10 feet below the embankment (external stability) and through the toe of the embankment (internal stability).

The embankment depth was increased to seven feet to allow for a more conservative analysis. The greater the embankment height, the lower the factor of safety. Analyses of external stability were conducted to establish the required geotextile reinforcement to achieve a minimum factor of safety of 1.0. Analyses of internal stability were only conducted to compare factors of safety with external stability analyses.

## 2.4 Results of STABGM Analyses

The results of the revised analyses are summarized in Table 2.1. Geotextile reinforcement strengths of 5,000, 7,000, 9,000, and 8,000

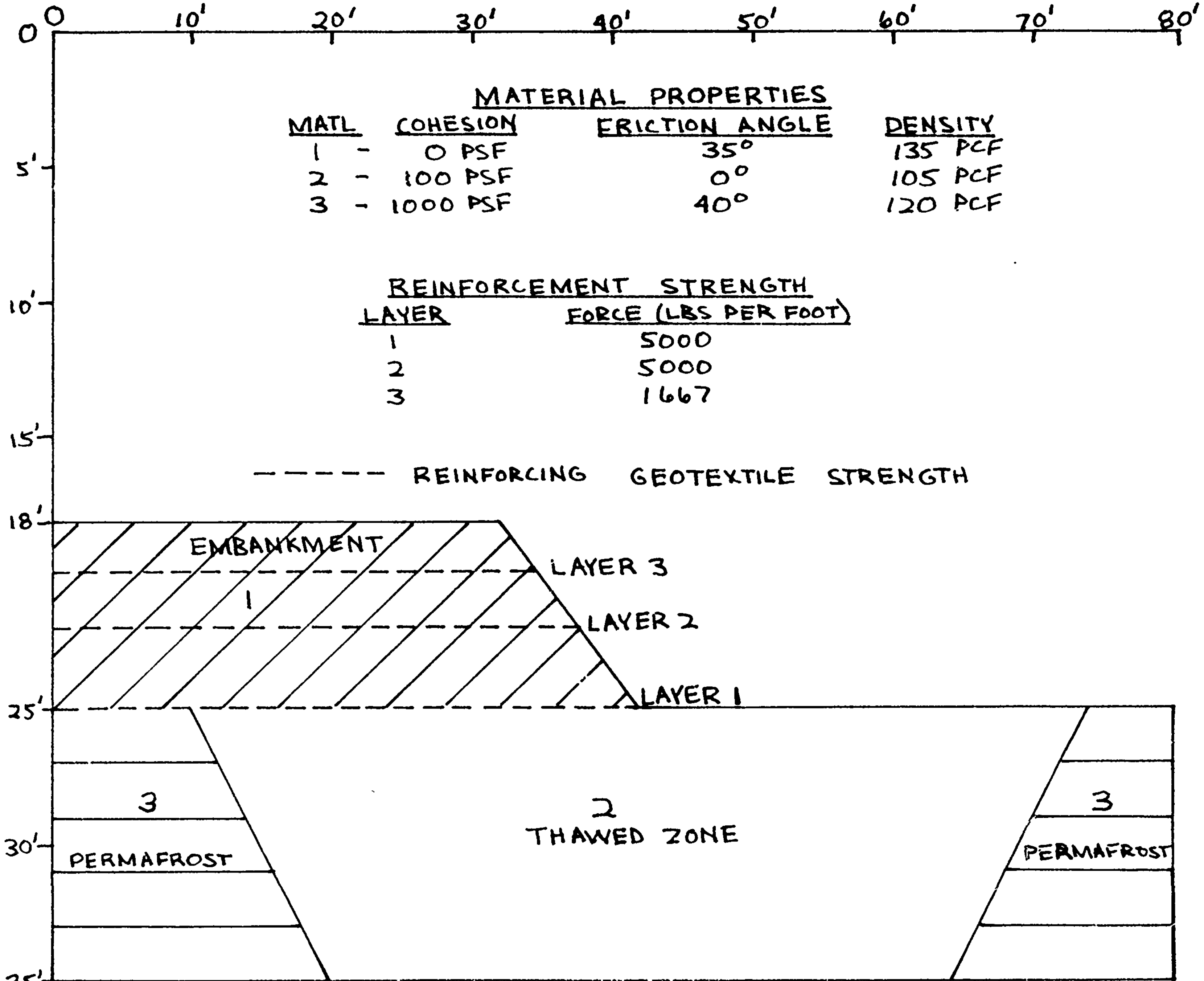



FIG. 2.5 STABGM REVISED ANALYSIS

Table 2.1. Summary of Results

TANGENT SLIP CIRCLE:

| Number of Reinforcing Layers | Slip Circle Depth Below Embankment | Factor of Safety | Force of Layer |
|---|---|---|---|
| | 3 ft | 0.719 | - |
| None | 5 ft | 0.636 | - |
| | 10 ft | 0.593 (critical) | - |
| One (7' below surface) | 10 ft | 1.043 | 8000 lbs |
| Two (4' and 7' below surface) | 10 ft | 1.035 | 5000 lbs |
| | 10 ft | 1.035 | (each) |
| Three (2', 4' and 7' below surface) | 10 ft | 1.062 | 1666 lbs (Layer 3) 5000 lbs (Layer 1 |

TOE FAILURE:

| Reinforcing Layers | Factor of Safety | Force of Layer |
|---|---|---|
| None | 0.373 | - |
| One (7' below surface) | 0.598 | 5000 lbs |
| Two (4' and 7' below surface) | 0.726 | 5000 (each) |
| Three (2', 4', and 7' below surface) | 0.748 | 1666 lbs (Layer 3) 5000 lbs (Layer 1 and 2) |

lbs per foot of width were analyzed to produce the strength required for a minimum factor of safety of 1.0 (See Appendix B). Analyses with two and three layers of reinforcement revealed that 5,000 lbs force was required to achieve a factor of safety of 1.0 (See Appendix B). It should be noted that with three layers of reinforcement, the top layer was modelled as mobilizing one third the strength due to the minimal overburden pressure. Also, there was minimal gain in factor of safety from the addition of the third layer. The analyses of internal stability revealed the layers of reinforcement strength required for a factor of safety of 1.0 in the external analyses were not strong enough to achieve the required minimum stability requirements (See Appendix B). These results indicate internal stability is more critical, however, the risk of failure for an embankment overlying soft material is more likely to occur in the soft subgrade soil (3).

# CHAPTER III

# NUMERICAL ANALYSES

Two computer programs were utilized to analyze the perplexing roadway conditions of the Farmer's Loop Road in Fairbanks, Alaska. FEADAM84: A Computer Program for Finite Element Analysis of Dams was initially used to model existing roadway embankment conditions. SSTIPN: Soil Structure Interactive Program was then used to model conditions for a reinforced roadway embankment constructed on permafrost.

## 3.1 FEADAM84 Analysis

FEADAM84 is an incremental finite element program for two-dimensional, plane strain analysis of earth and rockfill dams and slopes. It calculates the stresses, strains, and displacements due to incremental embankment construction and/or load application. The non-linear and stress history dependent stress-strain and volumetric strain properties of soils are approximated using a hyperbolic model modified by Seed and Duncan (1984). ....(8)

This program is a modified version of the program FEADAM developed by Duncan, Wong, and Ozawa (1980). The original incremental analysis procedure was coded in the program LSBILD by Kulhawy, Duncan, and Seed (1969). The subsequent program ISBILD, by Ozawa and Duncan (1973) incorporated (a) isoparametric elements with incompatible displacement modes developed by Wilson et al. (1971), (b) a more accurate procedure for assigning initial stresses to elements, and (c) more efficient computational techniques, including a new equation solver, developed by Wilson (1971). The program FEADAM, by Duncan, Wong, and Ozawa (1980) incorporated (a) a new model for stress-dependent bulk moduli, and (b) new criteria for differentiation between primary loading behavior and stiffer, elastic unloading/reloading behavior. The unloading-reloading model was subsequently deleted by Wong and Seed (1982), who also modified the bulk modulus model. ....(8)

In its present form, FEADAM84 incorporates the following modifications to the earlier program FEADAM:

(a) A modified version of the model for unloading/reloading behavior has been reinstated on an optional basis,

(b) New criteria are employed for determination of whether a given soil element is in a state corresponding to primary loading or unloading-reloading behavior,

(c) A modified lower bound constraint is incorporated in the stress-dependent bulk modulus model,

(d) The new program has the capability to model weightless, linear elastic soil elements with zero initial stresses.

### 3.1.1 Non-linear Incremental Finite Element Methodology

A successive-increment procedure is used for approximating non-linear stress and stress history dependent behavior of soil, in which progressive loading is divided into a number of small increments, and the soil behavior is assumed to be linear within each increment. The modulus values used to model each soil element are re-evaluated each increment in accordance with (a) the stresses in the element, and (b) the previous stress history of the element.

The incremental stress-strain relationship for an isotropic material under plane strain conditions may be expressed as follows:

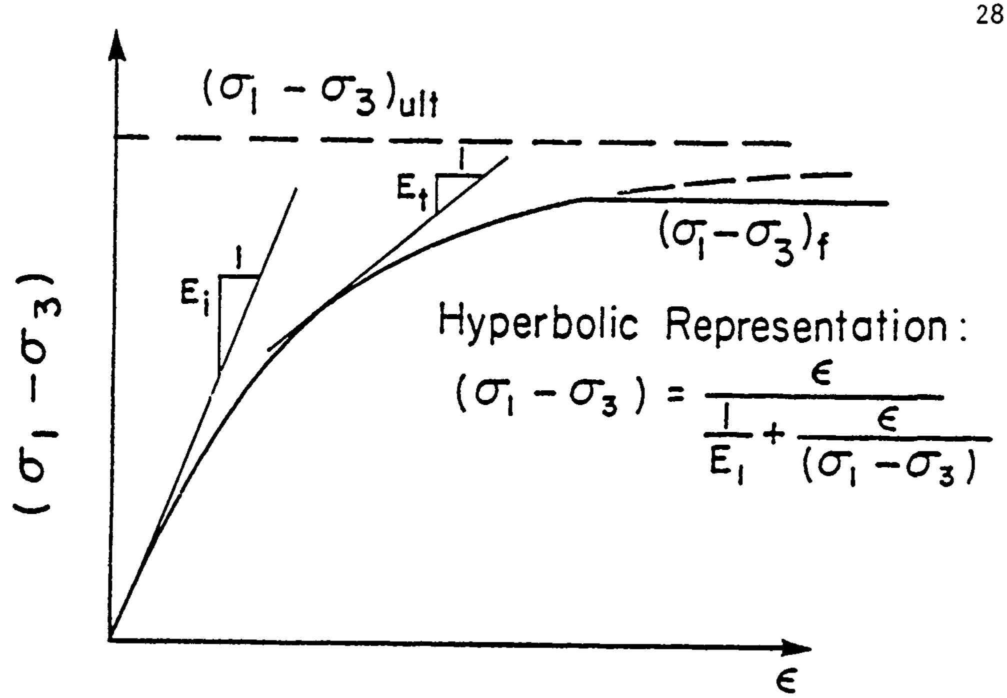
$$\begin{Bmatrix} \Delta\sigma_x \\ \Delta\sigma_y \\ \Delta\tau_{xu} \end{Bmatrix} = \frac{3B}{9B - E} \begin{bmatrix} (3B + E) & (3B - E) & 0 \\ (3B - E) & (3B + E) & 0 \\ 0 & 0 & E \end{bmatrix} \begin{Bmatrix} \Delta\varepsilon_x \\ \Delta\varepsilon_y \\ \Delta\gamma_{xy} \end{Bmatrix} \quad (3)$$

where $\Delta\sigma_x$ and $\Delta\sigma_y$ are the incremental stresses in the x and y directions respectively and $\Delta\tau_{xy}$ is the incremental shear stress. $\Delta\varepsilon_x$ and $\Delta\varepsilon_y$ are the incremental strains in the x and y directions respectively and $\Delta\gamma_{xy}$ is the incremental shear strain. E and B are Young's modulus and bulk modulus respectively. (1)

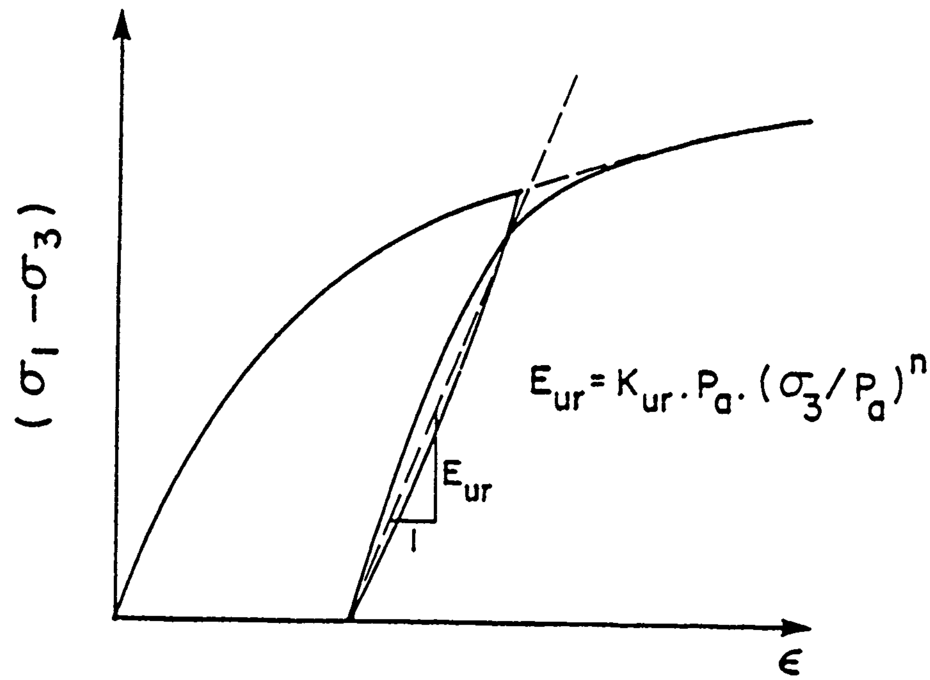
The non-linear, stress-dependent and stress-history-dependent soil behavior model is a modified version of the hyperbolic stress-strain, strength, and volumetric strain model proposed by Duncan et al. (1980). The original (1980) model has been modified in order to : a) provide improved modelling of soil behavior during unloading/reloading, b) eliminate a source of potential computational instability for some types of incremental loading paths, and c) provide improved modelling of bulk moduli at low stress levels and high confining stress. ....(8)

The original (1980) model assumes that stress-strain curves for soils at a given confining stress ($\sigma_3$) can be approximated as hyperbolas shown in Figure 3.1(a). The hyperbola in this figure can be represented by an equation of the form

$$(\sigma_1 - \sigma_3) = \frac{\varepsilon}{\dfrac{1}{E_i} + \dfrac{\varepsilon}{(\sigma_1 - \sigma_3)_{ult}}} \quad (4)$$

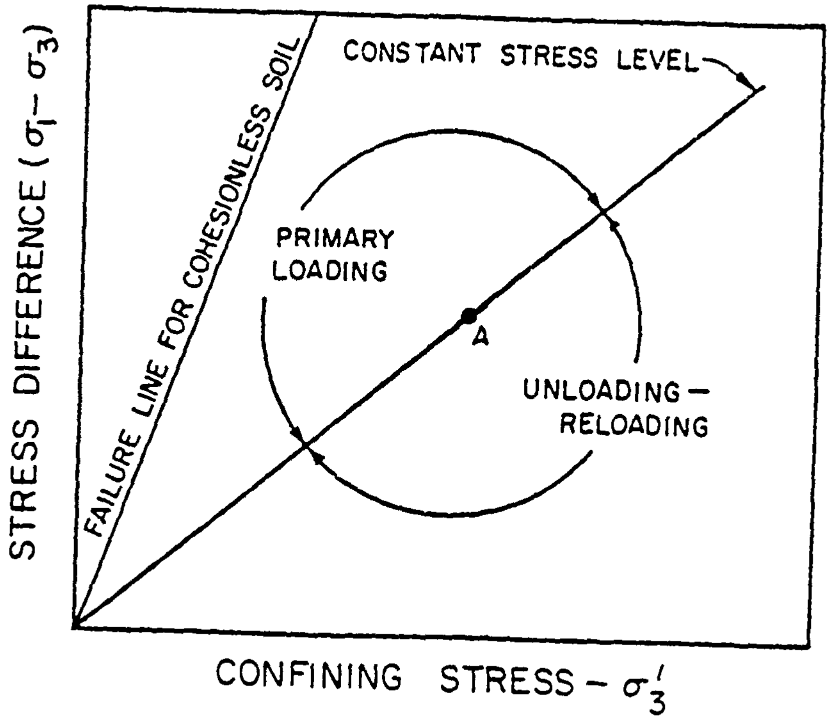



(a) Hyperbolic Representation of Stress-Strain Curve for Primary Loading.

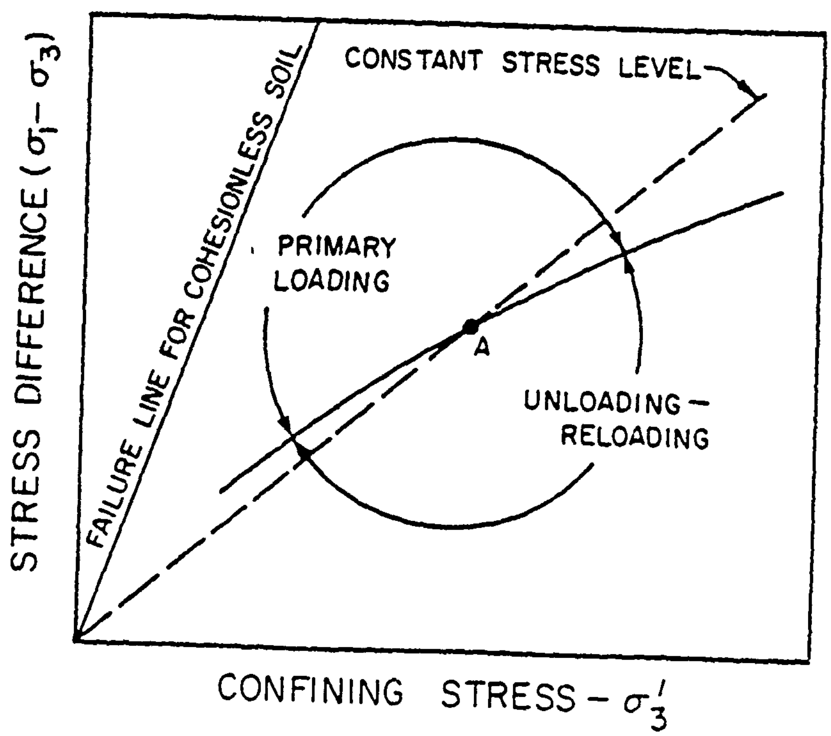



(b) Linear Unloading-Reloading Stress-Strain Relationship

FIG. 3.1 HYPERBOLIC MODEL FOR STRESS-STRAIN BEHAVIOR




a) Stress Level Criteria




b) Stress State Criteria

FIG. 3.2 COMPARISON BETWEEN STRESS LEVEL AND STRESS STATE CRITERIA FOR ASSIGNMENT OF UNLOADING-RELOADING MODULI where $E_i$ is the initial tangent modulus, and $(\sigma_1 - \sigma_3)_{ult}$ is the asymptotic value of deviatoric stress. In order that the hyperbolic curve should fit the actual stress-strain curve of a given soil as closely as possible $(\sigma_1 - \sigma_3)_{ult}$ is always greater than the compressive strength of the soil $(\sigma_1 - \sigma_3)_f$. The two values are related by a constant failure ration $(R_f)$ as

$$(\sigma_1 - \sigma_3)_f = R_f(\sigma_1 - \sigma_3)_{ult} \tag{5}$$

and $R_f$ is typically between 0.6 to 0.9 for most soils. When the deviatoric stress exceeds $(\sigma_1 - \sigma_3)_f$, a failure condition is assumed as shown in Figure 3.1(a). The deviatoric stress at failure is determined by the familiar Mohr-Coulomb failure criteria as

$$(\sigma_1 - \sigma_3)_f = \frac{2c \cdot \cos\phi + 2\sigma_3 \cdot \sin\phi}{1 - \sin\phi} \tag{6}$$

where c and $\phi$ are the cohesion intercept and friction angle of the soil. The model allows variation of $\phi$ as a function of $\sigma_3$ as

$$\phi = \phi_o - \Delta\phi \cdot \log_{10}\left(\frac{\sigma_3}{P_a}\right) \tag{7}$$

where $\phi_o$ = the soil friction angle at confining stress of $\sigma_3 = P_a$,

$\Delta\phi$ = the reduction in $\phi$ for each 10-fold increase in $\sigma_3$, and

$P_a$ = atmospheric pressure, introduced in order to make the model independent of the system of units chosen.

The instantaneous slope of the hyperbolic stress-strain curve shown in Figure 3.1(a) is the tangent modulus $E_t$, which is a function of confining stress ($\sigma_3$) and stress level (SL), and which can be expressed as

$$E_t = [1 - (R_f \cdot SL)]^2 \cdot K \cdot P_a \cdot (\sigma_3/P_a)^n \qquad (8)$$

where K,n = Model parameters (constants) relating to the initial modulus ($E_i$, see Figure 3.1(a)) to the confining stress $\sigma_3$ as

$$E_i = K \cdot P_a \cdot (\sigma_3/P_a)^n \qquad (9)$$

and SL = Stress Level, defined as the ratio

$$SL = (\sigma_1 - \sigma_3)/(\sigma_1 - \sigma_3)_f \qquad (10)$$

The tangent modulus modelled according to Equation 8 increases with increasing confining stress ($\sigma_3$) and decreases with increasing stress level (SL). ....(8)

When the current stress level was less than the previous maximum stress level ($SL_{max\ past}$), the unmodified (1980) model assumed the soil to be no longer in a state of primary loading, but rather in an unloading-reloading state. Unloading and reloading were modelled as linear and elastic as shown in Figure 3.1(b). The unloading-reloading modulus were modelled as a function only of $\sigma_3$ according to the equation

$$E_{ur} = K_{ur} \cdot P_a(\sigma_3/P_a)^n \tag{11}$$

where $K_{ur}$ is typically 1.2 to 3 times greater than K (the modulus parameter determining $E_i$). ....(8)

The bulk modulus of the soil is assumed to be independent of stress level, and can be expressed as a function only of $\sigma_3$ as

$$B = K_B \cdot P_a \cdot (\sigma_3/P_a)^m \tag{12}$$

where $K_B$ and m are dimensionless parameters (constants). Modelling the bulk modulus (B) as being independent of stress level results in modelling an increase in Poisson's ratio ($\nu$) with increasing stress level because the soil modulus ($E_t$) decreases with increasing stress level, and Poisson's ratio can be expressed as

$$\nu = 1/2 - E_t/6B \tag{13}$$

The bulk modulus in the (1980) model was at all times constrained such that $E_t/3 < B > 17\ E_t$, which in effect constrained Poisson's ratio such that $0.0 < \nu > 0.49$ (see Equation 13). ....(8)

Together, the soil modulus ($E_t$ or $E_{ur}$) and the bulk modulus (B) define the stress-strain and volumetric strain behavior of a given material. This relatively simple, straightforward hyperbolic model may be formulated and applied in terms of either total stress ($\sigma$) or effective stress ($\sigma'$) by using input parameters appropriate either for total or effective stress soil behavior.

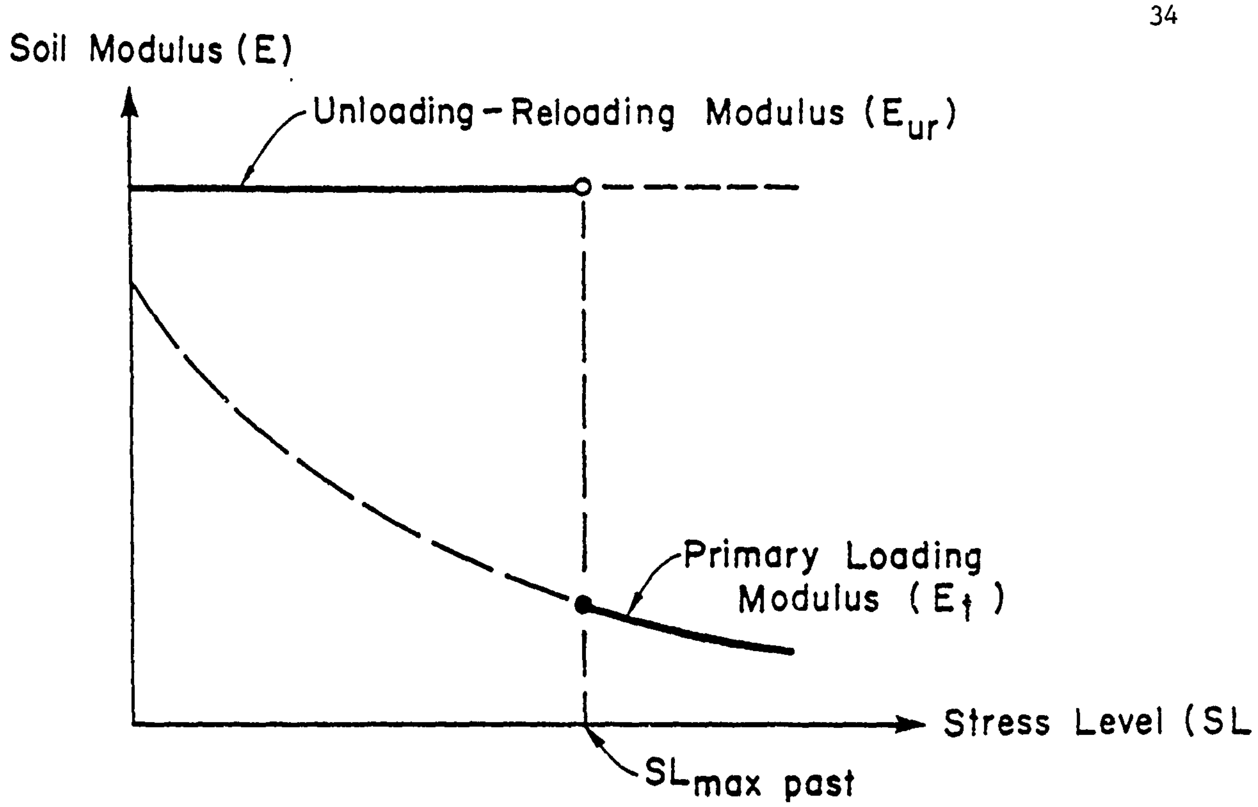
The unmodified (1980) model suffered from two problems concerning unloading-reloading.

The first of the two problems with the previous model for unloading-reloading moduli is that the simple stress level criteria used for differentiating between primary loading and unloading-reloading behavior does not appear adequate for many purposes. The line of constant stress level in Figure 3.2(a) represents the division, according to the earlier (1980) model, between primary loading and unloading-reloading stress paths for an element of soil currently existing at a stress condition represented by point A, where the stress level at A equals the maximum stress level achieved so far ($SL_{max\ past}$). This division between primary loading and unloading-reloading is defined by assuming unloading-reloading moduli for all conditions where $SL < L_{max\ past}$. Subsequent investigations have indicated that this simple stress level criteria for assignment of unloading-reloading moduli should be modified in order to include consideration of variations in the confining stress ($\sigma_3$) as well as variations in stress level. The new (modified) model therefore distinguishes between primary loading and unloading-reloading based on "stress state" (SS) defined as

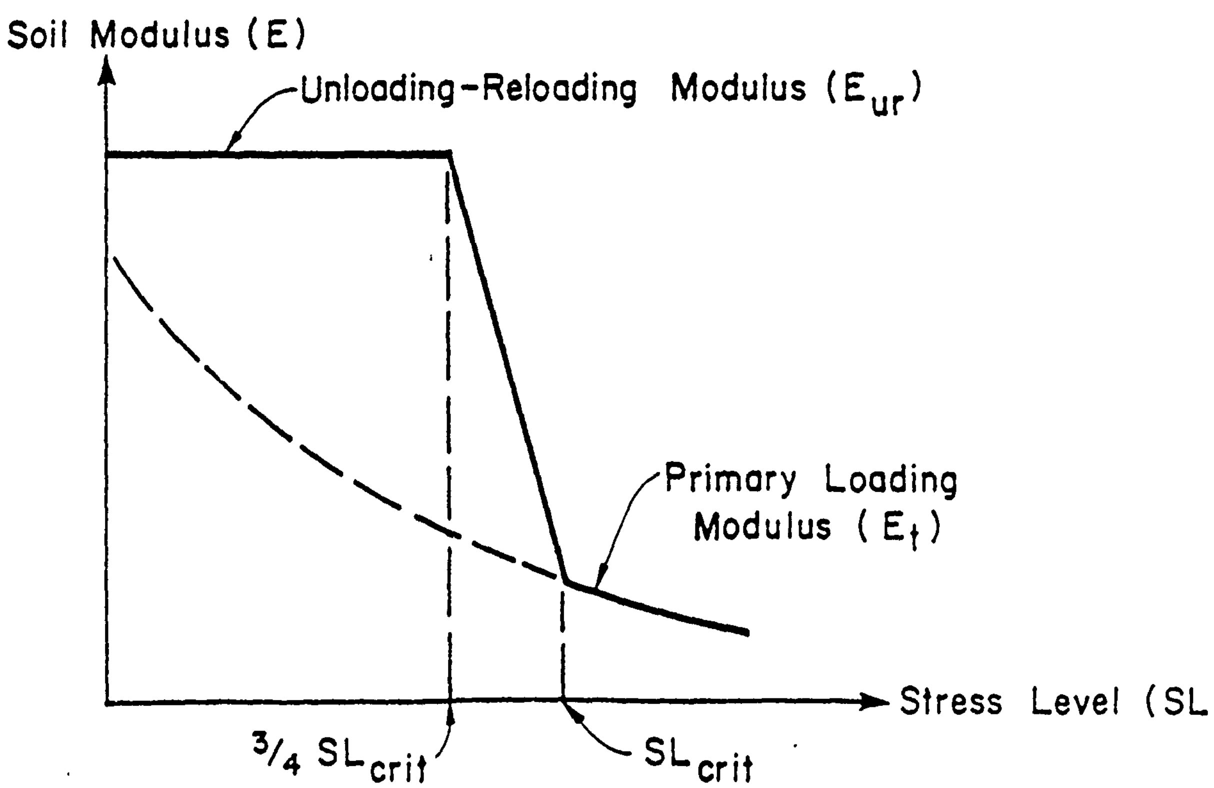
$$SS = SL \sqrt[4]{(\sigma_3/P_a)} \qquad (14)$$

where SL = Stress level = $(\sigma_1 - \sigma_3)/(\sigma_1 - \sigma_3)_f$, and

$P_a$ = atmospheric pressure, introduced in order to allow taking the fourth power radical of a dimensionless number.




a) Previous Model for Unloading-Reloading Moduli




b) Proposed Model for Unloading-Reloading Moduli

FIG. 3.3 MODELLING UNLOADING-RELOADING MODULI WITHOUT INTRODUCING COMPUTATIONAL INSTABILITY

The new model assumes primary loading moduli ($E_t$) are appropriate when the current stress state is greater than or equal to the maximum previous stress state ($SS > SS_{max\ past}$), and otherwise assumes unloading-reloading moduli ($E_{ur}$). Based on this criteria, the critical stress level ($SL_{crit}$) above which primary loading behavior is assumed for a given current confining stress ($\sigma_3$) may be calculated as

$$SL_{crit} = \frac{SS_{max\ past}}{\sqrt[4]{\sigma_3/P_a}} \tag{15}$$

Figure 3.2(b) illustrates the division between primary loading and unloading-reloading stress paths based on the new stress state criteria for the same initial conditions as were shown in Figure 3.2(a). The stress space is now divided by a line which is slightly concave downwards, and inclined slightly away from the constant stress level line.

The second, and most serious, problem with the previous model for unloading-reloading behavior is that it can lead to computational instability during incremental analyses. Figure 3.3(a) illustrates the soil moduli resulting from application of the unmodified 1980 model. At all stress levels greater than or equal to the maximum previous stress level ($SL_{max\ past}$) the primary loading modulus ($E_t$) is applied, and at all lower stress levels the unloading-reloading modulus ($E_{ur}$) is applies. The sharp discontinuity shown to occur in this figure at $SL_{max\ past}$ can result in a sudden change in modulus by a factor of more than 10 or 20 at this point. This can lead to computational instability during incremental finite element analyses, as soil elements incrementally subjected to loading at fairly constant stress levels may, as a result of minor fluctuations in stress level, cross back and forth across the discontinuity experiencing large and unwarranted sudden changes in modulus. Attempts to minimize the impact of this source of potential computational instability by setting the boundary between primary loading and unloading-reloading at 0.95 $SL_{max\ past}$ were unsuccessful. ....(8)

In order to prevent this potential source of computational instability, the new model provides for a less abrupt transition between unloading-reloading and primary loading moduli as illustrated in Figure 3.3(b), and described below:

1. The transition from unloading-reloading to primary loading is based on the new stress state criteria as described previously. Knowing the stress state ($SS_{max\ past}$) which defines the boundary between primary loading and unloading-reloading behavior, the stress level ($SL_{crit}$) at which primary loading begins for a given confining stress ($\sigma_3$) can be determined using Eq. 15.
2. When $SL > SL_{crit}$, the primary loading modulus ($E_t$) as determined by Eq. 8 is used.
3. When $SL < 3/4\ SL_{crit}$, the unloading-reloading modulus ($E_{ur}$) as determined by Eq. 11 is used.
4. When $3/4\ SL_{crit} < SL < SL_{crit}$, the modulus used is derived by linear interpolation between $E_{ur}$ at $3/4\ SL_{crit}$ and $E_t$ at $SL_{crit}$, as shown in Figure 3.3(b).

This continuous linear transition between $E_{ur}$ and $E_t$ eliminates the sudden $E_t/E_{ur}$ discontinuity, and thus reduces the associated potential for computational instability inherent in the previous model. The price of this elimination of a source of computational instability is that the new model underestimates, to some extent, the soil modulus during the initial stages of the transition from primary loading to unloading behavior. This underestimation is, however, of much less significance than the previous instability. In addition, the new model (a) provides (correctly) for a modulus in the range $3/4\ SL_{crit} < SL < SL_{crit}$ which is significantly higher than $E_t$ during both unloading and reloading, (b) provides an appropriate modulus ($E_{ur}$) in the range $SL < 3/4\ SL_{crit}$, (c) provides an appropriate modulus ($E_t$) in the range $SL > SL_{crit}$, and (d) provides an improved model for soil behavior during the transition from reloading to primary loading. ....(8)

The previous (1980) model had a tendency, under certain conditions, to underestimate the bulk modulus (B) and thus to underestimate minor principal stresses as well as soil strength and stiffness. This problem occurred most frequently in elements with very low stress levels and high confining stresses. In order to overcome tendency of the bulk modulus model to underestimate Poisson's ratio at low stress levels for some soils, the lower bound constraint on the new model has been modified such that

$$B_{min} > (E_t/3) \left\{ \frac{2 - \sin\phi}{\sin\phi} \right\} \qquad \text{for } \phi > 2.3° \qquad (16)$$

and

$$B_{min} = 17\ E_t \qquad \text{for } \phi < 2.3° \qquad (16a)$$

This supercedes the unmodified (1980) lower bound constraint of $B_{min} > E_t/3$ which constrained only against negative values of Poisson's ratio. When $\phi < 2.3°$, $\nu_t$ is thus set equal to 0.49, as is appropriate for a cohesive soil under undrained conditions. For $\phi > 2.3°$, this simple lower bound constraint on B has the effect of constraining Poisson's ratio be greater than or equal to $\nu_{min}$ where

$$\nu_{min} = \frac{1 - \sin\phi}{2 - \sin\phi} \tag{17}$$

3.1.2 Analysis Procedure

The program FEADAM84 calculates the stresses, strains, and displacements in embankments, simulating the actual sequence of construction operations and post-construction loading conditions. The non-linear and stress dependent stress-strain properties of the soils are approximated by performing the analysis in increments.

An increment may consist of the placement of a new layer on the embankment, or of application of loads to a complete embankment. Each increment is analyzed twice (a two-iteration process), the first time using modulus values based on the stresses at the beginning of the increment, and the second time using modulus values based on the average stresses during the increment. The changes in stress, strain, and displacement calculated during the second iteration of each increment are added to the stresses, strains, and displacements at the beginning of the increment to give the total or cumulative values up to that stage of the analysis. ....(8)

During each increment, each element is checked to determine if it is in a state of primary loading, unloading/reloading, tensile failure, or shear failure, and is modelled accordingly as follows:

a) Primary Loading. Primary loading moduli are used when the stress state of an element is greater than the maximum previous stress state of the element, and the minor principal stress ($\sigma_3$) is positive. If $\sigma_3$ is positive but less than 0.05 times atmospheric pressure, the modulus values are computed using $\sigma_3$ equal to 0.05 atmospheric pressure. If no unloading-reloading elastic modulus number is specified for a given soil type, then all elements of that type are modelled with primary loading moduli regardless of stress state, unless the element is in a state of tensile or shear failure. ....(8)

b) Elastic Unloading. Unloading-reloading modulus values ($E_{ur}$) are used when the current stress state of an element falls below the previous maximum stress state. Linear elastic (stress-state-independent) materials may also be modelled using the program FEADAM84, and these are never considered to be in an unloading-reloading condition. ....(8)

c) Tensile Failure. Tensile failure occurs when $\sigma_3$ is negative. During the first iteration, the assigned bulk modulus (B) is computed using $\sigma_3$ equal to 0.1 times atmospheric pressure and the soil modulus (E) is set equal to one-tenth of the bulk modulus. If at the end of the first iteration the element is still undergoing tensile failure, both of the moduli (E and B) are reduced to one-tenth of the values used in the first iteration. Linear elastic materials are not subject to tensile failure. ....(8)

d) Shear Failure. Shear failure occurs when the stress level of an element exceeds 95% of its shear strength. Modulus values are modelled using Equation 6, but corresponding to a condition where the product of stress level (SL) times the failure ration ($R_f$) equals 0.95, resulting in very low elastic moduli. Linear elastic materials are not subject to shear failure. ....(8)

### 3.1.3 Initial Analysis

FEADAM84, in its present form, is not capable of calculating internal forces and displacements of structural elements such as a geotextile placed in a roadway embankment. However, FEADAM84 is capable of modelling the failure mechanisms and stress distributions of existing roadway embankments constructed on permafrost. Analysis of geotextile reinforced roadway embankments will be accomplished with the use of SSTIPN obtained from Dr. J. M. Duncan at Virginia Tech. (See Appendix C)

3.1.3.1 Summary of Analysis. Two material properties can be specified within the FEADAM84 program: (1) a linear elastic material which is not subject to shear failure and which can take tension, and (2) a stress dependent non-linear elasto-plastic material which obeys the hyberpolic stress-strain and volumetric relationships described in Section 3.1.1.

Linear-elastic materials are not applicable to this analysis and will not be discussed. For the stress dependent, non-linear elasto-plastic soil materials, a total of nine parameters are required as summarized in Table 3.1.

Table 3.1 Summary of the Hyperbolic Parameters

| Parameter | Name | Function |
|---|---|---|
| $K$, $K_{ur}$ | Modulus number | Relate $E_i$ and $E_{ur}$ to $\sigma_3$ |
| $n$ | Modulus exponent | |
| $c$ | Cohesion intercept | Relate $(\sigma_1-\sigma_3)_f$ to $\sigma_3$ |
| $\phi$, $\Delta\phi$ | Friction angle parameters | |
| $R_f$ | Failure ratio | Relates $(\sigma_1-\sigma_3)_{ult}$ to $(\sigma_1-\sigma_3)_f$ |
| $K_b$ | Bulk modulus number | Value of $B/P_a$ at $\sigma_3 = P_a$ |
| $m$ | Bulk modulus exponent | Change in $B/P_a$ for ten-fold increase in $\sigma_3$ |

All of these parameters can be evaluated from a series of triaxial compression tests. These procedures are described by Duncan and Wong (1974).

Three steps are required to accurately model the existing failure mode of the Farmer's Loop Road in Fairbanks, Alaska. First, the question of "What were the causes of roadway embankment failure?" must be answered. Second, an appropriate representation of the roadway embankment geometry including foundation soil must be defined. Third, an accurate representation of the roadway embankment performance through the selection of soil parameter values to be input into the program.

The failure mechanisms associated with roadway embankments overlying weak foundations have been described in Sections 1.1 and 2.2. The failure of the Farmer's Loop Road is directly related to the seasonal thawing of the frozen foundation soil underlying the side slopes of the embankment. This degradation can be further amplified by the insulating effect of snow over the sideslopes which prevents the complete freeze-back of the active layer (13). The consequential consolidation of the thaw unstable permafrost results in differential settlement of the roadway embankment showing up as longitudinal cracks along the wearing surface (13, 14), as shown in Figure 1.1.

The roadway embankment geometry selected for the numerical analyses (See Figure 3.4) is taken from the State of Alaska Department of Transportation and Public Facilities (DOT&PF) Typical Cross Section of Farmer's Loop Road (See Figure 3.5) and the Engineering Geology and Soils Report (1985). The actual roadway embankment geometry varies along the length of the road ana is a function of the amount of cut and fill, grade, and superelevation of curves. The geometry selected in the analysis represents a typical section along the road.

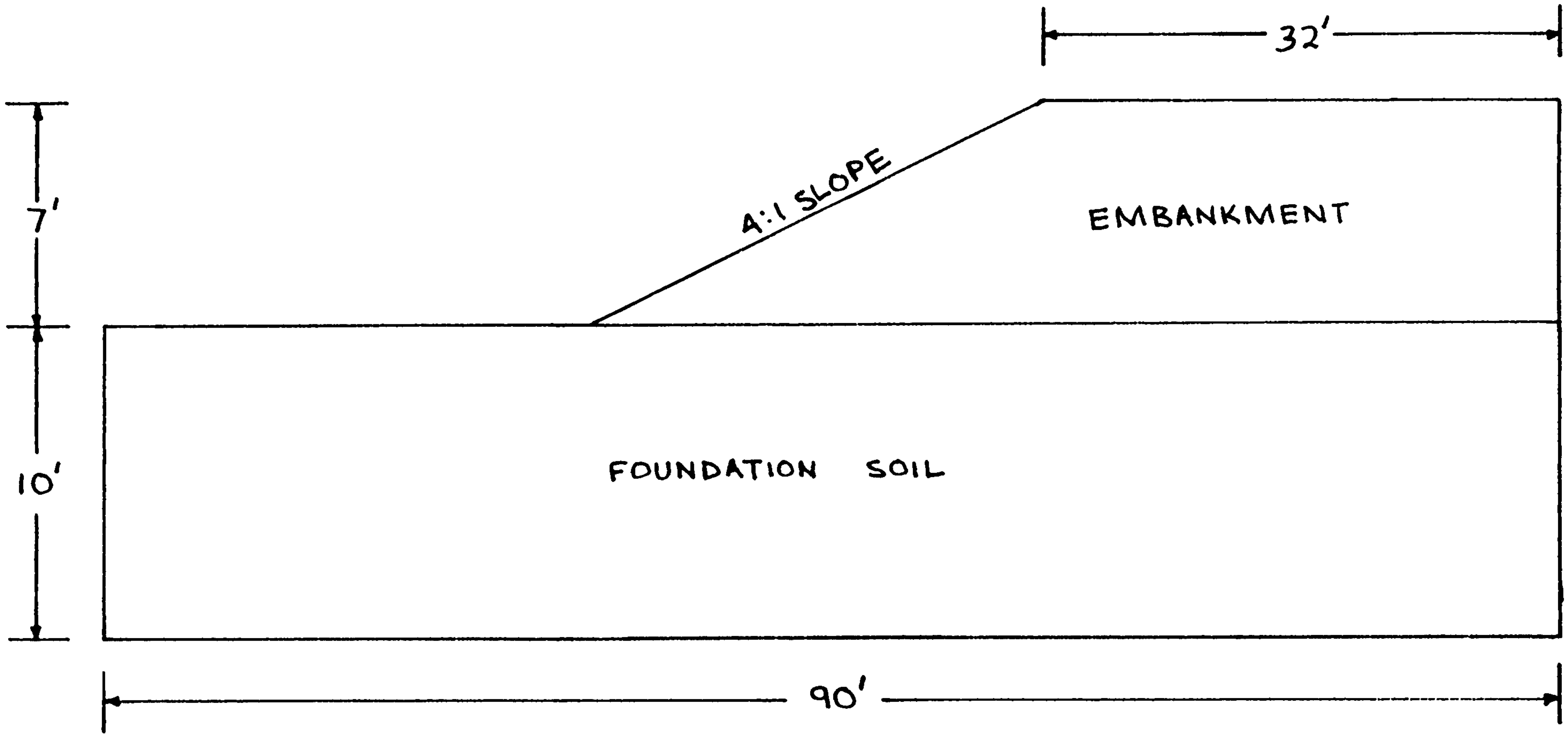
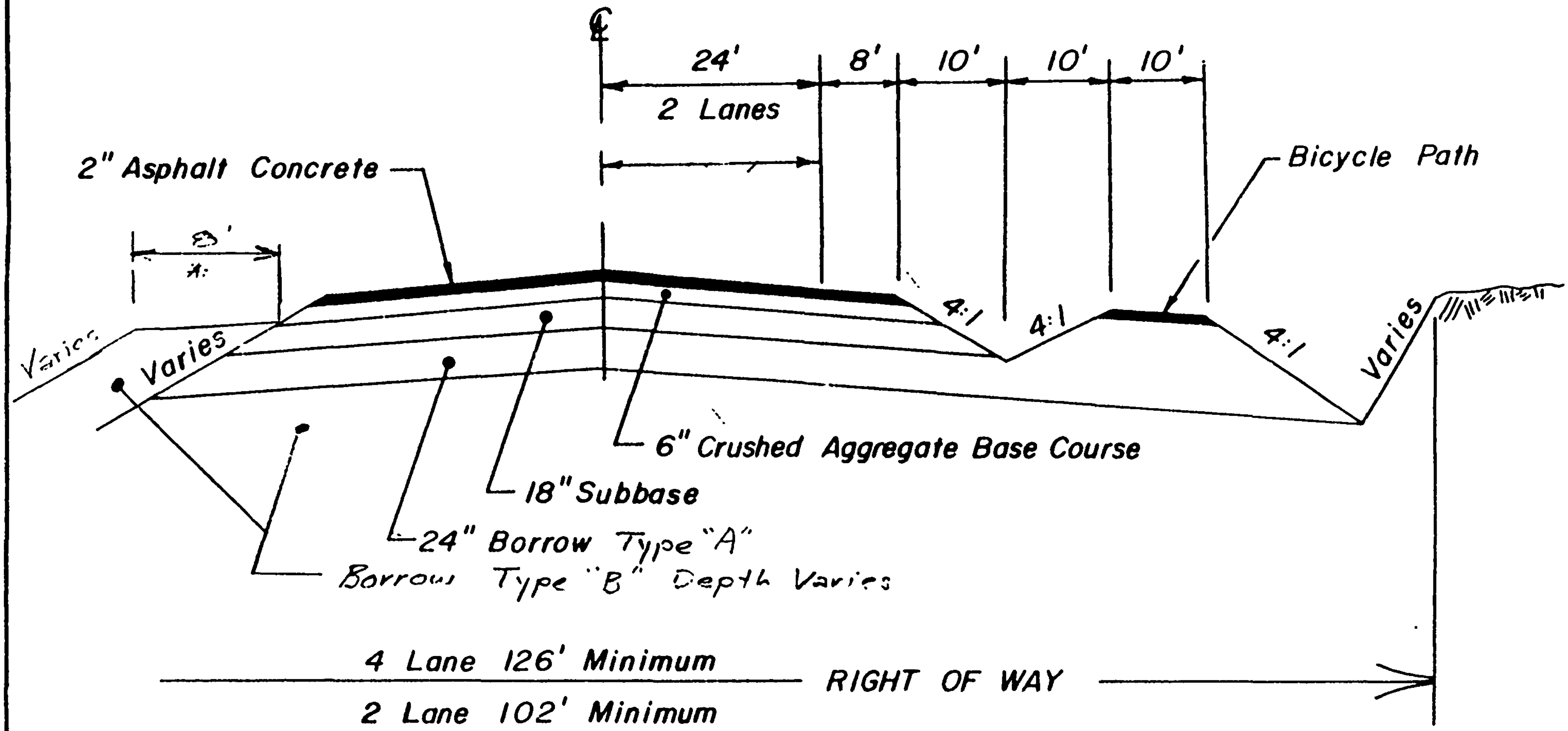



FIG. 3.4 EMBANKMENT GEOMETRY USED IN NUMERICAL ANALYSES




TYPICAL SECTION

Farmers Loop Road 0 to 8 Mile

RS - 0644 (13)

* Stabilizing Berm

FIG. 3.5

Modelling embankment performance is primarily dependent upon the proper selection of soil parameter values to be evaluated by the program. The soil parameters used in the hyperbolic model may be obtained from triaxial compression tests. Three soil types are used in modelling embankment performance in both FEADAM84 and SSTIPN. The roadway embankment is modelled as one type for convenient use in the program. Permafrost and thaw-unstable permafrost parametric values are estimated from Duncan et al. (1974) due to insufficient availability of test data on these types of soil materials. Since actual data are not available for the thaw-ustable permafrost, the objective is to obtain relative strength data for the three soil types used to model existing conditions. The three soil types modelled are crushed rock for the embankment, soft clay for the thaw unstable permafrost, and hard clay for the permafrost. The parametric values obtained for the crushed rock were obtained from Schauz (1981). The data obtained for soft and hard clay were obtained from Duncan et al. (1974). The values obtained for all three soil types are summarized in Table 3.2.

Table 3.2 Soil Parametric Values Used in FEADAM84 and SSTIPN

| Parameter | Crushed Rock | Soft Clay | Hard Clay |
|---|---|---|---|
| $K$ | 6000.0 | 40.0 | 1000.0 |
| $K_{ur}$ | 8000.0 | 80.0 | 1500.0 |
| $n$ | 0.5 | 0.3 | 0.4 |
| $R_f$ | 0.5 | 0.9 | 0.7 |
| $K_b$ | 1500.0 | 20.0 | 500.0 |
| $m$ | 0.6 | 0.2 | 0.5 |
| $c$ | 0 psf | 100 psf | 1000 psf |
| $\phi$ | 35° | 0° | 40° |
| $\Delta\phi$ | 0° | 0° | 0° |
| $\gamma$ | 135 pcf | 106 pcf | 120 pcf |
| $K_o$ | 0.5 | 0.5 | 0.5 |

The relative locations of the soil types and mesh used in the finite element analysis are shown in Figure 3.6. Location of the talik zone used in the analyses is consistent with data obtained by the State of Alaska DOT&PF (13, 14, 19). For most cases reasonably accurate results can be achieved by using eight or more layers in the mesh, and adding one layer at a time to the embankment. However, six layers were used to investigate the relative accuracy of the model with that of Figure 1.1. Six layers also allowed more flexibility in areas which required some refinement (See Figure 3.7). Figure 3.8 represents the deformed state of the original model. The failure mode associated with the Farmer's Loop Road can be detected in Figure 3.8. The deformed geometry plot is performed using Program GRAPH (See Appendix D). The consolidation of talik zone and severe surface deformation of the top of the embankment are clear. Through analysis of this figure, the material properties are reasonably accurate for further use in SSTIPN.

## 3.2 SSTIPN Analysis

SSTIPN calculates stresses, strain and displacements in soil elements and internal forces and displacements in structural elements by means of analyses which simulate the actual sequence of construction. The non-linear and stress-dependent stress-strain properties of the soils are approximated using the procedures developed by Kulhawy, Duncan, and Seed (1969). The structural materials are assumed to behave linearly. The soil model used is predecessor to the existing soil model used in FEADAM84. The purpose of utilizing SSTIPN is to analyze the effects of placing different structural materials within a

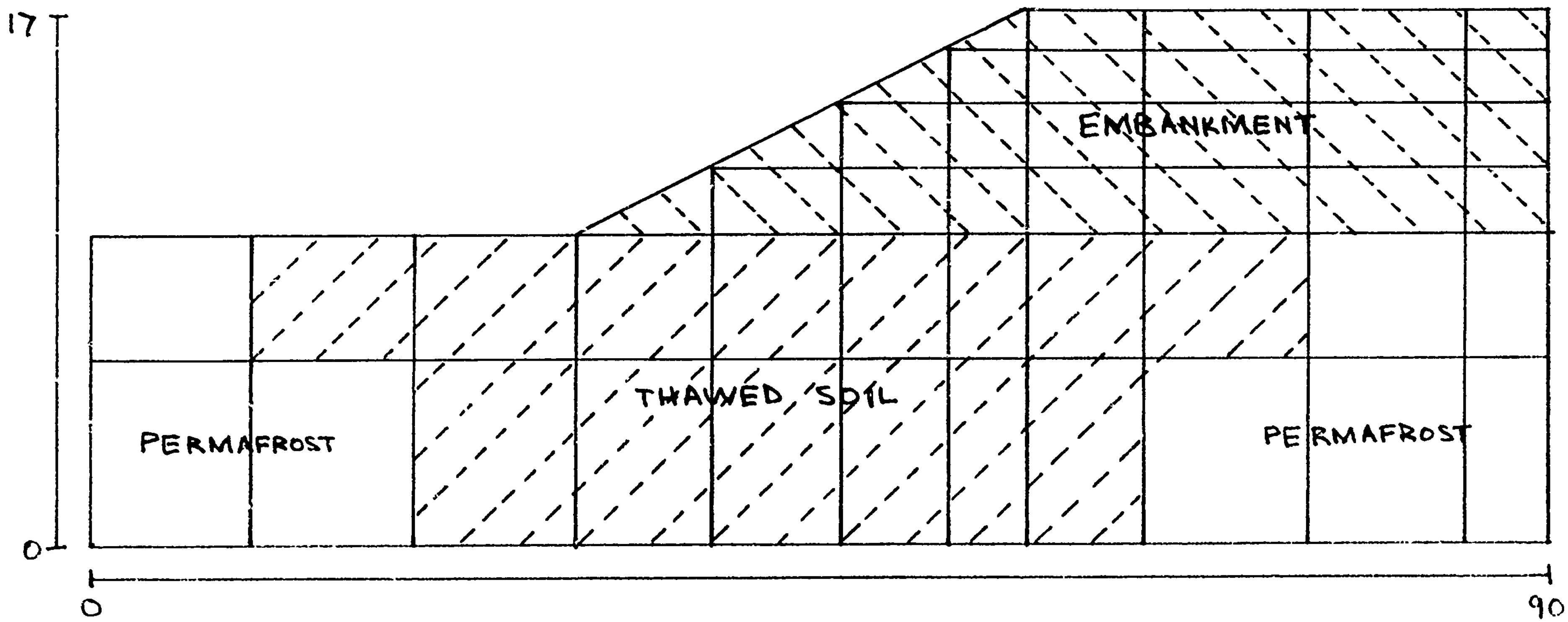



FIG. 3.6 FEADAM84 EMBANKMENT MODEL

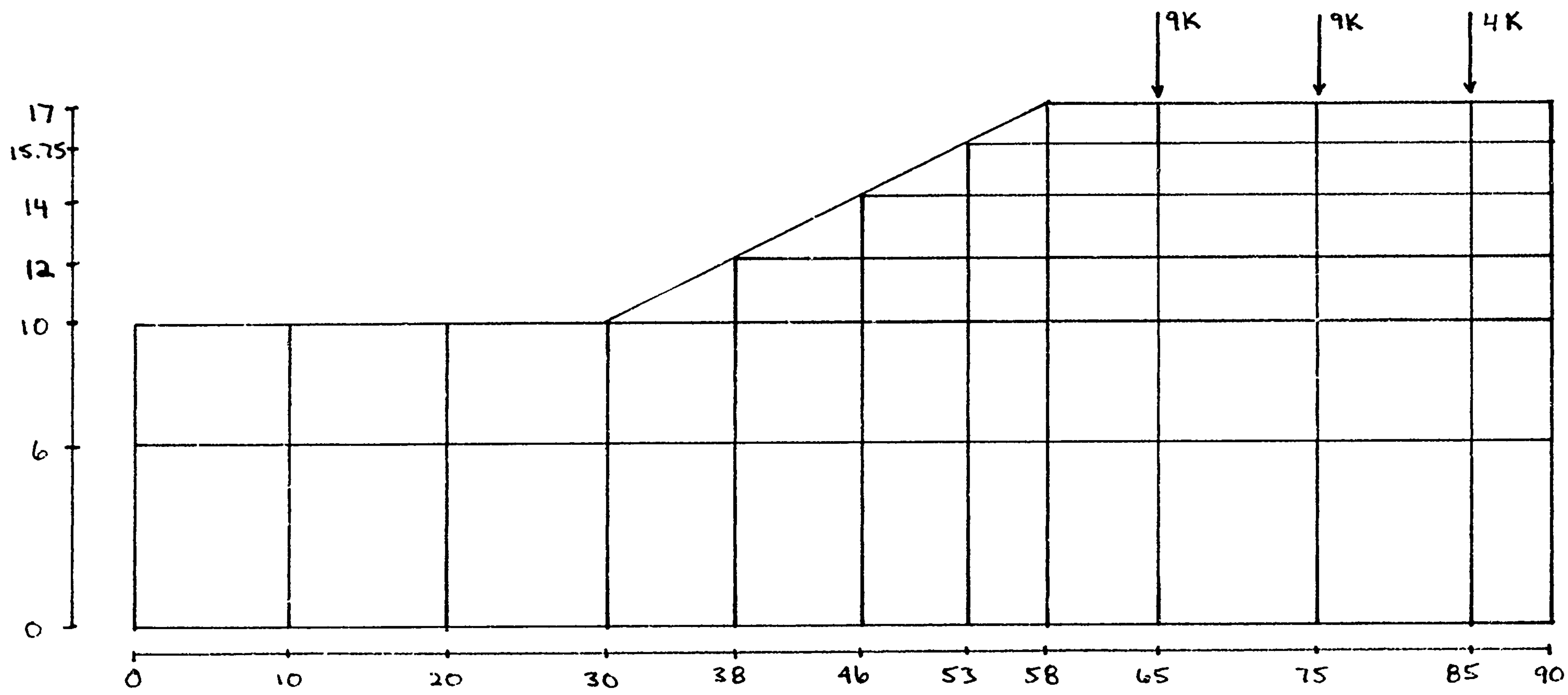



FIG. 3.7 FEADAM84 EMBANKMENT GEOMETRY

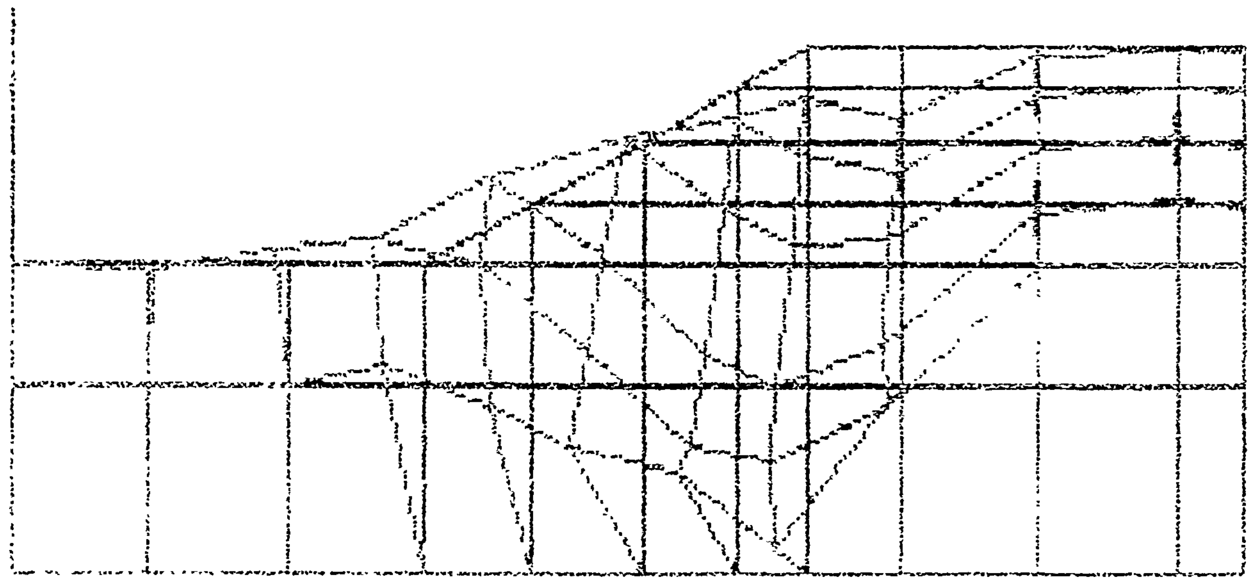


FIG. 3.8 DEFORMED EMBANKMENT GEOMETRY OF FEADAM84 ANALYSIS

roadway embankment constructed on permafrost.

### 3.2.1 Assumptions

The results of FEADAM84 reveal some important points. First, the soil parameters selected for the analyses are appropriate and accurately model roadway embankment performance in permafrost regions. The deformed roadway embankment model, Figure 3.8, depicts the distressed condition as a result of thaw-unstable foundation soil located beneath the side slopes of the embankment. Second, the geometry and location of the soil types are relatively accurate within the model. The relative location of the soil material properties, Figure 3.6, allows the roadway embankment model to behave consistently with DOT & PF articles (9, 21).

The conditions of the SSTIPN analyses are as follows:

1. Embankment geometry is identical to both STABGM and FEADAM84 analyses. Foundation soil height = 10 feet. Embankment soil height = 7 feet. Total number of soil elements if increased from 48 to 78 elements.
2. Five different strength modulae are analyzed for the geotextile properties. In addition, five different conditions are analyzed for each separate geotextile strength modulus.
3. Soil/geotextile interface is modelled for no slip between soil elements and structural elements.

Figure 3.9 depicts the mesh that is used in the SSTIPN analyses. The foundation and embankment numbers of layers are increased to three

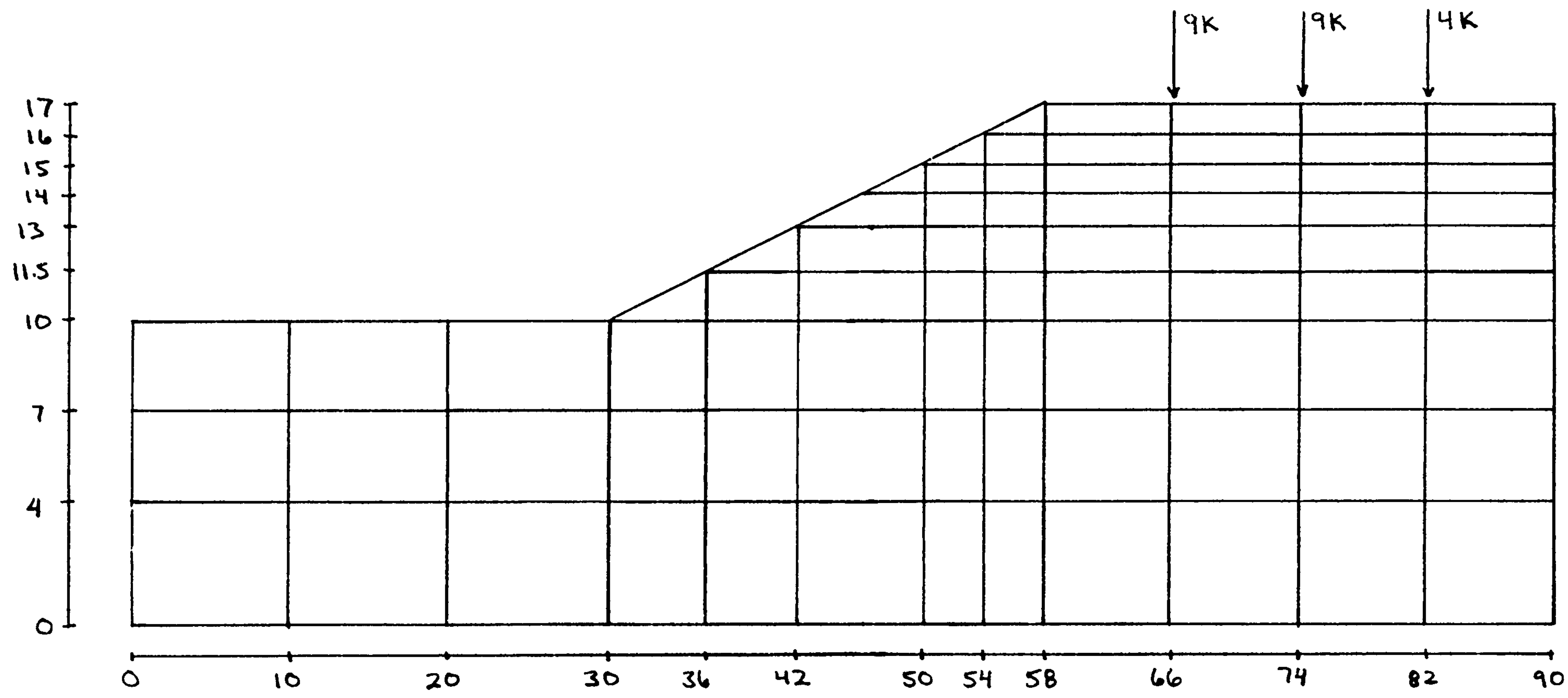



FIG. 3.9 SSTIPN EMBANKMENT GEOMETRY

and six, respectively to provide more accurate results of displacements and stresses. Figure 3.10 depicts the location of the three soil material types in the analyses. The location of the thaw-unstable material beneath the side slopes is consistent with articles from the state of Alaska DOT&PF (9, 15, 21).

The five geotextile strength modulus are displayed in Figure 3.11. Tensile strengths of 1000, 2000, and 4000 pounds per inch with strains of 5 and 20 percent are evaluated. SSTIPN does not differentiate between modulae with different strain. SSTIPN calculates the stiffness of each member in force per unit width without consideration to percent elongation. Therefore, a material with strength of 1000 pounds per inch at 5 percent strain is identical to a material with a strength of 4000 pounds per inch at 20 percent strain.

The five conditions analyzed for each strength modulae are as follows:

1. Three layers of geotextile are located within the embankment. The first layer located at the embankment/foundation interface and the second and third layers located three and five feet above the embankment/foundation interface, respectively.
2. Three layers of geotextile with identical locations as the first condition with a pre-tension of 1000 pounds per foot on all three layers.
3. One layer of geotextile located at the embankment/foundation interface.
4. One layer of geotextile located at the embankment/foundation

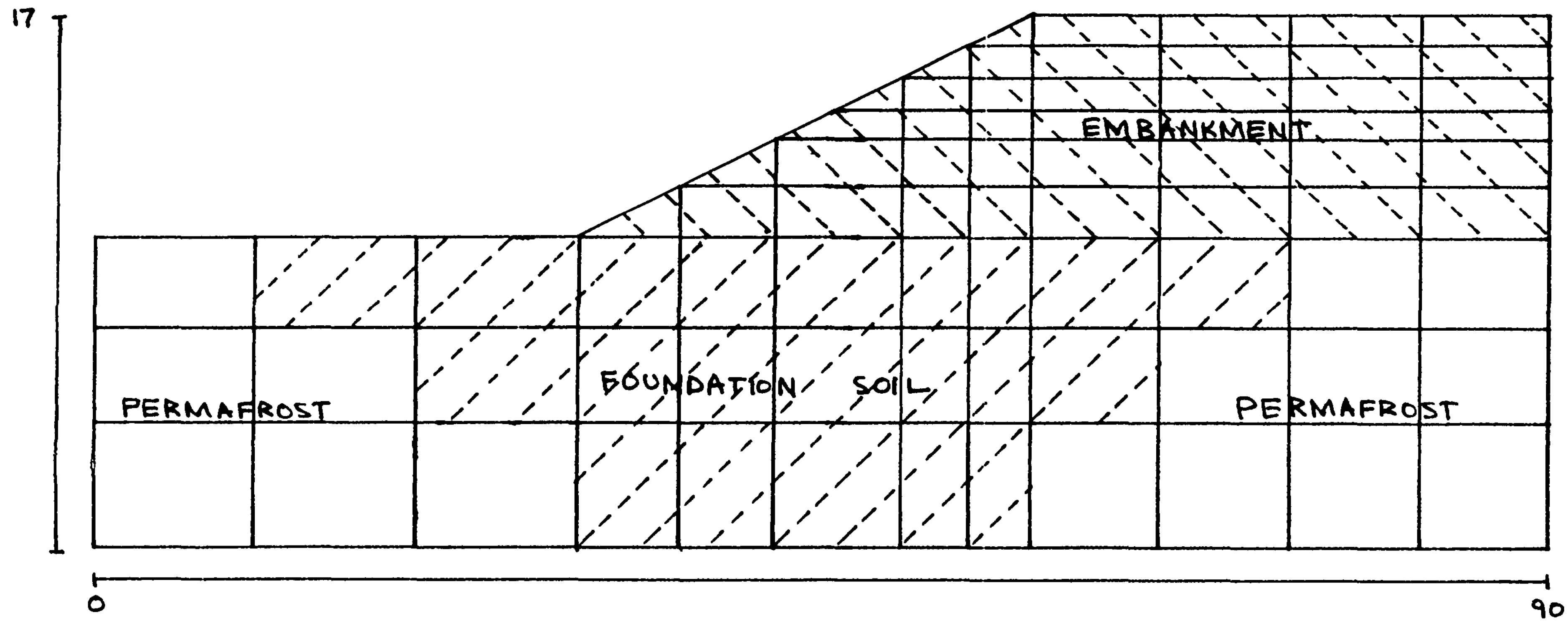
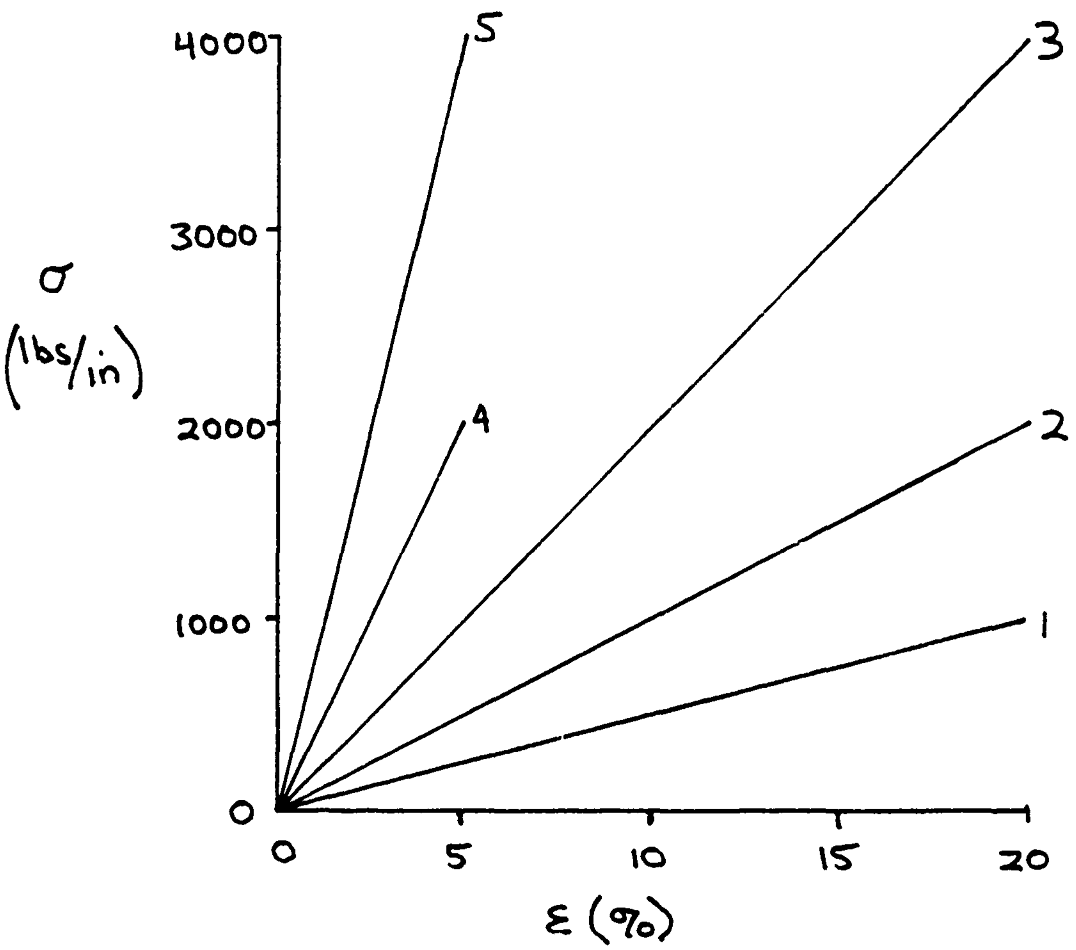



FIG. 3.10 SSTIPN EMBANKMENT MODEL




| MODULUS | LOAD (σ) (lb/in) | STRAIN (ε) (%) | STIFFNESS (lbs/ft of width) | (TONS/ft of width) |
|---|---|---|---|---|
| 1 | 1000 | 20 | 60,000 | 30 |
| 2 | 2000 | 20 | 120,000 | 60 |
| 3 | 4000 | 20 | 240,000 | 120 |
| 4 | 2000 | 5 | 480,000 | 240 |
| 5 | 4000 | 5 | 960,000 | 480 |

$$\text{STIFFNESS} = \frac{(1000\ \text{lb/in})(12\ \text{in/ft})}{(.01)(20\%)} = 60{,}000\ \text{lbs/ft of width}$$

FIG. 3.11 GEOTEXTILE STRENGTH MODULAE

interface with a pre-tension of 1000 pounds per foot.

5. One layer of geotextile located at the embankment/foundation interface with a pre-tension of 1000 pounds per foot. The geotextile extends 10 feet beyond the toe of the embankment. SSTIPN has the capability of modelling friction between soil and structural elements. The geotextile/soil interface is modelled with total friction, i.e., no slip between the soil and geotextile. The overall accuracy increases only by about 5 percent with the addition of friction elements. Modelling without friction elements is convenient for repetitive analyses and does not reduce the accuracy enough to cause a significant difference.

### 3.2.2 Results of SSTIPN Analysis

The analysis of SSTIPN results includes obtaining displacement and stress data from the output to evaluate the effect of each different modulae given the different conditions. The analysis of the roadway embankment with three layers of geotextile did not provide reliable results due to instability of SSTPIN in calculating displacements. Therefore, analyses of the five modulae with the first two conditions mentioned will no longer be discussed.

Displacement data extracted from SSTIPN output for all five different strength modulae with the last three conditions are plotted using the GRAPH in Appendix D. Figures 3.12 through 3.27 depict the deformed geometry for each case. Figures 3.28 through 3.43 the deviatoric stress distribution for the identical conditions used to plot the deformed geometry.

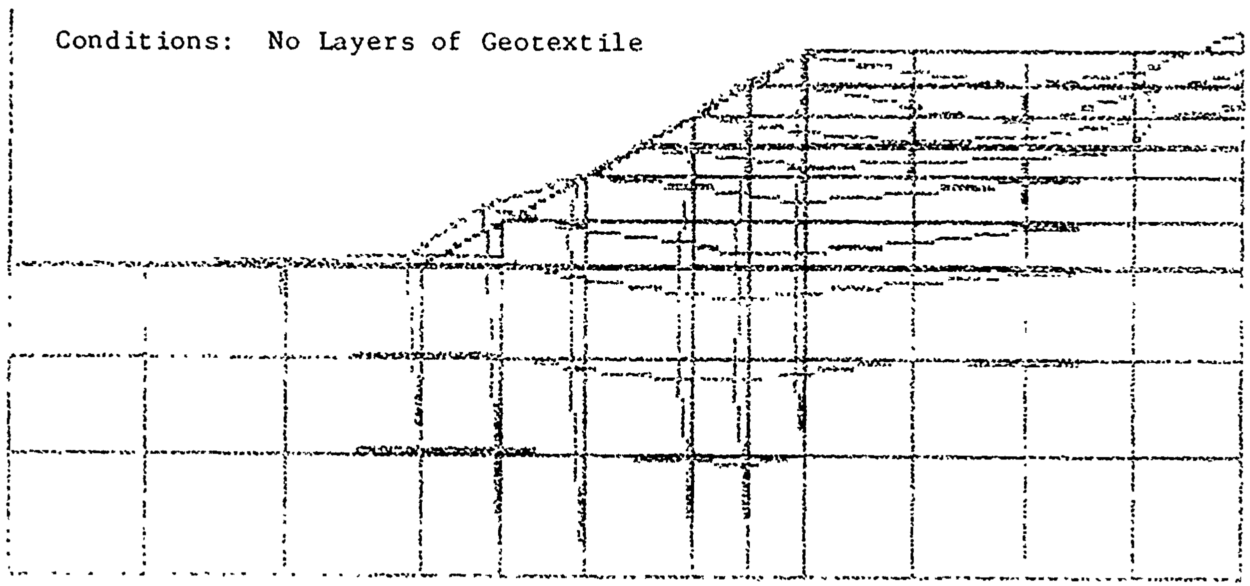



FIG. 3.12 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
No Pre-tension
Geotextile Strengtn: 1000 lbs/in @ $\varepsilon$ = 20%

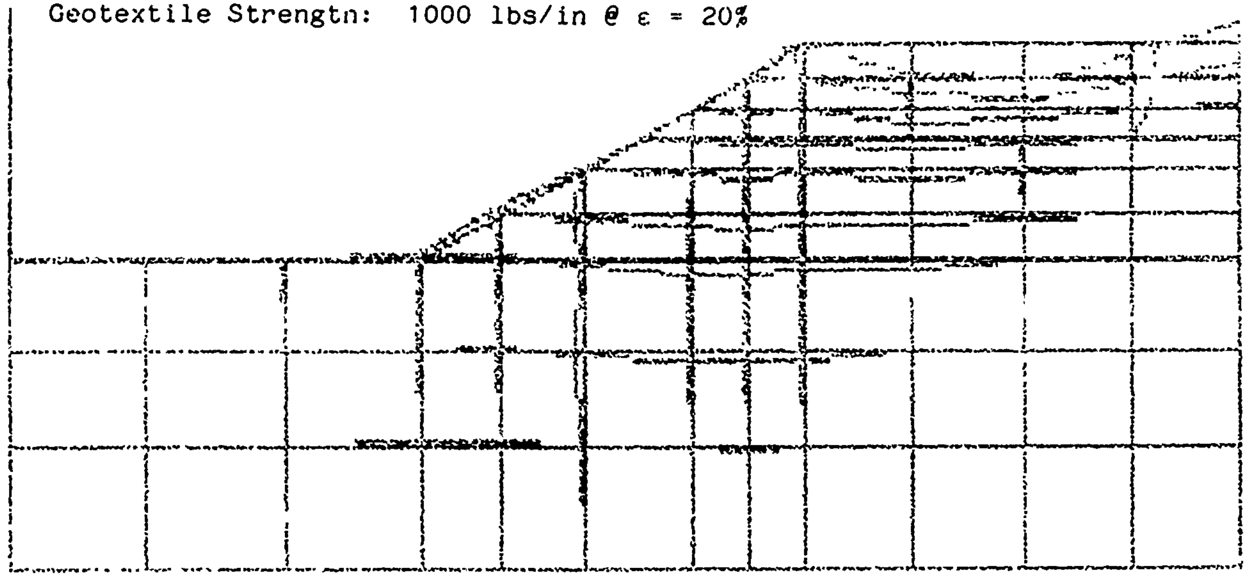


FIG. 3.13 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

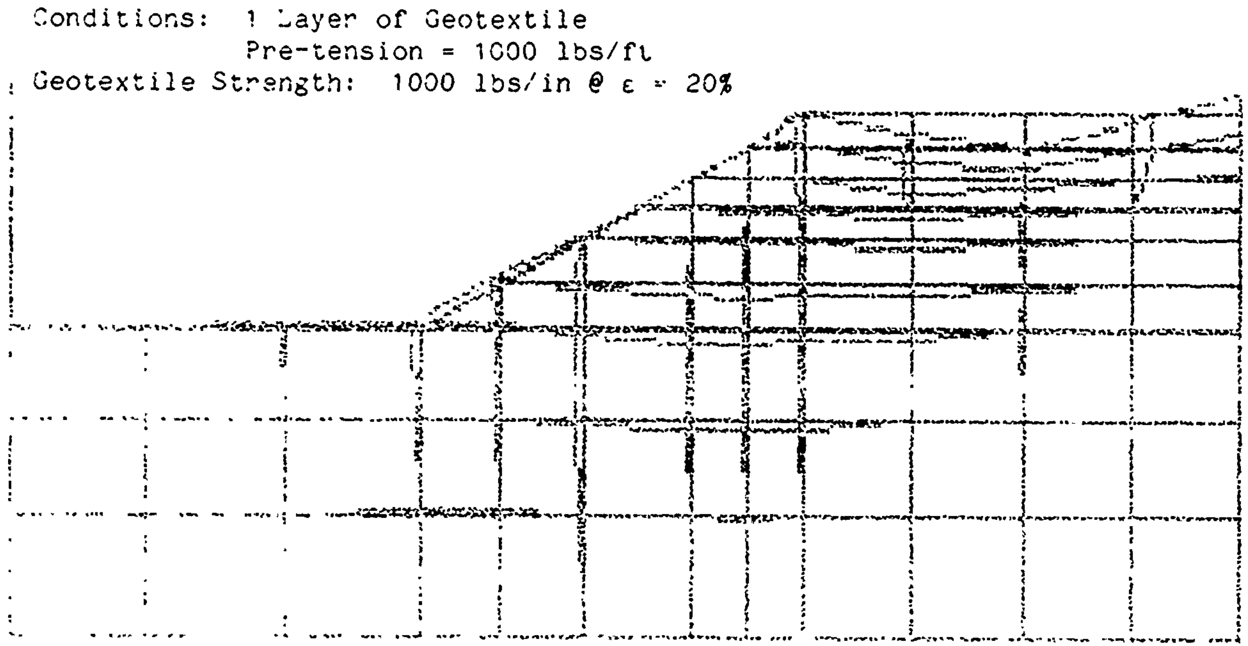



FIG. 3.14 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile Extended 10 Ft
Beyond Toe of Embankment
Pre-tension = 1000 lbs/ft
Geotextile Strength: 1000 lbs/in @ $\varepsilon$ = 20%

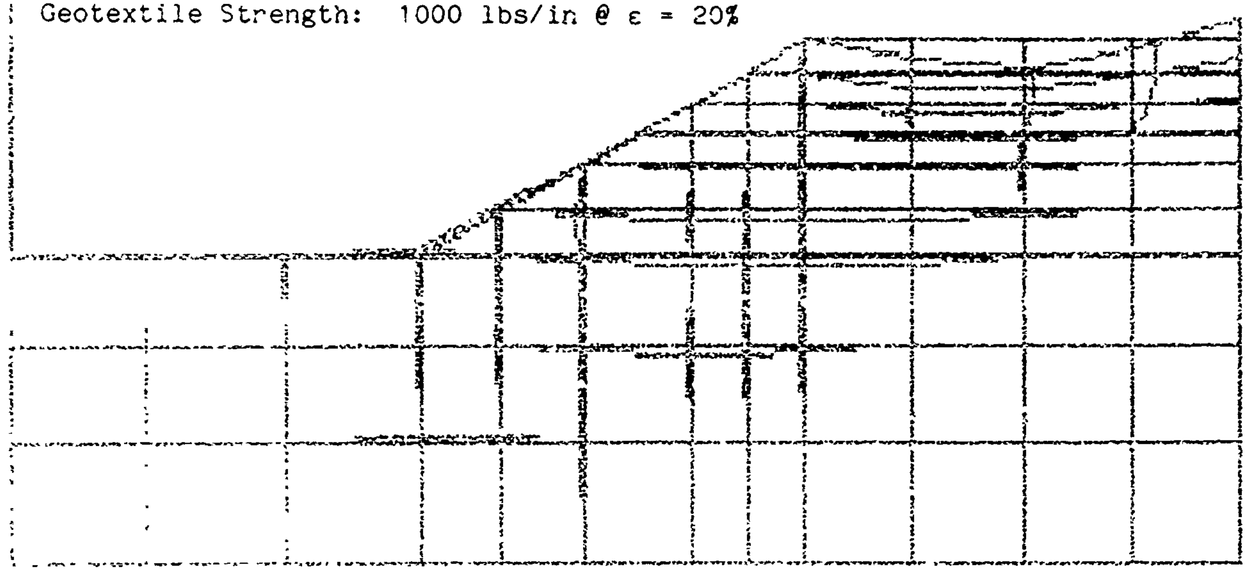


FIG. 3.15 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
No Pre-tension
Geotextile Strength: 2000 lbs/in @ $\varepsilon$ = 20%

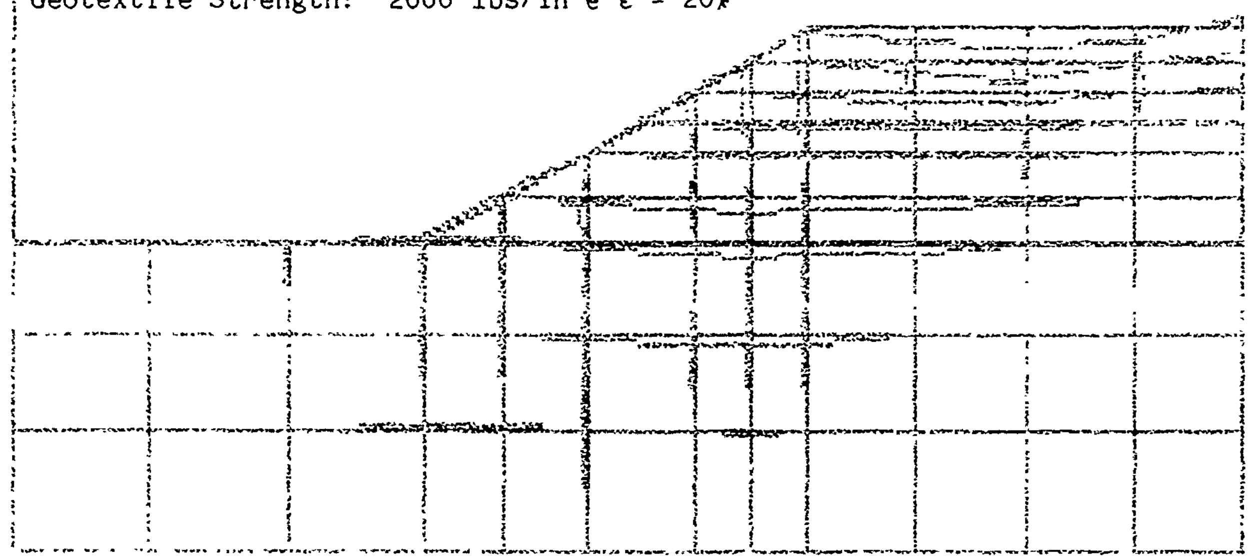


FIG. 3.16 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
Pre-tension = 1000 lbs/ft
Geotextile Strength: 2000 lbs/in @ $\varepsilon$ = 20%

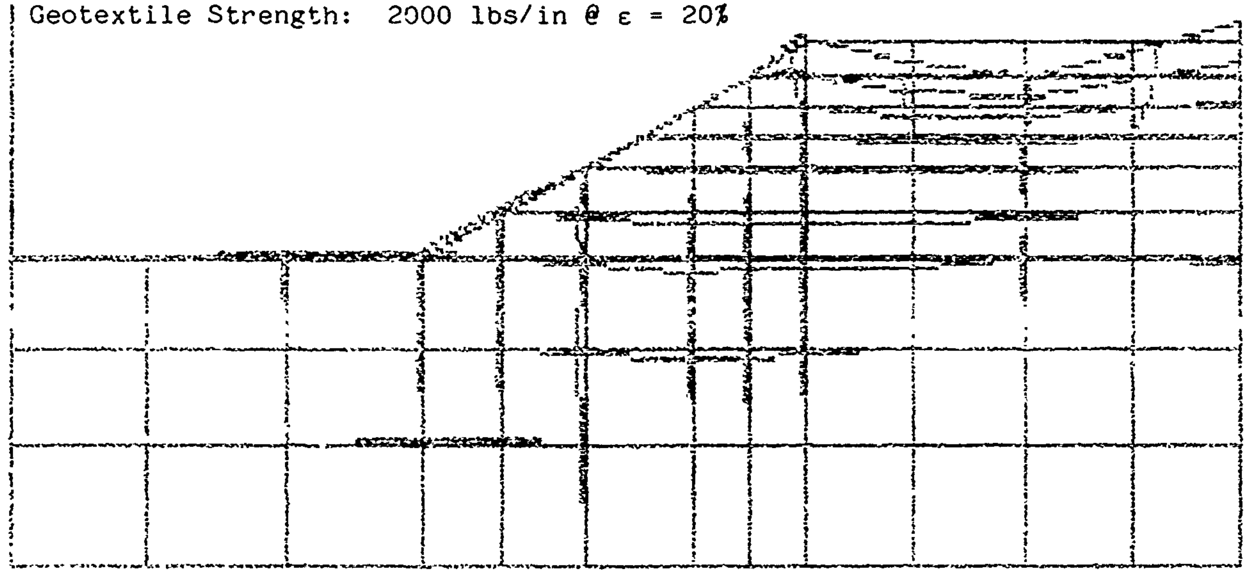


FIG. 3.17 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile Extended 10 Ft
Beyond Toe of Embankment
Pre-tension = 1000 lbs/ft
Geotextile Strength: 2000 lbs/in @ $\varepsilon$ = 20%

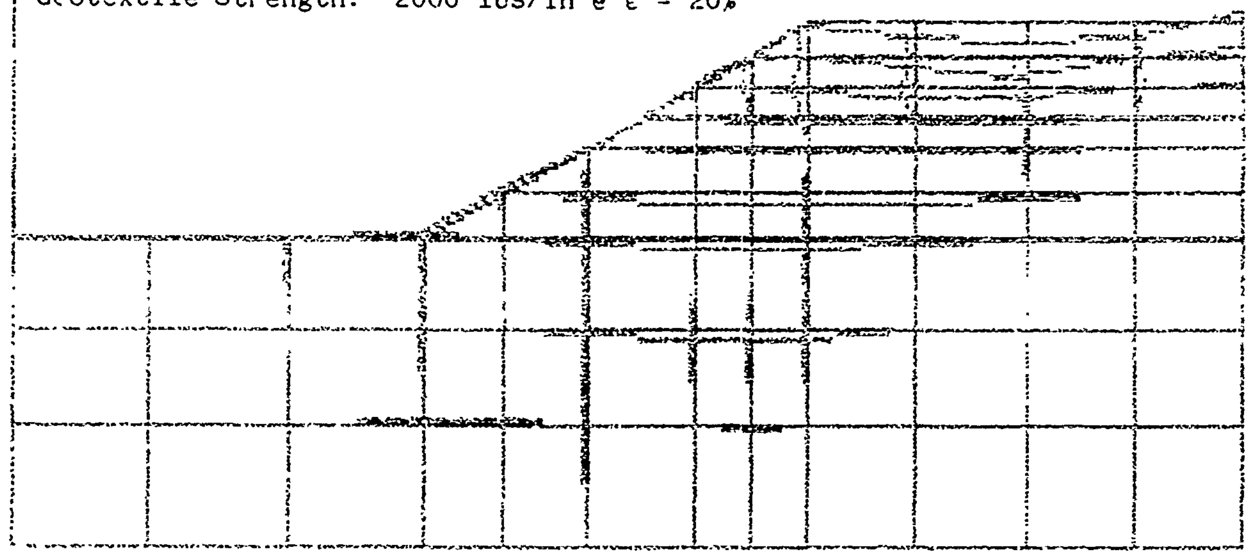


FIG. 3.18 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

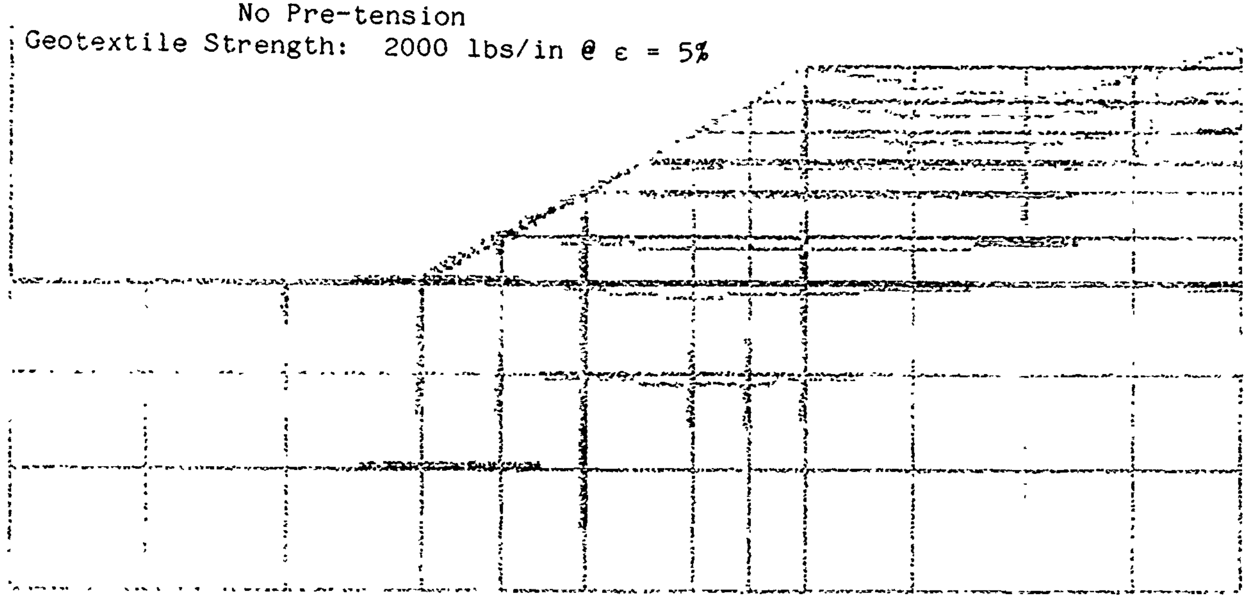



FIG. 3.19 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
Pre-tension = 1000 lbs/ft
Geotextile Strength: 4000 lbs/in @ $\varepsilon$ = 20%

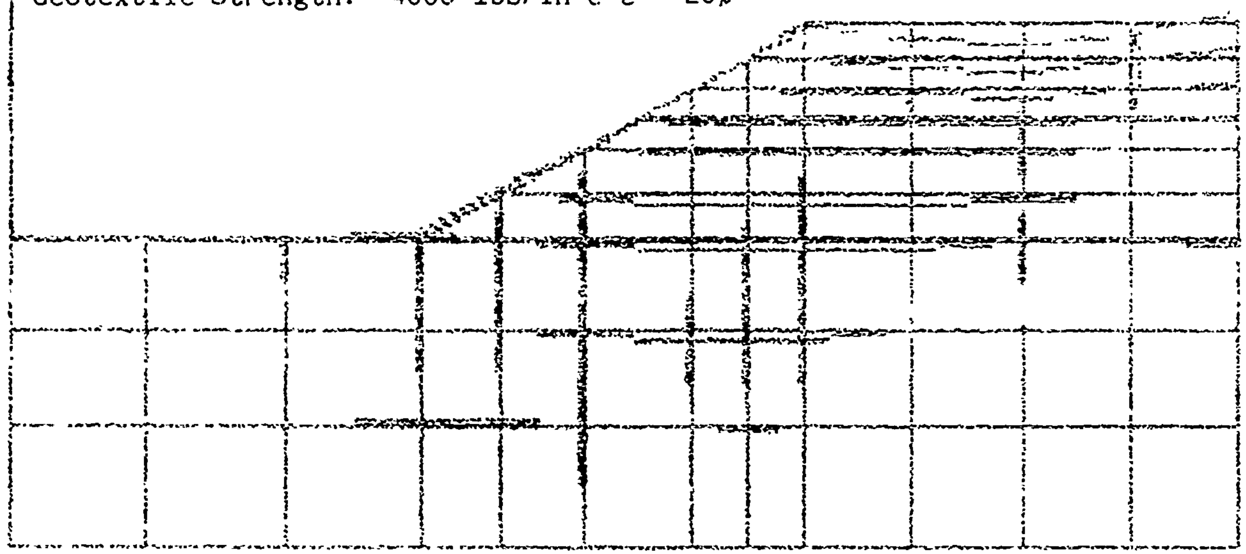


FIG. 3.20 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile Extended 10 Ft
Beyond Toe of Embankment
Pre-tension = 1000 lbs/ft
Geotextile Strength: 4000 lbs/in @ $\varepsilon$ = 20%

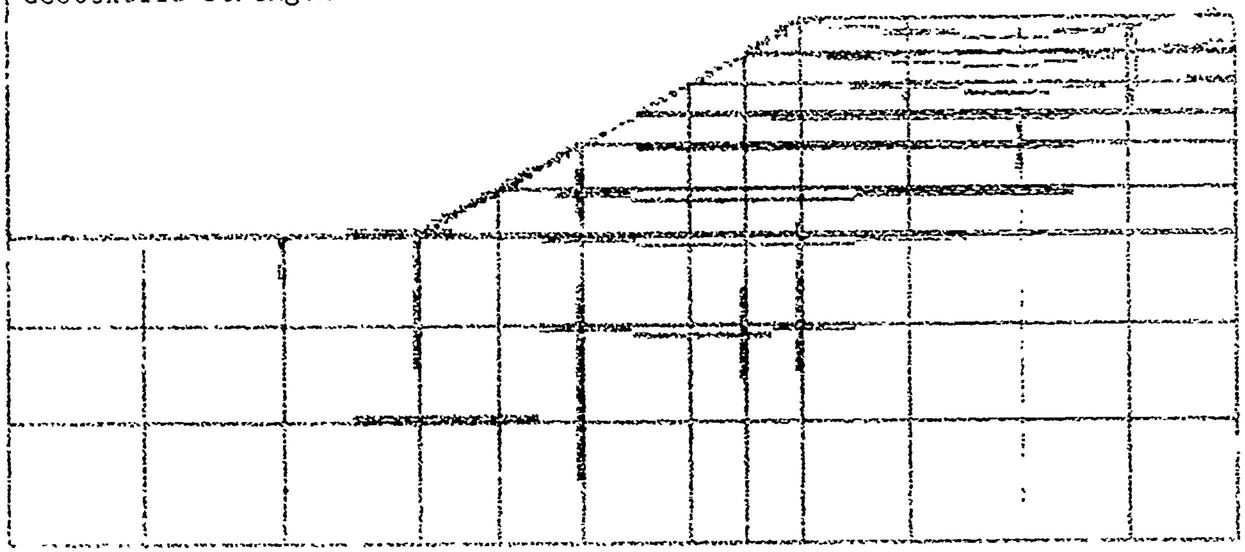


FIG. 3.21 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
No Pre-tension
Geotextile Strength: 4000 lbs/in @ $\varepsilon$ = 20%

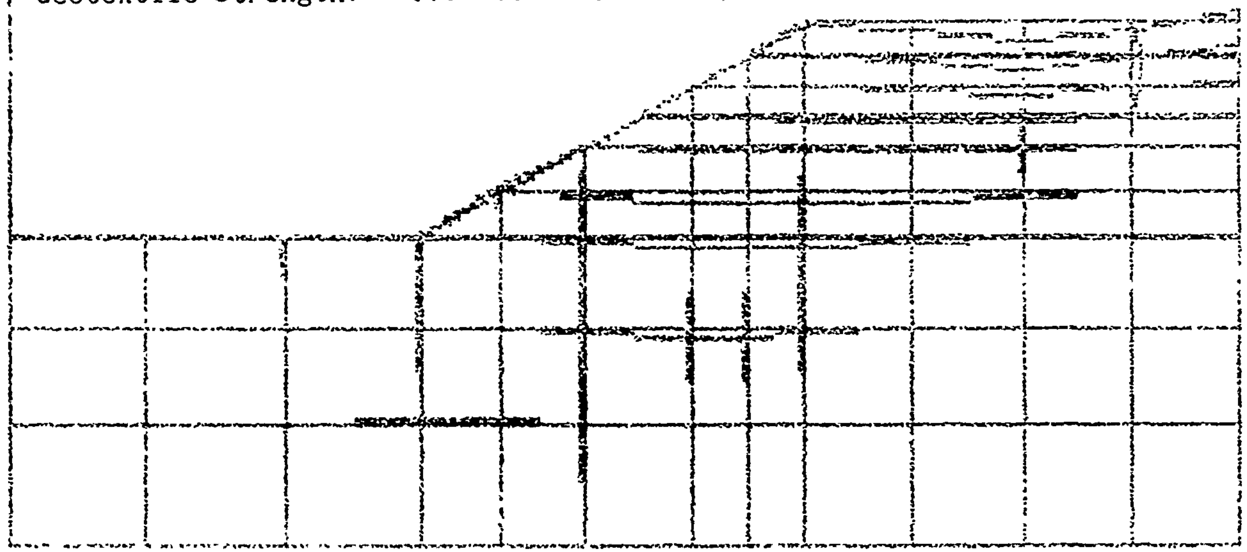


FIG. 3.22 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

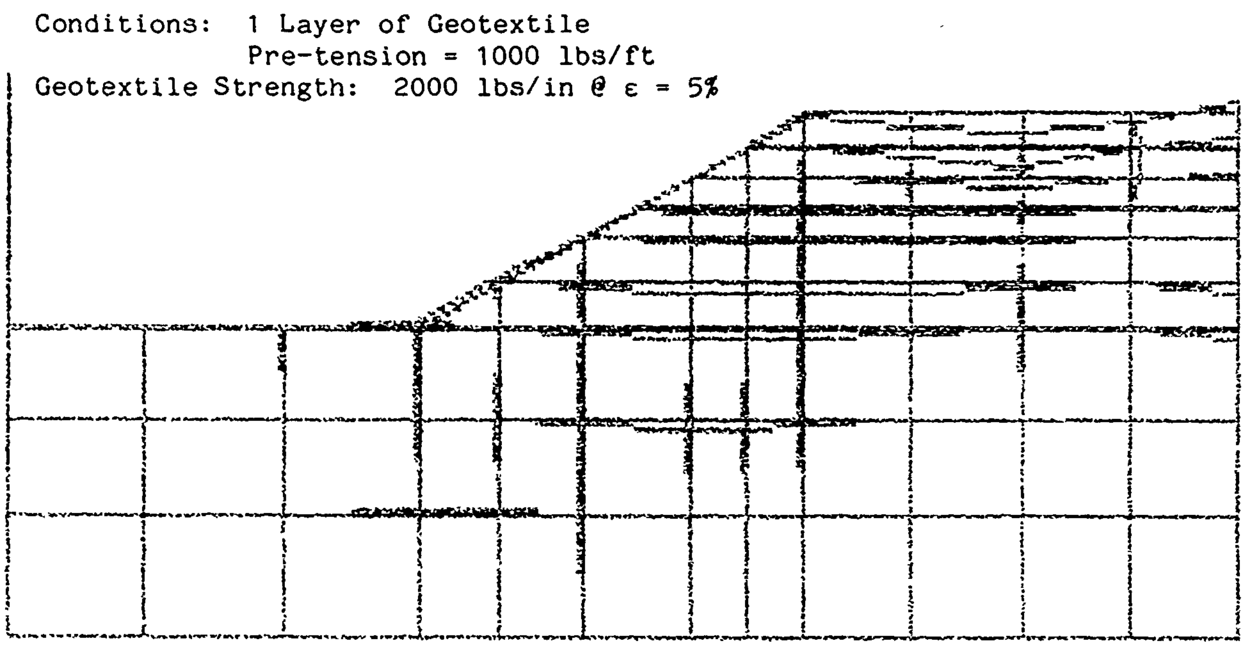



FIG. 3.23 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile Extended 10 Ft Beyond Toe of Embankment

Geotextile Strength: 2000 lbs/in @ $\varepsilon$ = 5%

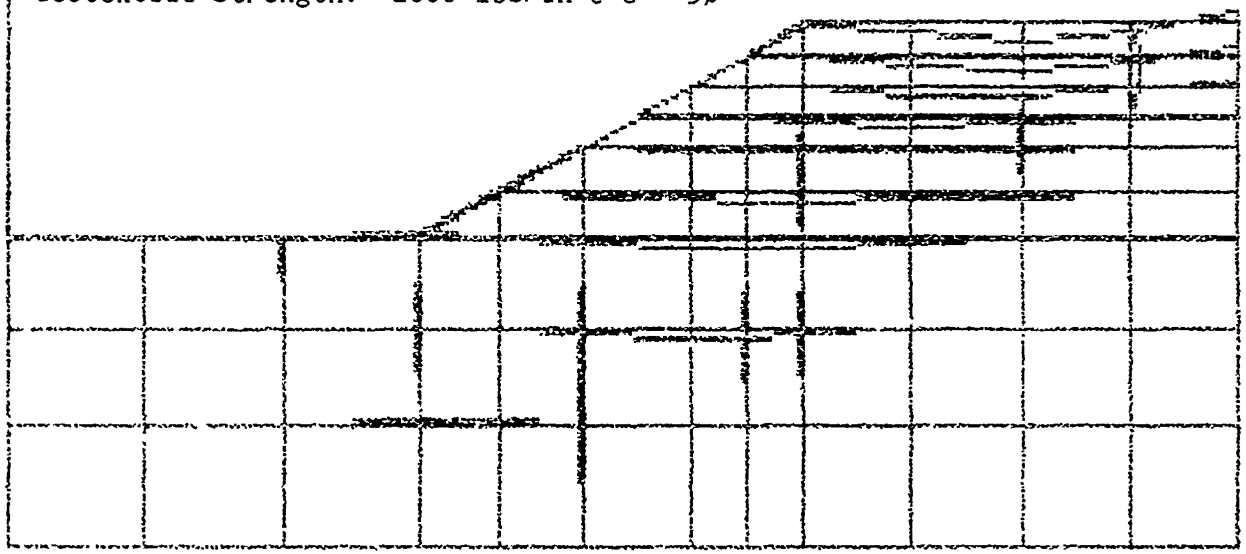


FIG. 3.24 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

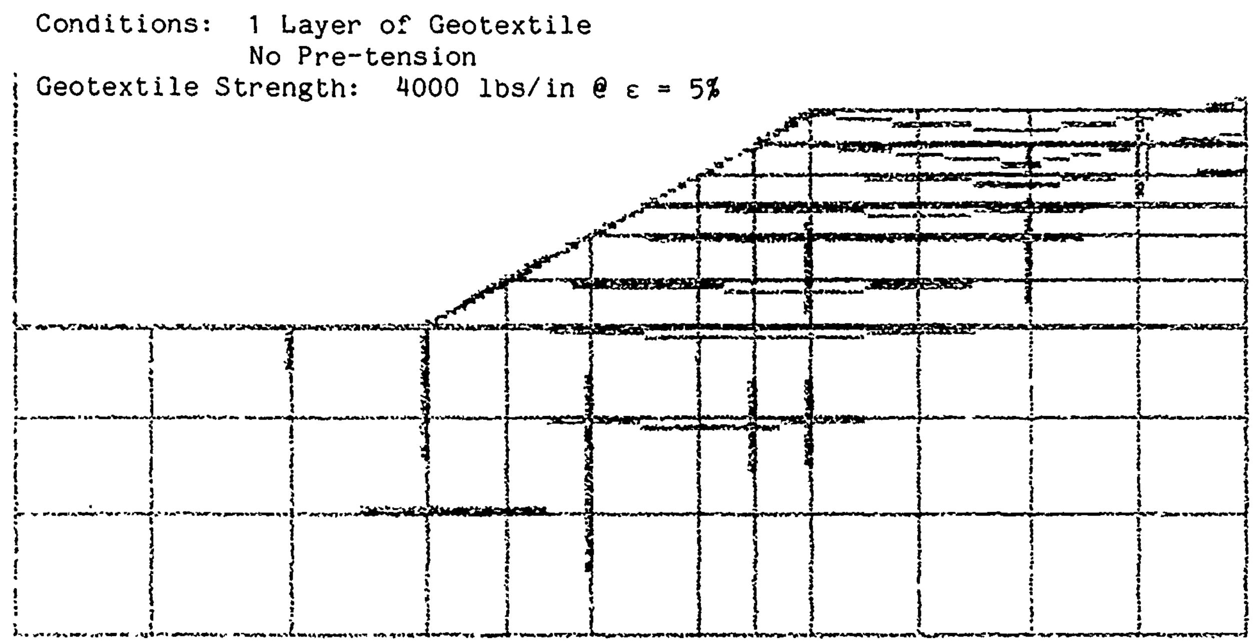



FIG. 3.25 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

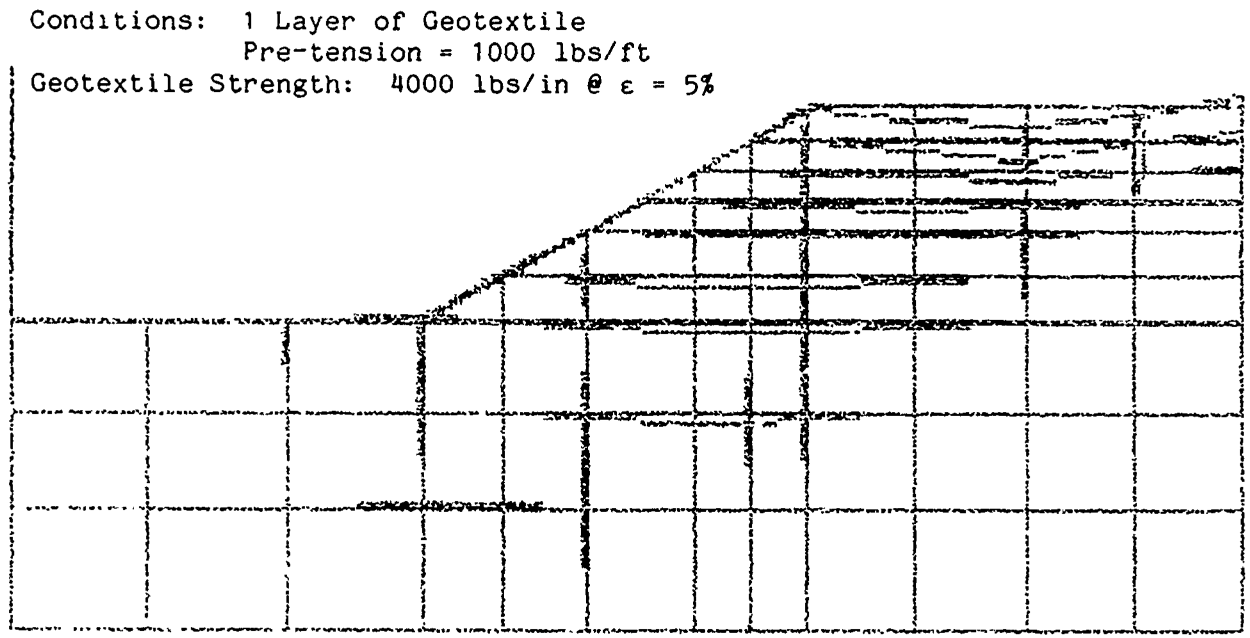



FIG. 3.26 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile Extended 10 Ft
Beyond Toe of Embankment
Geotextile Strength: 4000 lbs/in @ $\varepsilon$ = 5%

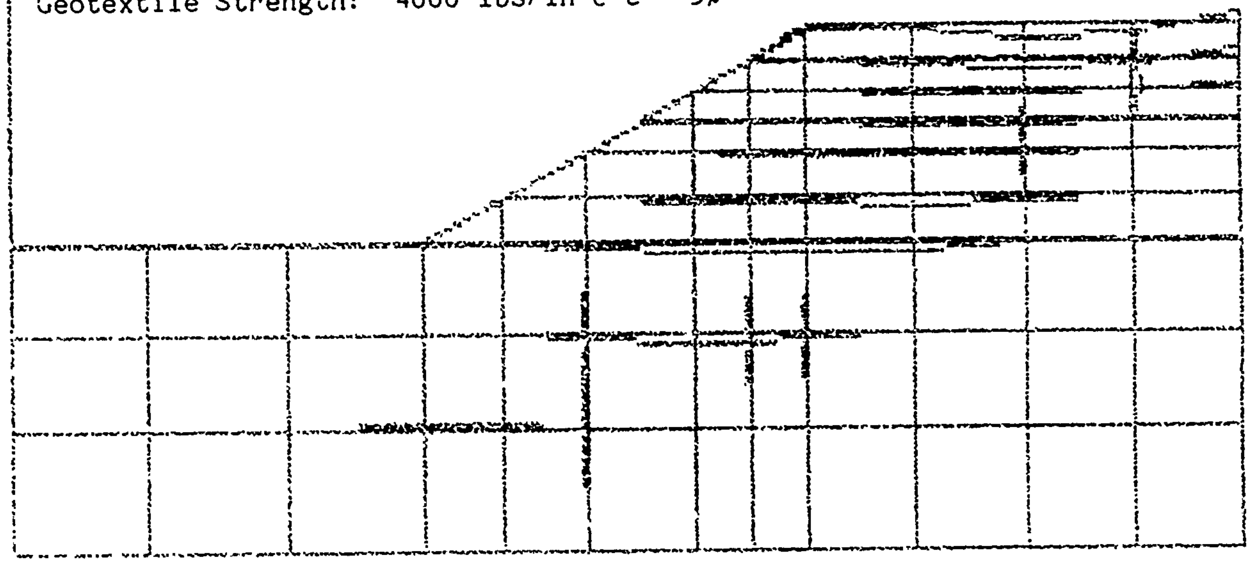


FIG. 3.27 DEFORMED EMBANKMENT GEOMETRY OF SSTIPN ANALYSIS

Conditions: No Layers of Geotextile

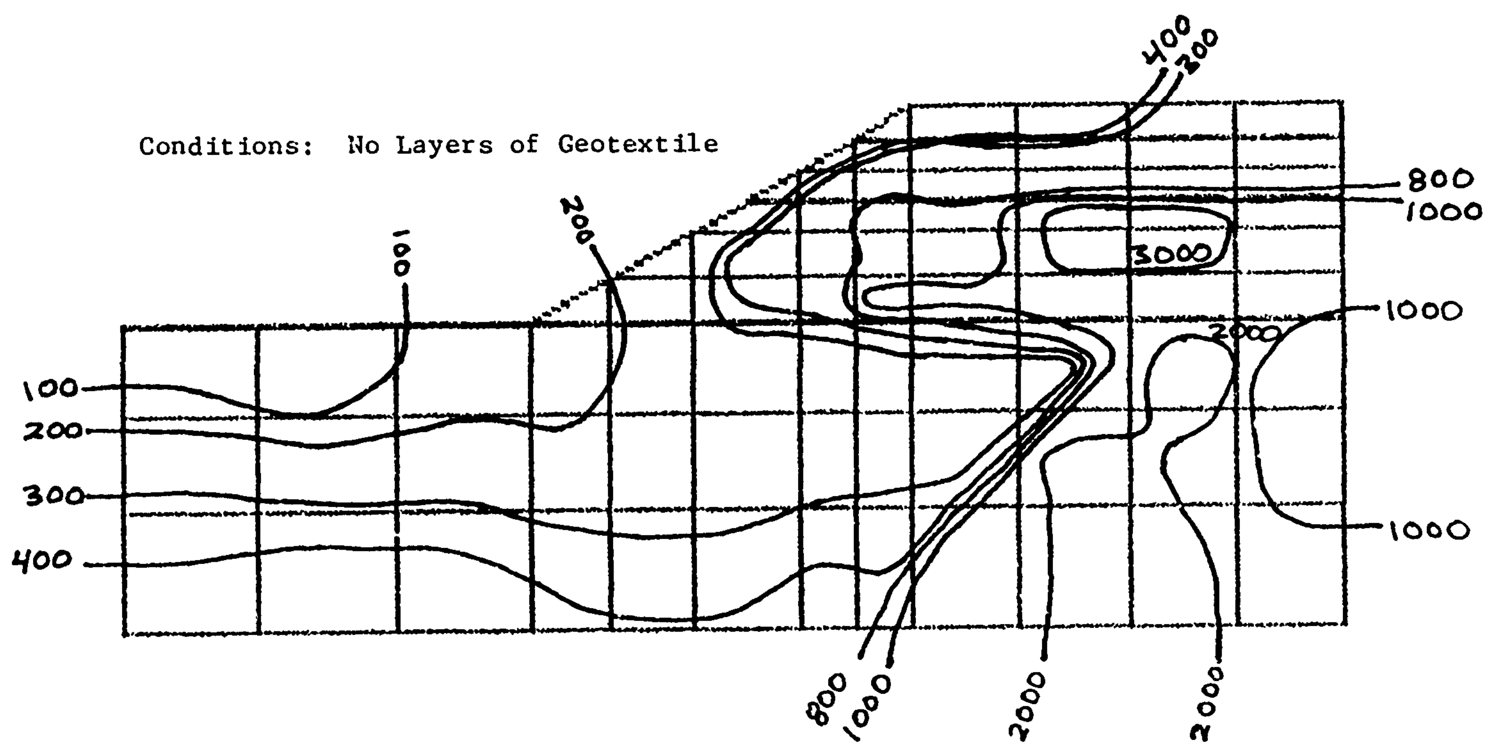



FIG. 3.28 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
No Pre-tension
Geotextile Strength: 1000 lbs/in @ $\varepsilon$ = 20%

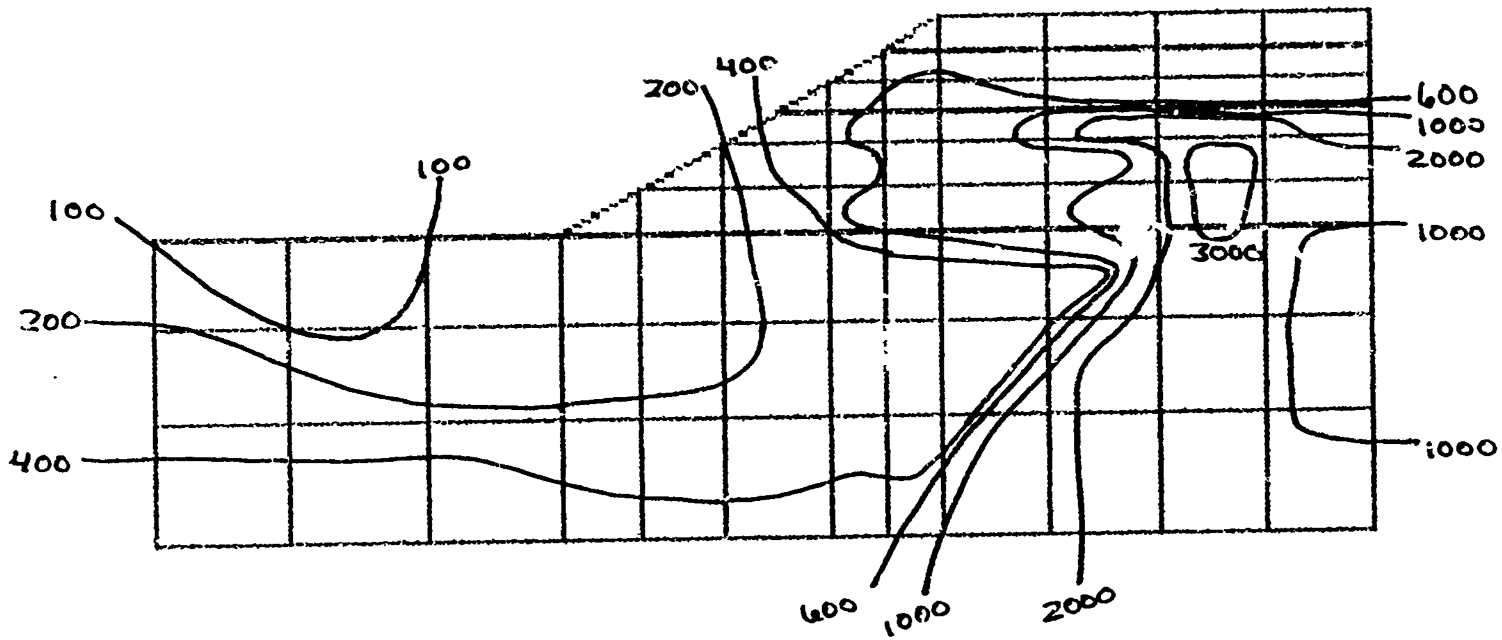



FIG. 3.29 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Condition: 1 Layer of Geotextile
Pre-tension = 1000 lbs/ft
Geotextile Strength: 1000 lbs/in @ $\varepsilon$ = 20%

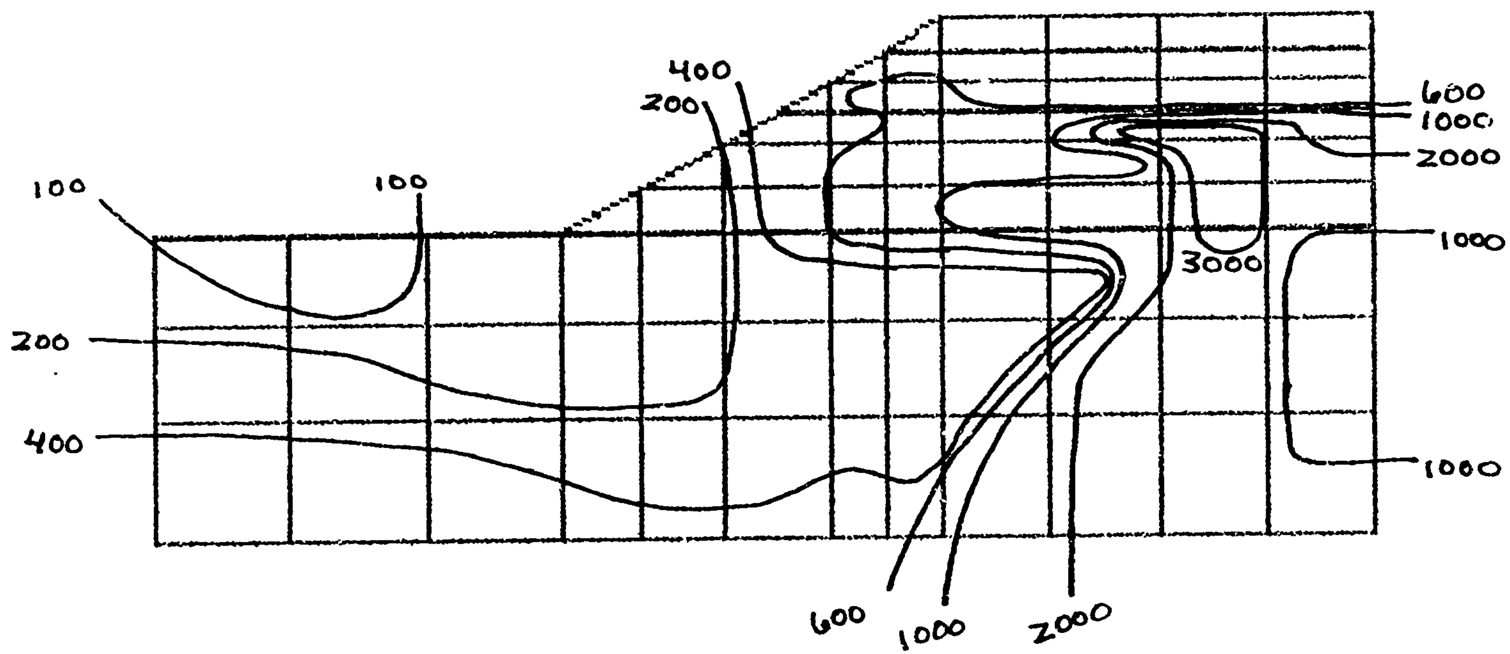



FIG. 3.30 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile Extended
10 ft Beyond Toe of Embankment
Pre-tension = 1000 lbs/ft
Geotextile Strength: 1000 lbs/in @ ε = 20%

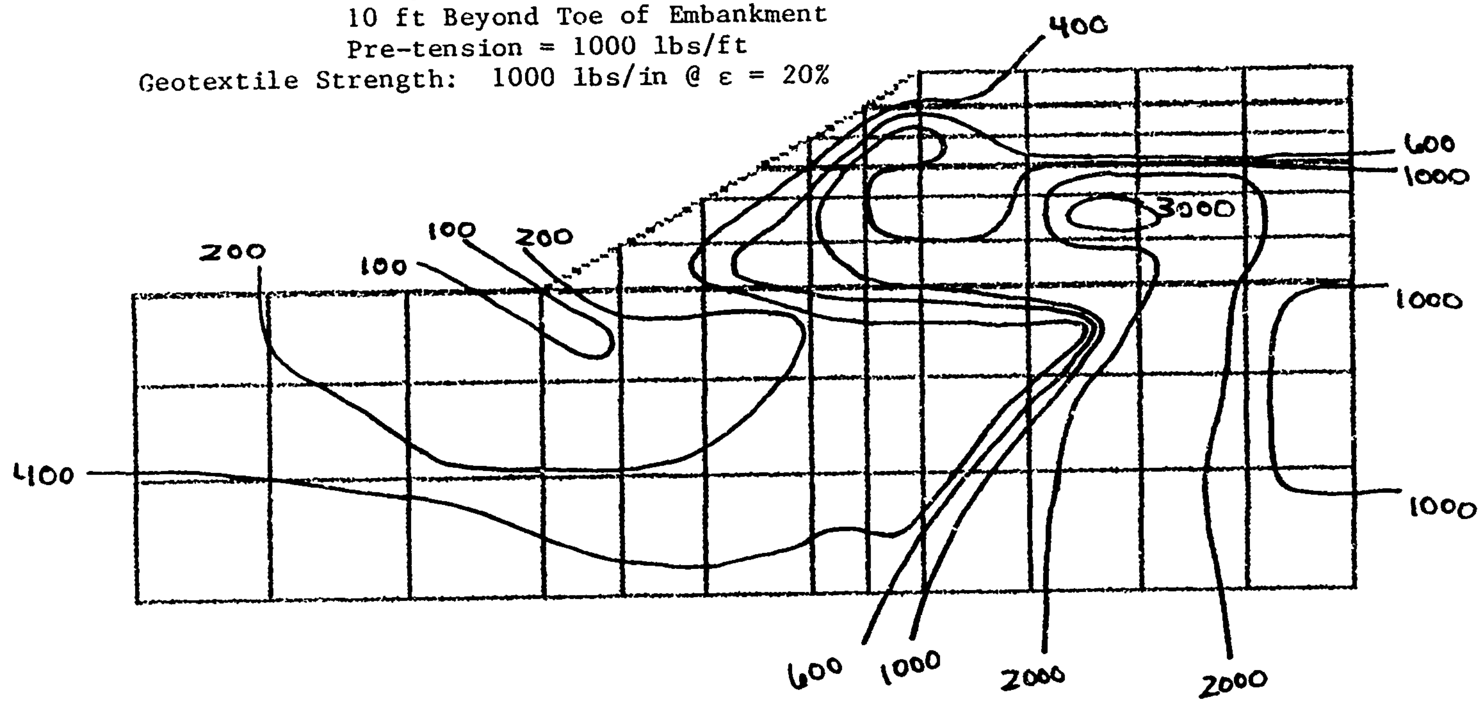



FIG. 3.31 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

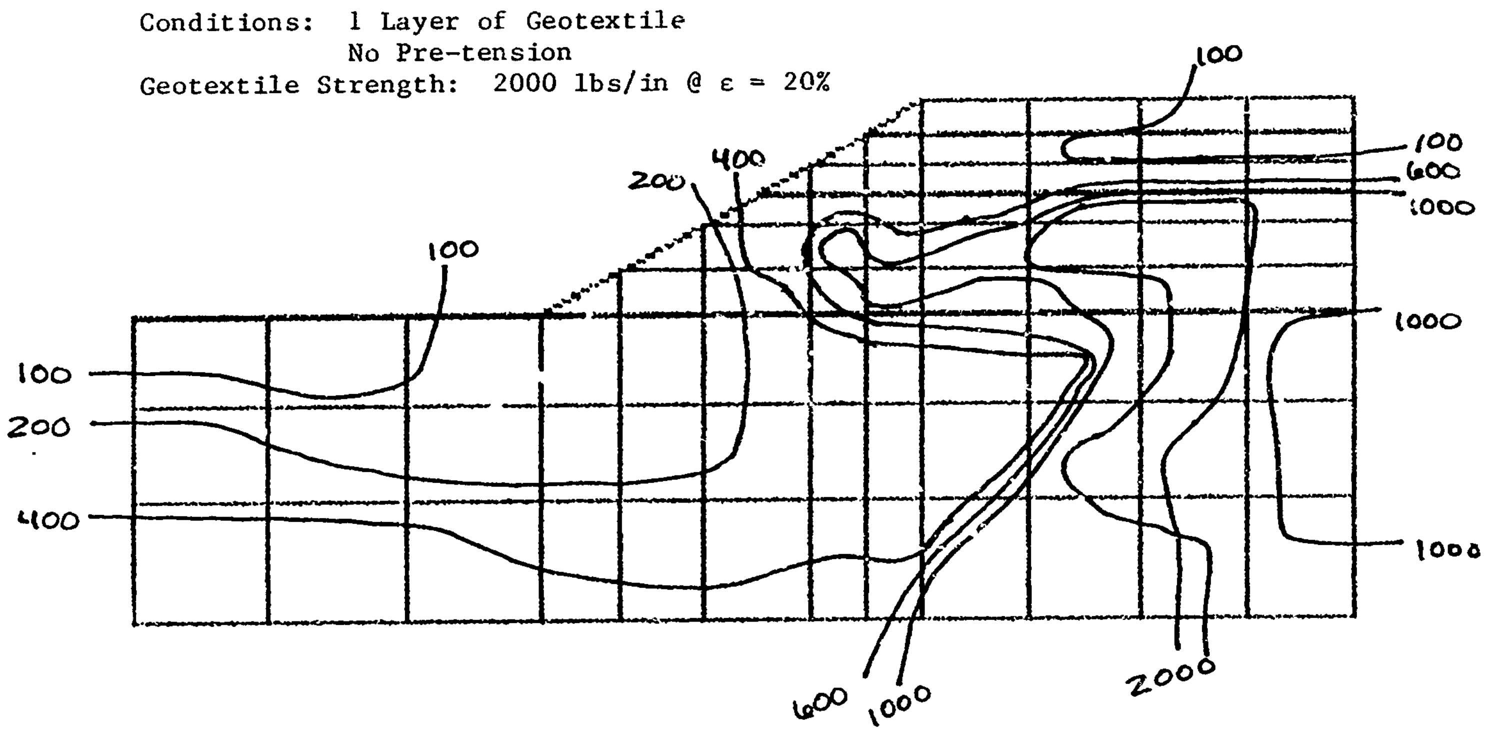



FIG. 3.32 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
Pre-tension = 1000 lbs/ft
Geotextile Strength: 2000 lbs/in @ $\varepsilon$ = 20%

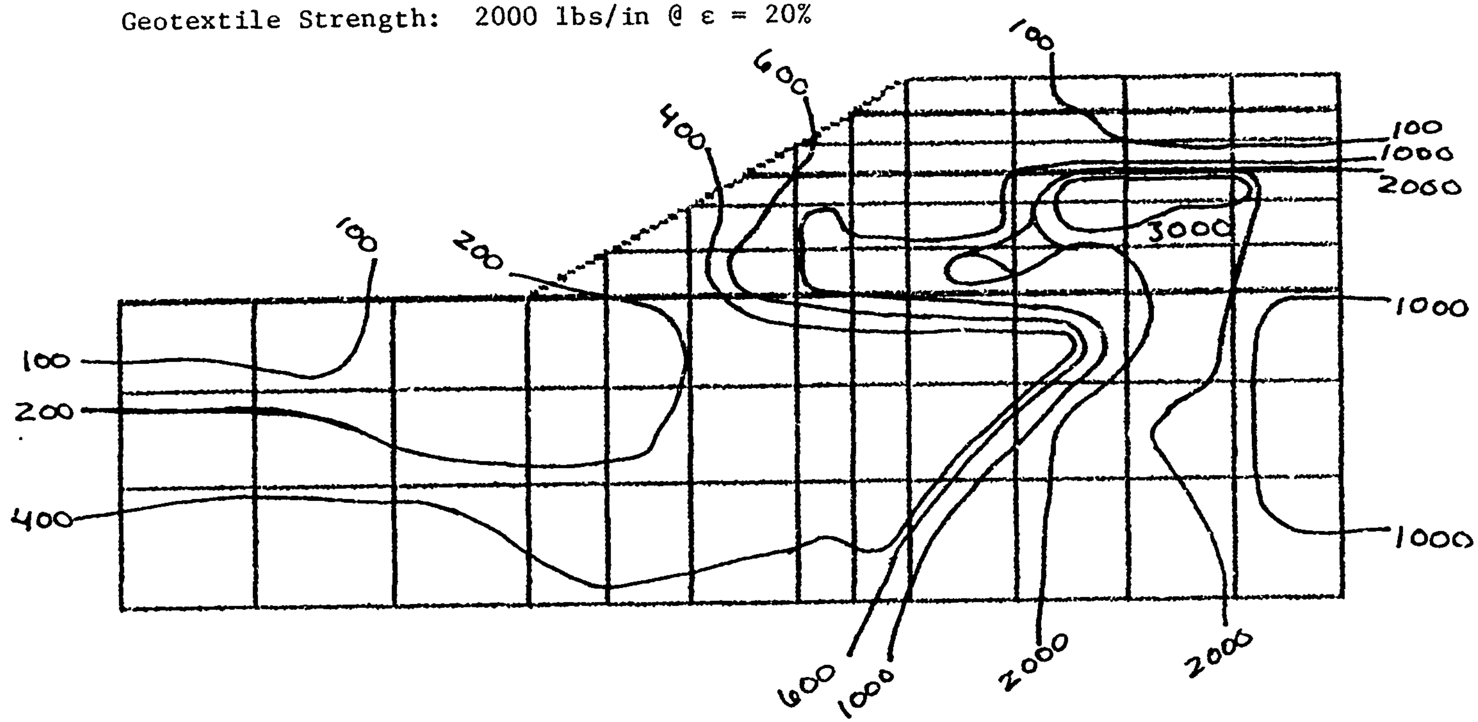



FIG. 3.33 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile Extended
10 Ft Beyond Toe of Embankment
Pre-Tension - 1000 lbs/ft
Geotextile Strength: 2000 lbs/in @ ε 20%

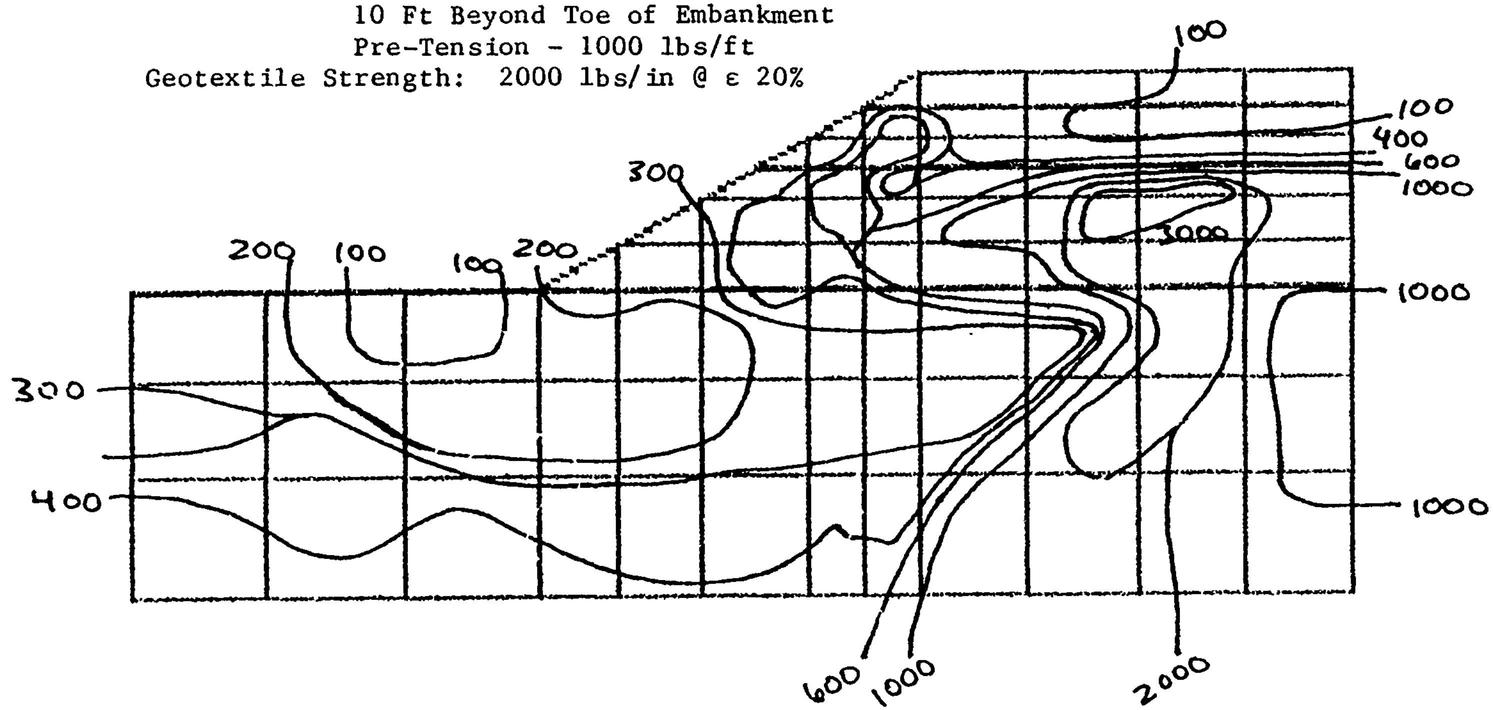



FIG. 3.34 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
No Pre-tension
Geotextile Strength: 4000 lbs/in @ $\varepsilon$ = 20%

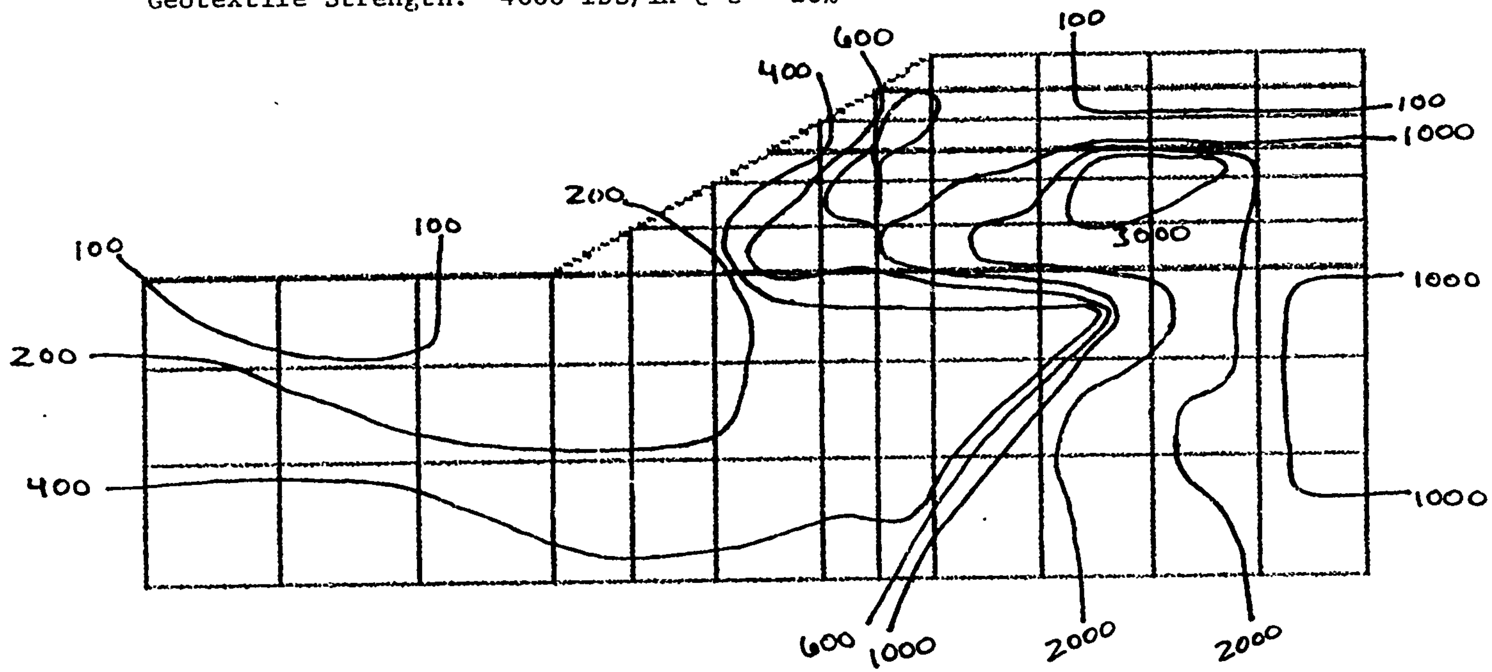



FIG. 3.35 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
Pre-tension = 1000 lbs/ft
Geotextile Strength: 4000 lbs/in @ ε= 20%

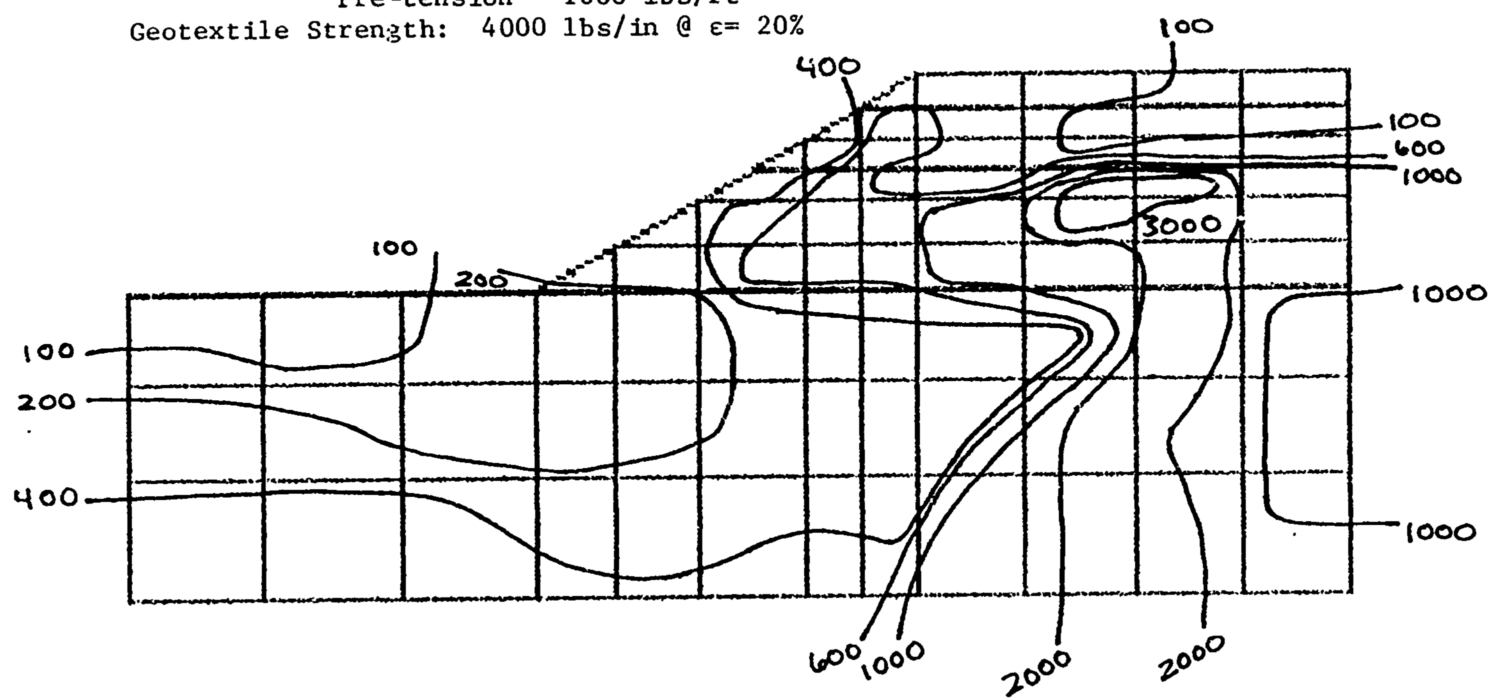



FIG. 3.36 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile Extended 10 Ft
Beyond Toe of Embankment
Pe-tension = 1000 lbs/ft
Geotextile Strength: 4000 lbs/in @ $\varepsilon$ = 20%

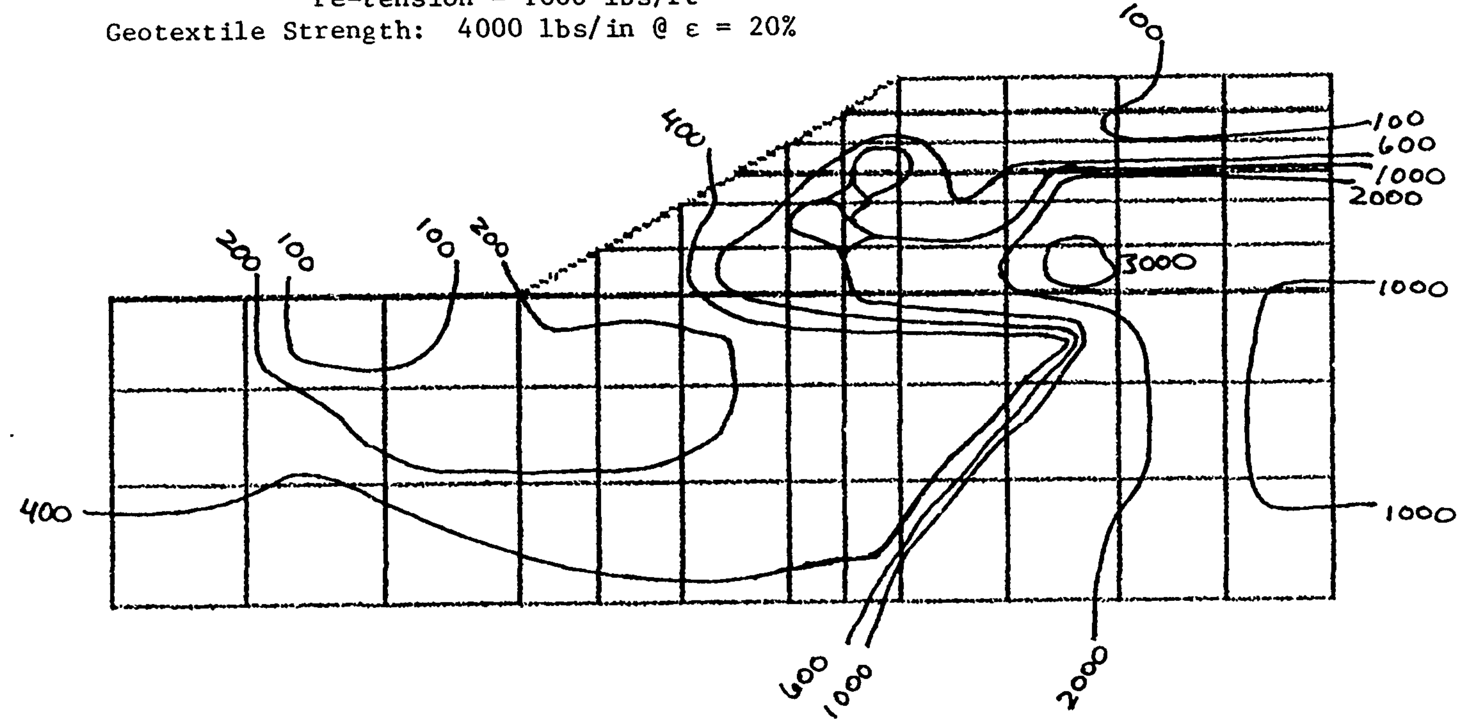



FIG. 3.37 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
No Pre-tension
Geotextile Strength: 2000 lbs/in @ ε = 5%

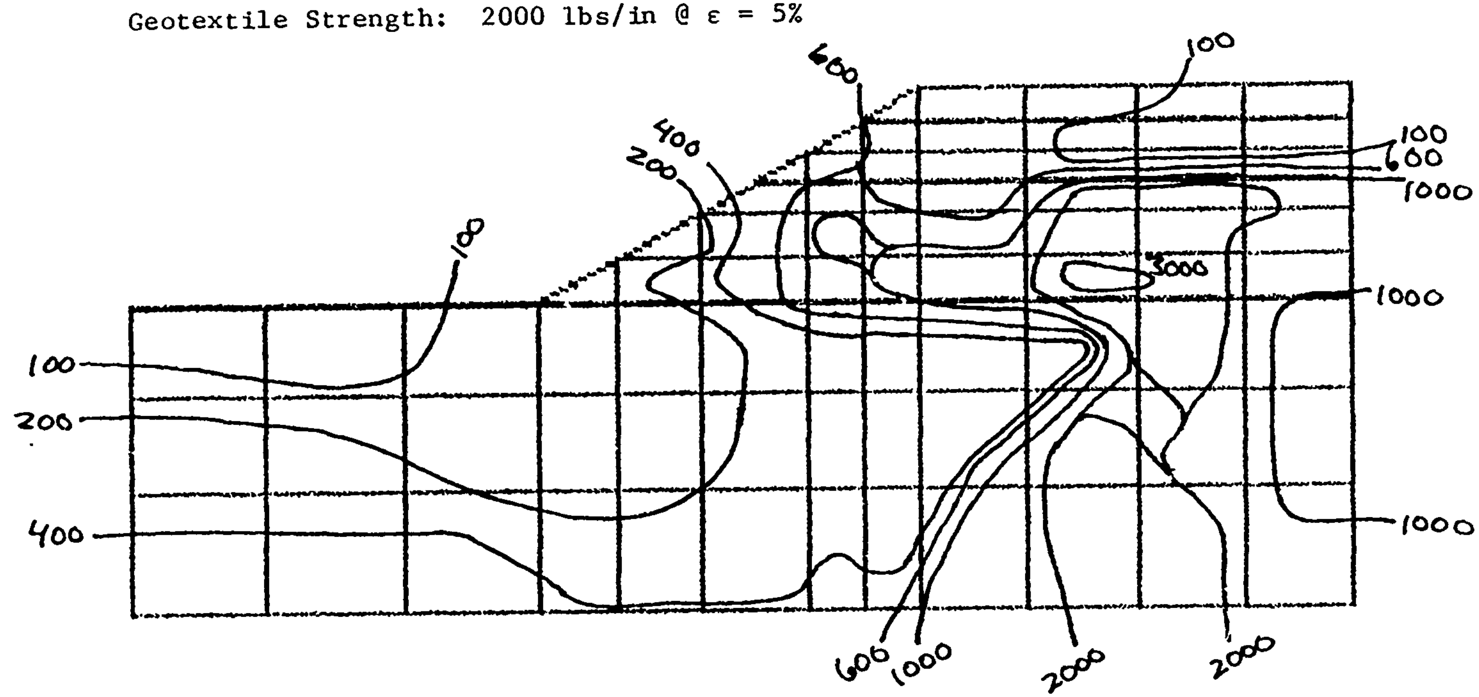



FIG. 3.38 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
Pre-tension = 1000 lbs/ft
Geotextile Strength: 2000 lbs/inc @ $\varepsilon$ = 5%

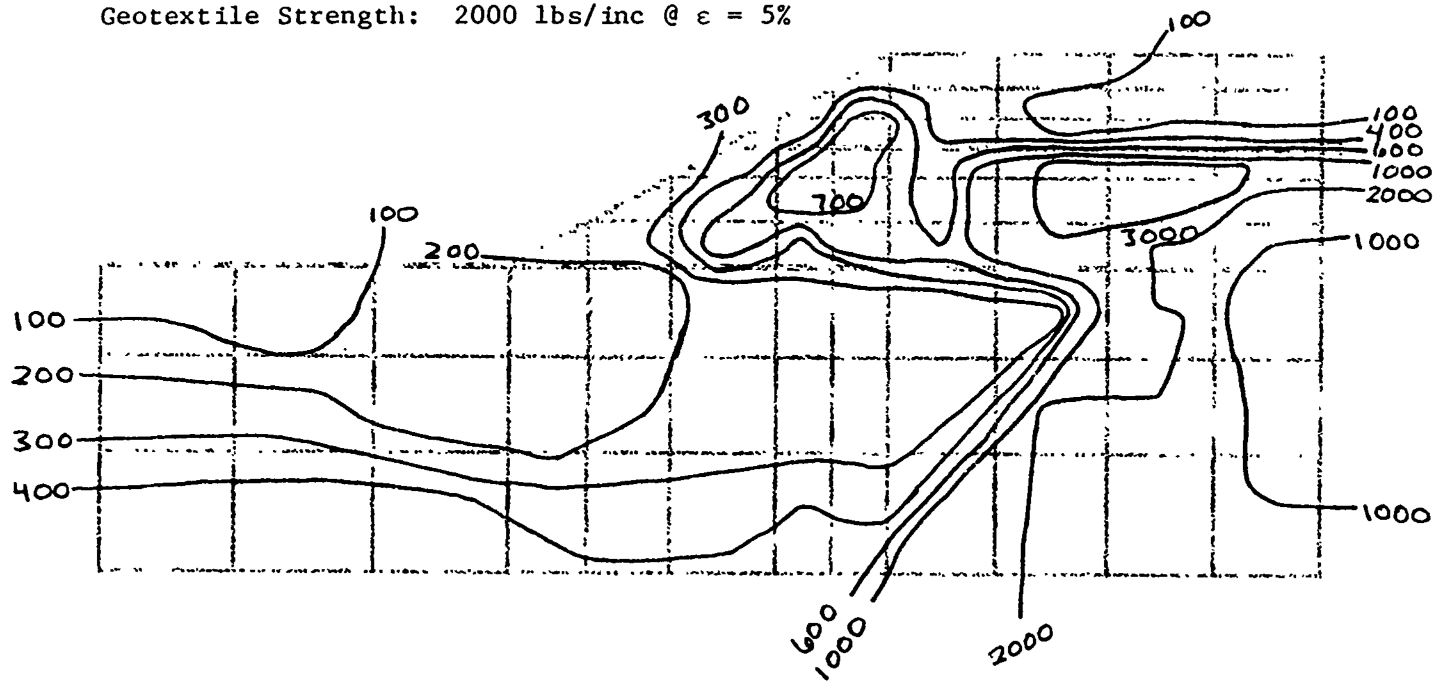



FIG. 3.39 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile Extended 10 Ft
Beyond Toe of Embankment
Pre-tension = 1000 lbs/ft
Geotextile Strength: 2000 lbs/in @ $\varepsilon$ = 5%

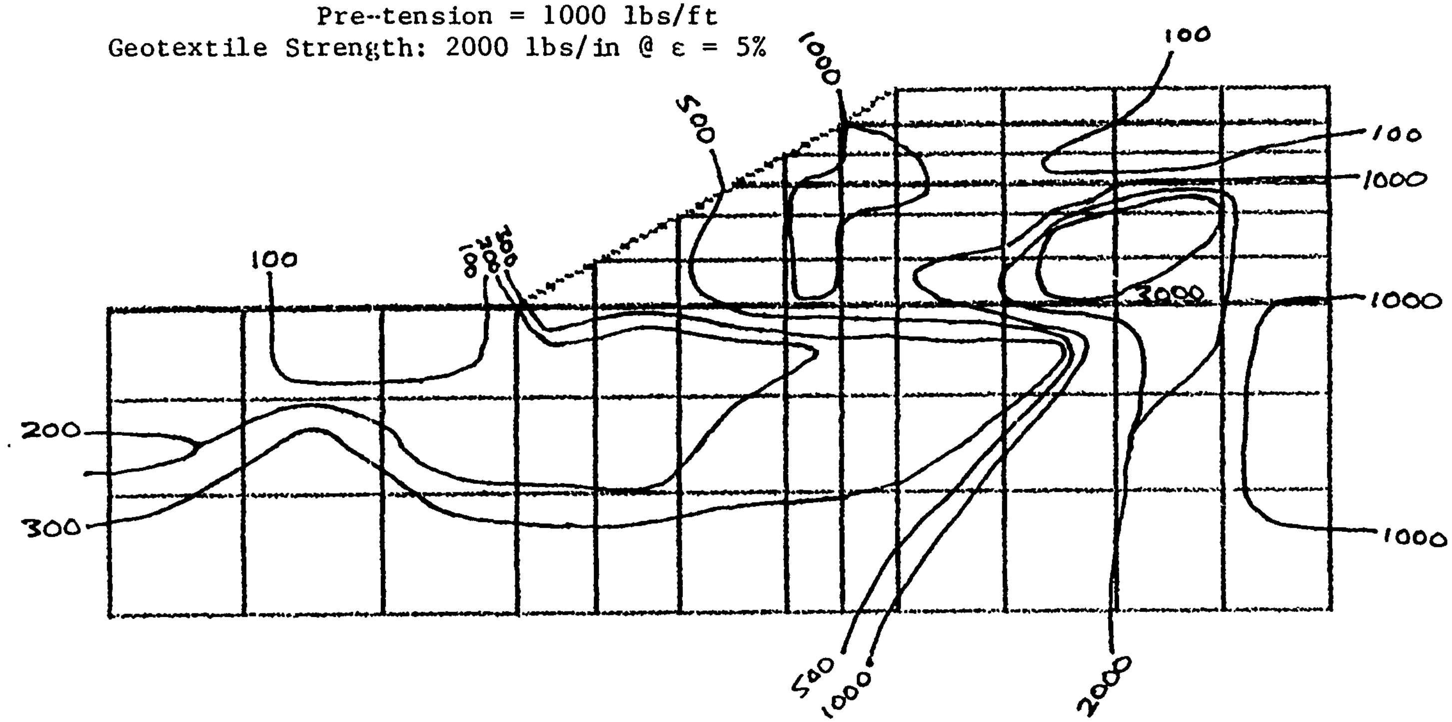



FIG. 3.40 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
No Pre-tension
Geotextile Strength: 4000 lbs/in @ $\varepsilon$ = 5%

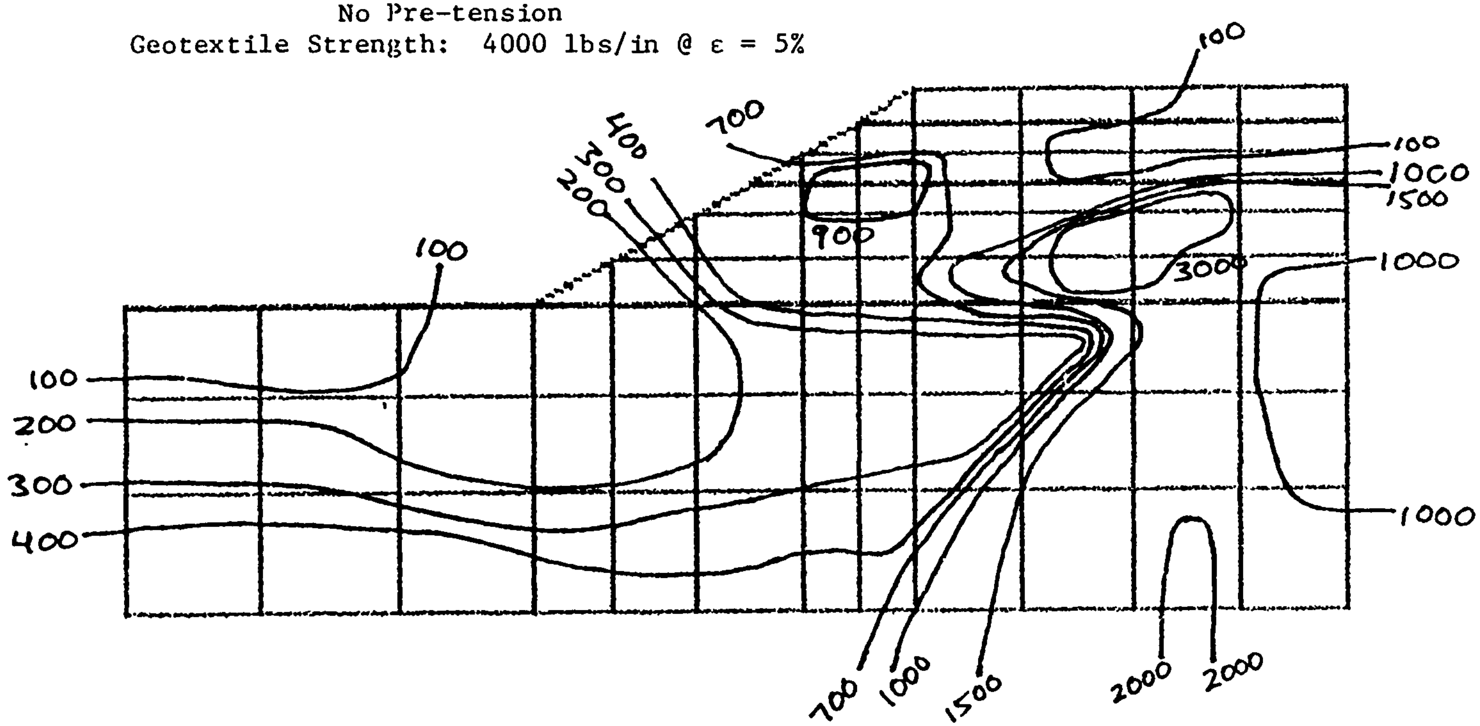



FIG. 3.41 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile
Pre-tension = 1000 lbs/ft
Geotextile Strength: 4000 lbs/in @ $\varepsilon$ = 5%

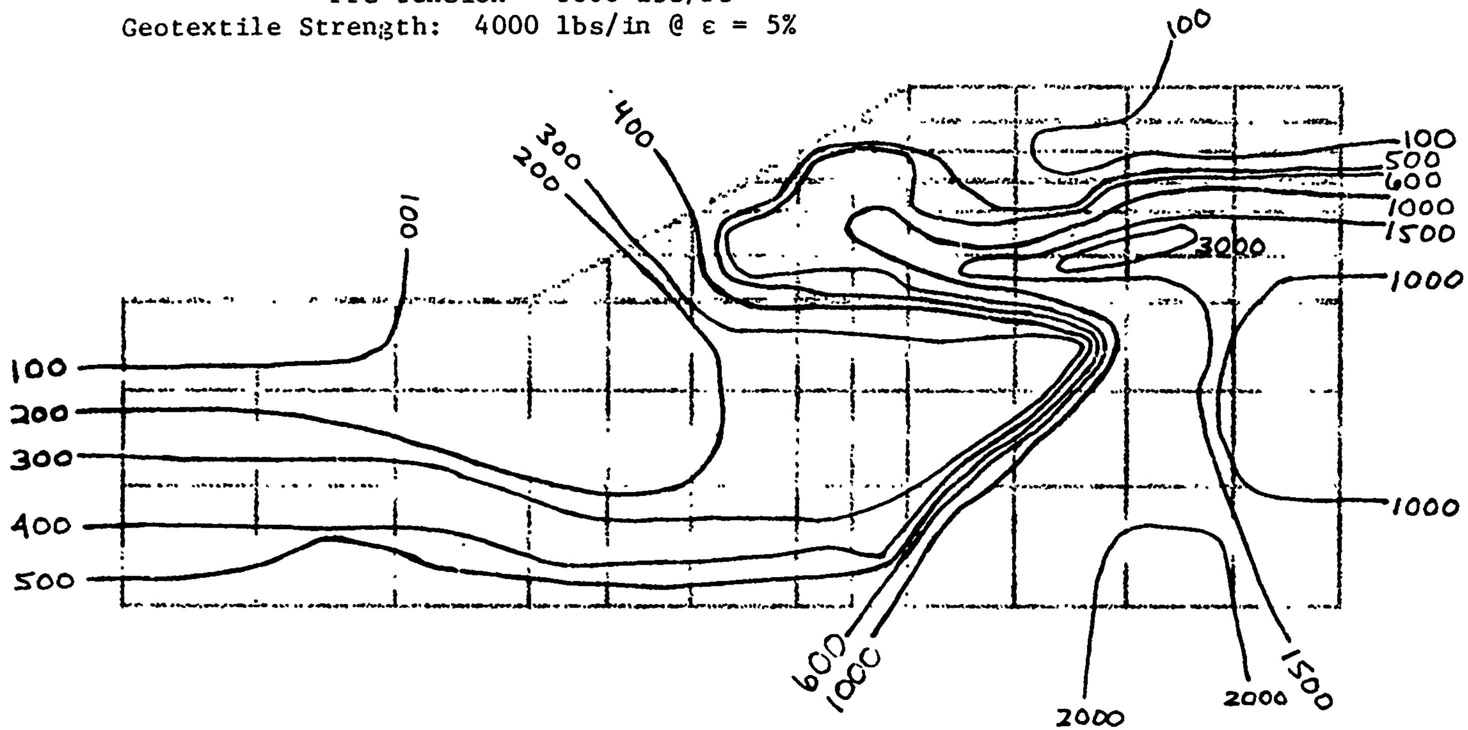



FIG. 3.42 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

Conditions: 1 Layer of Geotextile Extended 10 Ft
Beyond Toe of Embankment
Pre-tension = 1000 lbs/ft
Geotextile Strength: 4000 lbs/in @ $\varepsilon$ = 5%

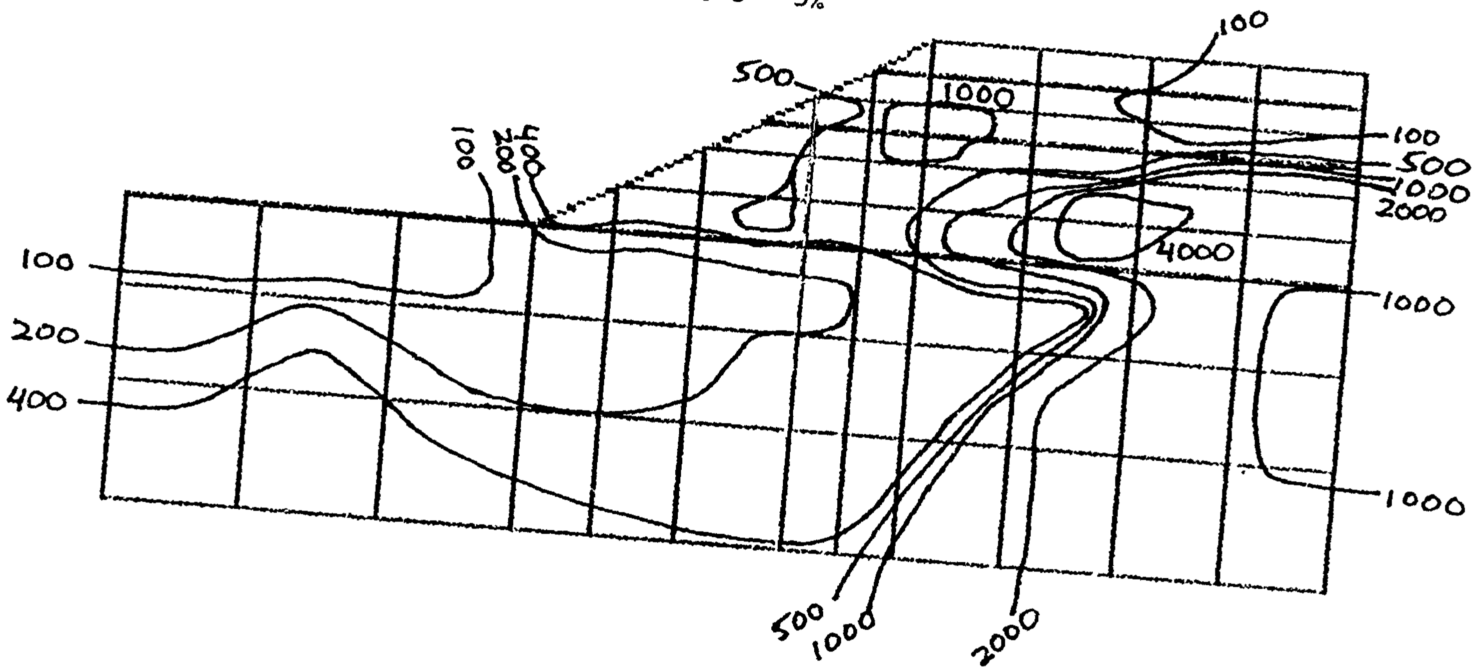



FIG. 3.43 DEVIATORIC STRESS CONTOUR OF SSTIPN ANALYSIS

### 3.2.2 Conclusions and Recommendations

There are two major factors which determine whether or not a numerical analysis is reliable. First, existing conditions must be modelled properly. Geometry and material properties must be as close to actual conditions as possible to accurately simulate behavior of the model. Second, the program must be able to evaluate conditions which may exist in the field. The soil model must be able to determine appropriate values for strength to simulate actual conditions. The hyperbolic model used in SSTIPN models soil conditions very accurately up to the point of failure. Once failure of the soil results, the model is not capable of simulating accurate conditions. Appendix E contains detail results of all analyses. Close observation of the analyses reveals the occurrence of shear and tensile failure within soil elements located within the thaw-unstable soil and roadway embankment. Failure occurs within the foundation soil from the placement of the embankment's first layer. With the placement of the additional five layers of embankment soil, an increasing number of soil elements enter a failure mode. Observation of stress contours for all conditions do not reveal a major redistribution in stress throughout the embankment and foundation as a result of the addition of a geotextile and increases of strength in the geotextile. The stress contours of the analysis with no layers of geotextile is not very different from the analysis with one layer of geotextile with a strength of 4000 pounds per inch at 5 percent strain. The inability of the hyperbolic model to accurately simulate soil conditions after failure is the primary cause for the difference. With soil elements in a failure mode throughout each analysis, the computation of stresses within the embankment apparently do not differ very much. In the final analysis, the resulting stress distributions are similar.

Observation of the deformed roadway embankment models, Figures 3.12 through 3.27, reveal subtle differences between each condition. The inability of the hyperbolic model to simulate soil properties after failure has the same effect on displacements as it does on stress computation. However, the diagrams display more displacement with weaker geotextile properties. This indicates the positive effect of stronger geotextile properties. It is difficult to assess which property has the most positive effect due to the programs inability to distinguish between different strain values. However, geotextiles which have higher strength and higher modulae tend to maintain embankment integrity and reduce the failure mechanisms associated with embankment stability. The more the embankment is allowed to deform over the thaw-unstable region, the more the risk for longitudinal cracking in the wearing surface.

The addition of a soil berm and geotextile extension outside the toe of the embankment causes the degradation of thawing to occur beneath the berm more than the sideslopes of the embankment. The result is consolidation of the thaw-unstable soil beneath the berm more than beneath the sideslopes of the embankment. This increases embankment stability and reduces the risk of longitudinal cracking in the wearing surface.

Through further observation of geotextile forces in Appendix E, the failure capacity is not attained in any analysis. This indicates that geotextile integrity is not impaired and will not fail under these conditions.

A comparison of Figure 3.8 and 3.12 reveals a discrepancy between the resulting displacements in the FEADAM84 and SSTIPN analysis. The soil model employed in the SSTIPN program is an older version of the model used in the FEADAM84 program. Displacements of the embankment model should have been similar given the same condition. The FEADAM84 deformed geometry, Figure 3.8, shows more displacement than the SSTIPN deformed geometry, Figure 3.12. The increased number of soil elements in the SSTIPN analysis should add more flexibility to the model. From the results obtained, the opposite occurs. The cause of this discrepancy is primarily attributed to the different generation of hyperbolic soil model.

Also, proper modelling of soil conditions after failure is best achieved with a plasticity model. The addition of this type of soil model in this program would greatly enhance its effectiveness in evaluating roadway embankments constructed over weak soil.

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# APPENDIX A

## STABGM INITIAL ANALYSIS

Figure 2.4 depicts the conditions of the initial STABGM analysis. Detailed results of the initial analyses are contained herein. Minimum factor of safety data from analyses with no layers of reinforcement with different foundation geometry are enclosed. Comparison of minimum factor of safety data with three and four layers of reinforcement are also enclosed.

Program STABR -- Version 2.84 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 10 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 3 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES TANGENT TO DEPTH, 28.0, 30.0, 35.0,

GEOMETRY

| SECTIONS | .0 | 10.0 | 13.0 | 15.0 | 20.0 | 32.0 | 42.0 | 64.0 | 69.0 | 71.0 | 74.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 0 LEVEL(s)

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 105.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(FS) |
|---|---|---|---|---|---|---|---|
| 1 | 28.0 | 6.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CF | | |
| 2 | 28.0 | 6.0 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CF | | |
| 3 | 28.0 | 10.0 | 37.0 | 18.0 | [illegible] | .263 | .0[illegible] |
| 4 | 28.0 | 6.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CF | | |
| 5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 | 28.0 | 10.0 | 35.0 | 18.0 | 1.037 | .921 | .000 |
| 7 | 28.0 | 12.0 | 37.0 | 16.0 | .988 | .909 | .000 |
| 8 | 28.0 | 10.0 | 39.0 | 18.0 | 1.037 | .921 | .000 |
| 9 | 28.0 | 8.0 | 37.0 | 20.0 | .977 | .853 | .000 |
| 10 | 28.0 | 12.0 | 35.0 | 16.0 | 1.041 | .950 | .000 |
| 11 | 28.0 | 12.0 | 39.0 | 16.0 | 1.041 | .950 | .000 |
| 12 | 28.0 | 8.0 | 39.0 | 20.0 | 1.076 | .927 | .000 |
| 13 | 28.0 | 8.0 | 35.0 | 20.0 | 1.101 | .927 | .000 |

F.S. MINIMUM= .966 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

## BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 30.0 | 10.0 | 35.0 | 20.0 | .932 | .842 | .000 |
| 2 | 30.0 | 10.0 | 31.0 | 20.0 | 1.702 | 1.305 | .000 |
| 3 | 30.0 | 14.0 | 35.0 | 16.0 | .914 | .847 | .000 |
| 4 | 30.0 | 10.0 | 39.0 | 20.0 | .932 | .842 | .000 |
| 5 | 30.0 | 6.0 | 35.0 | 24.0 | CENTER BELOW | INTERPOLATED CR. | |
| 6 | 30.0 | 14.0 | 33.0 | 16.0 | 1.012 | .926 | .000 |
| 7 | 30.0 | 16.0 | 35.0 | 14.0 | .930 | .872 | .000 |
| 8 | 30.0 | 14.0 | 37.0 | 16.0 | .886 | .823 | .000 |
| 9 | 30.0 | 12.0 | 35.0 | 18.0 | .910 | .831 | .000 |
| 10 | 30.0 | 16.0 | 37.0 | 14.0 | .906 | .852 | .000 |
| 11 | 30.0 | 14.0 | 39.0 | 16.0 | .914 | .847 | .000 |
| 12 | 30.0 | 12.0 | 37.0 | 18.0 | .874 | .802 | .000 |
| 13 | 30.0 | 12.0 | 35.0 | 18.0 | .910 | .831 | .000 |
| 14 | 30.0 | 12.0 | 39.0 | 18.0 | .910 | .831 | .000 |
| 15 | 30.0 | 10.0 | 37.0 | 20.0 | .882 | .802 | .000 |
| 16 | 30.0 | 14.0 | 35.0 | 16.0 | .914 | .847 | .000 |
| 17 | 30.0 | 14.0 | 39.0 | 16.0 | .914 | .847 | .000 |
| 18 | 30.0 | 10.0 | 39.0 | 20.0 | .932 | .842 | .000 |
| 19 | 30.0 | 10.0 | 35.0 | 20.0 | .932 | .842 | .000 |

F.S. MINIMUM= .874 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

## BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 35.0 | 15.0 | 35.0 | 20.0 | .860 | .917 | .000 |
| 2 | 35.0 | 15.0 | 31.0 | 20.0 | 1.030 | .969 | .000 |
| 3 | 35.0 | 19.0 | 35.0 | 16.0 | .877 | .794 | .000 |
| 4 | 35.0 | 15.0 | 39.0 | 20.0 | .860 | .817 | .000 |
| 5 | 35.0 | 11.0 | 35.0 | 24.0 | CENTER BELOW | INTERPOLATED CR. | |
| 6 | 35.0 | 19.0 | 33.0 | 16.0 | .877 | .926 | .000 |
| 7 | 35.0 | 21.0 | 35.0 | 14.0 | .939 | .799 | .000 |
| 8 | 35.0 | 19.0 | 37.0 | 16.0 | [illegible] | .737 | .000 |
| 9 | 35.0 | 17.0 | 35.0 | 18.0 | .812 | [illegible] | .000 |
| 10 | 35.0 | 21.0 | 37.0 | 14.0 | .929 | [illegible] | .000 |
| 11 | 35.0 | 19.0 | 39.0 | 16.0 | .877 | [illegible] | .000 |
| 12 | 35.0 | 17.0 | 37.0 | 18.0 | .923 | .795 | .000 |
| 13 | 35.0 | 21.0 | 35.0 | 14.0 | .939 | [illegible] | .000 |
| 14 | 35.0 | 21.0 | 39.0 | 14.0 | [illegible] | [illegible] | .000 |
| 15 | 35.0 | 17.0 | 39.0 | 18.0 | .842 | [illegible] | .000 |
| 16 | 35.0 | 17.0 | 35.0 | 18.0 | .842 | .797 | .000 |

F.S. MINIMUM= .923 FOR THE CIRCLE OF CENTER ( [illegible] )

Program STABR -- Version 2.84 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 15 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 3 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES TANGENT TO DEPTH, 28.0, 30.0, 35.0,

GEOMETRY

| SECTIONS | .0 | 15.0 | 18.0 | 20.0 | 25.0 | 32.0 | 42.0 | 59.0 | 64.0 | 66.0 | 69.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 0 LEVEL(s)

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 105.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 15 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 28.0 | 6.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 28.0 | 6.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 28.0 | 10.0 | 37.0 | 18.0 | [illegible] | [illegible] | .00[illegible] |
| 4 | 28.0 | 6.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 28.0 | [illegible] | [illegible] | [illegible] | CIRCLE OUTSIDE SLOPE | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 | 28.0 | 10.0 | 35.0 | 18.0 | 1.037 | .921 | .000 |
| 7 | 28.0 | 12.0 | 37.0 | 16.0 | .988 | .909 | .000 |
| 8 | 28.0 | 10.0 | 39.0 | 18.0 | 1.037 | .921 | .000 |
| 9 | 28.0 | 8.0 | 37.0 | 20.0 | .977 | .853 | .000 |
| 10 | 28.0 | 12.0 | 35.0 | 16.0 | 1.041 | .950 | .000 |
| 11 | 28.0 | 12.0 | 39.0 | 16.0 | 1.041 | .950 | .000 |
| 12 | 28.0 | 8.0 | 39.0 | 20.0 | 1.076 | .927 | .000 |
| 13 | 28.0 | 8.0 | 35.0 | 20.0 | 1.101 | .927 | .000 |

F.S. MINIMUM= .966 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 15 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 30.0 | 10.0 | 35.0 | 20.0 | .932 | .842 | .000 |
| 2 | 30.0 | 10.0 | 31.0 | 20.0 | 1.702 | 1.305 | .000 |
| 3 | 30.0 | 14.0 | 35.0 | 16.0 | .914 | .847 | .000 |
| 4 | 30.0 | 10.0 | 39.0 | 20.0 | .932 | .842 | .000 |
| 5 | 30.0 | 6.0 | 35.0 | 24.0 | CENTER BELOW INTERPOLATED CR. | | |
| 6 | 30.0 | 14.0 | 33.0 | 16.0 | 1.012 | .926 | .000 |
| 7 | 30.0 | 16.0 | 35.0 | 14.0 | .930 | .873 | .000 |
| 8 | 30.0 | 14.0 | 37.0 | 16.0 | .986 | .923 | .000 |
| 9 | 30.0 | 12.0 | 35.0 | 18.0 | .910 | .831 | .000 |
| 10 | 30.0 | 16.0 | 37.0 | 14.0 | .906 | .852 | .000 |
| 11 | 30.0 | 14.0 | 39.0 | 16.0 | .914 | .847 | .000 |
| 12 | 30.0 | 12.0 | 37.0 | 18.0 | .874 | .802 | .000 |
| 13 | 30.0 | 12.0 | 35.0 | 18.0 | .910 | .831 | .000 |
| 14 | 30.0 | 12.0 | 39.0 | 18.0 | .910 | .831 | .000 |
| 15 | 30.0 | 10.0 | 37.0 | 20.0 | .882 | .802 | .000 |
| 16 | 30.0 | 14.0 | 35.0 | 16.0 | .914 | .847 | .000 |
| 17 | 30.0 | 14.0 | 39.0 | 16.0 | .914 | .847 | .000 |
| 18 | 30.0 | 10.0 | 39.0 | 20.0 | .932 | .842 | .000 |
| 19 | 30.0 | 10.0 | 35.0 | 20.0 | .932 | .842 | .000 |

F.S. MINIMUM= .874 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 15 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 35.0 | 15.0 | 35.0 | 20.0 | .960 | [illegible] | .000 |
| 2 | 35.0 | 15.0 | 31.0 | 20.0 | [illegible] | [illegible] | .000 |
| 3 | 35.0 | 19.0 | 35.0 | 16.0 | .837 | [illegible] | .000 |
| 4 | 35.0 | 15.0 | 39.0 | 20.0 | [illegible] | [illegible] | .000 |
| 5 | 35.0 | 11.0 | 35.0 | 24.0 | CENTER BELOW INTERPOLATED CR | | |
| 6 | 35.0 | 19.0 | 33.0 | 16.0 | 1.174 | 1.035 | .000 |
| 7 | 35.0 | 21.0 | 35.0 | 14.0 | .962 | [illegible] | .000 |
| 8 | 35.0 | 19.0 | 37.0 | 16.0 | .925 | [illegible] | .000 |
| 9 | 35.0 | 17.0 | 35.0 | 18.0 | .842 | [illegible] | .000 |
| 10 | 35.0 | 21.0 | 37.0 | 14.0 | [illegible] | [illegible] | .000 |
| 11 | 35.0 | 19.0 | 39.0 | 16.0 | .977 | [illegible] | [illegible] |
| 12 | 35.0 | 17.0 | 37.0 | [illegible] | .928 | [illegible] | [illegible] |
| 13 | 35.0 | 21.0 | 35.0 | [illegible] | [illegible] | 1.019 | [illegible] |
| 14 | 35.0 | 21.0 | 39.0 | [illegible] | [illegible] | [illegible] | [illegible] |
| 15 | 35.0 | 17.0 | 39.0 | [illegible] | [illegible] | [illegible] | [illegible] |
| 16 | 35.0 | 17.0 | 35.0 | [illegible] | [illegible] | [illegible] | [illegible] |

F.S. MINIMUM= .925 FOR THE CIRCLE OF CENTER ( 37.0, 16.0)

Program STABR -- Version 2.84 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 20 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 3 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES TANGENT TO DEPTH, 28.0, 30.0, 35.0,

GEOMETRY

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SECTIONS | .0 | 20.0 | 23.0 | 25.0 | 30.0 | 32.0 | 42.0 | 54.0 | 59.0 | 61.0 | 64.0 |
| T. CRACKS | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 0 LEVEL(s)

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 145.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 20 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISH.) | FS(ORD) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 28.0 | 6.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CT | | |
| 2 | 28.0 | 6.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CT | | |
| 3 | 28.0 | 10.0 | 37.0 | 18.0 | .9[illegible] | .958 | .00 |
| 4 | 28.0 | 6.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CT | | |
| 5 | 28.0 | [illegible] | [illegible] | [illegible] | CIRCLE OUTSIDE SLOPE | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 | 28.0 | 10.0 | 35.0 | 18.0 | 1.037 | .921 | .000 |
| 7 | 28.0 | 12.0 | 37.0 | 16.0 | .988 | .909 | .000 |
| 8 | 28.0 | 10.0 | 39.0 | 18.0 | 1.037 | .921 | .000 |
| 9 | 28.0 | 8.0 | 37.0 | 20.0 | .977 | .853 | .000 |
| 10 | 28.0 | 12.0 | 35.0 | 16.0 | 1.041 | .950 | .000 |
| 11 | 28.0 | 12.0 | 39.0 | 16.0 | 1.041 | .950 | .000 |
| 12 | 28.0 | 8.0 | 39.0 | 20.0 | 1.076 | .927 | .000 |
| 13 | 28.0 | 8.0 | 35.0 | 20.0 | 1.101 | .927 | .000 |

F.S. MINIMUM= .966 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 20 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 30.0 | 10.0 | 35.0 | 20.0 | .932 | .842 | .000 |
| 2 | 30.0 | 10.0 | 31.0 | 20.0 | 2.089 | 1.319 | .000 |
| 3 | 30.0 | 14.0 | 35.0 | 16.0 | .914 | .847 | .000 |
| 4 | 30.0 | 10.0 | 39.0 | 20.0 | .932 | .843 | .000 |
| 5 | 30.0 | 6.0 | 35.0 | 24.0 | CENTER BELOW INTERPOLATED CR. | | |
| 6 | 30.0 | 14.0 | 33.0 | 16.0 | 1.249 | 1.234 | .000 |
| 7 | 30.0 | 16.0 | 35.0 | 14.0 | .930 | .872 | .000 |
| 8 | 30.0 | 14.0 | 37.0 | 16.0 | .886 | .823 | .000 |
| 9 | 30.0 | 12.0 | 35.0 | 18.0 | .910 | .831 | .000 |
| 10 | 30.0 | 16.0 | 37.0 | 14.0 | .906 | .852 | .000 |
| 11 | 30.0 | 14.0 | 39.0 | 16.0 | .914 | .847 | .000 |
| 12 | 30.0 | 12.0 | 37.0 | 18.0 | .874 | .802 | .000 |
| 13 | 30.0 | 12.0 | 35.0 | 18.0 | .910 | .831 | .000 |
| 14 | 30.0 | 12.0 | 39.0 | 18.0 | .910 | .831 | .000 |
| 15 | 30.0 | 10.0 | 37.0 | 20.0 | .883 | .802 | .000 |
| 16 | 30.0 | 14.0 | 35.0 | 16.0 | .914 | .847 | .000 |
| 17 | 30.0 | 14.0 | 39.0 | 16.0 | .914 | .847 | .000 |
| 18 | 30.0 | 10.0 | 39.0 | 20.0 | .932 | .843 | .000 |
| 19 | 30.0 | 10.0 | 35.0 | 20.0 | .932 | .842 | .000 |

F.S. MINIMUM= .874 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 3 feet, 20 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 35.0 | 15.0 | 35.0 | 20.0 | 4.538 | 4.062 | .000 |
| 2 | 35.0 | 15.0 | 31.0 | 20.0 | 8.673 | 7.596 | .000 |
| 3 | 35.0 | 19.0 | 35.0 | 16.0 | 5.054 | 4.374 | .000 |
| 4 | 35.0 | 15.0 | 39.0 | 20.0 | .560 | .818 | .000 |
| 5 | 35.0 | 11.0 | 35.0 | 24.0 | CENTER BELOW INTERPOLATED CR. | | |
| 6 | 35.0 | 15.0 | 37.0 | 20.0 | .860 | .849 | .000 |
| 7 | 35.0 | 17.0 | 39.0 | 18.0 | .942 | .797 | .000 |
| 8 | 35.0 | 15.0 | 41.0 | 20.0 | .917 | .868 | .000 |
| 9 | 35.0 | 13.0 | 39.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 10 | 35.0 | 17.0 | 37.0 | 18.0 | 1.636 | 1.743 | .000 |
| 11 | 35.0 | 19.0 | 39.0 | 16.0 | .978 | .781 | .000 |
| 12 | 35.0 | 17.0 | 41.0 | 18.0 | .886 | .877 | .000 |
| 13 | 35.0 | 19.0 | 37.0 | 16.0 | 3.349 | 3.179 | .000 |
| 14 | 35.0 | 19.0 | 41.0 | 16.0 | [illegible] | .726 | .000 |
| 15 | 35.0 | 15.0 | 41.0 | 20.0 | .717 | .368 | .000 |
| 16 | 35.0 | 15.0 | 37.0 | 20.0 | .860 | .849 | .000 |

F.S. MINIMUM= .942 FOR THE CIRCLE OF CENTER ( 39.0, 18.0)

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1Program STABR -- Version 2.84 (MS-DOS) .


0         BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES
Opermafrost depth 5 feet, 20 feet from centerline
0CONTROL DATA
       NUMBER OF SPECIFIED CENTERS                        0
       NUMBER OF DEPTH LIMITING TANGENTS                  3
       NUMBER OF VERTICAL SECTIONS                       12
       NUMBER OF SOIL LAYER BOUNDARIES                    5
       NUMBER OF PORE PRESSURE LINES                      0
       NUMBER OF POINTS DEFINING COHESION PROFILE         0
0SEISMIC COEFFICIENT S1,S2    =    .00,  .00
0UNIT WEIGHT OF WATER         =         62.40
0 SEARCH IS BASED ON BISHOP MODIFIED METHOD

 SEARCH STARTS AT CENTER (   37.0,   22.0) WITH FINAL GRID OF   2.0
0ALL CIRCLES TANGENT TO DEPTH,   28.0,   30.0,   35.0,
0GEOMETRY
0     SECTIONS        .0   20.0   23.0   25.0   30.0   32.0   42.0   54.0   59.0   61.0   64.

      T. CRACKS   20.0   20.0   20.0   20.0   20.0   20.0   25.0   25.0   25.0   25.0   25.
      W IN CRACK  20.0   20.0   20.0   20.0   20.0   20.0   25.0   25.0   25.0   25.0   25.
      BOUNDARY 1  20.0   20.0   20.0   20.0   20.0   20.0   25.0   25.0   25.0   25.0   25.
      BOUNDARY 2  25.0   25.0   25.0   25.0   25.0   25.0   25.0   25.0   25.0   25.0   25.
      BOUNDARY 3  35.0   35.0   25.0   25.0   25.0   25.0   25.0   25.0   25.0   25.0   35.
      BOUNDARY 4  35.0   35.0   28.0   30.0   35.0   35.0   35.0   35.0   30.0   28.0   35.
      BOUNDARY 5  35.0   35.0   35.0   35.0   35.0   35.0   35.0   35.0   35.0   35.0   35.
0REINFORCING FORCE DATA AT  3 LEVEL(s)

0     Y=      20.50      NO. OF FORCE POINTS=  4
                X          FORCE
              33.0            .0
              30.0        1666.0
               3.0        1666.0
                .0            .0

0     Y=      22.00      NO. OF FORCE POINTS=  4
                X          FORCE
              36.0            .0
              33.0        5000.0
               3.0        5000.0
                .0            .0

0     Y=      24.00      NO. OF FORCE POINTS=  4
                X          FORCE
              40.0            .0
              37.0        5000.0
               3.0        5000.0
                .0            .0

0SOIL PROPERTIES
0       LAYER              COHESION   FRICTION ANGLE     DENSITY
          1                    .0          35.0           125.0
          2                1000.0          40.0           120.0
          3                 100.0            .0           105.0
          4                1000.0          10.0           120.0
0         BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES
Opermafrost depth 5 feet, 20 feet from centerline
0NUMBER  TANGENT  RADIUS    (X) CENTER   (Y) CENTER    FS(BISHOP)  FS(OMS)    (FS(BI

      1     28.0      6.0         37.0          22.0       CENTER BELOW INTERPOLATED (
      2     28.0      6.0         33.0          22.0       CENTER BELOW INTERPOLATED (
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 | 28.0 | 10.0 | 37.0 | 18.0 | 3.282 | 3.183 | 2.3 |
| 4 | 28.0 | 6.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED C | | |
| 5 | 28.0 | 2.0 | 37.0 | 26.0 | CIRCLE OUTSIDE SLOPE | | |
| 6 | 28.0 | 10.0 | 35.0 | 18.0 | 3.493 | 3.378 | 2.45 |
| 7 | 28.0 | 12.0 | 37.0 | 16.0 | 3.502 | 3.423 | 2.5 |
| 8 | 28.0 | 10.0 | 39.0 | 18.0 | 3.494 | 3.378 | 2.4 |
| 9 | 28.0 | 8.0 | 37.0 | 20.0 | 2.908 | 2.794 | 1.9 |
| 10 | 28.0 | 8.0 | 35.0 | 20.0 | 3.197 | 3.023 | 2.07 |
| 11 | 28.0 | 8.0 | 39.0 | 20.0 | 3.166 | 3.017 | 2.0 |
| 12 | 28.0 | 6.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED C | | |
| 13 | 28.0 | 10.0 | 35.0 | 18.0 | 3.493 | 3.378 | 2.45 |
| 14 | 28.0 | 10.0 | 39.0 | 18.0 | 3.494 | 3.378 | 2.45 |
| 15 | 28.0 | 6.0 | 39.0 | 22.0 | CENTER BELOW INTERPOLATED C | | |
| 16 | 28.0 | 6.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED C | | |

OF.S. MINIMUM= 2.908 FOR THE CIRCLE OF CENTER ( 37.0, 20.0)

0 BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

0permafrost depth 5 feet, 20 feet from centerline

| 0NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS |
|---|---|---|---|---|---|---|---|
| 1 | 30.0 | 8.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 30.0 | 8.0 | 31.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 30.0 | 12.0 | 35.0 | 18.0 | 2.379 | 2.300 | 1.46 |
| 4 | 30.0 | 8.0 | 39.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 30.0 | 4.0 | 35.0 | 26.0 | CIRCLE OUTSIDE SLOPE | | |
| 6 | 30.0 | 12.0 | 33.0 | 18.0 | 2.687 | 2.583 | 1.64 |
| 7 | 30.0 | 14.0 | 35.0 | 16.0 | 2.563 | 2.495 | 1.64 |
| 8 | 30.0 | 12.0 | 37.0 | 18.0 | 2.291 | 2.218 | 1.41 |
| 9 | 30.0 | 10.0 | 35.0 | 20.0 | 2.084 | 1.995 | 1.15 |
| 10 | 30.0 | 10.0 | 33.0 | 20.0 | 2.475 | 2.347NEG.RESIST | |
| 11 | 30.0 | 10.0 | 37.0 | 20.0 | 1.980 | 1.899 | 1.09 |
| 12 | 30.0 | 8.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 13 | 30.0 | 12.0 | 37.0 | 18.0 | 2.291 | 2.218 | 1.41 |
| 14 | 30.0 | 10.0 | 39.0 | 20.0 | 2.084 | 1.995 | 1.15 |
| 15 | 30.0 | 8.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 16 | 30.0 | 12.0 | 35.0 | 18.0 | 2.379 | 2.300 | 1.46 |
| 17 | 30.0 | 12.0 | 39.0 | 18.0 | 2.379 | 2.300 | 1.46 |
| 18 | 30.0 | 8.0 | 39.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 19 | 30.0 | 8.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |

OF.S MINIMUM= 1.980 FOR THE CIRCLE OF CENTER ( 37.0, 20.0)

0 BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

0permafrost depth 5 feet, 20 feet from centerline

| 0NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS. |
|---|---|---|---|---|---|---|---|
| 1 | 35.0 | 13.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 35.0 | 13.0 | 31.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 35.0 | 17.0 | 35.0 | 18.0 | 5.442 | 4.951 | .61 |
| 4 | 35.0 | 13.0 | 39.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 35.0 | 9.0 | 35.0 | 26.0 | CENTER BELOW RIGHT INTERSEC | | |
| 6 | 35.0 | 17.0 | 33.0 | 18.0 | 7.086 | 6.374 | .62 |
| 7 | 35.0 | 19.0 | 35.0 | 16.0 | 5.780 | 5.301 | .72 |
| 8 | 35.0 | 17.0 | 37.0 | 18.0 | 3.236 | 2.762 | .62 |
| 9 | 35.0 | 15.0 | 35.0 | 20.0 | 4.777 | 4.301 | .47 |
| 10 | 35.0 | 19.0 | 37.0 | 16.0 | 4.084 | 3.874 | .73 |
| 11 | 35.0 | 17.0 | 39.0 | 18.0 | .474 | 1.419 | .63 |
| 12 | 35.0 | 15.0 | 37.0 | 20.0 | 1.298 | 1.288 | .43 |
| 13 | 35.0 | 13.0 | 35.0 | 20.0 | 4.777 | 4.301 | .47 |
| 14 | 35.0 | 15.0 | 39.0 | 20.0 | 1.303 | 1.265 | .44 |
| 15 | 35.0 | 13.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED C | | |
| 16 | 35.0 | 17.0 | 35.0 | 18.0 | 5.442 | .951 | .61 |
| 17 | 35.0 | 17.0 | 39.0 | 18.0 | 1.474 | 1.419 | .63 |
| 18 | 35.0 | 13.0 | 39.0 | 22.0 | CENTER BELOW INTERPOLATED C | | |
| 19 | 35.0 | 1[illegible] | 35.0 | 22.0 | CENTER BELOW INTERPOLATED C | | |

OF.S. MINIMUM= 1.298 FOR THE CIRCLE OF CENTER ( 37.0, 20.0)

Program STABR -- Version 2.34 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 20 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 3 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES TANGENT TO DEPTH, 28.0, 30.0, 35.0,

GEOMETRY

| SECTIONS | .0 | 20.0 | 23.0 | 25.0 | 30.0 | 32.0 | 42.0 | 54.0 | 59.0 | 61.0 | 64.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 25.0 | 25.0 | 25.0 | 23.0 | 25.0 |
| W IN CRACK | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 4 LEVEL(s)

Y= 20.50 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 33.0 | .0 |
| 30.0 | 1666.0 |
| 3.0 | 1666.0 |
| .0 | .0 |

Y= 22.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 36.0 | .0 |
| 33.0 | 5000.0 |
| 3.0 | 5000.0 |
| .0 | .0 |

Y= 24.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 40.0 | .0 |
| 37.0 | 5000.0 |
| 3.0 | 5000.0 |
| .0 | .0 |

Y= 25.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 42.0 | .0 |
| 39.0 | 5000.0 |
| 3.0 | 3000.0 |
| .0 | .0 |

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 105.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 20 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 28.0 | 6.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 28.0 | 6.0 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 28.0 | 10.0 | 37.0 | 18.0 | 4.778 | 4.679 | 3.811 |
| 4 | 28.0 | 6.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CRA | | |
| 5 | 28.0 | 2.0 | 37.0 | 26.0 | CIRCLE OUTSIDE SLOPE | | |
| 6 | 28.0 | 10.0 | 35.0 | 18.0 | 5.081 | 4.965 | 4.044 |
| 7 | 28.0 | 12.0 | 37.0 | 16.0 | 4.962 | 4.883 | 3.974 |
| 8 | 28.0 | 10.0 | 39.0 | 18.0 | 5.081 | 4.965 | 4.045 |
| 9 | 28.0 | 8.0 | 37.0 | 20.0 | 4.473 | 4.349 | 3.496 |
| 10 | 28.0 | 8.0 | 35.0 | 20.0 | 4.897 | 4.722 | 3.795 |
| 11 | 28.0 | 8.0 | 39.0 | 20.0 | 4.876 | 4.727 | 3.799 |
| 12 | 28.0 | 6.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CRA | | |
| 13 | 28.0 | 10.0 | 35.0 | 18.0 | 5.081 | 4.965 | 4.044 |
| 14 | 28.0 | 10.0 | 39.0 | 18.0 | 5.081 | 4.965 | 4.045 |
| 15 | 28.0 | 6.0 | 39.0 | 22.0 | CENTER BELOW INTERPOLATED CRA | | |
| 16 | 28.0 | 6.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |

F.S. MINIMUM= 4.473 FOR THE CIRCLE OF CENTER ( 37.0, 20.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 20 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 30.0 | 8.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 30.0 | 8.0 | 31.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 30.0 | 12.0 | 35.0 | 18.0 | 3.328 | 3.249 | 2.418 |
| 4 | 30.0 | 8.0 | 39.0 | 22.0 | CENTER BELOW INTERPOLATED CR. | | |
| 5 | 30.0 | 4.0 | 35.0 | 26.0 | CIRCLE OUTSIDE SLOPE | | |
| 6 | 30.0 | 12.0 | 33.0 | 18.0 | 3.732 | 3.649 | 2.715 |
| 7 | 30.0 | 14.0 | 35.0 | 16.0 | 3.520 | 3.452 | 2.606 |
| 8 | 30.0 | 12.0 | 37.0 | 18.0 | 3.206 | 3.134 | 2.333 |
| 9 | 30.0 | 10.0 | 35.0 | 20.0 | 3.019 | 2.929 | 2.086 |
| 10 | 30.0 | 10.0 | 33.0 | 20.0 | 3.574 | 3.347NEG.RESIST. | |
| 11 | 30.0 | 10.0 | 37.0 | 20.0 | 2.869 | 2.799 | 1.986 |
| 12 | 30.0 | 8.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 13 | 30.0 | 12.0 | 37.0 | 18.0 | 3.206 | 3.134 | 2.333 |
| 14 | 30.0 | 10.0 | 39.0 | 20.0 | 3.019 | 2.929 | 2.086 |
| 15 | 30.0 | 8.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 16 | 30.0 | 12.0 | 35.0 | 18.0 | 3.328 | 3.249 | 2.418 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 17 | 30.0 | 12.0 | 39.0 | 18.0 | 3.328 | 3.249 | 2.417 |
| 18 | 30.0 | 8.0 | 39.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 19 | 30.0 | 8.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |

F.S. MINIMUM= 2.869 FOR THE CIRCLE OF CENTER ( 37.0, 20.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 20 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 35.0 | 13.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 35.0 | 13.0 | 31.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 35.0 | 17.0 | 35.0 | 18.0 | 5.838 | 5.347 | 1.008 |
| 4 | 35.0 | 13.0 | 39.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 35.0 | 9.0 | 35.0 | 26.0 | CENTER BELOW RIGHT INTERSECT | | |
| 6 | 35.0 | 17.0 | 32.0 | 18.0 | 7.489 | 6.778 | 1.027 |
| 7 | 35.0 | 19.0 | 35.0 | 16.0 | 6.202 | 5.722 | 1.148 |
| 8 | 35.0 | 17.0 | 37.0 | 18.0 | 2.656 | 2.763 | 1.020 |
| 9 | 35.0 | 15.0 | 35.0 | 20.0 | 5.333 | 4.857 | .795 |
| 10 | 35.0 | 19.0 | 37.0 | 16.0 | 4.511 | 4.301 | 1.162 |
| 11 | 35.0 | 17.0 | 39.0 | 18.0 | 1.882 | 1.837 | 1.039 |
| 12 | 35.0 | 15.0 | 37.0 | 20.0 | 1.654 | 1.644 | .795 |
| 13 | 35.0 | 15.0 | 35.0 | 20.0 | 5.333 | 4.857 | .795 |
| 14 | 35.0 | 15.0 | 39.0 | 20.0 | 1.671 | 1.628 | .810 |
| 15 | 35.0 | 13.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 16 | 35.0 | 17.0 | 35.0 | 18.0 | 5.838 | 5.347 | 1.008 |
| 17 | 35.0 | 17.0 | 39.0 | 18.0 | 1.882 | 1.837 | 1.039 |
| 18 | 35.0 | 13.0 | 39.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 19 | 35.0 | 13.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |

F.S. MINIMUM= 1.654 FOR THE CIRCLE OF CENTER ( 37.0, 20.0)

# APPENDIX B

## RESULTS OF STABGM ANALYSIS

Figure 2.5 depicts the conditions of the revised STABGM analysis. Detailed results of the revised analysis are contained herein. Analysis with no layers of reinforcement display the critical factor of safety exists at a depth of 10 feet below the embankment/foundation soil interface. Analyses with one layer of reinforcement are enclosed. Strengths of 5,000, 7,000, 9,000, and 8,000 pounds per foot were analyzed to obtain a minimum factor of safety of 1.0 at a strength of 8,000 pounds per foot. Analyses with two and three layers of reinforcement are also enclosed. Internal stability analyses with none, one, two, and three layers of reinforcement are enclosed for comparison with external stability analyses.

Program STABR -- Version 2.94 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 3 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES TANGENT TO DEPTH, 28.0, 30.0, 35.0,

GEOMETRY

| SECTIONS | .0 | 10.0 | 13.0 | 15.0 | 20.0 | 32.0 | 42.0 | 64.0 | 69.0 | 71.0 | 74.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 0 LEVEL(s)

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 105.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 28.0 | 6.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 28.0 | 6.0 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 28.0 | 10.0 | 37.0 | 18.0 | .719 | .643 | .000 |
| 4 | 28.0 | 6.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 28.0 | 2.0 | 37.0 | 26.0 | CIRCLE OUTSIDE SLOPE | | |
| 6 | 28.0 | 10.0 | 35.0 | 18.0 | .772 | .679 | .000 |
| 7 | 28.0 | 12.0 | 37.0 | 16.0 | .710 | .682 | .000 |
| 8 | 28.0 | 10.0 | 39.0 | 18.0 | .772 | .679 | .000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 9 | 28.0 | 8.0 | 37.0 | 20.0 | CENTER BELOW | INTERPOLATED CR | |
| 10 | 28.0 | 12.0 | 35.0 | 16.0 | .779 | .710 | .000 |
| 11 | 28.0 | 12.0 | 39.0 | 16.0 | .779 | .710 | .000 |
| 12 | 28.0 | 8.0 | 39.0 | 20.0 | CENTER BELOW | INTERPOLATED CR | |
| 13 | 28.0 | 8.0 | 35.0 | 20.0 | CENTER BELOW | INTERPOLATED CR | |

F.S. MINIMUM= .719 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 30.0 | 10.0 | 35.0 | 20.0 | CENTER BELOW | INTERPOLATED CR. | |
| 2 | 30.0 | 10.0 | 31.0 | 20.0 | CENTER BELOW | INTERPOLATED CR. | |
| 3 | 30.0 | 14.0 | 35.0 | 16.0 | .668 | .616 | .000 |
| 4 | 30.0 | 10.0 | 39.0 | 20.0 | CENTER BELOW | INTERPOLATED CR. | |
| 5 | 30.0 | 6.0 | 35.0 | 24.0 | CENTER BELOW | INTERPOLATED CR | |
| 6 | 30.0 | 14.0 | 33.0 | 16.0 | .739 | .670 | .000 |
| 7 | 30.0 | 16.0 | 35.0 | 14.0 | .682 | .642 | .000 |
| 8 | 30.0 | 14.0 | 37.0 | 16.0 | .646 | .600 | .000 |
| 9 | 30.0 | 12.0 | 35.0 | 18.0 | .663 | .600 | .000 |
| 10 | 30.0 | 16.0 | 37.0 | 14.0 | .665 | .628 | .000 |
| 11 | 30.0 | 14.0 | 39.0 | 16.0 | .668 | .616 | .000 |
| 12 | 30.0 | 12.0 | 37.0 | 18.0 | .636 | .580 | .000 |
| 13 | 30.0 | 12.0 | 35.0 | 18.0 | .663 | .600 | .000 |
| 14 | 30.0 | 12.0 | 39.0 | 18.0 | .663 | .600 | .000 |
| 15 | 30.0 | 10.0 | 37.0 | 20.0 | CENTER BELOW | INTERPOLATED CR | |
| 16 | 30.0 | 14.0 | 35.0 | 16.0 | .668 | .616 | .000 |
| 17 | 30.0 | 14.0 | 39.0 | 16.0 | .668 | .616 | .000 |
| 18 | 30.0 | 10.0 | 39.0 | 20.0 | CENTER BELOW | INTERPOLATED CR | |
| 19 | 30.0 | 10.0 | 35.0 | 20.0 | CENTER BELOW | INTERPOLATED CR | |

F.S. MINIMUM= .636 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 35.0 | 15.0 | 35.0 | 20.0 | CENTER BELOW | INTERPOLATED CR | |
| 2 | 35.0 | 15.0 | 31.0 | 20.0 | CENTER BELOW | INTERPOLATED CR | |
| 3 | 35.0 | 19.0 | 35.0 | 16.0 | .601 | .566 | .000 |
| 4 | 35.0 | 15.0 | 39.0 | 20.0 | CENTER BELOW | INTERPOLATED CR | |
| 5 | 35.0 | 11.0 | 35.0 | 24.0 | CENTER BELOW | INTERPOLATED CR | |
| 6 | 35.0 | 19.0 | 33.0 | 16.0 | .628 | .589 | .000 |
| 7 | 35.0 | 21.0 | 35.0 | 14.0 | .603 | .572 | .000 |
| 8 | 35.0 | 19.0 | 37.0 | 16.0 | .593 | .559 | .000 |
| 9 | 35.0 | 17.0 | 35.0 | 18.0 | .605 | .567 | .000 |
| 10 | 35.0 | 21.0 | 37.0 | 14.0 | .596 | .565 | .000 |
| 11 | 35.0 | 19.0 | 39.0 | 16.0 | .601 | .566 | .000 |
| 12 | 35.0 | 17.0 | 37.0 | 18.0 | .595 | .559 | .000 |
| 13 | 35.0 | 21.0 | 35.0 | 14.0 | .603 | .572 | .000 |
| 14 | 35.0 | 21.0 | 39.0 | 14.0 | .603 | .572 | .000 |
| 15 | 35.0 | 17.0 | 39.0 | 18.0 | .605 | .567 | .000 |
| 16 | 35.0 | 17.0 | 35.0 | 18.0 | .605 | .567 | .000 |

F.S. MINIMUM= .593 FOR THE CIRCLE OF CENTER ( 37.0, 16.0)

CRITICAL FACTOR OF SAFETY - 10 FEET BELOW BOTTOM OF EMBANKME

Program STABR -- Version 2.84 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 3 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES TANGENT TO DEPTH, 28.0, 30.0, 35.0,

GEOMETRY

| SECTIONS | .0 | 10.0 | 13.0 | 15.0 | 20.0 | 32.0 | 42.0 | 64.0 | 69.0 | 71.0 | 74.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 19.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 1 LEVEL(s)

Y= 25.00 NO. OF FORCE POINTS- 4

| X | FORCE |
|---|---|
| 42.0 | .0 |
| 39.0 | 5000.0 |
| 3.0 | 5000.0 |
| .0 | .0 |

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 145.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS/dB |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 28.0 | 6.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 28.0 | 6.0 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 28.0 | 10.0 | 37.0 | 18.0 | 1.703 | 1.627 | .984 |
| 4 | 28.0 | 6.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 28.0 | 2.0 | 37.0 | 26.0 | CIRCLE OUTSIDE SLOPE | | |
| 6 | 28.0 | 10.0 | 35.0 | 18.0 | 1.811 | 1.718 | 1.039 |
| 7 | 28.0 | 12.0 | 37.0 | 16.0 | 1.680 | 1.622 | .940 |
| 8 | 28.0 | 10.0 | 39.0 | 18.0 | 1.811 | 1.718 | 1.039 |
| 9 | 28.0 | 8.0 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 10 | 28.0 | 12.0 | 35.0 | 16.0 | 1.758 | 1.688 | .979 |
| 11 | 28.0 | 14.0 | 37.0 | 14.0 | 1.685 | 1.641 | .914 |
| 12 | 28.0 | 12.0 | 39.0 | 16.0 | 1.758 | 1.688 | .979 |
| 13 | 28.0 | 14.0 | 35.0 | 14.0 | 1.747 | 1.695 | .944 |
| 14 | 28.0 | 14.0 | 39.0 | 14.0 | 1.747 | 1.695 | .944 |
| 15 | 28.0 | 10.0 | 39.0 | 18.0 | 1.811 | 1.718 | 1.039 |
| 16 | 28.0 | 10.0 | 35.0 | 18.0 | 1.811 | 1.718 | 1.039 |

F.S. MINIMUM= 1.680 FOR THE CIRCLE OF CENTER ( 37.0, 16.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 30.0 | 12.0 | 35.0 | 18.0 | 1.305 | 1.243 | .643 |
| 2 | 30.0 | 12.0 | 31.0 | 18.0 | 1.842 | 1.699NEG.RESIST.^ | |
| 3 | 30.0 | 16.0 | 35.0 | 14.0 | 1.317 | 1.277 | .635 |
| 4 | 30.0 | 12.0 | 39.0 | 18.0 | 1.305 | 1.243 | .643 |
| 5 | 30.0 | 8.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED CR/ | | |
| 6 | 30.0 | 12.0 | 33.0 | 18.0 | 1.474 | 1.387 | .717 |
| 7 | 30.0 | 10.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR/ | | |
| 8 | 30.0 | 14.0 | 33.0 | 16.0 | 1.433 | 1.364 | .694 |
| 9 | 30.0 | 14.0 | 37.0 | 16.0 | 1.268 | 1.222 | .621 |
| 10 | 30.0 | 10.0 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CR. | | |
| 11 | 30.0 | 10.0 | 33.0 | 20.0 | CENTER BELOW INTERPOLATED CR/ | | |
| 12 | 30.0 | 16.0 | 37.0 | 14.0 | 1.286 | 1.249 | .621 |
| 13 | 30.0 | 14.0 | 39.0 | 16.0 | 1.306 | 1.254 | .633 |
| 14 | 30.0 | 16.0 | 33.0 | 14.0 | 1.317 | 1.277 | .635 |
| 15 | 30.0 | 16.0 | 39.0 | 14.0 | 1.317 | 1.277 | .635 |
| 16 | 30.0 | 12.0 | 39.0 | 18.0 | 1.305 | 1.243 | .643 |
| 17 | 30.0 | 12.0 | 35.0 | 18.0 | 1.305 | 1.243 | .643 |

F.S. MINIMUM= 1.268 FOR THE CIRCLE OF CENTER ( 37.0, 16.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 5 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 35.0 | 17.0 | 35.0 | 18.0 | .889 | .832 | .288 |
| 2 | 35.0 | 17.0 | 31.0 | 18.0 | 1.027 | .971 | [illegible] |
| 3 | 35.0 | 21.0 | 35.0 | 14.0 | [illegible] | .889 | .316 |
| 4 | 35.0 | 17.0 | 39.0 | 18.0 | .889 | .832 | .288 |
| 5 | 35.0 | 13.0 | 35.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 6 | 35.0 | 17.0 | 33.0 | 18.0 | [illegible] | .933 | [illegible] |
| 7 | 35.0 | 19.0 | 33.0 | 16.0 | [illegible] | .859 | [illegible] |
| 8 | 35.0 | 17.0 | 41.0 | 18.0 | [illegible] | .897 | .298 |
| 9 | 35.0 | 15.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 10 | 35.0 | 17.0 | 35.0 | 18.0 | .889 | .832 | .288 |
| 11 | 35.0 | 19.0 | 37.0 | 16.0 | .893 | .853 | .299 |
| 12 | 35.0 | 15.0 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 13 | 35.0 | 19.0 | 35.0 | 16.0 | .904 | .869 | .303 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 14 | 35.0 | 19.0 | 39.0 | 16.0 | .904 | .869 | .303 |
| 15 | 35.0 | 15.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CF | | |
| 16 | 35.0 | 15.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CF | | |

F.S. MINIMUM= .875 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

Program STABR -- Version 2.84 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 1 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES TANGENT TO DEPTH, 35.0,

GEOMETRY

| SECTIONS | .0 | 10.0 | 13.0 | 15.0 | 20.0 | 32.0 | 42.0 | 64.0 | 69.0 | 71.0 | 74.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 | 25.0 | 35.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 1 LEVEL ,

Y= 25.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 42.0 | .0 |
| 39.0 | 7000.0 |
| 3.0 | 7000.0 |
| .0 | .0 |

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 1[illegible]5.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS BISHOP) | FS(OMS) | dFS/BS |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 35.0 | 13.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CF | | |
| 2 | 35.0 | 13.0 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CF | | |
| 3 | 35.0 | 17.0 | 37.0 | 18.0 | .987 | .951 | .393 |
| 4 | 35.0 | 13.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CF | | |
| 5 | 35.0 | 9.0 | 37.0 | 26.0 | CENTER BELOW RIGHT INTERSECT | | |
| 6 | 35.0 | 17.0 | 35.0 | 18.0 | 1.003 | .966 | .399 |
| 7 | 35.0 | 19.0 | 37.0 | 16.0 | 1.012 | .978 | .417 |
| 8 | 35.0 | 17.0 | 39.0 | 18.0 | 1.003 | .966 | .399 |
| 9 | 35.0 | 15.0 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CF | | |
| 10 | 35.0 | 19.0 | 35.0 | 16.0 | 1.026 | .990 | .42 |
| 11 | 35.0 | 19.0 | 39.0 | 16.0 | 1.026 | .990 | .424 |
| 12 | 35.0 | 15.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CF | | |
| 13 | 35.0 | 15.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CF | | |

F.S. MINIMUM= .987 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

Program STABR -- Version 2.84 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 1 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES TANGENT TO DEPTH, 35.0,

GEOMETRY

| SECTIONS | .0 | 10.0 | 13.0 | 15.0 | 20.0 | 32.0 | 42.0 | 64.0 | 69.0 | 71.0 | 74.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 1 LEVEL(s)

Y= 25.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 42.0 | .0 |
| 39.0 | 9000.0 |
| 3.0 | 9000.0 |
| .0 | .0 |

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 105.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS/DS |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 35.0 | 13.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CF | | |
| 2 | 35.0 | 13.0 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CF | | |
| 3 | 35.0 | 17.0 | 37.0 | 18.0 | 1.099 | 1.063 | .505 |
| 4 | 35.0 | 13.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CF | | |
| 5 | 35.0 | 9.0 | 37.0 | 26.0 | CENTER BELOW RIGHT INTERSECT | | |
| 6 | 35.0 | 17.0 | 35.0 | 18.0 | 1.117 | 1.080 | .513 |
| 7 | 35.0 | 19.0 | 37.0 | 16.0 | 1.133 | 1.097 | .539 |
| 8 | 35.0 | 17.0 | 39.0 | 18.0 | 1.117 | 1.080 | .513 |
| 9 | 35.0 | 15.0 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CF | | |
| 10 | 35.0 | 19.0 | 35.0 | 16.0 | 1.147 | 1.111 | .54[illegible] |
| 11 | 35.0 | 19.0 | 39.0 | 16.0 | 1.147 | 1.111 | .54[illegible] |
| 12 | 35.0 | 15.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CF | | |
| 13 | 35.0 | 15.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CF | | |

F.S. MINIMUM= 1.099 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

Program STABR -- Version 2.84 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 1 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES TANGENT TO DEPTH, 35.0,

GEOMETRY

| SECTIONS | .0 | 10.0 | 13.0 | 15.0 | 20.0 | 32.0 | 42.0 | 64.0 | 69.0 | 71.0 | 74.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 1 LEVEL(s)

Y= 25.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 42.0 | .0 |
| 39.0 | 8000.0 |
| 3.0 | 8000.0 |
| .0 | .0 |

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | [illegible] |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 105.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(Bs |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 35.0 | 13.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 35.0 | 13.0 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 35.0 | 17.0 | 37.0 | 18.0 | 1.043 | 1.007 | .449 |
| 4 | 35.0 | 13.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 35.0 | 9.0 | 37.0 | 26.0 | CENTER BELOW RIGHT INTERSECT | | |
| 6 | 35.0 | 17.0 | 35.0 | 18.0 | 1.060 | 1.023 | .456 |
| 7 | 35.0 | 19.0 | 37.0 | 16.0 | 1.072 | 1.038 | .475 |
| 8 | 35.0 | 17.0 | 39.0 | 18.0 | 1.060 | 1.023 | .456 |
| 9 | 35.0 | 15.0 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 10 | 35.0 | 19.0 | 35.0 | 16.0 | 1.086 | 1.051 | .485 |
| 11 | 35.0 | 19.0 | 39.0 | 16.0 | 1.086 | 1.051 | .485 |
| 12 | 35.0 | 15.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 13 | 35.0 | 15.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |

F.S. MINIMUM= 1.043 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

Program STABR -- Version 2.84 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 3 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES TANGENT TO DEPTH, 28.0, 30.0, 35.0,

GEOMETRY

| SECTIONS | .0 | 10.0 | 13.0 | 15.0 | 20.0 | 32.0 | 42.0 | 64.0 | 69.0 | 71.0 | 74.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 16.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 2 LEVEL(s)

Y= 22.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 37.7 | .0 |
| 34.0 | 5000.0 |
| 3.0 | 5000.0 |
| .0 | .0 |

Y= 25.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 42.0 | .0 |
| 39.0 | 5000.0 |
| 7.0 | 5000.0 |
| .0 | .0 |

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 125.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 105.0 |
| . | | | |

| | | | |
|---|---|---|---|
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS |
|---|---|---|---|---|---|---|---|
| 1 | 28.0 | 6.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 28.0 | 6.0 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 28.0 | 10.0 | 37.0 | 18.0 | 2.265 | 2.18[illegible] | 1.34[illegible] |
| 4 | 28.0 | 6.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 28.0 | 2.0 | 37.0 | 26.0 | CIRCLE OUTSIDE SLOPE | | |
| 6 | 28.0 | 10.0 | 35.0 | 18.0 | 2.404 | 2.312 | 1.632 |
| 7 | 28.0 | 12.0 | 37.0 | 16.0 | 2.307 | 2.249 | 1.567 |
| 8 | 28.0 | 10.0 | 39.0 | 18.0 | 2.404 | 2.312 | 1.632 |
| 9 | 28.0 | 8.0 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 10 | 28.0 | 12.0 | 35.0 | 16.0 | 2.410 | 2.341 | 1.631 |
| 11 | 28.0 | 12.0 | 39.0 | 16.0 | 2.410 | 2.341 | 1.631 |
| 12 | 28.0 | 8.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 13 | 28.0 | 8.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |

F.S. MINIMUM= 2.265 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 30.0 | 10.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 30.0 | 10.0 | 31.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 30.0 | 14.0 | 35.0 | 16.0 | 1.731 | 1.680 | 1.063 |
| 4 | 30.0 | 10.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 30.0 | 6.0 | 35.0 | 24.0 | CENTER BELOW INTERPOLATED CR | | |
| 6 | 30.0 | 14.0 | 33.0 | 16.0 | 1.895 | 1.826 | 1.156 |
| 7 | 30.0 | 16.0 | 35.0 | 14.0 | 1.779 | 1.739 | 1.097 |
| 8 | 30.0 | 14.0 | 37.0 | 16.0 | 1.682 | 1.636 | 1.035 |
| 9 | 30.0 | 12.0 | 35.0 | 18.0 | 1.672 | 1.610 | 1.010 |
| 10 | 30.0 | 12.0 | 33.0 | 18.0 | 1.884 | 1.797 | 1.127 |
| 11 | 30.0 | 12.0 | 37.0 | 18.0 | 1.612 | 1.556 | .976 |
| 12 | 30.0 | 10.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 13 | 30.0 | 14.0 | 37.0 | 16.0 | 1.682 | 1.636 | 1.035 |
| 14 | 30.0 | 12.0 | 39.0 | 18.0 | 1.672 | 1.610 | 1.010 |
| 15 | 30.0 | 10.0 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 16 | 30.0 | 14.0 | 35.0 | 16.0 | 1.731 | 1.680 | 1.063 |
| 17 | 30.0 | 14.0 | 39.0 | 16.0 | 1.731 | 1.680 | 1.063 |
| 18 | 30.0 | 10.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 19 | 30.0 | 10.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |

F.S. MINIMUM= 1.612 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS. |
|---|---|---|---|---|---|---|---|
| 1 | 35.0 | 13.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 35.0 | 15.0 | 31.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 35.0 | 17.0 | 35.0 | 16.0 | 1.10[illegible] | 1.07[illegible] | .50[illegible] |
| 4 | 35.0 | 15.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 35.0 | 11.0 | 35.0 | 24.0 | CENTER BELOW INTERPOLATED CR | | |
| 6 | 35.0 | 19.0 | 33.0 | 16.0 | 1.153 | 1.11[illegible] | .52[illegible] |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7 | 35.0 | 21.0 | 35.0 | 14.0 | 1.149 | 1.118 | .546 |
| 8 | 35.0 | 19.0 | 37.0 | 16.0 | 1.092 | 1.057 | .499 |
| 9 | 35.0 | 17.0 | 35.0 | 18.0 | 1.052 | 1.015 | .447 |
| 10 | 35.0 | 17.0 | 33.0 | 18.0 | 1.106 | 1.064 | .46[illegible] |
| 11 | 35.0 | 17.0 | 37.0 | 18.0 | 1.035 | .999 | .44 |
| 12 | 35.0 | 15.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CF | | |
| 13 | 35.0 | 19.0 | 37.0 | 16.0 | 1.092 | 1.057 | .49[illegible] |
| 14 | 35.0 | 17.0 | 39.0 | 18.0 | 1.052 | 1.015 | .4[illegible] |
| 15 | 35.0 | 15.0 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CF | | |
| 16 | 35.0 | 19.0 | 35.0 | 16.0 | 1.106 | 1.071 | .30[illegible] |
| 17 | 35.0 | 19.0 | 39.0 | 16.0 | 1.106 | 1.071 | .305 |
| 18 | 35.0 | 15.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CF | | |
| 19 | 35.0 | 15.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CF | | |

F.S. MINIMUM= 1.035 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

Program STABR -- Version 2.84 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 3 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES TANGENT TO DEPTH, 28.0, 30.0, 35.0,

GEOMETRY

| SECTIONS | .0 | 10.0 | 13.0 | 15.0 | 20.0 | 32.0 | 42.0 | 64.0 | 69.0 | 71.0 | 74.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 3 LEVEL(s)

Y= 20.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 34.8 | .0 |
| 31.0 | 1666.0 |
| 3.0 | 1666.0 |
| .0 | .0 |

Y= 22.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 37.7 | .0 |
| 34.0 | 5000.0 |
| 3.0 | 5000.0 |
| .0 | .0 |

Y= 25.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 42.0 | .0 |
| 39.0 | 5000.0 |
| 3.0 | 5000.0 |
| .0 | .0 |

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 105.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 28.0 | 6.0 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 28.0 | 6.0 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 28.0 | 10.0 | 37.0 | 18.0 | 2.358 | 2.283 | 1.639 |
| 4 | 28.0 | 6.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 28.0 | 2.0 | 37.0 | 26.0 | CIRCLE OUTSIDE SLOPE | | |
| 6 | 28.0 | 10.0 | 35.0 | 18.0 | 2.503 | 2.411 | 1.731 |
| 7 | 28.0 | 12.0 | 37.0 | 16.0 | 2.446 | 2.388 | 1.706 |
| 8 | 28.0 | 10.0 | 39.0 | 18.0 | 2.503 | 2.411 | 1.731 |
| 9 | 28.0 | 8.0 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 10 | 28.0 | 12.0 | 35.0 | 16.0 | 2.555 | 2.486 | 1.776 |
| 11 | 28.0 | 12.0 | 39.0 | 16.0 | 2.555 | 2.486 | 1.776 |
| 12 | 28.0 | 8.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 13 | 28.0 | 8.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |

F.S. MINIMUM= 2.358 FOR TH CIRCLE OF CENTER ( 37.0, 18.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 30.0 | 10.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 30.0 | 10.0 | 31.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 30.0 | 14.0 | 35.0 | 16.0 | 1.826 | 1.774 | 1.158 |
| 4 | 30.0 | 10.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 30.0 | 6.0 | 35.0 | 24.0 | CENTER BELOW INTERPOLATED CR | | |
| 6 | 30.0 | 14.0 | 33.0 | 16.0 | 1.998 | 1.929 | 1.259 |
| 7 | 30.0 | 16.0 | 35.0 | 14.0 | 1.895 | 1.854 | 1.212 |
| 8 | 30.0 | 14.0 | 37.0 | 16.0 | 1.774 | 1.728 | 1.127 |
| 9 | 30.0 | 12.0 | 35.0 | 18.0 | 1.734 | 1.671 | 1.071 |
| 10 | 30.0 | 12.0 | 33.0 | 18.0 | 1.952 | 1.865 | 1.195 |
| 11 | 30.0 | 12.0 | 37.0 | 18.0 | 1.671 | 1.615 | [illegible] |
| 12 | 30.0 | 10.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 13 | 30.0 | 14.0 | 37.0 | 16.0 | 1.774 | 1.729 | 1.127 |
| 14 | 30.0 | 12.0 | 39.0 | 18.0 | 1.734 | 1.671 | 1.071 |
| 15 | 30.0 | 10.0 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 16 | 30.0 | 14.0 | 35.0 | 16.0 | 1.826 | 1.774 | 1.159 |
| 17 | 30.0 | 14.0 | 39.0 | 16.0 | [illegible] | 1.774 | 1.158 |
| 18 | 30.0 | 10.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 19 | 30.0 | 10.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |

F.S. MINIMUM= 1.671 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 35.0 | 15.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 35.0 | 15.0 | 31.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 35.0 | 19.0 | 35.0 | 16.0 | 1.151 | 1.116 | .551 |
| 4 | 35.0 | 15.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 35.0 | 11.0 | 35.0 | 24.0 | CENTER BELOW INTERPOLATED CR | | |
| 6 | 35.0 | 19.0 | 33.0 | 16.0 | 1.200 | 1.160 | .572 |
| 7 | 35.0 | 21.0 | 35.0 | 14.0 | 1.207 | 1.175 | .604 |
| 8 | 35.0 | 19.0 | 37.0 | 16.0 | 1.136 | 1.102 | .543 |
| 9 | 35.0 | 17.0 | 35.0 | 18.0 | 1.079 | 1.042 | .473 |
| 10 | 35.0 | 17.0 | 33.0 | 18.0 | 1.134 | 1.092 | .497 |
| 11 | 35.0 | 17.0 | 37.0 | 18.0 | 1.062 | 1.026 | .467 |
| 12 | 35.0 | 15.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 13 | 35.0 | 19.0 | 37.0 | 16.0 | 1.136 | 1.102 | .543 |
| 14 | 35.0 | 17.0 | 39.0 | 18.0 | 1.079 | 1.042 | .475 |
| 15 | 35.0 | 15.0 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 16 | 35.0 | 19.0 | 35.0 | 16.0 | 1.151 | 1.116 | .550 |
| 17 | 35.0 | 19.0 | 39.0 | 16.0 | 1.151 | 1.116 | .550 |
| 18 | 35.0 | 15.0 | 39.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 19 | 35.0 | 15.0 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |

F.S. MINIMUM= 1.062 FOR THE CIRCLE OF CENTER ( 37.0, 18.0)

Program STABR -- Version 2.84 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 0 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES PASS THROUGH THE POINT ( 42.0, 35.0)

GEOMETRY

| SECTIONS | .0 | 10.0 | 13.0 | 15.0 | 20.0 | 32.0 | 42.0 | 64.0 | 69.0 | 71.0 | 74.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 0 LEVEL(s)

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 105.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS |
|---|---|---|---|---|---|---|---|
| 1 | 35.9 | 13.9 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR. | | |
| 2 | [illegible] | 15.8 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 33.[illegible] | 17.7 | 37.0 | 13.0 | .457 | .[illegible]31 | .000 |
| 4 | 35.0 | 1[illegible].0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 36.3 | 10.7 | 37.0 | 26.0 | CENTER BELOW RIGHT INTERSECT | | |
| 6 | 36.4 | 18.[illegible] | 35.0 | 18.0 | .[illegible]05 | .787 | .000 |
| 7 | 35.6 | 1[illegible].[illegible] | 37.0 | 14.0 | .[illegible] | .[illegible]40 | .000 |
| 8 | 33.3 | 17.3 | 39.0 | 18.0 | .[illegible] | .489 | .000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 9 | 35.8 | 15.8 | 37.0 | 20.0 | CENTER | BELOW | INTERPOLATED CF |
| 10 | 37.2 | 19.2 | 33.0 | 18.0 | .373 | .358 | .000 |
| 11 | 36.2 | 20.2 | 35.0 | 16.0 | .411 | .395 | .000 |
| 12 | 36.6 | 16.6 | 35.0 | 20.0 | CENTER | BELOW | INTERPOLATED CF |
| 13 | 38.2 | 20.2 | 31.0 | 18.0 | 2.397 | 2.238 | .000 |
| 14 | 37.0 | 21.0 | 33.0 | 16.0 | .378 | .763 | .000 |
| 15 | 37.5 | 17.5 | 33.0 | 20.0 | CENTER | BELOW | INTERPOLATED CF |
| 16 | 38.0 | 22.0 | 31.0 | 16.0 | 2.841 | 2.572 | .000 |
| 17 | 36.2 | 20.2 | 35.0 | 16.0 | .411 | .395 | .000 |
| 18 | 36.6 | 16.6 | 35.0 | 20.0 | CENTER | BELOW | INTERPOLATED CF |
| 19 | 38.6 | 18.6 | 31.0 | 20.0 | CENTER | BELOW | INTERPOLATED CF |

F.S. MINIMUM= .373 FOR THE CIRCLE OF CENTER ( 33.0, 18.0)

Program STABR -- Version 2.84 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 0 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES PASS THROUGH THE POINT ( 42.0, 35.0)

GEOMETRY

| SECTIONS | .0 | 10.0 | 13.0 | 15.0 | 20.0 | 32.0 | 42.0 | 64.0 | 69.0 | 71.0 | 74.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 1 LEVEL(s)

Y= 25.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 42.0 | .0 |
| 39.0 | 5000.0 |
| 3.0 | 5000.0 |
| .0 | .0 |

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 105.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

NUMBER TANGENT RADIUS (X) CENTER (Y) CENTER FS(BISHOP) FS(OMS) AREA(B)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 35.9 | 13.9 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 37.8 | 15.8 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 35.7 | 17.7 | 37.0 | 18.0 | .714 | .691 | .260 |
| 4 | 35.0 | 13.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 36.3 | 10.3 | 37.0 | 26.0 | CENTER BELOW RIGHT INTERSECT | | |
| 6 | 36.4 | 18.4 | 35.0 | 18.0 | .644 | .627 | .240 |
| 7 | 35.6 | 19.6 | 37.0 | 16.0 | .743 | .722 | .283 |
| 8 | 35.3 | 17.3 | 39.0 | [illegible] | .795 | .769 | .283 |
| 9 | 35.8 | 15.8 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 10 | 37.2 | 19.2 | 33.0 | 15.0 | .598 | .583 | .225 |
| 11 | 36.2 | 20.2 | 35.0 | 16.0 | .673 | .658 | .262 |
| 12 | 36.6 | 16.6 | 33.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 13 | 38.2 | 20.2 | 31.0 | 18.0 | 2.609 | 2.449 | .211 |
| 14 | 37.0 | 21.0 | 33.0 | 16.0 | .627 | .614 | .249 |
| 15 | 37.5 | 17.5 | 33.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 16 | 38.0 | 22.0 | 31.0 | 16.0 | 3.075 | 2.806 | .234 |
| 17 | 36.2 | 20.2 | 35.0 | 16.0 | .673 | .658 | .262 |
| 18 | 36.6 | 16.6 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 19 | 38.6 | 18.6 | 31.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |

F.S. MINIMUM= .598 FOR THE CIRCLE OF CENTER ( 33.0, 18.0)

Program STABR -- Version 2.34 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 0 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES PASS THROUGH THE POINT ( 42.0, 35.0)

GEOMETRY

| SECTIONS | .0 | 10.0 | 13.0 | 15.0 | 20.0 | 32.0 | 42.0 | 64.0 | 69.0 | 71.0 | 74.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 33.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 2 LEVEL(s)

Y= 22.00 NO. OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 37.7 | .0 |
| 34.0 | 5000.0 |
| 3.0 | 5000.0 |
| .0 | .0 |

Y= 25.00 NO OF FORCE POINTS= 4

| X | FORCE |
|---|---|
| 42.0 | .0 |
| 39.0 | 5000.0 |
| 3.0 | 5000.0 |
| .0 | .0 |

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 105.0 |

| | | | |
|---|---|---|---|
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS |
|---|---|---|---|---|---|---|---|
| 1 | 35.9 | 13.9 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 37.9 | 15.9 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 35.7 | 17.7 | 37.0 | 18.0 | .863 | .840 | .40[illegible] |
| 4 | 35.0 | 13.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 36.3 | 10.3 | 37.0 | 26.0 | CENTER BELOW RIGHT INTERSECT | | |
| 6 | 36.4 | 18.4 | 35.0 | 18.0 | .781 | .764 | .377 |
| 7 | 35.6 | 19.6 | 37.0 | 16.0 | .932 | .911 | .471 |
| 8 | 35.3 | 17.3 | 39.0 | 18.0 | .959 | .929 | .440 |
| 9 | 35.8 | 15.8 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CR. | | |
| 10 | 37.2 | 19.2 | 33.0 | 18.0 | .726 | .711 | .354 |
| 11 | 36.2 | 20.2 | 35.0 | 16.0 | .848 | .832 | .437 |
| 12 | 36.6 | 16.6 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR. | | |
| 13 | 38.2 | 20.2 | 31.0 | 18.0 | 2.729 | 2.570 | .332 |
| 14 | 37.0 | 21.0 | 33.0 | 16.0 | .793 | .780 | .414 |
| 15 | 37.5 | 17.5 | 33.0 | 20.0 | CENTER BELOW INTERPOLATED CR. | | |
| 16 | 38.0 | 22.0 | 31.0 | 16.0 | 3.231 | 2.962 | .390 |
| 17 | 36.2 | 20.2 | 35.0 | 16.0 | .848 | .832 | .437 |
| 18 | 36.6 | 16.6 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR. | | |
| 19 | 38.6 | 18.6 | 31.0 | 20.0 | CENTER BELOW INTERPOLATED CR. | | |

F.S. MINIMUM= .726 FOR THE CIRCLE OF CENTER ( 33.0, 18.0)

Program STABR -- Version 2.84 (MS-DOS)

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

CONTROL DATA

| | |
|---|---|
| NUMBER OF SPECIFIED CENTERS | 0 |
| NUMBER OF DEPTH LIMITING TANGENTS | 0 |
| NUMBER OF VERTICAL SECTIONS | 12 |
| NUMBER OF SOIL LAYER BOUNDARIES | 5 |
| NUMBER OF PORE PRESSURE LINES | 0 |
| NUMBER OF POINTS DEFINING COHESION PROFILE | 0 |

SEISMIC COEFFICIENT S1,S2 = .00, .00

UNIT WEIGHT OF WATER = 62.40

SEARCH IS BASED ON BISHOP MODIFIED METHOD

SEARCH STARTS AT CENTER ( 37.0, 22.0) WITH FINAL GRID OF 2.0

ALL CIRCLES PASS THROUGH THE POINT ( 42.0, 35.0)

GEOMETRY

| SECTIONS | .0 | 10.0 | 13.0 | 15.0 | 20.0 | 32.0 | 42.0 | 64.0 | 69.0 | 71.0 | 74.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T. CRACKS | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| W IN CRACK | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 1 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 2 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| BOUNDARY 3 | 35.0 | 35.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 35.0 |
| BOUNDARY 4 | 35.0 | 35.0 | 28.0 | 30.0 | 35.0 | 35.0 | 35.0 | 35.0 | 30.0 | 28.0 | 35.0 |
| BOUNDARY 5 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |

REINFORCING FORCE DATA AT 3 LEVEL(s)

Y= 20.00 NO. OF FORCE POINTS= 4

| Y | FORCE |
|---|---|
| 34.8 | .0 |
| 31.0 | 1666.0 |
| 3.0 | 1666.0 |
| .0 | .0 |

Y= 22.00 NO. OF FORCE POINTS= 4

| Y | FORCE |
|---|---|
| 37.7 | .0 |
| 34.0 | 5000.0 |
| 3.0 | 5000.0 |
| .0 | .0 |

Y= 25.00 NO. OF FORCE POINTS= 4

| Y | FORCE |
|---|---|
| 42.0 | .0 |
| 39.0 | 5000.0 |
| 3.0 | 5000.0 |
| .0 | .0 |

SOIL PROPERTIES

| LAYER | COHESION | FRICTION ANGLE | DENSITY |
|---|---|---|---|
| 1 | .0 | 35.0 | 135.0 |
| 2 | 1000.0 | 40.0 | 120.0 |
| 3 | 100.0 | .0 | 105.0 |
| 4 | 1000.0 | 40.0 | 120.0 |

BISHOP MODIFIED AND/OR ORDINARY METHOD OF SLICES

permafrost depth 7 feet, 10 feet from centerline

| NUMBER | TANGENT | RADIUS | (X) CENTER | (Y) CENTER | FS(BISHOP) | FS(OMS) | dFS(BS) |
|---|---|---|---|---|---|---|---|
| 1 | 35.9 | 13.9 | 37.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 2 | 37.8 | 15.8 | 33.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 3 | 35.7 | 17.7 | 37.0 | 18.0 | .887 | .865 | .434 |
| 4 | 35.0 | 13.0 | 41.0 | 22.0 | CENTER BELOW INTERPOLATED CR | | |
| 5 | 36.3 | 10.3 | 37.0 | 26.0 | CENTER BELOW RIGHT INTERSECT | | |
| 6 | 36.4 | 18.4 | 35.0 | 18.0 | .804 | .786 | .399 |
| 7 | 35.6 | 19.6 | 37.0 | 16.0 | .974 | .953 | .513 |
| 8 | 35.3 | 17.3 | 39.0 | 18.0 | .986 | .956 | .467 |
| 9 | 35.8 | 15.8 | 37.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 10 | 37.2 | 19.2 | 33.0 | 18.0 | .748 | .733 | .375 |
| 11 | 36.2 | 20.2 | 35.0 | 16.0 | .887 | .871 | .476 |
| 12 | 36.6 | 16.6 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 13 | 38.2 | 20.2 | 31.0 | 18.0 | 2.749 | 2.590 | .352 |
| 14 | 37.0 | 21.0 | 33.0 | 16.0 | .829 | .816 | .451 |
| 15 | 37.5 | 17.5 | 33.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 16 | 38.0 | 22.0 | 31.0 | 16.0 | 3.266 | 2.997 | .425 |
| 17 | 36.2 | 20.2 | 35.0 | 16.0 | .887 | .871 | .476 |
| 18 | 36.6 | 16.6 | 35.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |
| 19 | 38.6 | 18.6 | 31.0 | 20.0 | CENTER BELOW INTERPOLATED CR | | |

F.S. MINIMUM= .748 FOR THE CIRCLE OF CENTER ( 33.0, 18.0)

# APPENDIX C

## PROCUREMENT OF SSTIPN PROGRAM

The procurement of computer software at Georgia Tech must follow Electronic Data Processing Equipment Request Procedures (EDP) under an executive order from the Governor. The procurement of SSTIPN is summarized as follows:

1. EPD request number 11-EC-86 was submitted for approval (enclosed).
2. Approval letter for EDP request number 11-EC-86 (enclosed).
3. Georgia Institute of Technology requisition form for SSTIPN (enclosed).
4. Letter of request for purchase of SSTIPN to Professor Duncan (enclosed).
5. Acceptance letter Professor Duncan (enclosed.

[illegible]

[illegible] NUMBER: 11-EC-86

[illegible]: Georgia [illegible]
College of Engineering
Department of [illegible]

MAILING ADDRESS: Atlanta, GA [illegible]

LOCATION OF EQUIPMENT: Geotechnical Building

[illegible] RESPONSIBLE: Neil D. Williams, [illegible]

[illegible]: 404/894-[illegible]

TYPE OF REQUEST: ____ New System X [illegible]

[illegible] REQUESTED:
Software: Soil Structure Interactive [illegible] (SSTIPN)

COST OF EQUIPMENT

The anticipated cost for the software [illegible] of funds for this acquisition will be [illegible] by Hueston, Inc.

[illegible] TO BE PERFORMED AND WORKLOAD

The [illegible] program will be used to analyze [illegible] road embankment constructed on [illegible] Fairbanks, Alaska. The analysis will yield design [illegible] the geotextile material which will [illegible].

The program will be utilized by one graduate [illegible] approximately 20 hours per week. [illegible] to other problems will [illegible].

[illegible] CONSIDERED
The other alternative considered [illegible] to produce the same results that the [illegible].

[illegible] ALTERNATIVES:
[illegible] the SSTIPN [illegible] 5000 [illegible] 20 [illegible]

BOARD OF REGENTS OF THE UNIVERSITY SYSTEM OF GEORGIA
PRESIDENT'S OFFICE BUILDING
ATHENS, GEORGIA 30602

OFFICE OF ASSISTANT VICE CHANCELLOR
FOR COMPUTING SYSTEMS

January 31, 1986

Dr. Joseph M. Pettit
President
Georgia Institute of Technology
225 North Avenue, N.W.
Atlanta, GA 30332

Dear President Pettit:

Approval is given to Georgia Institute of Technology to acquire the data processing equipment referenced in request number(s):

[redacted] 12-AT-86

Yours very truly,

James L. Carmon
James L. Carmon
Assistant Vice Chancellor
for Computing Systems

JLC/jw

cc: Mr. John Gehl

GEORGIA INSTITUTE OF TECHNOLOGY

SCHOOL OF CIVIL ENGINEERING

DATE 1/22/86

SUPPLIES

Signature of person requesting [signature]

Signature of faculty member supervising [signature]

Signature of cognizant staff that these items are not in stock [signature]

Estimated Cost 200.00

On Campus ____ Off Campus ____ State Funds ____ Project Funds ✓

Vendor Virginia Tech Foundation

Items Computer Program SSTIPN (on tape), source listing, and user manuals

E20-693

Requisition Number 200-6-25147

Approved [signature]

J. E. Fitzgerald, Director
School of Civil Engineering

Professor J.M. Duncan
Department of Civil Engineering
104 Patton Hall
Virginia Tech [illegible]
Blacksburg, VA 24061

Dear Professor Duncan,

The finite element analysis program, Soil Structure Interaction Program Non-linear (SSTIPN), we discussed in our phone conversation on January 17 will be very useful for our analysis of a geotextile reinforced road embankment. I am requesting that you send a copy of SSTIPN with source listing and user manual to the following address: Neil D. Williams, Ph.D.
c/o George Papaioannou
Georgia Institute of Technology
Department of Civil Engineering
Atlanta, GA 30332

It is my understanding from our phone conversation that the cost of the above items will be $200.00. The requisition number applicable to this purchase is #200-6-25147.

The following tape format information is provided for [illegible] transfer of the program:

- 80 character records
- 10 records per block
- 9 tracks
- Coded in ASCII or EBCDIC
- Density - 1600 or 6250 BPI

In addition, please specify the program tape format of [illegible] you send.

If further information is required please contact [illegible] Williams or me at (404)894-[illegible].

Thank you for your effort and [illegible] assistance.

Sincerely,

George Papaioannou

COLLEGE OF ENGINEERING

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

*Blacksburg, Virginia* 24061

DEPARTMENT OF CIVIL ENGINEERING (703) 961-6635

February 13, 1986

INVOICE

Mr. George Papaioanou
c/o Dr. Neil D. Williams
Georgia Institute of Technology
Department of Civil Engineering
Atlanta, GA 30332

REF: Requisition No. 200-6-25147

For computer program SSTIPN (Soil-Structure Interaction Program) sent via BITNET on February 13, 1986.

| | |
|---|---|
| SSTIPN | $200.00 |

Payable upon receipt.

Mail payment to:

Professor J. M. Duncan
Department of Civil Engineering
104 Patton Hall
Virginia Tech
Blacksburg, VA 24061

Please make check payable to: The Virginia Tech Foundation, Inc.

# APPENDIX D

## BASIC PLOTTING PROGRAM

The BASIC program for plotting FEADAM84 and SSTIPN reduced output was written by Robert L. Roglin (21). The program was written for use on an IBM PC with enhanced computer graphics. Output data from FEADAM84 and SSTIPN was reduced for use in the plotting program. Four data files were reduced from the output: Nodal point input data, four node solid element data, Nodal point displacement data, and four node element stress data. Three dimensional plots of stresses were not useful in evaluating stress distributions within the embankment and are not included. Program source listing is enclosed.

```
10 REM      PROGRAM:  GRAPH1
20 REM
30 REM         USER:    R.L. ROBLIN  RESEARCH ENG II GTRI
40 REM                  GEORGE PAPAIOANOU  SPECIAL PROBLEM
50 REM    ABSTRACT:  THIS PROGRAM IS USED TO PLOT A TWO DIMENSIONAL FINITE
60 REM                 ELEMENT GRID IN THE UNDEFORMED AND DEFORMED STATES
70 REM
80 REM -------------------------------------------------------------------------
90 DIM JT(70),X(70),Y(70),DX(3,70),DY(3,70)
100 DIM EL(50),I1(50),I2(50),I3(50),I4(50),EX(50),EY(50)
110 DIM SXX(3,50),SYY(3,50),SXY(3,50),XS(50),YS(50)
120 DIM ELS(10),ELF(10)
130 REM
140 REM
150 REM  Open Files For Input "JOINTS" "ELEMENTS" "DISPL" "STRESSES"
160 REM
170 REM -------------------------------------------------------------------------
180 REM
190 OPEN "JOINTS.DAT" FOR INPUT AS #1
200 INPUT #1, NJT
210 FOR I = 1 TO NJT
220  INPUT #1,JT(I),X(JT(I)),Y(JT(I))
230 NEXT I
240 CLOSE #1
250 OPEN "ELEMENTS.DAT" FOR INPUT AS #1
260 INPUT #1, NEL
270 FOR I = 1 TO NEL
280  INPUT #1,EL(I),I1(EL(I)),I2(EL(I)),I3(EL(I)),I4(EL(I)),EX(EL(I)),EY(EL(I))
290 NEXT I
300 INPUT #1,NLR
310 FOR I = 1 TO NLR
320  INPUT #1,LAY,ELS(LAY),ELF(LAY)
330 NEXT I
340 CLOSE #1
350 OPEN "DISPL.DAT" FOR INPUT AS #1
360 INPUT #1, NLC
370 FOR J = 1 TO NLC
380  FOR I = 1 TO NJT
390   INPUT #1, JT(I),DX(J,JT(I)),DY(J,JT(I))
400  NEXT I
410 NEXT J
420 CLOSE #1
430 OPEN "STRESSES.DAT" FOR INPUT AS #1
440 FOR J = 1 TO NLC
450  FOR I = 1 TO NEL
460   INPUT #1,EL(I),SXX(J,EL(I)),SYY(J,EL(I)),SXY(J,EL(I))
470  NEXT I
480 NEXT J
490 CLOSE #1
500 REM
510 REM
520 REM      Displaced Shape Plotting
530 REM
540 REM -------------------------------------------------------------------------
550 REM
560 INPUT "HORIZONTAL SCALE FACTOR: ";XSCALE
570 INPUT "VERTICAL SCALE FACTOR: ";YSCALE
580 INPUT "HORIZONTAL DISPLACEMENT SCALE FACTOR: ";DXSCALE
590 INPUT "VERTICAL DISPLACEMENT SCALE FACTOR: ";DYSCALE
600 INPUT "LOAD CASE NUMBER: ";LC
610 SCREEN 1,0
620 COLOR ,0
630 WINDOW (-110,-70)-(500,150)
640 REM
650 REM
```

```
670 REM
680 REM ------------------------------------------------------------------------------
690 REM
700 LINE (0,0) - (400,0): LINE (0,0) - (0,100)
710 REM
720 REM
730 REM   Plot Undeformed Geometry
740 REM
750 REM ------------------------------------------------------------------------------
760 REM
770 FOR I = 1 TO NEL
780  X1 = HSCALE*X(I1(EL(I))): Y1 = VSCALE*Y(I1(EL(I)))
790  X2 = HSCALE*X(I2(EL(I))): Y2 = VSCALE*Y(I2(EL(I))): LINE (X1,Y1) - (X2,Y2
800  X3 = HSCALE*X(I3(EL(I))): Y3 = VSCALE*Y(I3(EL(I))): LINE - (X3,Y3)
810  X4 = HSCALE*X(I4(EL(I))): Y4 = VSCALE*Y(I4(EL(I))): LINE - (X4,Y4)
820  LINE - (X1,Y1)
830 NEXT I
840 REM
850 REM
860 REM  Plot Deformed Geometry
870 REM
880 REM ------------------------------------------------------------------------------
890 REM
900 FOR I = 1 TO NJT
910  X1 = HSCALE*X(I1(EL(I))) + DHSCALE*DX(LC,I1(EL(I)))
920  X2 = HSCALE*X(I2(EL(I))) + DHSCALE*DX(LC,I1(EL(I)))
930  X3 = HSCALE*X(I3(EL(I))) + DHSCALE*DX(LC,I3(EL(I)))
940  X4 = HSCALE*X(I4(EL(I))) + DHSCALE*DX(LC,I4(EL(I)))
950  Y1 = VSCALE*Y(I1(EL(I))) + DVSCALE*DY(LC,I1(EL(I)))
960  Y2 = VSCALE*Y(I2(EL(I))) + DVSCALE*DY(LC,I2(EL(I)))
970  Y3 = VSCALE*Y(I3(EL(I))) + DVSCALE*DY(LC,I3(EL(I)))
980  Y4 = VSCALE*Y(I4(EL(I))) + DVSCALE*DY(LC,I4(EL(I)))
990  LINE (X1,Y1) - (X2,Y2),2
1000  LINE - (X3,Y3),2
1010  LINE - (X4,Y4),2
1020  LINE - (X1,Y1),2
1030 NEXT I
1040 REM
1050 REM
1060 REM   Stress Contour Plotting
1070 REM
1080 REM ------------------------------------------------------------------------------
1090 REM
1100 REM
1110 REM   Develop Coordinate Transformation Equations
1120 REM
1130 REM ------------------------------------------------------------------------------
1140 REM
1150 INPUT "SPIN ANGLE, TIP ANGLE: ";SPIN,TIP
1160 CSPIN = COS(SPIN*3.14159/180): SSPIN = SIN(SPIN*3.14159/180)
1170 CTIP = COS(TIP*3.14159/180): STIP = SIN(TIP*3.14159/180)
1180 PRINT "cspin = ",CSPIN," sspin = ",SSPIN
1190 PRINT "ctip = ",CTIP," stip = ",STIP
1200 INPUT "STRESS, LOAD: ";STRESS,LD
1210 CLS
1220 FOR I = 1 TO NEL
1230  IF STRESS = 1 THEN SIG = SX(LD,EL(I))
1240  IF STRESS = 2 THEN SIG = SY(LD,EL(I))
1250  IF STRESS = 3 THEN SIG = S[illegible](LD,EL(I))
1260  XS(EL(I)) = X(EL(I))*CSPIN + SSPIN*[illegible]
1270  YS(EL(I)) = Y(EL(I))*CTIP + STIP*(X(EL(I))*[illegible]
1280 NEXT I
1290 REM
1300 REM
1310 REM   Plot Stress Contours
```

```
1330 REM ------------------------------------------------------------------------
1340 REM
1350 REM
1360 REM
1370 REM    Plot Global Axis
1380 REM
1390 REM ------------------------------------------------------------------------
1400 REM
1410 XSX = 100*CSPIN: YSX = -100*SSPIN*STIP: LINE (0,0) - (XSX,YSX),1
1420 XSY = 0: YSY = 100*CTIP: LINE (0,0) - (XSY,YSY),2
1430 XSZ = 100*SSPIN: YSZ = 100*CSPIN*STIP: LINE (0,0) - (XSZ,YSZ),3
1440 FOR I = 1 TO NEL
1450 X1 = HSCALE*X(I1(EL(I))): Y1 = VSCALE*Y(I1(EL(I)))
1460 Y1 = Y1*CTIP + X1*STIP*(-1)*SSPIN: X1 = X1*CSPIN
1470 X2 = HSCALE*X(I2(EL(I))): Y2 = VSCALE*Y(I2(EL(I)))
1480 Y2 = Y2*CTIP + X2*STIP*(-1)*SSPIN: X2 = X2*CSPIN: LINE (X1,Y1) - (X2,Y2)
1490 X3 = HSCALE*X(I3(EL(I))): Y3 = VSCALE*Y(I3(EL(I)))
1500 Y3 = Y3*CTIP + X3*STIP*(-1)*SSPIN: X3 = X3*CSPIN: LINE - (X3,Y3)
1510 X4 = HSCALE*X(I4(EL(I))): Y4 = VSCALE*Y(I4(EL(I)))
1520 Y4 = Y4*CTIP + X4*STIP*(-1)*SSPIN: X4 = X4*CSPIN: LINE - (X4,Y4)
1530 LINE - (X1,Y1)
1540 NEXT I
1550 FOR K = 1 TO NLR
1560 K1 = (NLR + 1) - K
1570 J = 0
1580  FOR I = ELS(K1) TO (ELF(K1) - 1)
1590   IB = ELF(K1) - J: IE = ELF(K1) - J - 1
1600   LINE (XS(IB),YS(IB)) - (XS(IE),YS(IE))
1610   IF K1 = 1 THEN GOTO 1640
1620   IE = ELF(K1 - 1) - J
1630   LINE (XS(IB),YS(IB)) - (XS(IE),YS(IE))
1640   J = J + 1
1650  NEXT I
1660  IF K1 = 1 THEN GOTO 1700
1670  IB = ELF(K1) - J: IE = ELF(K1 - 1) - J
1680  LINE (XS(IB),YS(IB)) - (XS(IE),YS(IE))
1690 NEXT K
1700 REM
1710 STOP
```

# APPENDIX E

## SSTIPN OUTPUT DATA

Detailed results of the SSTIPN analyses are contained herein. Output data includes nodal point displacements, soil element stress and strain data, and internal forces of structural elements. Analyses include output for all five different geotextile strengths. Each of the five geotextile strengths include three different conditions as stated in Section 3.2.

SSTIPN: 1 LAYER OF GEOTEXTILE, P=1000 PPI, T=0

```
TOTAL NUMBER OF NODES-------------------- 95
NUMBER OF BAR ELEMENTS-------------------  5
NUMBER OF DIFF. BAR MATERIALS-----------  1
NUMBER OF BEAM ELEMENTS-----------------  0
NUMBER OF DIFF. BEAM MATERIALS----------  0
NUMBER OF NODAL LINKS ------------------  0
NUMBER OF INTERFACE ELEMENTS------------  0
NO  OF INTERFACE ELE. IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE. IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS-----------  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 75
NUMBER OF DIFF  SOIL MATERIALS----------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 35
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS---------  0
NUMBER OF PREEXISTING NODES------------  0
NUMBER OF CONSTRUCTION LAYERS----------  6
NUMBER OF LOAD CASES--------------------  1

CALING FACTOR ----------      1 00000

ATMOSPHERIC PRESSURE ---      1.05800

UNIT WEIGHT OF WATER ---       03120


OMPUTATION SEQUENCE FOR A TOTAL OF     7  INCREMENTS
----------------------------------------------------

 INCREMENT NO.  1      PUT ON LAYER NO.  1

 INCREMENT NO.  2      PUT ON LAYER NO.  2

 INCREMENT NO.  3      PUT ON LAYER NO.  3

 INCREMENT NO.  4      PUT ON LAYER NO.  4

 INCREMENT NO.  5      PUT ON LAYER NO.  5

 INCREMENT NO   6      PUT ON LAYER NO.  6

 INCREMENT NO.  7      APPLY LOAD CASE   1
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B.C. CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | .000 | .000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 38.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58.000 | .000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | .000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30.000 | 4.000 | 0 | 0 | 0 |
| 18 | 38.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54.000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82.000 | 4.000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 38.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.000 | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10.000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.000 | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 38.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10.000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 38.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11.500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74.000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.000 | 14.000 | 0 | 0 | 0 |
| 72 | 34.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | 15.000 | 0 | 0 | 0 |
| 83 | 82.000 | 15.000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17.000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17.000 | 1 | 0 | 1 |

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 30. | 1.00 | 0. |

| ELMT NO. | CONNECTED NODES I | CONNECTED NODES J | MATL NO. |
|---|---|---|---|
| 1 | 43 | 44 | 1 |
| 2 | 44 | 45 | 1 |
| 3 | 45 | 46 | 1 |
| 4 | 46 | 47 | 1 |
| 5 | 47 | 48 | 1 |
| 6 | 48 | 49 | 1 |
| 7 | 34 | 35 | 1 |
| 7 | 49 | 50 | 1 |
| 8 | 50 | 51 | 1 |
| 9 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| | | YOUNG'S MODULUS | | | BULK MODULUS | | STRENGTH PARAMETERS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| MATL | UNIT WT | CONSTANT | EXPONENT | RATIO | CONSTANT | EXPONENT | C | PHI | DPHI | KO |
| 1 | .0880 | 8000.00 | .500 | .500 | 1500.00 | .800 | .00 | 35.00 | .00 | .50 |
| 2 | .0830 | 40.00 | .300 | .800 | 20.00 | .200 | .05 | .00 | .00 | .50 |
| 3 | .0800 | 1000.00 | .400 | .700 | 500.00 | .500 | .50 | 40.00 | .00 | .50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO. | CONNECTED NODES I | J | K | L | MATL NO. | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5.000 | 2.000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15.000 | 2.000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25.000 | 2.000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33.000 | 2.000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39.000 | 2.000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46.000 | 2.000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52.000 | 2.000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 58.000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62.000 | 2.000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2.000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78.000 | 2.000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 88.000 | 2.000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5.000 | 5.500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15.000 | 5.500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25.000 | 5.500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33.000 | 5.500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5.500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5.500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 58.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5.500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5.500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78.000 | 5.500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 88.000 | 5.500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5.000 | 8.500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15.000 | 8.500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25.000 | 8.500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33.000 | 8.500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39.000 | 8.500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46.000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52.000 | 8.500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 58.000 | 8.500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62.000 | 8.500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70.000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78.000 | 8.500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 88.000 | 8.500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34.500 | 10.750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39.000 | 10.750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46.000 | 10.750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52.000 | 10.750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 58.000 | 10.750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62.000 | 10.750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70.000 | 10.750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78.000 | 10.750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 88.000 | 10.750 |
| 46 | 53 | 54 | 62 | 32 | 1 | 40.500 | 12.250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46.000 | 12.250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52.000 | 12.250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 58.000 | 12.250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62.000 | 12.250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70.000 | 12.250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78.000 | 12.250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 88.000 | 12.250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47.000 | 13.500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52.000 | 13.500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 58.000 | 13.500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62.000 | 13.500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70.000 | 13.500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78.000 | 13.500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 88.000 | 13.500 |
| 61 | 70 | 71 | 78 | 76 | 1 | 49.000 | 14.500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52.000 | 14.500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 58.000 | 14.500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62.000 | 14.500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70.000 | 14.500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78.000 | 14.500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 88.000 | 14.500 |
| 68 | 78 | 79 | 85 | 85 | 1 | 53.000 | 15.500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 58.000 | 15.500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62.000 | 15.300 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70.000 | 15.500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78.000 | 15.500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 88.000 | 15.500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57.000 | 16.500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62.000 | 16.500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70.000 | 16.500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78.000 | 16.500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 88.000 | 16.500 |

```
SSTIPN: 1 LAYER OF GEOTEXTILE, P=1000 PPI, T=0

*****************************************************
*****************************************************
*                                                   *
*  LOAD CASE -----------------------------    1     *
*                                                   *
*****************************************************
*****************************************************

LARGEST ELE. NO. IN THIS INCREMENT   78

LARGEST N P  NO  IN THIS INCREMENT   86


BAND WIDTH-----------------------  40

TOTAL NUMBER OF EQUATIONS--------- 222

NUMBER OF EQUATIONS IN BLOCK------  86

NUMBER OF BLOCKS-----------------   3

NUMBER OF N.P. FORCE CARDS--------  3

NUMBER OF PRESSURE CARDS---------  0
```

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0. | 0. |
| 2 | 0. | 0. |
| 3 | 0. | 0. |
| 4 | 0. | 0. |
| 5 | 0. | 0. |
| 6 | 0. | 0. |
| 7 | 0. | 0. |
| 8 | 0. | 0. |
| 9 | 0. | 0. |
| 10 | 0. | 0. |
| 11 | 0. | 0. |
| 12 | 0. | 0. |
| 13 | 0. | 0. |
| 14 | 0. | 0. |
| 15 | 0. | 0. |
| 16 | 0. | 0. |
| 17 | 0. | 0. |
| 18 | 0. | 0. |
| 19 | 0. | 0. |
| 20 | 0. | 0. |
| 21 | 0. | 0. |
| 22 | 0. | 0. |
| 23 | 0. | 0. |
| 24 | 0. | 0. |
| 25 | 0. | 0. |
| 26 | 0. | 0. |
| 27 | 0. | 0. |
| 28 | 0. | 0. |
| 29 | 0. | 0. |
| 30 | 0. | 0. |
| 31 | 0. | 0. |
| 32 | 0. | 0. |
| 33 | 0. | 0. |
| 34 | 0. | 0. |
| 35 | 0. | 0. |
| 36 | 0. | 0. |
| 37 | 0. | 0. |
| 38 | 0. | 0. |
| 39 | 0. | 0. |
| 40 | 0. | 0. |
| 41 | 0. | 0. |
| 42 | 0. | 0. |
| 43 | 0. | 0. |
| 44 | 0. | 0. |
| 45 | 0. | 0. |
| 46 | 0. | 0. |
| 47 | 0. | 0. |
| 48 | 0. | 0. |
| 49 | 0. | 0. |
| 50 | 0. | 0. |
| 51 | 0. | 0. |
| 52 | 0. | 0. |
| 53 | 0. | 0. |
| 54 | 0. | 0. |
| 55 | 0. | 0. |
| 56 | 0. | 0. |
| 57 | 0. | 0. |
| 58 | 0. | 0. |
| 59 | 0. | 0. |
| 60 | 0. | 0. |
| 61 | 0. | 0. |
| 62 | 0. | 0. |
| 63 | 0. | 0. |
| 64 | 0. | 0. |
| 65 | 0. | 0. |
| 66 | 0. | 0. |
| 67 | 0. | 0. |
| 68 | 0. | 0. |
| 69 | 0. | 0. |
| 70 | 0. | 0. |
| 71 | 0. | 0. |
| 72 | 0. | 0. |
| 73 | 0. | 0. |
| 74 | 0. | 0. |
| 75 | 0. | 0. |
| 76 | 0. | 0. |
| 77 | 0. | 0. |
| 78 | 0. | 0. |
| 79 | 0. | 0. |
| 80 | 0. | 0. |
| 81 | 0. | 0. |
| 82 | 0. | 0. |
| 83 | 0. | 0. |
| 84 | 0. | 0. |
| 85 | 0. | 0. |
| 86 | 0. | 0. |
| 87 | 0. | 0. |
| 88 | 0. | 0. |
| 89 | 0. | 0. |
| 90 | 0. | 0. |
| 91 | 0. | 0. |
| 92 | 0. | -4.50 |
| 93 | 0. | -4.50 |
| 94 | 0. | -2.00 |
| 95 | 0. | 0. |

LOAD CASE : 1    ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 1 |
| 2 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 2 |
| 3 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 3 |
| 4 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 4 |
| 5 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 5 |
| 6 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 6 |
| 7 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 7 |
| 8 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 8 |
| 9 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 9 |
| 10 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 10 |
| 11 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 11 |
| 12 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 12 |
| 13 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 13 |
| 14 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 14 |
| 15 | .0000 | .0000 | .0000 | -.0002 | .0000 | .0000 | .0002 | 15 |
| 16 | -.0001 | -.0001 | .0000 | -.0005 | -.0006 | .0000 | .0007 | 16 |
| 17 | -.0004 | .0002 | .0000 | -.0051 | .0021 | .0000 | .0055 | 17 |
| 18 | -.0217 | .0102 | .0000 | -.2398 | .0598 | .0000 | .2473 | 18 |
| 19 | -.0405 | .0027 | .0000 | -.3684 | -.0841 | .0000 | .3840 | 19 |
| 20 | -.0379 | -.0089 | .0000 | -.2240 | -.1379 | .0000 | .2630 | 20 |
| 21 | -.0230 | -.0183 | .0000 | -.0822 | -.1543 | .0000 | .1633 | 21 |
| 22 | -.0005 | -.0001 | .0000 | -.0007 | -.0052 | .0000 | .0053 | 22 |
| 23 | -.0013 | -.0019 | .0000 | -.0008 | -.0051 | .0000 | .0052 | 23 |
| 24 | .0009 | -.0085 | .0000 | .0015 | -.0113 | .0000 | .0114 | 24 |
| 25 | .0024 | -.0019 | .0000 | .0025 | -.0053 | .0000 | .0058 | 25 |
| 26 | .0000 | .0008 | .0000 | .0000 | -.0022 | .0000 | .0022 | 26 |
| 27 | .0000 | .0000 | .0000 | .0000 | .0001 | .0000 | .0001 | 27 |
| 28 | .0000 | .0000 | .0000 | .0000 | -.0003 | .0000 | .0003 | 28 |
| 29 | -.0002 | .0000 | .0000 | -.0020 | .0004 | .0000 | .0020 | 29 |
| 30 | -.0317 | .0070 | .0000 | -.2923 | .0730 | .0000 | .3013 | 30 |
| 31 | -.0538 | .0224 | .0000 | -.4279 | .1187 | .0000 | .4439 | 31 |
| 32 | -.0785 | .0095 | .0000 | -.5118 | -.1111 | .0000 | .5238 | 32 |
| 33 | -.0835 | -.0108 | .0000 | -.4272 | -.2780 | .0000 | .5102 | 33 |
| 34 | -.0980 | -.0223 | .0000 | -.3498 | -.2804 | .0000 | .4483 | 34 |
| 35 | -.0819 | -.0293 | .0000 | -.2426 | -.1881 | .0000 | .3075 | 35 |
| 36 | -.0014 | -.0048 | .0000 | -.0001 | -.0144 | .0000 | .0144 | 36 |
| 37 | .0019 | -.0130 | .0000 | .0025 | -.0212 | .0000 | .0213 | 37 |
| 38 | .0028 | -.0033 | .0000 | .0028 | -.0100 | .0000 | .0103 | 38 |
| 39 | .0000 | .0026 | .0000 | .0000 | -.0035 | .0000 | .0035 | 39 |
| 40 | .0000 | .0000 | .0000 | .0000 | .0001 | .0000 | .0001 | 40 |
| 41 | .0000 | .0000 | .0000 | .0002 | -.0005 | .0000 | .0004 | 41 |
| 42 | -.0278 | .0123 | .0000 | -.1892 | .0685 | .0000 | .2005 | 42 |
| 43 | -.0813 | .0175 | .0000 | -.4126 | .1120 | .0000 | .4275 | 43 |
| 44 | -.0942 | .0297 | .0000 | -.4334 | .1295 | .0000 | .4523 | 44 |
| 45 | -.0948 | .0135 | .0000 | -.4220 | -.1888 | .0000 | .4601 | 45 |
| 46 | -.0957 | -.0111 | .0000 | -.3858 | -.3874 | .0000 | .5327 | 46 |
| 47 | -.0963 | -.0257 | .0000 | -.3174 | -.3983 | .0000 | .5015 | 47 |
| 48 | -.0948 | -.0343 | .0000 | -.2569 | -.3177 | .0000 | .4088 | 48 |
| 49 | -.0634 | -.0541 | .0000 | -.1067 | -.2423 | .0000 | .2644 | 49 |
| 50 | -.0025 | -.0325 | .0000 | -.0080 | -.0604 | .0000 | .0608 | 50 |
| 51 | .0003 | -.0021 | .0000 | -.0009 | -.0108 | .0000 | .0109 | 51 |
| 52 | .0000 | .0039 | .0000 | .0000 | -.0082 | .0000 | .0082 | 52 |
| 53 | -.0803 | .0287 | .0000 | -.6850 | .1666 | .0000 | .7047 | 53 |
| 54 | -.0805 | .0135 | .0000 | -.5956 | -.1424 | .0000 | .6124 | 54 |
| 55 | -.0908 | -.0111 | .0000 | -.3798 | -.3711 | .0000 | .5310 | 55 |
| 56 | -.0918 | -.0281 | .0000 | -.3208 | -.4081 | .0000 | .5190 | 56 |
| 57 | -.0908 | -.0377 | .0000 | -.2486 | -.3483 | .0000 | .4285 | 57 |
| 58 | -.0532 | -.1053 | .0000 | -.1110 | -.2880 | .0000 | .3087 | 58 |
| 59 | -.0081 | -.0385 | .0000 | .0385 | -.1049 | .0000 | .1111 | 59 |
| 60 | -.0031 | -.0013 | .0000 | -.0063 | -.0080 | .0000 | .0100 | 60 |
| 61 | .0000 | .0037 | .0000 | .0000 | -.0049 | .0000 | .0049 | 61 |
| 62 | -.0865 | .0138 | .0000 | -.1850 | .0087 | .0000 | .1852 | 62 |
| 63 | -.1604 | .0017 | .0000 | -.2344 | -.1481 | .0000 | .2773 | 63 |
| 64 | -.1586 | -.0870 | .0000 | -.2344 | -.2804 | .0000 | .3504 | 64 |
| 65 | -.1391 | .0008 | .0000 | -.2107 | -.1988 | .0000 | .2902 | 65 |
| 66 | -.0163 | -.2873 | .0000 | -.0852 | -.3806 | .0000 | .3960 | 66 |
| 67 | -.0146 | -.0848 | .0000 | -.0343 | -.1388 | .0000 | .1431 | 67 |
| 68 | -.0077 | -.0004 | .0000 | -.0082 | -.0088 | .0000 | .0114 | 68 |
| 69 | .0000 | .0029 | .0000 | .0000 | -.0036 | .0000 | .0036 | 69 |
| 70 | -.1282 | .0151 | .0000 | -.1906 | -.0288 | .0000 | .1928 | 70 |
| 71 | -.1431 | .0018 | .0000 | -.2065 | -.0881 | .0000 | .2281 | 71 |
| 72 | -.1427 | -.0875 | .0000 | -.2056 | -.2033 | .0000 | .2892 | 72 |
| 73 | -.1339 | -.0170 | .0000 | -.1957 | -.1846 | .0000 | .2856 | 73 |
| 74 | -.0501 | -.2897 | .0000 | -.1033 | -.3714 | .0000 | .3855 | 74 |
| 75 | -.0372 | -.0481 | .0000 | -.0804 | -.1504 | .0000 | .1620 | 75 |
| 76 | -.0084 | -.0012 | .0000 | -.0079 | -.0064 | .0000 | .0102 | 76 |
| 77 | .0000 | .0027 | .0000 | .0000 | -.0023 | .0000 | .0023 | 77 |
| 78 | -.1845 | .0058 | .0000 | -.2016 | -.0646 | .0000 | .2089 | 78 |
| 79 | -.1848 | -.0855 | .0000 | -.2328 | -.1480 | .0000 | .2767 | 79 |
| 80 | -.2288 | -.0119 | .0000 | -.2858 | -.1062 | .0000 | .2883 | 80 |
| 81 | -.2600 | -.4791 | .0000 | -.2987 | -.5340 | .0000 | .6124 | 81 |
| 82 | .5327 | -.2809 | .0000 | .4941 | -.3499 | .0000 | .6054 | 82 |
| 83 | 1.1879 | -.0509 | .0000 | 1.1864 | -.0549 | .0000 | 1.1877 | 83 |
| 84 | .0300 | .1317 | .0000 | .0000 | .1282 | .0000 | .1282 | 84 |
| 85 | -.2018 | -.0588 | .0000 | -.2181 | -.0842 | .0000 | .2319 | 85 |
| 86 | -.2204 | -.0076 | .0000 | -.2382 | -.0395 | .0000 | .2395 | 86 |
| 87 | -.2017 | -.4840 | .0000 | -.2177 | -.5105 | .0000 | .5550 | 87 |
| 88 | .9341 | -.6196 | .0000 | .8885 | -.6727 | .0000 | 1.1146 | 88 |
| 89 | 1.6678 | -.0526 | .0000 | 1.6569 | -.0738 | .0000 | 1.6806 | 89 |
| 90 | .0000 | .3922 | .0000 | .0000 | .3738 | .0000 | .3738 | 90 |
| 91 | -.9016 | .0521 | .0000 | -.9016 | .0521 | .0000 | .9031 | 91 |
| 92 | -.4255 | -.7788 | .0000 | -.4256 | -.7766 | .0000 | .8875 | 92 |
| 93 | 1.2409 | -.9420 | .0000 | 1.2409 | -.9420 | .0000 | 1.5579 | 93 |
| 94 | 1.7100 | -.0415 | .0000 | 1.7100 | -.0415 | .0000 | 1.7105 | 94 |
| 95 | .0000 | .5559 | .0000 | .0000 | .5589 | .0000 | .5569 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO. | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | -.0843 |
| 2 | -.0030 |
| 3 | -.0036 |
| 4 | -.0043 |
| 5 | .012" |
| 6 | .1222 |
| 7 | .1907 |
| 8 | .0106 |
| 9 | -.0012 |
| TOTAL VALUES | |
| 1 | -.1036 |
| 2 | .0588 |
| 3 | .2114 |
| 4 | .3614 |
| 5 | .4369 |
| 6 | .5747 |
| 7 | .3737 |

8 .0192
9 .0034

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 526.7 | 330.8 | 227.9 | .156 | .001 | .001 | .003 | .002 | -.001 | .003 | 1 |
| 2 | 524.5 | 333.5 | 225.8 | .162 | .001 | .007 | .011 | .011 | -.002 | .013 | 2 |
| 3 | 517.6 | 327.0 | 223.5 | .158 | .023 | -.020 | .057 | .037 | -.034 | .071 | 3 |
| 4 | .7 | 17.2 | .2 | .494 | 1.957 | -.775 | 2.583 | 2.470 | -1.289 | 3.759 | 4 |
| 5 | .6 | 17.0 | .2 | .494 | .987 | .053 | 8.511 | 4.801 | -3.781 | 8.582 | 5 |
| 6 | .7 | 17.9 | .2 | .494 | -.640 | 2.525 | 7.740 | 5.063 | -3.377 | 8.440 | 6 |
| 7 | .7 | 18.4 | .2 | .493 | -1.647 | 3.703 | 4.208 | 4.432 | -2.376 | 6.808 | 7 |
| 8 | .8 | 18.8 | .2 | .494 | -1.144 | 2.045 | -.752 | 2.088 | -1.188 | 3.276 | 8 |
| 9 | 456.0 | 338.0 | 188.2 | .225 | -.001 | .130 | .017 | .130 | -.001 | .131 | 9 |
| 10 | 468.1 | 360.5 | 189.1 | .235 | -.013 | .205 | .028 | .206 | -.014 | .220 | 10 |
| 11 | 475.5 | 370.7 | 191.5 | .242 | -.007 | .207 | -.089 | .216 | -.016 | .232 | 11 |
| 12 | 511.6 | 383.6 | 211.6 | .209 | .016 | .084 | -.052 | .102 | .009 | .093 | 12 |
| 13 | 437.4 | 257.8 | 194.9 | .122 | .001 | .003 | -.001 | .003 | .001 | .002 | 13 |
| 14 | 466.0 | 272.6 | 208.8 | .116 | .011 | -.011 | .021 | .015 | -.015 | .031 | 14 |
| 15 | 2.2 | 14.1 | .8 | .473 | 1.475 | -1.198 | 4.434 | 2.727 | -2.450 | 5.177 | 15 |
| 16 | 2.5 | 15.8 | .8 | .473 | 3.083 | -2.180 | 7.041 | 4.847 | -3.944 | 8.791 | 16 |
| 17 | 1.2 | 16.7 | .4 | .488 | 1.880 | -.214 | 8.840 | 5.161 | -3.886 | 8.847 | 17 |
| 18 | .8 | 17.0 | .2 | .494 | -1.389 | 3.135 | 7.455 | 5.236 | -3.472 | 8.710 | 18 |
| 19 | .8 | 17.0 | .2 | .494 | -2.614 | 4.385 | 7.952 | 6.182 | -4.411 | 10.593 | 19 |
| 20 | .7 | 18.1 | .2 | .494 | -2.484 | 5.098 | 5.268 | 5.923 | -3.309 | 9.232 | 20 |
| 21 | .6 | 17.1 | .2 | .494 | -1.516 | 3.218 | 2.930 | 3.634 | -1.933 | 5.567 | 21 |
| 22 | 389.3 | 330.7 | 158.4 | .261 | -.029 | .316 | .056 | .320 | -.031 | .352 | 22 |
| 23 | 405.2 | 305.3 | 164.7 | .230 | -.008 | .244 | -.123 | .258 | -.022 | .280 | 23 |
| 24 | 457.5 | 310.0 | 192.2 | .190 | .032 | .100 | -.068 | .111 | .021 | .089 | 24 |
| 25 | 408.6 | 229.6 | 186.9 | .093 | -.001 | .000 | .002 | .001 | -.001 | .002 | 25 |
| 26 | .0 | .1 | .0 | .495 | .557 | -1.101 | 2.779 | 1.657 | -1.801 | 3.458 | 26 |
| 27 | 1.2 | 13.5 | .4 | .488 | 2.569 | -1.750 | 4.535 | 3.541 | -2.722 | 6.262 | 27 |
| 28 | 1.6 | 13.5 | .5 | .480 | 1.300 | -.812 | 1.569 | 1.559 | -1.071 | 2.631 | 28 |
| 29 | 1.3 | 14.1 | .4 | .485 | .808 | .595 | 2.910 | 2.057 | -.853 | 2.910 | 29 |
| 30 | .5 | 16.0 | .2 | .494 | -.662 | 2.565 | -.031 | 2.566 | -.662 | 3.446 | 30 |
| 31 | .6 | 15.7 | .2 | .494 | -1.570 | 3.804 | -1.538 | 3.716 | -1.681 | 5.397 | 31 |
| 32 | .6 | 16.4 | .2 | .494 | -2.071 | 3.942 | -2.290 | 4.152 | -2.282 | 6.434 | 32 |
| 33 | .7 | 17.7 | .2 | .494 | -2.474 | 5.943 | .469 | 5.950 | -2.480 | 8.430 | 33 |
| 34 | .7 | 17.4 | .2 | .494 | -.638 | 4.287 | .748 | 4.315 | -.667 | 4.982 | 34 |
| 35 | 292.9 | 258.9 | 114.7 | .277 | -.033 | .501 | -.118 | .508 | -.039 | .547 | 35 |
| 36 | 346.0 | 217.2 | 148.7 | .155 | .010 | .059 | -.012 | .060 | .010 | .050 | 36 |
| 37 | .1 | 4.0 | .0 | .495 | .375 | .212 | 17.083 | 8.835 | -8.248 | 17.084 | 37 |
| 38 | 1153.0 | 587.4 | 566.3 | .018 | -.639 | 2.066 | 20.241 | 10.849 | -9.602 | 20.451 | 38 |
| 39 | 809.8 | 614.8 | 348.8 | .161 | -1.684 | 4.053 | 10.409 | 7.127 | -4.758 | 11.885 | 39 |
| 40 | 346.1 | 441.2 | 127.7 | .355 | -1.326 | 4.950 | 2.373 | 5.167 | -1.543 | 6.710 | 40 |
| 41 | 407.6 | 449.7 | 153.3 | .330 | -1.585 | 5.381 | -.520 | 5.391 | -1.594 | 6.985 | 41 |
| 42 | 11.9 | 386.6 | 4.0 | .495 | -1.770 | 4.618 | -.158 | 4.619 | -1.771 | 6.390 | 42 |
| 43 | 11.9 | 386.6 | 4.0 | .495 | -1.612 | 4.027 | -3.302 | 4.482 | -1.966 | 6.448 | 43 |
| 44 | 709.8 | 630.0 | 277.3 | .280 | .224 | 1.928 | -2.139 | 2.442 | -.292 | 2.733 | 44 |
| 45 | 1087.2 | 656.4 | 468.3 | .144 | -.033 | .045 | .058 | .055 | -.042 | .097 | 45 |
| 46 | 279.2 | 432.3 | 100.9 | .363 | -.036 | .062 | -.336 | .166 | -.164 | .352 | 46 |
| 47 | .1 | 4.0 | .0 | .495 | .390 | -.354 | 2.737 | 1.437 | -1.400 | 2.837 | 47 |
| 48 | .1 | 4.0 | .0 | .495 | .088 | 1.420 | 5.050 | 3.358 | -1.870 | 5.228 | 48 |
| 49 | .1 | 4.0 | .0 | .495 | -.724 | 1.244 | 2.597 | 1.480 | -1.370 | 3.259 | 49 |
| 50 | .1 | 4.0 | .0 | .495 | -1.385 | 5.707 | 2.375 | 5.901 | -1.579 | 7.479 | 50 |
| 51 | .1 | 4.0 | .0 | .495 | -.589 | 9.124 | -2.469 | 9.279 | -.744 | 10.022 | 51 |
| 52 | 628.9 | 545.0 | 246.0 | .274 | -.238 | 2.865 | -.396 | 2.877 | -.251 | 3.128 | 52 |
| 53 | 886.3 | 592.3 | 381.2 | .178 | -.088 | .053 | .123 | .076 | -.109 | .185 | 53 |
| 54 | .1 | 4.0 | .0 | .495 | .704 | -.424 | .948 | .876 | -.596 | 1.471 | 54 |
| 55 | 170.8 | 419.7 | 63.1 | .425 | -.038 | .147 | .802 | .466 | -.357 | .823 | 55 |
| 56 | .1 | 4.0 | .0 | .495 | -.442 | 1.008 | -2.167 | 1.587 | -1.020 | 2.607 | 56 |
| 57 | 11.9 | 398.8 | 4.0 | .495 | -1.490 | 1.220 | 5.152 | 2.775 | -3.046 | 5.821 | 57 |
| 58 | 1787.2 | 957.3 | 843.4 | .059 | -.417 | 2.956 | 1.144 | 3.051 | -.512 | 3.562 | 58 |
| 59 | 855.5 | 599.9 | 355.3 | .204 | -.446 | 2.769 | .103 | 2.770 | -.447 | 3.216 | 59 |
| 60 | 521.3 | 466.4 | 203.3 | .282 | -.105 | .106 | -.058 | .117 | -.116 | .233 | 60 |
| 61 | .1 | 4.0 | .0 | .495 | .373 | -.386 | 2.702 | 1.397 | -1.409 | 2.807 | 61 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | .1 | 4.0 | .0 | .495 | .362 | -.243 | 5.526 | 2.839 | -2.720 | 5.560 | 62 |
| 63 | 11.9 | 398.6 | 4.0 | .495 | .259 | -.284 | 6.086 | 3.043 | -3.068 | 6.111 | 63 |
| 64 | .1 | 4.0 | .0 | .495 | -.365 | 9.283 | 19.830 | 15.492 | -6.565 | 22.057 | 64 |
| 65 | .1 | 4.0 | .0 | .495 | -5.154 | 22.980 | -18.917 | 25.864 | -8.038 | 33.903 | 65 |
| 66 | .1 | 4.0 | .0 | .495 | -4.457 | 15.973 | -66.160 | 51.006 | -39.490 | 90.497 | 66 |
| 67 | .1 | 4.0 | .0 | .495 | 7.242 | -3.918 | -59.875 | 32.115 | -28.791 | 60.906 | 67 |
| 68 | .1 | 4.0 | .0 | .495 | .755 | -.708 | 2.487 | 1.466 | -1.419 | 2.885 | 68 |
| 69 | 11.9 | 398.6 | 4.0 | .495 | .634 | -.572 | -1.247 | .899 | -.836 | 1.735 | 69 |
| 70 | 11.9 | 398.6 | 4.0 | .495 | .088 | .035 | 2.647 | 1.368 | -1.282 | 2.648 | 70 |
| 71 | .1 | 4.0 | .0 | .495 | -11.798 | 19.283 | -22.332 | 22.881 | -15.395 | 38.258 | 71 |
| 72 | .1 | 4.0 | .0 | .495 | -8.945 | 20.061 | -48.979 | 34.012 | -22.906 | 56.916 | 72 |
| 73 | .1 | 4.0 | .0 | .495 | 17.563 | -11.153 | -28.530 | 23.530 | -17.020 | 40.550 | 73 |
| 74 | .1 | 4.0 | .0 | .495 | .464 | -5.984 | 66.839 | 30.824 | -36.324 | 67.148 | 74 |
| 75 | .1 | 4.0 | .0 | .495 | -3.091 | 11.780 | 53.428 | 32.080 | -23.392 | 55.452 | 75 |
| 76 | .1 | 4.0 | .0 | .495 | -17.514 | 30.882 | -2.274 | 30.889 | -17.541 | 48.430 | 76 |
| 77 | .1 | 4.0 | .0 | .495 | -7.517 | 15.587 | -26.621 | 21.843 | -13.583 | 35.236 | 77 |
| 78 | .1 | 4.0 | .0 | .495 | 21.111 | -16.787 | -9.506 | 21.713 | -16.389 | 38.103 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .248 | .484 | .008 | .484 | .248 | .119 | 1.484 | 1.987 | .079 | 1 |
| 2 | .258 | .523 | .025 | .525 | .253 | .136 | 5.357 | 2.075 | .069 | 2 |
| 3 | .354 | .390 | .134 | .507 | .237 | .135 | 41.168 | 2.144 | .090 | 3 |
| 4 | .377 | .546 | .005 | .548 | .377 | .085 | 1.774 | 1.448 | 1.890 | 4 |
| 5 | .349 | .525 | .017 | .527 | .347 | .090 | 5.610 | 1.518 | 1.792 | 5 |
| 6 | .452 | .646 | .017 | .647 | .451 | .098 | 4.891 | 1.437 | 1.867 | 6 |
| 7 | .515 | .718 | .009 | .718 | .514 | .102 | 2.880 | 1.397 | 2.040 | 7 |
| 8 | .317 | .509 | -.001 | .509 | .317 | .096 | -.424 | 1.610 | 1.929 | 8 |
| 9 | .333 | 1.022 | .028 | 1.023 | .332 | .346 | 2.130 | 3.083 | .207 | 9 |
| 10 | .401 | 1.437 | .051 | 1.440 | .399 | .520 | 2.828 | 3.611 | .291 | 10 |
| 11 | .444 | 1.469 | -.172 | 1.497 | .416 | .541 | -9.262 | 3.603 | .297 | 11 |
| 12 | .379 | .875 | -.109 | .898 | .356 | .271 | -11.888 | 2.521 | .158 | 12 |
| 13 | .141 | .283 | -.002 | .283 | .141 | .071 | -.649 | 2.002 | .053 | 13 |
| 14 | .181 | .224 | .042 | .250 | .155 | .047 | 31.789 | 1.612 | .035 | 14 |
| 15 | .140 | .205 | .020 | .210 | .134 | .038 | 15.523 | 1.571 | .765 | 15 |
| 16 | .258 | .275 | .042 | .310 | .225 | .043 | 39.584 | 1.379 | .862 | 16 |
| 17 | .319 | .395 | .023 | .402 | .312 | .045 | 15.443 | 1.288 | .893 | 17 |
| 18 | .352 | .458 | .015 | .460 | .350 | .055 | 7.867 | 1.316 | 1.106 | 18 |
| 19 | .347 | .464 | .016 | .466 | .345 | .060 | 7.714 | 1.350 | 1.209 | 19 |
| 20 | .494 | .616 | .012 | .617 | .493 | .062 | 5.618 | 1.252 | 1.241 | 20 |
| 21 | .340 | .449 | .006 | .450 | .339 | .055 | 3.156 | 1.328 | 1.104 | 21 |
| 22 | .366 | 1.635 | .084 | 1.641 | .361 | .640 | 3.785 | 4.547 | .372 | 22 |
| 23 | .323 | 1.287 | -.204 | 1.308 | .281 | .514 | -11.875 | 4.661 | .326 | 23 |
| 24 | .318 | .620 | -.113 | .658 | .281 | .188 | -18.380 | 2.340 | .119 | 24 |
| 25 | .041 | .091 | .003 | .091 | .041 | .025 | 3.442 | 2.210 | .022 | 25 |
| 26 | .001 | -.008 | .003 | .002 | -.007 | .005 | 68.919 | -.315 | -1.000 | 26 |
| 27 | .087 | .010 | .012 | .089 | .008 | .045 | 82.463 | 12.234 | .907 | 27 |
| 28 | .111 | .041 | .028 | .121 | .030 | .045 | 70.229 | 3.978 | .908 | 28 |
| 29 | .131 | .212 | .014 | .214 | .128 | .043 | 9.711 | 1.670 | .880 | 29 |
| 30 | .187 | .291 | -.003 | .291 | .188 | .052 | -1.529 | 1.561 | 1.046 | 30 |
| 31 | .240 | .347 | -.005 | .348 | .240 | .054 | -2.614 | 1.448 | 1.075 | 31 |
| 32 | .212 | .321 | -.012 | .323 | .211 | .056 | -6.341 | 1.533 | 1.123 | 32 |
| 33 | .481 | .602 | .002 | .602 | .481 | .060 | 1.043 | 1.251 | 1.207 | 33 |
| 34 | .525 | .626 | .005 | .626 | .525 | .051 | 2.897 | 1.193 | 1.011 | 34 |
| 35 | .448 | 1.616 | -.130 | 1.628 | .433 | .597 | -6.362 | 4.219 | .377 | 35 |
| 36 | .065 | .248 | -.015 | .249 | .064 | .093 | -4.688 | 3.900 | .078 | 36 |
| 37 | .139 | .092 | -.099 | .218 | .014 | .102 | -51.317 | 15.785 | 5.498 | 37 |
| 38 | .159 | .106 | .027 | .170 | .095 | .038 | 67.512 | 1.787 | .296 | 38 |
| 39 | .120 | .264 | .031 | .281 | .114 | .074 | 12.421 | 2.301 | .483 | 39 |
| 40 | .087 | .231 | .139 | .310 | -.012 | .161 | 29.885 | -24.844 | -1.000 | 40 |
| 41 | .093 | .770 | -.112 | .788 | .075 | .356 | -9.155 | 10.518 | 3.537 | 41 |
| 42 | -.112 | .383 | .004 | .383 | -.112 | .247 | .463 | -3.434 | -1.000 | 42 |
| 43 | -.268 | .370 | -.118 | .391 | -.290 | .340 | -10.131 | -1.349 | -1.000 | 43 |
| 44 | .287 | 1.938 | -.203 | 1.962 | .242 | .860 | -6.813 | 8.092 | 2.836 | 44 |
| 45 | -.141 | .180 | .244 | .312 | -.273 | .292 | 28.337 | -1.143 | -1.000 | 45 |
| 46 | .040 | .046 | .021 | .064 | .022 | .021 | 41.018 | 2.888 | .702 | 46 |
| 47 | .058 | .131 | .113 | .213 | -.025 | .119 | 36.097 | -8.606 | -1.000 | 47 |
| 48 | .085 | .289 | .054 | .302 | .071 | .115 | 14.070 | 4.233 | 1.202 | 48 |
| 49 | .036 | .314 | -.112 | .353 | -.004 | .178 | -19.441 | -95.182 | -1.000 | 49 |
| 50 | .213 | .375 | -.052 | .390 | .198 | .096 | -16.439 | 1.972 | .381 | 50 |
| 51 | .273 | .580 | -.100 | .610 | .243 | .183 | -16.554 | 2.509 | .581 | 51 |
| 52 | -.035 | 1.498 | -.287 | 1.543 | -.080 | .812 | -9.616 | -19.249 | -1.000 | 52 |
| 53 | -.585 | .149 | .427 | .346 | -.781 | .563 | 24.866 | -.441 | -1.000 | 53 |
| 54 | .032 | .061 | .124 | .171 | -.078 | .125 | 41.632 | -2.200 | -1.000 | 54 |
| 55 | -.030 | .241 | .028 | .244 | -.033 | .138 | 5.950 | -7.421 | -1.000 | 55 |
| 56 | -.044 | .285 | .002 | .285 | -.044 | .165 | .401 | -6.468 | -1.000 | 56 |
| 57 | -1.241 | -.857 | .123 | -.821 | -1.277 | .228 | 16.287 | .643 | -1.000 | 57 |
| 58 | -1.538 | 2.487 | -1.809 | 3.256 | -2.298 | 2.777 | -21.717 | -1.419 | -1.000 | 58 |
| 59 | -2.180 | .208 | 1.877 | 1.237 | -3.211 | 2.224 | 28.779 | -.385 | -1.000 | 59 |
| 60 | -.389 | .384 | -.207 | .438 | -.412 | .425 | -14.584 | -1.062 | -1.000 | 60 |
| 61 | .010 | .024 | .003 | .025 | .009 | .008 | 12.793 | 2.788 | .864 | 61 |
| 62 | .152 | .129 | .134 | .275 | .006 | .134 | 47.376 | 46.691 | 16.984 | 62 |
| 63 | .052 | -.123 | .421 | .394 | -.465 | .430 | 50.884 | -.847 | -1.000 | 63 |
| 64 | .409 | .562 | -.133 | .638 | .333 | .153 | -30.076 | 1.919 | .342 | 64 |
| 65 | .718 | .755 | -.008 | .757 | .715 | .021 | -10.485 | 1.058 | .022 | 65 |
| 66 | .468 | .501 | -.035 | .523 | .446 | .039 | -32.329 | 1.175 | .065 | 66 |
| 67 | .252 | .334 | -.023 | .340 | .246 | .047 | -14.822 | 1.385 | .143 | 67 |
| 68 | -.011 | .035 | .028 | .047 | -.023 | .035 | 24.102 | -2.032 | -1.000 | 68 |
| 69 | .319 | .239 | .047 | .340 | .218 | .061 | 65.262 | 1.562 | .209 | 69 |
| 70 | .474 | .579 | .057 | .603 | .449 | .077 | 23.612 | 1.343 | .128 | 70 |
| 71 | .302 | .344 | -.009 | .346 | .300 | .023 | -11.545 | 1.151 | .056 | 71 |
| 72 | .448 | .488 | -.020 | .486 | .440 | .020 | -22.113 | 1.127 | .047 | 72 |
| 73 | .258 | .282 | -.011 | .287 | .273 | .012 | -52.358 | 1.066 | .032 | 73 |
| 74 | -.208 | -.205 | .029 | -.178 | -.235 | .029 | 43.318 | .758 | -1.000 | 74 |
| 75 | .357 | .386 | .021 | .397 | .346 | .026 | 27.949 | 1.148 | .055 | 75 |
| 76 | .530 | .585 | -.001 | .585 | .530 | .028 | -.934 | 1.106 | .039 | 76 |
| 77 | .329 | .364 | -.011 | .367 | .326 | .021 | -16.471 | 1.127 | .047 | 77 |
| 78 | .244 | .232 | -.004 | .245 | .230 | .007 | -74.301 | 1.063 | .023 | 78 |

```
SSTIPN: 1 LAYER OF GEOTEXTILE, P=1000 PPI, T=1000

TOTAL NUMBER OF NODES-------------------- 85
NUMBER OF BAR ELEMENTS-------------------  9
NUMBER OF DIFF. BAR MATERIALS-----------  1
NUMBER OF BEAM ELEMENTS-----------------  0
NUMBER OF DIFF. BEAM MATERIALS----------  0
NUMBER OF NODAL LINKS ------------------  0
NUMBER OF INTERFACE ELEMENTS------------  0
NO  OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE. IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS-----------  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF  SOIL MATERIALS----------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 36
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS---------  0
NUMBER OF PREEXISTING NODES------------  0
NUMBER OF CONSTRUCTION LAYERS----------  6
NUMBER OF LOAD CASES-------------------  2

CALING FACTOR ----------      1 00000

ATMOSPHERIC PRESSURE ---      1.05800

UNIT WEIGHT OF WATER ---        03120


OMPUTATION SEQUENCE FOR A TOTAL OF    8  INCREMENTS
---------------------------------------------------------


 INCREMENT NO.  1      APPLY LOAD CASE   1

 INCREMENT NO.  2      PUT ON LAYER NO.  1

 INCREMENT NO.  3      PUT ON LAYER NO.  2

 INCREMENT NO.  4      PUT ON LAYER NO.  3

 INCREMENT NO.  5      PUT ON LAYER NO   4

 INCREMENT NO.  6      PUT ON LAYER NO.  5

 INCREMENT NO.  7      PUT ON LAYER NO.  6

 INCREMENT NO.  8      APPLY LOAD CASE   2
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B.C. CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | 000 | 000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 38.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58 000 | 000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | 000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30 000 | 4 000 | 0 | 0 | 0 |
| 18 | 38.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54 000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82 000 | 4 000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 38.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.000 | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10 000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.000 | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 38.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10 000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 38.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11 500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74 000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.000 | 14.000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | 15.000 | 0 | 0 | 0 |
| 83 | 82.000 | 15.000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17 000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17 000 | 1 | 0 | 1 |

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 30. | 1.00 | 0. |

| ELMT NO. | CONNECTED NODES I | J | MATL NO. |
|---|---|---|---|
| 1 | 43 | 44 | 1 |
| 2 | 44 | 45 | 1 |
| 3 | 45 | 46 | 1 |
| 4 | 46 | 47 | 1 |
| 5 | 47 | 48 | 1 |
| 6 | 48 | 49 | 1 |
| 7 | 34 | 35 | 1 |
| 7 | 49 | 50 | 1 |
| 8 | 50 | 51 | 1 |
| 9 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | YOUNG'S MODULUS EXPONENT | RATIO | BULK MODULUS CONSTANT | BULK MODULUS EXPONENT | STRENGTH PARAMETERS C | PHI | DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0880 | 8000 00 | 500 | 500 | 1500 00 | 800 | 00 | 35 00 | 00 | 50 |
| 2 | .0830 | 40.00 | .300 | .800 | 20.00 | .200 | .05 | .00 | .00 | .50 |
| 3 | .0800 | 1000.00 | .400 | .700 | 500.00 | 500 | .50 | 40.00 | .00 | .50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO. | CONNECTED NODES I | J | K | L | MATL NO. | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5.000 | 2.000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15.000 | 2 000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25.000 | 2.000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33.000 | 2.000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39.000 | 2.000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46 000 | 2 000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52.000 | 2.000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 56.000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62.000 | 2.000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2 000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78.000 | 2.000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86.000 | 2.000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5.000 | 5.500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15 000 | 5 500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25.000 | 5.500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33.000 | 5.500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5.500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5.500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 56.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5.500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5.500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78.000 | 5.500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86 000 | 5 500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5.000 | 8.500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15.000 | 8.500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25.000 | 8.500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33 000 | 8.500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39.000 | 8.500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46.000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52.000 | 8.500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 56 000 | 8 500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62.000 | 8.500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70.000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78.000 | 8.500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86.000 | 8 500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34.500 | 10.750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39.000 | 10.750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46.000 | 10.750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52 000 | 10 750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 56.000 | 10.750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62.000 | 10.750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70.000 | 10.750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78.000 | 10 750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86.000 | 10.750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40.500 | 12.250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46.000 | 12.250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52 000 | 12 250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 56.000 | 12.250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62.000 | 12.250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70.000 | 12.250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78 000 | 12 250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86.000 | 12.250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47.000 | 13.500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52.000 | 13.500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 56 000 | 13 500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62.000 | 13.500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70.000 | 13.500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78.000 | 13.500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86 000 | 13 500 |
| 61 | 70 | 71 | 78 | 78 | 1 | 46.000 | 14.500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52.000 | 14.500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 56.000 | 14.500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62 000 | 14 500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70.000 | 14.500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78.000 | 14.500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 88.000 | 14.500 |
| 68 | 78 | 79 | 86 | 85 | 1 | 53 000 | 15.500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 56.000 | 15.500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62.000 | 15.500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70.000 | 15.500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78 000 | 15 500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86.000 | 15.500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57.000 | 16.500 |
| 75 | 86 | 87 | 92 | 31 | 1 | 62.000 | 16.500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70 000 | 16 500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78.000 | 16.500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86.000 | 16.500 |

CONSTRUCTION LAYER INFORMAT'ON

```
SSTIPN: 1 LAYER OF GEOTEXTILE, P=1000 PPI, T=1000

**********************************************************
**********************************************************
*                                                        *
*  LOAD CASE ------------------------------   2          *
*                                                        *
**********************************************************
**********************************************************

LARGEST ELE. NO. IN THIS INCREMENT   78

LARGEST N P  NO  IN THIS INCREMENT   95


BAND WIDTH-----------------------  40
TOTAL NUMBER OF EQUATIONS--------- 222
NUMBER OF EQUATIONS IN BLOCK------  84
NUMBER OF BLOCKS------------------   3

NUMBER OF N.P. FORCE CARDS--------   3
NUMBER OF PRESSURE CARDS----------   0
```

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0. | 0. |
| 2 | 0. | 0. |
| 3 | 0. | 0. |
| 4 | 0. | 0. |
| 5 | 0. | 0. |
| 6 | 0. | 0. |
| 7 | 0. | 0. |
| 8 | 0. | 0. |
| 9 | 0. | 0. |
| 10 | 0. | 0. |
| 11 | 0. | 0. |
| 12 | 0. | 0. |
| 13 | 0. | 0. |
| 14 | 0. | 0. |
| 15 | 0. | 0. |
| 16 | 0. | 0. |
| 17 | 0. | 0. |
| 18 | 0. | 0. |
| 19 | 0. | 0. |
| 20 | 0. | 0. |
| 21 | 0. | 0. |
| 22 | 0. | 0. |
| 23 | 0. | 0. |
| 24 | 0. | 0. |
| 25 | 0. | 0. |
| 26 | 0. | 0. |
| 27 | 0. | 0. |
| 28 | 0. | 0. |
| 29 | 0. | 0. |
| 30 | 0. | 0. |
| 31 | 0. | 0. |
| 32 | 0. | 0. |
| 33 | 0. | 0. |
| 34 | 0. | 0. |
| 35 | 0. | 0. |
| 36 | 0. | 0. |
| 37 | 0. | 0. |
| 38 | 0. | 0. |
| 39 | 0. | 0. |
| 40 | 0. | 0. |
| 41 | 0. | 0. |
| 42 | 0. | 0. |
| 43 | 0. | 0. |
| 44 | 0. | 0. |
| 45 | 0. | 0. |
| 46 | 0. | 0. |
| 47 | 0. | 0. |
| 48 | 0. | 0. |
| 49 | 0. | 0. |
| 50 | 0. | 0. |
| 51 | 0. | 0. |
| 52 | 0. | 0. |
| 53 | 0. | 0. |
| 54 | 0. | 0. |
| 55 | 0. | 0. |
| 56 | 0. | 0. |
| 57 | 0. | 0. |
| 58 | 0. | 0. |
| 59 | 0. | 0. |
| 60 | 0. | 0. |
| 61 | 0. | 0. |
| 62 | 0. | 0. |
| 63 | 0. | 0. |
| 64 | 0. | 0. |
| 65 | 0. | 0. |
| 66 | 0. | 0. |
| 67 | 0. | 0. |
| 68 | 0. | 0. |
| 69 | 0. | 0. |
| 70 | 0. | 0. |
| 71 | 0. | 0. |
| 72 | 0. | 0. |
| 73 | 0. | 0. |
| 74 | 0. | 0. |
| 75 | 0. | 0. |
| 76 | 0. | 0. |
| 77 | 0. | 0. |
| 78 | 0. | 0. |
| 79 | 0. | 0. |
| 80 | 0. | 0. |
| 81 | 0. | 0. |
| 82 | 0. | 0. |
| 83 | 0. | 0. |
| 84 | 0. | 0. |
| 85 | 0. | 0. |
| 86 | 0. | 0. |
| 87 | 0. | 0. |
| 88 | 0. | 0. |
| 89 | 0. | 0. |
| 90 | 0. | 0. |
| 91 | 0. | 0. |
| 92 | 0. | -4.50 |
| 93 | 0. | -4.50 |
| 94 | 0. | -2.00 |
| 95 | 0. | 0. |

LOAD CASE 2 ITERATION 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 1 |
| 2 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 2 |
| 3 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 3 |
| 4 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 4 |
| 5 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 5 |
| 6 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 6 |
| 7 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 7 |
| 8 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 8 |
| 9 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 9 |
| 10 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 10 |
| 11 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 11 |
| 12 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 12 |
| 13 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 13 |
| 14 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 14 |
| 15 | .0000 | .0000 | .0000 | -.0003 | -.0001 | .0000 | .0004 | 15 |
| 16 | .0000 | -.0001 | .0000 | -.0008 | -.0007 | .0000 | .0011 | 16 |
| 17 | -.0005 | .0002 | .0000 | -.0058 | .0027 | .0000 | .0064 | 17 |
| 18 | -.0151 | .0034 | .0000 | -.2497 | .0583 | .0000 | .2564 | 18 |
| 19 | -.0250 | .0009 | .0000 | -.3674 | -.0649 | .0000 | .3731 | 19 |
| 20 | -.0240 | -.0035 | .0000 | -.2283 | -.1377 | .0000 | .2666 | 20 |
| 21 | -.0171 | -.0064 | .0000 | -.0624 | -.1578 | .0000 | .1648 | 21 |
| 22 | -.0005 | .0000 | .0000 | -.0008 | -.0053 | .0000 | .0054 | 22 |
| 23 | -.0014 | -.0021 | .0000 | -.0007 | -.0053 | .0000 | .0053 | 23 |
| 24 | .0006 | -.0063 | .0000 | .0013 | -.0111 | .0000 | .0111 | 24 |
| 25 | .0023 | -.0019 | .0000 | .0025 | -.0053 | .0000 | .0058 | 25 |
| 26 | .0000 | .0008 | .0000 | .0000 | -.0023 | .0000 | .0023 | 26 |
| 27 | .0000 | .0009 | .0000 | .0000 | .0002 | .0000 | .0002 | 27 |
| 28 | .0000 | .0600 | .0000 | -.0001 | -.0008 | .0000 | .0008 | 28 |
| 29 | -.0002 | .0061 | .0000 | -.0030 | .0004 | .0000 | .0030 | 29 |
| 30 | -.0378 | .0068 | .0000 | -.3815 | .0366 | .0000 | .3835 | 30 |
| 31 | -.0531 | .0081 | .0000 | -.5380 | .1084 | .0000 | .5470 | 31 |
| 32 | -.0733 | .0033 | .0000 | -.5723 | -.1226 | .0000 | .5851 | 32 |
| 33 | -.0808 | -.0052 | .0000 | -.4866 | -.2820 | .0000 | .5386 | 33 |
| 34 | -.0813 | -.0047 | .0000 | -.3735 | -.2609 | .0000 | .4873 | 34 |
| 35 | -.0834 | -.0273 | .0000 | -.2595 | -.1952 | .0000 | .3247 | 35 |
| 36 | -.0016 | -.0054 | .0000 | -.0005 | -.0148 | .0000 | .0148 | 36 |
| 37 | .0017 | -.0128 | .0000 | .0021 | -.0207 | .0000 | .0208 | 37 |
| 38 | .0027 | -.0038 | .0000 | .0024 | -.0101 | .0000 | .0104 | 38 |
| 39 | .0000 | .0025 | .0000 | .0000 | -.0037 | .0000 | .0037 | 39 |
| 40 | .0000 | .0000 | .0000 | .0000 | .0002 | .0000 | .0002 | 40 |
| 41 | .0000 | .0000 | .0000 | .0002 | -.0005 | .0000 | .0005 | 41 |
| 42 | -.0355 | .0125 | .0000 | -.2006 | .0961 | .0000 | .2224 | 42 |
| 43 | -.0761 | .0188 | .0000 | -.5254 | .1728 | .0000 | .5531 | 43 |
| 44 | -.0782 | .0106 | .0000 | -.5272 | .0982 | .0000 | .5359 | 44 |
| 45 | -.0788 | .0035 | .0000 | -.4864 | -.1802 | .0000 | .5101 | 45 |
| 46 | -.0791 | -.0048 | .0000 | -.4259 | -.3353 | .0000 | .5811 | 46 |
| 47 | -.0805 | -.0008 | .0000 | -.3871 | -.3818 | .0000 | .5370 | 47 |
| 48 | -.0828 | -.0283 | .0000 | -.3037 | -.3287 | .0000 | .4478 | 48 |
| 49 | -.0565 | -.0874 | .0000 | -.1470 | -.2443 | .0000 | .2855 | 49 |
| 50 | -.0031 | -.0318 | .0000 | -.0284 | -.0517 | .0000 | .0595 | 50 |
| 51 | .0005 | -.0028 | .0000 | -.0120 | -.0133 | .0000 | .0178 | 51 |
| 52 | .0000 | .0037 | .0000 | .0000 | -.0083 | .0000 | .0084 | 52 |
| 53 | -.0775 | .0107 | .0000 | -.6761 | .1666 | .0000 | .6938 | 53 |
| 54 | -.0778 | .0033 | .0000 | -.5900 | -.1434 | .0000 | .6072 | 54 |
| 55 | -.0788 | -.0080 | .0000 | -.3782 | -.3887 | .0000 | .5289 | 55 |
| 56 | -.0784 | -.0008 | .0000 | -.3035 | -.4178 | .0000 | .5179 | 56 |
| 57 | -.0588 | -.0271 | .0000 | -.2380 | -.3564 | .0000 | .4285 | 57 |
| 58 | -.0488 | -.1058 | .0000 | -.1035 | -.2849 | .0000 | .3075 | 58 |
| 59 | -.0081 | -.0382 | .0000 | .0387 | -.1048 | .0000 | .1108 | 59 |
| 60 | -.0029 | -.0918 | .0000 | -.0043 | -.0085 | .0000 | .0105 | 60 |
| 61 | .0000 | .0035 | .0000 | .0000 | -.0050 | .0000 | .0050 | 61 |
| 62 | -.0783 | .0034 | .0000 | -.1794 | -.0063 | .0000 | .1795 | 62 |
| 63 | -.0853 | -.0071 | .0000 | -.1862 | -.1833 | .0000 | .2489 | 63 |
| 64 | -.0834 | .0002 | .0000 | -.1789 | -.2172 | .0000 | .2821 | 64 |
| 65 | -.0819 | .0027 | .0000 | -.1707 | -.2218 | .0000 | .2799 | 65 |
| 66 | -.0129 | -.2826 | .0000 | -.0888 | -.3875 | .0000 | .4033 | 66 |
| 67 | -.0138 | -.0442 | .0000 | -.0364 | -.1388 | .0000 | .1435 | 67 |
| 68 | -.0078 | -.0009 | .0000 | -.0085 | -.0071 | .0000 | .0119 | 68 |
| 69 | .0000 | .0027 | .0000 | .0000 | -.0038 | .0000 | .0038 | 69 |
| 70 | -.0844 | -.0002 | .0000 | -.1818 | -.0488 | .0000 | .1880 | 70 |
| 71 | -.0848 | -.0362 | .0000 | -.1730 | -.1131 | .0000 | .2067 | 71 |
| 72 | -.0654 | -.0013 | .0000 | -.1743 | -.1624 | .0000 | .2383 | 72 |
| 73 | -.0641 | -.0940 | .0000 | -.1418 | -.1774 | .0000 | .2269 | 73 |
| 74 | -.0482 | -.2941 | .0000 | -.1108 | -.3785 | .0000 | .3943 | 74 |
| 75 | -.0350 | -.0449 | .0000 | -.0818 | -.1512 | .0000 | .1632 | 75 |
| 76 | -.0065 | -.0015 | .0000 | -.0082 | -.0066 | .0000 | .0107 | 76 |
| 77 | .0060 | .0028 | .0000 | .0000 | -.0028 | .0000 | .0028 | 77 |
| 78 | -.0939 | -.0031 | .0000 | -.1380 | -.0878 | .0000 | .1819 | 78 |
| 79 | -.1020 | .0002 | .0000 | -.1468 | -.1028 | .0000 | .1791 | 79 |
| 80 | -.5801 | .0829 | .0000 | -.6280 | -.0217 | .0000 | .6283 | 80 |
| 81 | -.5789 | -.5151 | .0000 | -.6278 | -.5728 | .0000 | .8496 | 81 |
| 82 | .3278 | -.2566 | .0000 | .2868 | -.3460 | .0000 | .4508 | 82 |
| 83 | .5583 | -.0573 | .0000 | .5877 | -.0815 | .0000 | .5935 | 83 |
| 84 | .0000 | .1195 | .0000 | .0000 | .1160 | .0000 | .1160 | 84 |
| 85 | -.1487 | .0032 | .0000 | -.1585 | -.0278 | .0000 | .1606 | 85 |
| 86 | -.5047 | .0931 | .0000 | -.5229 | .0813 | .0000 | .5284 | 86 |
| 87 | -.6031 | -.6204 | .0000 | -.5214 | -.5490 | .0000 | .7571 | 87 |
| 88 | .3279 | -.6172 | .0000 | .2614 | -.6707 | .0000 | .7273 | 88 |
| 89 | 1.3707 | -.0890 | .0000 | 1.3818 | -.1102 | .0000 | 1.3861 | 89 |
| 90 | .0000 | .3524 | .0000 | .0000 | .3339 | .0000 | .3339 | 90 |
| 91 | -.4285 | .0587 | .0000 | -.4285 | .0587 | .0000 | .4387 | 91 |
| 92 | -.4282 | -.5254 | .0000 | -.4252 | -.6254 | .0000 | .8759 | 92 |
| 93 | .3886 | -.3650 | .0000 | .3896 | -.9850 | .0000 | 1.0521 | 93 |
| 94 | 1.3732 | -.1257 | .0000 | 1.3732 | -.1257 | .0000 | 1.3789 | 94 |
| 95 | .0000 | .6228 | .0000 | .0000 | .6228 | .0000 | .6228 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO. | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | -.0053 |
| 2 | -.0022 |
| 3 | .0019 |
| 4 | -.0080 |
| 5 | -.0189 |
| 6 | .0912 |
| 7 | .2079 |
| 8 | .0133 |
| 9 | -.0017 |
| TOTAL VALUES | |
| 1 | -.0081 |
| 2 | .1438 |
| 3 | .2722 |
| 4 | .4413 |
| 5 | .4781 |
| 6 | .5877 |
| 7 | .4411 |

5 .0554
9 .0446

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 530.8 | 333.5 | 228.5 | .158 | .002 | .001 | .005 | .004 | -.001 | .005 | 1 |
| 2 | 525.1 | 335.3 | 225.5 | .164 | .002 | .010 | .017 | .015 | -.003 | .018 | 2 |
| 3 | 488.9 | 308.9 | 210.7 | .160 | .025 | -.025 | .065 | .041 | -.041 | .082 | 3 |
| 4 | .7 | 17.3 | .2 | .484 | 2.033 | -.783 | 2.732 | 2.589 | -1.319 | 3.908 | 4 |
| 5 | .6 | 17.0 | .2 | .484 | .880 | .084 | 8.740 | 4.825 | -3.861 | 8.786 | 5 |
| 6 | .7 | 17.9 | .2 | .484 | -.689 | 2.533 | 7.901 | 5.133 | -3.489 | 8.602 | 6 |
| 7 | .7 | 18.4 | .2 | .483 | -1.882 | 3.825 | 4.298 | 4.451 | -2.417 | 6.868 | 7 |
| 8 | .8 | 18.7 | .2 | .484 | -1.180 | 2.041 | -.704 | 2.079 | -1.218 | 3.297 | 8 |
| 9 | 448.2 | 334.6 | 182.6 | .227 | -.001 | .133 | .020 | .133 | -.002 | .136 | 9 |
| 10 | 488.2 | 380.8 | 188.8 | .237 | -.013 | .204 | .029 | .205 | -.014 | .219 | 10 |
| 11 | 475.6 | 370.5 | 191.8 | .241 | -.007 | .205 | -.083 | .213 | -.015 | .228 | 11 |
| 12 | 510.5 | 363.0 | 211.1 | .209 | .015 | .095 | -.049 | .102 | .008 | .094 | 12 |
| 13 | 444.3 | 262.2 | 197.9 | .123 | .002 | .007 | -.001 | .003 | .002 | .001 | 13 |
| 14 | 484.7 | 287.8 | 202.7 | .122 | .017 | -.012 | .032 | .024 | -.019 | .043 | 14 |
| 15 | 2.0 | 14.2 | .7 | .478 | 1.918 | -1.582 | 5.801 | 3.555 | -3.219 | 6.774 | 15 |
| 16 | 1.7 | 16.5 | .6 | .481 | 3.720 | -2.415 | 10.463 | 6.418 | -5.513 | 11.932 | 16 |
| 17 | .7 | 18.4 | .2 | .483 | 1.283 | .089 | 11.140 | 6.292 | -4.911 | 11.203 | 17 |
| 18 | .6 | 17.0 | .2 | .484 | -1.582 | 3.356 | 8.874 | 5.875 | -4.111 | 9.986 | 18 |
| 19 | .6 | 17.0 | .2 | .484 | -2.700 | 4.485 | 8.878 | 6.501 | -4.748 | 11.247 | 19 |
| 20 | .7 | 18.2 | .2 | .484 | -2.805 | 5.214 | 5.987 | 6.222 | -3.813 | 9.635 | 20 |
| 21 | .6 | 17.1 | .2 | .484 | -1.820 | 3.323 | 3.177 | 3.790 | -2.087 | 5.878 | 21 |
| 22 | 403.6 | 332.6 | 160.3 | .259 | -.029 | .318 | .068 | .321 | -.031 | .352 | 22 |
| 23 | 404.5 | 304.5 | 164.4 | .230 | -.009 | .240 | -.113 | .253 | -.021 | .274 | 23 |
| 24 | 453.8 | 307.3 | 190.6 | .180 | .030 | .103 | -.057 | .113 | .020 | .093 | 24 |
| 25 | 408.8 | 228.6 | 187.0 | .093 | -.001 | .000 | .002 | .001 | -.001 | .002 | 25 |
| 26 | .0 | .1 | .0 | .495 | 1.019 | -1.595 | 2.302 | 1.528 | -2.204 | 3.832 | 26 |
| 27 | .4 | 13.4 | .1 | .494 | 3.516 | -2.887 | 4.827 | 4.326 | -3.678 | 8.002 | 27 |
| 28 | 1.5 | 13.5 | .5 | .482 | 1.302 | -1.052 | 2.785 | 1.949 | -1.699 | 3.647 | 28 |
| 29 | 8.1 | 15.1 | 2.9 | .405 | .083 | 1.190 | 2.855 | 2.161 | -.908 | 3.070 | 29 |
| 30 | .6 | 14.6 | .2 | .484 | -1.177 | 2.857 | .606 | 2.880 | -1.196 | 4.076 | 30 |
| 31 | .6 | 15.6 | .2 | .484 | -1.774 | 3.738 | -.873 | 3.758 | -1.794 | 5.553 | 31 |
| 32 | .6 | 15.5 | .2 | .484 | -2.217 | 4.075 | -1.229 | 4.135 | -2.276 | 6.411 | 32 |
| 33 | .7 | 17.7 | .2 | .484 | -2.598 | 5.117 | 1.550 | 5.166 | -2.687 | 7.853 | 33 |
| 34 | .7 | 17.4 | .2 | .484 | -.751 | 4.410 | 1.776 | 4.559 | -.900 | 5.459 | 34 |
| 35 | 288.8 | 253.4 | 113.1 | .277 | -.110 | .570 | .458 | .640 | -.180 | .821 | 35 |
| 36 | 344.6 | 218.9 | 148.9 | .157 | -.080 | .131 | .167 | .163 | -.091 | .254 | 36 |
| 37 | 11.9 | 398.6 | 4.0 | .495 | .216 | .186 | 17.369 | 8.886 | -8.483 | 17.369 | 37 |
| 38 | 867.3 | 625.7 | 381.3 | .137 | -.606 | 2.066 | 19.868 | 10.666 | -9.426 | 20.092 | 38 |
| 39 | 432.1 | 453.2 | 163.8 | .319 | -1.848 | 3.993 | 10.350 | 7.084 | -4.739 | 11.822 | 39 |
| 40 | 223.2 | 425.1 | 79.4 | .407 | -1.835 | 5.375 | 2.285 | 5.561 | -1.721 | 7.282 | 40 |
| 41 | 348.1 | 441.6 | 128.5 | .354 | -1.547 | 5.565 | -1.028 | 5.600 | -1.583 | 7.163 | 41 |
| 42 | 204.1 | 422.7 | 72.1 | .415 | -1.658 | 4.558 | -.941 | 4.593 | -1.691 | 6.284 | 42 |
| 43 | 11.9 | 388.6 | 4.0 | .493 | -1.412 | 3.956 | -3.772 | 4.543 | -2.100 | 6.643 | 43 |
| 44 | 878.7 | 587.9 | 265.5 | .278 | .219 | 1.942 | -2.183 | 2.463 | -.302 | 2.765 | 44 |
| 45 | 1077.1 | 657.9 | 471.8 | .141 | -.032 | .048 | .065 | .055 | -.041 | .095 | 45 |
| 46 | 268.8 | 430.9 | 96.9 | .386 | -.056 | .068 | .063 | .074 | -.068 | .136 | 46 |
| 47 | .1 | 4.0 | .0 | .495 | -.010 | .152 | .714 | .437 | -.295 | .732 | 47 |
| 48 | 85.8 | 408.4 | 29.3 | .484 | -.214 | .148 | .611 | .409 | -.478 | .887 | 48 |
| 49 | .1 | 4.0 | .0 | .495 | .569 | -.043 | .700 | .132 | -.742 | .874 | 49 |
| 50 | .1 | 4.0 | .0 | .495 | -1.085 | 6.387 | 1.399 | 6.447 | -1.150 | 7.597 | 50 |
| 51 | .1 | 4.0 | .0 | .495 | -.575 | 9.317 | -2.238 | 9.441 | -.700 | 10.141 | 51 |
| 52 | 636.6 | 554.9 | 249.6 | .275 | -.252 | 2.877 | -.320 | 2.885 | -.260 | 3.145 | 52 |
| 53 | 850.5 | 573.7 | 358.0 | .188 | -.085 | .057 | .124 | .080 | -.110 | .190 | 53 |
| 54 | 11.9 | 388.6 | 4.0 | .495 | .137 | -.110 | .662 | .472 | -.444 | .916 | 54 |
| 55 | 11.9 | 388.6 | 4.0 | .495 | -.072 | .084 | 1.485 | .758 | -.736 | 1.494 | 55 |
| 56 | 11.9 | 388.8 | 4.0 | .495 | -.543 | .548 | -.118 | .551 | -.546 | 1.097 | 56 |
| 57 | 11.9 | 388.8 | 4.0 | .495 | -.833 | .709 | 4.569 | 2.359 | -2.482 | 4.841 | 57 |
| 58 | 1482.6 | 845.2 | 651.7 | .114 | -.481 | 3.001 | 1.262 | 3.112 | -.573 | 3.681 | 58 |
| 59 | 878.1 | 613.1 | 365.2 | .202 | -.462 | 2.808 | .089 | 2.807 | -.462 | 3.269 | 59 |
| 60 | 905.9 | 484.1 | 188.3 | .288 | -.106 | .104 | -.089 | .113 | -.117 | .229 | 60 |
| 61 | .1 | 4.0 | .0 | .495 | .257 | -.019 | -.036 | .258 | -.021 | .279 | 61 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | 279.8 | 432.4 | 101.2 | .383 | .141 | -.072 | .327 | .230 | -.181 | .390 | 62 |
| 63 | .1 | 4.0 | .0 | .495 | 5.547 | -4.878 | 24.855 | 13.812 | -13.141 | 26.952 | 63 |
| 64 | .1 | 4.0 | .0 | .495 | -.180 | 6.316 | 57.916 | 32.208 | -26.072 | 58.280 | 64 |
| 65 | 1 | 4.0 | .0 | .495 | -5.826 | 24.494 | 7.532 | 24.953 | -6.383 | 31.336 | 65 |
| 66 | .1 | 4.0 | .0 | .495 | -4.890 | 16.192 | -69.244 | 41.913 | -30.411 | 72.325 | 66 |
| 67 | 1 | 4.0 | 0 | 495 | 6 186 | -3 010 | -51 417 | 27 704 | -24 528 | 52 233 | 67 |
| 68 | 11.9 | 396.6 | 4.0 | .495 | .201 | -.295 | 4.656 | 2.394 | -2.489 | 4.883 | 68 |
| 69 | .1 | 4.0 | .0 | .495 | 10.421 | -.303 | -3.681 | 10.728 | -.610 | 11.338 | 69 |
| 70 | 99.6 | 410.0 | 34.1 | 466 | -.013 | .114 | .030 | .118 | -.016 | .131 | 70 |
| 71 | .1 | 4 0 | 0 | 495 | -10.824 | 19.288 | -3.891 | 19 401 | -10.737 | 30.138 | 71 |
| 72 | .1 | 4.0 | .0 | .495 | -11.116 | 21.864 | -22.186 | 24.966 | -14.528 | 39.496 | 72 |
| 73 | .1 | 4.0 | .0 | .495 | 14.781 | -8.272 | -22.042 | 19.176 | -12.697 | 31.873 | 73 |
| 74 | .1 | 4.0 | .0 | .495 | 8.875 | -.283 | -9.942 | 11.067 | -2.450 | 13.508 | 74 |
| 75 | 135 9 | 414.3 | 47.1 | .443 | -.031 | 116 | 047 | 120 | - 034 | 154 | 75 |
| 76 | .1 | 4.0 | .0 | .495 | -10.182 | 16.636 | -2.503 | 16.682 | -10.216 | 26.908 | 76 |
| 77 | .1 | 4.0 | .0 | .495 | -12.789 | 20.226 | -10.883 | 21.100 | -13.663 | 34.763 | 77 |
| 78 | .1 | 4.0 | .0 | .495 | 17.149 | -11.680 | -7.563 | 17.637 | -12.106 | 29.805 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .251 | .488 | .011 | .488 | .250 | .119 | 2.577 | 1.952 | .078 | 1 |
| 2 | .283 | .539 | .039 | .545 | .258 | .144 | 7.832 | 2.114 | .093 | 2 |
| 3 | .365 | .384 | .149 | .508 | .211 | .149 | 44.123 | 2.409 | .102 | 3 |
| 4 | .393 | .561 | .005 | .561 | .393 | .084 | 1.885 | 1.430 | 1.888 | 4 |
| 5 | .353 | .529 | .018 | .531 | .351 | .090 | 5.897 | 1.511 | 1.795 | 5 |
| 6 | .448 | .642 | .017 | .644 | .447 | .098 | 4.954 | 1.441 | 1.988 | 6 |
| 7 | .510 | .713 | .010 | .714 | .510 | .102 | 2.705 | 1.400 | 2.039 | 7 |
| 8 | .310 | .503 | -.001 | .503 | .310 | .097 | -.394 | 1.623 | 1.930 | 8 |
| 9 | .332 | 1.035 | .031 | 1.036 | .331 | .353 | 2.517 | 3.130 | .211 | 9 |
| 10 | .402 | 1.433 | .053 | 1.436 | .399 | .518 | 2.937 | 3.597 | .288 | 10 |
| 11 | .440 | 1.456 | -.162 | 1.481 | .414 | .533 | -8.637 | 3.574 | .293 | 11 |
| 12 | .375 | .881 | -.104 | .902 | .365 | .273 | -11.171 | 2.541 | .160 | 12 |
| 13 | .146 | .288 | -.002 | .288 | .146 | .070 | -.722 | 1.955 | .052 | 13 |
| 14 | .206 | .222 | .085 | .279 | .149 | .065 | 41.868 | 1.874 | .048 | 14 |
| 15 | .184 | .207 | .030 | .221 | .141 | .040 | 24.414 | 1.571 | .505 | 15 |
| 16 | .248 | .284 | .043 | .313 | .219 | .047 | 33.309 | 1.426 | .933 | 16 |
| 17 | .299 | .385 | .022 | .390 | .294 | .048 | 13.833 | 1.328 | .965 | 17 |
| 18 | .350 | .458 | .018 | .481 | .347 | .057 | 8.973 | 1.328 | 1.139 | 18 |
| 19 | .344 | .481 | .017 | .483 | .341 | .061 | 6.321 | 1.356 | 1.222 | 19 |
| 20 | .493 | .615 | .014 | .616 | .491 | .063 | 6.323 | 1.255 | 1.253 | 20 |
| 21 | .339 | .450 | .007 | .450 | .339 | .056 | 3.423 | 1.328 | 1.112 | 21 |
| 22 | .386 | 1.841 | .087 | 1.847 | .380 | .643 | 3.885 | 4.875 | .374 | 22 |
| 23 | .314 | 1.245 | -.188 | 1.285 | .277 | .504 | -10.854 | 4.632 | .321 | 23 |
| 24 | .310 | .632 | -.109 | .665 | .276 | .194 | -17.089 | 2.408 | .124 | 24 |
| 25 | .042 | .091 | .003 | .092 | .042 | .025 | 4.006 | 2.182 | .022 | 25 |
| 26 | .009 | -.004 | .007 | .012 | -.007 | .010 | 65.646 | -1.682 | -1.000 | 26 |
| 27 | .165 | .027 | .046 | .178 | .014 | .082 | 73.494 | 12.553 | 1.642 | 27 |
| 28 | .106 | .024 | .012 | .108 | .022 | .043 | 82.092 | 4.806 | .854 | 28 |
| 29 | .159 | .187 | .033 | .208 | .137 | .036 | 33.761 | 1.519 | .713 | 29 |
| 30 | .176 | .302 | -.003 | .302 | .176 | .063 | -1.473 | 1.722 | 1.267 | 30 |
| 31 | .226 | .335 | -.004 | .336 | .226 | .054 | -2.084 | 1.475 | 1.089 | 31 |
| 32 | .206 | .322 | -.011 | .323 | .204 | .059 | -5.526 | 1.582 | 1.190 | 32 |
| 33 | .486 | .611 | .002 | .611 | .486 | .062 | .905 | 1.254 | 1.237 | 33 |
| 34 | .526 | .627 | .006 | .627 | .526 | .051 | 3.180 | 1.193 | 1.017 | 34 |
| 35 | .414 | 1.787 | -.104 | 1.795 | .406 | .695 | -4.321 | 4.423 | .365 | 35 |
| 36 | .085 | .285 | -.024 | .289 | .082 | .104 | -6.729 | 4.332 | .087 | 36 |
| 37 | .080 | .087 | -.083 | .128 | .019 | .054 | -37.895 | 6.720 | 2.128 | 37 |
| 38 | .084 | .102 | .021 | .119 | .076 | .021 | 39.283 | 1.561 | .208 | 38 |
| 39 | .083 | .281 | .071 | .304 | .061 | .121 | 17.777 | 4.996 | 1.486 | 39 |
| 40 | -.018 | .270 | -.124 | .316 | -.082 | .199 | -20.446 | -5.085 | -1.000 | 40 |
| 41 | -.155 | .326 | .026 | .328 | -.156 | .242 | 3.302 | -2.099 | -1.000 | 41 |
| 42 | -.484 | .779 | .056 | .781 | -.487 | .619 | 2.563 | -1.711 | -1.000 | 42 |
| 43 | -.575 | .085 | -.121 | .107 | -.597 | .352 | -10.080 | -.179 | -1.000 | 43 |
| 44 | .257 | 2.010 | -.223 | 2.038 | .229 | .905 | -7.143 | 8.913 | 2.941 | 44 |
| 45 | -.119 | .176 | .224 | .287 | -.230 | .264 | 28.275 | -1.239 | -1.000 | 45 |
| 46 | .026 | .026 | .025 | .056 | -.002 | .029 | 44.194 | -31.105 | -1.000 | 46 |
| 47 | .014 | .152 | .107 | .210 | -.044 | .127 | 28.813 | -4.780 | -1.000 | 47 |
| 48 | -.046 | .239 | .108 | .275 | -.083 | .179 | 18.580 | -3.325 | -1.000 | 48 |
| 49 | -.049 | .260 | -.077 | .287 | -.087 | .182 | -12.483 | -4.470 | -1.000 | 49 |
| 50 | .237 | .410 | -.043 | .420 | .228 | .097 | -13.230 | 1.855 | .318 | 50 |
| 51 | .276 | .584 | -.095 | .611 | .249 | .181 | -15.825 | 2.458 | .541 | 51 |
| 52 | -.021 | 1.470 | -.309 | 1.531 | -.083 | .807 | -11.254 | -18.474 | -1.000 | 52 |
| 53 | -.840 | .156 | .410 | .303 | -.726 | .541 | 28.846 | -.446 | -1.000 | 53 |
| 54 | .128 | .146 | .129 | .266 | .007 | .130 | 43.016 | 38.102 | 13.043 | 54 |
| 55 | .066 | .257 | .058 | .274 | .052 | .111 | 15.858 | 5.300 | 1.588 | 55 |
| 56 | -.153 | .261 | -.001 | .261 | -.153 | .207 | -.194 | -1.708 | -1.000 | 56 |
| 57 | -.824 | -.309 | .116 | -.271 | -.882 | .155 | 16.166 | .410 | -1.000 | 57 |
| 58 | -1.017 | 1.738 | -1.840 | 2.359 | -1.838 | 2.299 | -26.596 | -1.372 | -1.000 | 58 |
| 59 | -2.009 | .398 | 1.780 | 1.341 | -2.955 | 2.148 | 27.982 | -.454 | -1.000 | 59 |
| 60 | -.384 | .347 | -.183 | .392 | -.408 | .400 | -13.623 | -.961 | -1.000 | 60 |
| 61 | .010 | .006 | -.057 | .046 | -.028 | .037 | -46.447 | -1.646 | -1.000 | 61 |
| 62 | .625 | .115 | .307 | .889 | -.046 | .386 | 81.751 | -14.886 | -1.000 | 62 |
| 63 | .124 | .084 | .142 | .247 | -.039 | .143 | 46.889 | -6.384 | -1.000 | 63 |
| 64 | .318 | .462 | -.081 | .490 | .289 | .111 | -27.855 | 1.823 | .306 | 64 |
| 65 | .745 | .785 | .003 | .787 | .745 | .021 | 4.141 | 1.056 | .021 | 65 |
| 66 | .467 | .501 | -.026 | .516 | .452 | .032 | -29.316 | 1.143 | .063 | 66 |
| 67 | .247 | .328 | -.020 | .333 | .242 | .046 | -12.937 | 1.377 | .140 | 67 |
| 68 | -.349 | -.378 | .279 | -.083 | -.642 | .280 | 46.406 | .129 | -1.000 | 68 |
| 69 | .484 | .486 | -.074 | .565 | .404 | .078 | 50.317 | 1.372 | .136 | 69 |
| 70 | .350 | .545 | -.041 | .553 | .342 | .106 | -11.386 | 1.616 | .230 | 70 |
| 71 | .350 | .391 | -.001 | .391 | .350 | .020 | -2.080 | 1.117 | .043 | 71 |
| 72 | .420 | .463 | -.009 | .465 | .418 | .023 | -11.188 | 1.111 | .041 | 72 |
| 73 | .284 | .283 | -.009 | .293 | .275 | .009 | -47.205 | 1.064 | .024 | 73 |
| 74 | .355 | .356 | -.002 | .358 | .354 | .002 | -36.186 | 1.011 | .004 | 74 |
| 75 | .303 | .459 | .022 | .462 | .300 | .081 | 7.969 | 1.539 | .200 | 75 |
| 76 | .343 | .383 | -.001 | .383 | .343 | .020 | -1.430 | 1.117 | .043 | 76 |
| 77 | .300 | .344 | -.004 | .344 | .300 | .022 | -4.863 | 1.147 | .055 | 77 |
| 78 | .247 | .241 | -.003 | .248 | .239 | .004 | -87.392 | 1.036 | .013 | 78 |

```
SSTIPN. 1 LAYER OF GEOTEXTILE, P=1000 PPI, EXTENRED, T=1000

TOTAL NUMBER OF NODES------------------ 95
NUMBER OF BAR ELEMENTS----------------- 11
NUMBER OF DIFF. BAR MATERIALS----------  1
NUMBER OF BEAM ELEMENTS----------------  0
NUMBER OF DIFF. BEAM MATERIALS---------  0
NUMBEP OF NODAL LINKS -----------------  0
NUMBER OF INTERFACE ELEMENTS-----------  0
NO  OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE. IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS----------  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF  SOIL MATERIALS---------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 38
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS---------  0
NUMBER OF PREEXISTING NODES------------  0
NUMBER OF CONSTRUCTION LAYERS----------  6
NUMBER OF LOAD CASES-------------------  2

CALING FACTOR ---------      1 00000

ATMOSPHERIC PRESSURE ---      1.05800

UNIT WEIGHT OF WATER ---        03120


OMPUTATION SEQUENCE FOR A TOTAL OF     8  INCREMENTS
-------------------------------------------------------

 INCREMENT NO.  1      APPLY LOAD CASE   1

 INCREMENT NO.  2      PUT ON LAYER NO.  1

 INCREMENT NO.  3      PUT ON LAYER NO.  2

 INCREMENT NO.  4      PUT ON LAYER NO.  3

 INCREMENT NO.  5      PUT ON LAYER NO.  4

 INCREMENT NO.  6      PUT ON LAYER NO.  5

 INCREMENT NO   7      PUT ON LAYER NO   6

 INCREMENT NO.  8      APPLY LOAD CASE   2
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B.C. CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | .000 | .000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 35.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58.000 | .000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | .000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30.000 | 4.000 | 0 | 0 | 0 |
| 18 | 35.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54.000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82.000 | 4.000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 35.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.000 | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10.000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.000 | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 35.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10.000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 35.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11.500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74.000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.030 | 14.000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.C00 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | 15.000 | 0 | 0 | 0 |
| 83 | 82.000 | 15.000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 13.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17.000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17.000 | 1 | 0 | 1 |

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 30. | 1.00 | 0. |

| ELMT NO. | CONNECTED NODES I | J | MATL NO. |
|---|---|---|---|
| 1 | 41 | 42 | 1 |
| 2 | 42 | 43 | 1 |
| 3 | 43 | 44 | 1 |
| 4 | 44 | 45 | 1 |
| 5 | 45 | 46 | 1 |
| 6 | 46 | 47 | 1 |
| 7 | 47 | 48 | 1 |
| 8 | 48 | 49 | 1 |
| 9 | 49 | 50 | 1 |
| 10 | 50 | 51 | 1 |
| 11 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | EXPONENT | RATIO | BULK MODULUS CONSTANT | EXPONENT | STRENGTH PARAMETERS C | PHI | DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .0550 | 6000.00 | .500 | .500 | 1500.00 | .500 | .00 | 35.00 | .00 | .50 |
| 2 | .0530 | 40.00 | .300 | .900 | 20.00 | .200 | .05 | .00 | .00 | .50 |
| 3 | .0800 | 1000.00 | .400 | .700 | 500.00 | .500 | .50 | 40.00 | .00 | .50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO. | CONNECTED NODES I | J | K | L | MATL NO. | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5.000 | 2.000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15.000 | 2.000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25.000 | 2.000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33.000 | 2.000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39.000 | 2.000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46.000 | 2.000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52.000 | 2.000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 58.000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62.000 | 2.000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2.000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78.000 | 2.000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86.000 | 2.000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5.000 | 5.500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15.000 | 5.500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25.000 | 5.500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33.000 | 5.500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5.500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5.500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 58.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5.500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5.500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78.000 | 5.500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86.000 | 5.500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5.000 | 8.500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15.000 | 8.500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25.000 | 8.500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33.000 | 8.500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39.000 | 8.500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46.000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52.000 | 8.500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 58.000 | 8.500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62.000 | 8.500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70.000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78.000 | 8.500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86.000 | 8.500 |
| 37 | 43 | 44 | 53 | 52 | 1 | 36.500 | 10.750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39.000 | 10.750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46.000 | 10.750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52.000 | 10.750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 56.000 | 10.750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62.000 | 10.750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70.000 | 10.750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78.000 | 10.750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86.000 | 10.750 |
| 46 | 53 | 54 | 62 | 61 | 1 | 40.500 | 12.250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46.000 | 12.250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52.000 | 12.250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 56.000 | 12.250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62.000 | 12.250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70.000 | 12.250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78.000 | 12.250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86.000 | 12.250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47.000 | 13.500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52.000 | 13.500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 56.000 | 13.500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62.000 | 13.500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70.000 | 13.500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78.000 | 13.500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86.000 | 13.500 |
| 61 | 70 | 71 | 78 | 77 | 1 | 49.000 | 14.500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52.000 | 14.500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 56.000 | 14.500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62.000 | 14.500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70.000 | 14.500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78.000 | 14.500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 86.000 | 14.500 |
| 68 | 78 | 79 | 85 | 84 | 1 | 53.000 | 15.500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 56.000 | 15.500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62.000 | 15.500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70.000 | 15.500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78.000 | 15.500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86.000 | 15.500 |
| 74 | 85 | 86 | 91 | 90 | 1 | 57.000 | 16.500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62.000 | 16.500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70.000 | 16.500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78.000 | 16.500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86.000 | 16.500 |

SSTIPN 1 LAYER OF GEOTEXTILE, P=1000 PPI, EXTENDED, T=1000

```
**********************************************************
**********************************************************
*                                                        *
*  LOAD CASE -------------------------------     2       *
*                                                        *
**********************************************************
**********************************************************
```

LARGEST ELE. NO. IN THIS INCREMENT 78

LARGEST N P NO IN THIS INCREMENT 95

BAND WIDTH------------------------ 40

TOTAL NUMBER OF EQUATIONS--------- 222

NUMBER OF EQUATIONS IN BLOCK------ 84

NUMBER OF BLOCKS------------------ 3

NUMBER OF N.P. FORCE CARDS-------- 3

NUMBER OF PRESSURE CARDS---------- 0

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0. | 0. |
| 2 | 0 | 0 |
| 3 | 0. | 0. |
| 4 | 0. | 0. |
| 5 | 0. | 0. |
| 6 | 0 | 0 |
| 7 | 0. | 0. |
| 8 | 0. | 0. |
| 9 | 0. | 0. |
| 10 | 0 | 0 |
| 11 | 0 | 0. |
| 12 | 0. | 0. |
| 13 | 0. | 0. |
| 14 | 0 | 0 |
| 15 | 0. | 0. |
| 16 | 0. | 0. |
| 17 | 0. | 0. |
| 18 | 0 | 0 |
| 19 | 0. | 0. |
| 20 | 0. | 0. |
| 21 | 0 | 0. |
| 22 | 0 | 0 |
| 23 | 0 | 0. |
| 24 | 0. | 0. |
| 25 | 0. | 0. |
| 26 | 0 | 0 |
| 27 | 0. | 0. |
| 28 | 0. | 0. |
| 29 | 0. | 0. |
| 30 | 0 | 0 |
| 31 | 0. | 0. |
| 32 | 0. | 0. |
| 33 | 0. | 0. |
| 34 | 0 | 0 |
| 35 | 0. | 0. |
| 36 | 0. | 0. |
| 37 | 0. | 0. |
| 38 | 0 | 0 |
| 39 | 0. | 0. |
| 40 | 0. | 0. |
| 41 | 0. | 0. |
| 42 | 0 | 0 |
| 43 | 0. | 0. |
| 44 | 0 | 0. |
| 45 | 0. | 0. |
| 46 | 0. | 0 |
| 47 | 0. | 0. |
| 48 | 0. | 0. |
| 49 | 0. | 0. |
| 50 | 0 | 0 |
| 51 | 0. | 0. |
| 52 | 0. | 0. |
| 53 | 0. | 0. |
| 54 | 0 | 0 |
| 55 | 0. | 0. |
| 56 | 0. | 0. |
| 57 | 0 | 0. |
| 58 | 0 | 0 |
| 59 | 0. | 0. |
| 60 | 0 | 0. |
| 61 | 0. | 0. |
| 62 | 0. | 0. |

| | | |
|---|---|---|
| 64 | 0. | 0. |
| 65 | 0. | 0. |
| 66 | 0. | 0. |
| 67 | 0. | 0. |
| 68 | 0. | 0. |
| 69 | 0. | 0. |
| 70 | 0. | 0 |
| 71 | 0. | 0 |
| 72 | 0. | 0. |
| 73 | 0. | 0. |
| 74 | 0. | 0. |
| 75 | 0. | 0. |
| 76 | 0 | 0. |
| 77 | 0. | 0. |
| 78 | 0. | 0. |
| 79 | 0. | 0. |
| 80 | 0. | 0. |
| 81 | 0. | 0. |
| 82 | 0. | 0. |
| 83 | 0. | 0. |
| 84 | 0. | 0. |
| 85 | 0. | 0. |
| 86 | 0. | 0. |
| 87 | 0. | 0. |
| 88 | 0 | 0 |
| 89 | 0. | 0. |
| 90 | 0. | 0. |
| 91 | 0. | 0. |
| 92 | 0. | -4.50 |
| 93 | 0. | -4.50 |
| 94 | 0. | -2.00 |
| 95 | 0. | 0. |

LOAD CASE : 2 ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 1 |
| 2 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 2 |
| 3 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 3 |
| 4 | .0000 | .0000 | .0000 | .0000 | .0000 | 0000 | 0000 | 4 |
| 5 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 5 |
| 6 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 6 |
| 7 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 7 |
| 8 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 8 |
| 9 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 9 |
| 10 | .0000 | .0000 | .0090 | .0000 | .0000 | .0000 | .0000 | 10 |
| 11 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 11 |
| 12 | .0C00 | .0000 | .0000 | .0000 | .0000 | 0000 | 0000 | 12 |
| 13 | .0000 | .0000 | .0000 | .0000 | 0000 | .0000 | .0000 | 13 |
| 14 | .0000 | -.0001 | .0000 | .0000 | -.0008 | .0000 | .0C08 | 14 |
| 15 | .0000 | .0000 | .0000 | -.0008 | .0002 | .0000 | .0008 | 15 |
| 16 | .0000 | .0000 | .0000 | -.0006 | - 0004 | 0000 | .0007 | 16 |
| 17 | -.0005 | .0002 | .0000 | -.0051 | .0023 | .0000 | .0056 | 17 |
| 18 | -.0135 | .0022 | .0000 | -.2080 | .0358 | .0000 | .2121 | 18 |
| 19 | -.0171 | -.0039 | .0000 | -.2930 | -.0742 | .0000 | .3022 | 19 |
| 20 | -.0089 | -.0051 | .0000 | -.1874 | - 1278 | 0000 | .2108 | 20 |
| 21 | -.0061 | -.0036 | .0000 | -.0630 | -.1380 | .0000 | .1526 | 21 |
| 22 | .0003 | .0010 | .0000 | .0005 | -.0037 | .0000 | .0038 | 22 |
| 23 | -.0013 | - 0028 | .0000 | -.0006 | - 0060 | .0000 | .0061 | 23 |
| 24 | .0009 | - 0057 | 0000 | .0015 | - 0105 | .0000 | 0106 | 24 |
| 25 | .0021 | - 0020 | .0000 | .0024 | - 0054 | .0000 | .0059 | 25 |
| 26 | .0000 | .0006 | .0000 | .0000 | -.0028 | .0000 | .0028 | 26 |
| 27 | .0000 | -.0001 | .0000 | .0000 | - 0010 | .0000 | .0010 | 27 |
| 28 | - 0001 | 0001 | .0000 | -.0014 | .0002 | 0000 | 0015 | 28 |
| 29 | -.0001 | .0000 | .0000 | -.0016 | .0003 | .0000 | .0016 | 29 |
| 30 | -.0193 | 0048 | .0000 | -.2107 | .0839 | .0000 | 2201 | 30 |
| 31 | -.0302 | .0048 | .0000 | -.3199 | .0708 | .0000 | 3277 | 31 |
| 32 | -.0377 | -.0052 | .0000 | -.3859 | -.1297 | 0000 | 4071 | 32 |
| 33 | -.0450 | -.0061 | .0000 | -.3156 | -.2549 | .0000 | 4057 | 33 |
| 34 | -.0555 | 0040 | .0000 | -.2644 | -.2359 | .0000 | .3543 | 34 |
| 35 | -.0741 | -.0092 | .0000 | -.1893 | - 1881 | .0000 | 2544 | 35 |
| 36 | -.0030 | -.0074 | .0000 | -.0014 | -.0187 | 0000 | 0188 | 36 |
| 37 | .0019 | -.0113 | .0000 | .0027 | - 0194 | .0000 | 0196 | 37 |
| 38 | .0025 | -.0036 | .0000 | .0024 | - 0103 | .0000 | 0108 | 38 |
| 39 | .0000 | .0C19 | 0000 | .0000 | -.0042 | .0000 | 0042 | 39 |
| 40 | .0000 | -.0002 | .0000 | .0000 | - 0015 | 0000 | 0015 | 40 |
| 41 | -.0006 | .0002 | .0000 | -.0051 | 0010 | .0000 | .0052 | 41 |
| 42 | -.0257 | .0055 | .0000 | -.1019 | 0207 | .0000 | 1040 | 42 |
| 43 | -.0569 | .0107 | .0000 | -.2738 | 1078 | .0000 | .2941 | 43 |
| 44 | -.0590 | 0041 | .0000 | -.3011 | 0672 | .0000 | 3085 | 44 |
| 45 | -.0604 | -.0060 | .0000 | -.3067 | - 1768 | .0000 | .3540 | 45 |
| 46 | -.0591 | - 0088 | .0000 | -.2884 | - 3521 | .0000 | .4427 | 46 |
| 47 | -.0553 | .0058 | 0000 | -.2274 | -.3287 | .0000 | .3997 | 47 |
| 48 | -.0584 | .0129 | 0000 | -.1886 | - 2462 | 0000 | 3089 | 48 |
| 49 | -.0404 | -.1110 | .0000 | -.0787 | -.2538 | .0000 | .2657 | 49 |
| 50 | -.0003 | -.0278 | .0000 | -.0032 | -.0457 | 0000 | .0458 | 50 |
| 51 | .0000 | -.0030 | .0000 | - 0012 | -.0118 | 0000 | 0118 | 51 |
| 52 | .0000 | .0028 | .0000 | .0000 | - 0073 | .0000 | .0073 | 52 |
| 53 | -.0670 | .0044 | .0000 | -.5567 | .1060 | .0000 | .5666 | 53 |
| 54 | -.0581 | -.0058 | .0000 | -.4880 | -.1508 | .0000 | .5087 | 54 |
| 55 | -.0814 | -.0101 | .0000 | -.2837 | -.3241 | .0000 | .4374 | 55 |
| 56 | -.0818 | .0055 | .0000 | -.2353 | - 3490 | 0000 | 4208 | 56 |
| 57 | -.0613 | 0108 | .0000 | - 1781 | -.2716 | .0000 | .3231 | 57 |
| 58 | -.0079 | - 1177 | .0000 | -.0801 | -.2925 | .0000 | .2988 | 58 |
| 59 | -.0047 | - 0318 | .0000 | .0432 | -.0987 | .0000 | .1059 | 59 |
| 60 | -.0029 | -.0027 | .0000 | -.0040 | -.0105 | .0000 | .0112 | 60 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 61 | .0000 | .0027 | .0000 | .0000 | -.0057 | .0000 | .0057 | 61 |
| 62 | -.0580 | -.0055 | .0000 | -.1252 | -.0202 | .0000 | .1268 | 62 |
| 63 | -.0718 | -.0087 | .0000 | -.1389 | -.1470 | .0000 | .2023 | 63 |
| 64 | -.0759 | .0052 | .0000 | -.1435 | -.1712 | .0000 | .2234 | 64 |
| 65 | -.0888 | .0123 | .0000 | -.1521 | -.1719 | .0000 | .2295 | 65 |
| 66 | -.0224 | -.1201 | .0000 | -.0884 | -.2204 | .0000 | .2307 | 66 |
| 67 | -.0150 | -.0336 | .0000 | -.0339 | -.1274 | .0000 | .1318 | 67 |
| 68 | -.0059 | -.0030 | .0000 | -.0075 | -.0092 | .0000 | .0119 | 68 |
| 69 | .0000 | .0027 | .0000 | .0000 | -.0037 | .0000 | .0037 | 69 |
| 70 | -.0781 | -.0044 | .0000 | -.1283 | - 0473 | .0000 | .1388 | 70 |
| 71 | -.0883 | - 0082 | .0000 | -.1520 | -.0850 | .0000 | .1783 | 71 |
| 72 | -.1196 | .0074 | .0000 | -.1743 | - 1133 | 0000 | 2079 | 72 |
| 73 | -.1298 | .0155 | .0000 | -.1848 | -.1178 | 0000 | .2190 | 73 |
| 74 | -.0343 | - 1209 | .0000 | -.0839 | -.2002 | 0000 | .2171 | 74 |
| 75 | -.0229 | -.0743 | .0000 | -.0449 | -.1390 | .0000 | .1481 | 75 |
| 76 | -.0077 | -.0036 | .0000 | -.0092 | -.0087 | .0000 | .0127 | 76 |
| 77 | .0000 | .0024 | .0000 | .0000 | -.0025 | .0000 | .0025 | 77 |
| 78 | -.1207 | -.0010 | .0000 | -.1501 | -.0523 | .0000 | 1589 | 78 |
| 79 | -.1281 | .0071 | .0000 | -.1583 | -.0848 | .0000 | .1692 | 79 |
| 80 | -.1336 | 0197 | .0000 | -.1663 | -.0630 | .0000 | .1778 | 80 |
| 81 | -.2855 | - 3206 | .0000 | -.3194 | -.3732 | .0000 | .4912 | 81 |
| 82 | .7202 | -.2491 | .0000 | .8839 | - 3373 | 0000 | 7526 | 82 |
| 83 | 1.1167 | - 0409 | .0000 | 1.1153 | -.0449 | .0000 | 1.1162 | 83 |
| 84 | .0000 | .1206 | .0000 | .0000 | 1171 | .0000 | .1171 | 84 |
| 85 | -.1302 | .0072 | .0000 | -.1402 | -.0121 | .0000 | .1407 | 85 |
| 86 | -.1406 | .0239 | .0000 | -.1518 | - 0009 | .0000 | 1518 | 86 |
| 87 | -.1419 | - 5415 | 0000 | -.1524 | -.5887 | .0000 | .5671 | 87 |
| 88 | 8511 | -.5436 | .0000 | .8081 | - 5959 | .0000 | 1.0040 | 88 |
| 89 | 1.5705 | -.0510 | .0000 | 1.5819 | -.0721 | .0000 | 1.5835 | 89 |
| 90 | .0000 | .3716 | .0000 | .0000 | .3532 | .0000 | 3532 | 90 |
| 91 | -.0703 | .0259 | .0000 | -.0703 | .0259 | .0000 | .0749 | 91 |
| 92 | -.0704 | -.5452 | .0000 | -.0704 | -.5452 | .0000 | .5497 | 92 |
| 93 | .7390 | -.9087 | .0000 | 7390 | -.9087 | .0000 | 1.1713 | 93 |
| 94 | 1.6411 | - 0538 | .0000 | 1.6411 | -.0538 | .0000 | 1 6420 | 94 |
| 95 | .0000 | .5580 | .0000 | .0000 | .5580 | .0000 | .5580 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO. | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | -.0752 |
| 2 | -.0837 |
| 3 | -.0103 |
| 4 | -.0072 |
| 5 | .0048 |
| 6 | .0289 |
| 7 | -.0231 |
| 8 | .0872 |
| 9 | .1504 |
| 10 | .0012 |
| 11 | .0001 |
| TOTAL VALUES | |
| 1 | -.2904 |
| 2 | -.5155 |
| 3 | -.1369 |
| 4 | -.0276 |
| 5 | .1434 |
| 6 | .3078 |
| 7 | .3058 |
| 8 | .4047 |
| 9 | .2830 |
| 10 | .0076 |
| 11 | .0048 |

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 538.1 | 340.4 | 232.1 | .159 | .003 | .005 | .004 | .008 | .002 | .004 | 1 |
| 2 | 511.1 | 323.6 | 220.4 | .159 | .000 | .003 | .016 | .010 | -.006 | .016 | 2 |
| 3 | 505.1 | 318.3 | 218.3 | .157 | .023 | -.023 | .058 | .037 | -.037 | .074 | 3 |
| 4 | .7 | 17.2 | .2 | .494 | 1.699 | -.475 | 2.398 | 2.231 | -1.007 | 3.237 | 4 |
| 5 | .8 | 17.1 | .2 | .494 | .700 | .480 | 7.192 | 4.187 | -3.008 | 7.195 | 5 |
| 6 | .7 | 17.9 | .2 | .494 | -.768 | 2.525 | 6.060 | 4.326 | -2.556 | 6.931 | 6 |
| 7 | .7 | 18.4 | .2 | .493 | -1.305 | 3.335 | 3.019 | 3.783 | -1.753 | 5.536 | 7 |
| 8 | .8 | 18.9 | .2 | .494 | -.794 | 1.784 | -.910 | 1.862 | -.872 | 2.734 | 8 |
| 9 | 483.3 | 340.9 | 189.6 | .222 | .007 | .122 | .014 | .123 | .006 | .118 | 9 |
| 10 | 483.4 | 360.9 | 189.2 | .238 | -.013 | .207 | .016 | .207 | -.013 | .221 | 10 |
| 11 | 475.3 | 371.0 | 191.3 | .242 | -.005 | .199 | -.081 | .207 | -.013 | .220 | 11 |
| 12 | 513.8 | 365.6 | 212.4 | .209 | .015 | .100 | -.047 | .106 | .009 | .098 | 12 |
| 13 | 485.9 | 294.6 | 220.1 | .126 | .010 | .006 | .004 | .011 | .005 | .006 | 13 |
| 14 | 385.7 | 224.9 | 172.9 | .116 | .002 | -.013 | .037 | .014 | -.026 | .040 | 14 |
| 15 | 2.0 | 13.6 | .7 | .475 | 1.087 | -1.040 | 3.115 | 1.894 | -1.887 | 3.780 | 15 |
| 16 | 4.0 | 16.2 | 1.4 | .457 | 2.610 | -1.612 | 4.936 | 3.746 | -2.749 | 6.495 | 16 |
| 17 | 1.5 | 16.9 | .5 | .485 | 1.249 | .340 | 5.982 | 3.820 | -2.231 | 6.051 | 17 |
| 18 | .8 | 17.1 | .2 | .494 | -1.224 | 3.043 | 5.138 | 4.248 | -2.430 | 6.677 | 18 |
| 19 | .8 | 17.1 | .2 | .494 | -1.945 | 3.733 | 5.730 | 4.927 | -3.139 | 8.067 | 19 |
| 20 | .7 | 18.2 | .2 | .494 | -1.606 | 4.189 | 4.024 | 4.819 | -2.236 | 7.055 | 20 |
| 21 | .6 | 17.1 | .2 | .494 | -1.230 | 2.751 | 2.474 | 3.104 | -1.583 | 4.688 | 21 |
| 22 | 402.9 | 331.9 | 160.0 | .259 | -.038 | .326 | .040 | .327 | -.039 | .366 | 22 |
| 23 | 394.8 | 305.7 | 164.4 | .231 | -.004 | .230 | -.108 | .242 | -.016 | .258 | 23 |
| 24 | 484.[illegible] | 314.5 | 195.1 | .190 | .030 | .109 | -.058 | .118 | .021 | .098 | 24 |
| 25 | 380.1 | 223.8 | 169.5 | .121 | .033 | -.005 | .042 | .042 | -.015 | .056 | 25 |
| 26 | .4 | 13.4 | .1 | .495 | .486 | -.393 | 1.629 | .982 | -.850 | 1.833 | 26 |
| 27 | .0 | .1 | 0 | .495 | 1.904 | -1.087 | 1.968 | 2.200 | -1.384 | 3.584 | 27 |
| 28 | 1.3 | 13.5 | .4 | .484 | 1.139 | -.886 | 1.017 | 1.272 | -.800 | 2.072 | 28 |
| 29 | .8 | 14.4 | .3 | .491 | .598 | .847 | 2.071 | 1.785 | -.322 | 2.086 | 29 |
| 30 | 1.1 | 16.2 | .4 | .486 | -.676 | 2.406 | -.228 | 2.410 | -.683 | 3.092 | 30 |
| 31 | .6 | 15.7 | .2 | .494 | -1.153 | 3.166 | -1.933 | 3.372 | -1.359 | 4.732 | 31 |
| 32 | .6 | 15.5 | .2 | .494 | -1.324 | 3.015 | -2.831 | 3.436 | -1.745 | 5.180 | 32 |
| 33 | .7 | 17.7 | .2 | .494 | -1.911 | 5.420 | .241 | 5.422 | -1.913 | 7.335 | 33 |
| 34 | .7 | 17.4 | .2 | .494 | -.497 | 4.380 | .102 | 4.381 | -.497 | 4.888 | 34 |
| 35 | 294.7 | 258.5 | 115.4 | .277 | -.011 | .482 | -.111 | .488 | -.018 | .486 | 35 |
| 36 | 349.0 | 217.8 | 151.4 | .152 | .008 | .075 | -.007 | .075 | .007 | .068 | 36 |
| 37 | 289.2 | 433.6 | 104.9 | .379 | .457 | -.107 | 18.657 | 9.508 | -9.158 | 18.665 | 37 |
| 38 | 332.0 | 439.3 | 122.0 | .361 | -.565 | 1.784 | 19.936 | 10.656 | -9.416 | 20.074 | 38 |
| 39 | 481.9 | 460.5 | 185.6 | .299 | -1.384 | 3.789 | 10.227 | 6.933 | -4.528 | 11.460 | 39 |
| 40 | 397.7 | 448.3 | 149.1 | .334 | -1.224 | 4.784 | 2.289 | 4.995 | -1.435 | 6.430 | 40 |
| 41 | 394.9 | 447.9 | 147.9 | .335 | -1.237 | 5.112 | -1.082 | 5.156 | -1.281 | 6.437 | 41 |
| 42 | 157.6 | 416.9 | 54.9 | .434 | -1.416 | 4.136 | -.504 | 4.147 | -1.427 | 5.574 | 42 |
| 43 | 11.9 | 398.6 | 4.0 | .495 | -1.030 | 3.886 | -4.787 | 4.871 | -2.035 | 6.705 | 43 |
| 44 | 724.4 | 346.1 | 282.8 | .281 | .284 | 1.828 | -2.188 | 2.395 | -.283 | 2.678 | 44 |
| 45 | 1369.5 | 753.1 | 634.9 | .078 | -.033 | .055 | .038 | .059 | -.036 | .095 | 45 |
| 46 | 11.9 | 398.6 | 4.0 | .495 | -.040 | .014 | .016 | .016 | -.041 | .057 | 46 |
| 47 | .1 | 4.0 | .0 | .495 | .082 | .023 | .769 | .438 | -.333 | .771 | 47 |
| 48 | 143.3 | 415.2 | 49.7 | .440 | .021 | .055 | .503 | .290 | -.214 | .505 | 48 |
| 49 | 11.9 | 398.6 | 4.0 | .495 | -.298 | .699 | 1.304 | 1.022 | -.618 | 1.640 | 49 |
| 50 | .1 | 4.0 | .0 | .495 | -1.007 | .505 | 3.357 | 1.881 | -1.983 | 3.864 | 50 |
| 51 | 524.9 | 487.0 | 205.0 | .281 | -.327 | 2.980 | .281 | 2.986 | -.333 | 3.298 | 51 |
| 52 | 740.5 | 661.8 | 288.6 | .282 | -.228 | 2.765 | -.191 | 2.768 | -.228 | 2.996 | 52 |
| 53 | 937.8 | 585.4 | 406.8 | .152 | -.073 | .069 | .053 | .074 | -.077 | .151 | 53 |
| 54 | .1 | 4.0 | .0 | .495 | .306 | -.327 | 2.221 | 1.143 | -1.165 | 2.308 | 54 |
| 55 | 11.9 | 398.6 | 4.0 | .495 | .310 | -.261 | 3.607 | 1.851 | -1.801 | 3.652 | 55 |
| 56 | 11.9 | 398.6 | 4.0 | .495 | .219 | -.221 | 4.433 | 2.227 | -2.228 | 4.455 | 56 |
| 57 | .1 | 4.0 | 0 | .495 | -1.157 | .063 | 4.657 | 1.860 | -2.953 | 4.814 | 57 |
| 58 | 1604.3 | 880.7 | 744.6 | .077 | -.416 | 2.871 | 1.187 | 2.975 | -.522 | 3.497 | 58 |
| 59 | 1283.2 | 759.8 | 557.4 | .133 | -.352 | 2.763 | -.348 | 2.783 | -.361 | 3.124 | 59 |
| 60 | 491.3 | 461.9 | 189.8 | .295 | -.102 | .094 | .027 | .095 | -.103 | .198 | 60 |
| 61 | .1 | 4.0 | 0 | .495 | .578 | -.528 | 2.474 | 1.380 | -1.330 | 2.710 | 61 |
| 62 | .1 | 4.0 | .0 | .495 | .344 | -.238 | 1.207 | .723 | -.617 | 1.340 | 62 |
| 63 | 281.7 | 430.0 | 94.1 | .391 | .228 | -.171 | .316 | .283 | -.226 | .509 | 63 |
| 64 | .1 | 4.0 | .0 | .495 | .326 | 9.828 | 15.898 | 14.251 | -4.097 | 18.348 | 64 |
| 65 | .1 | 4.0 | .0 | .495 | -6.444 | 23.410 | -23.846 | 27.588 | -10.622 | 38.209 | 65 |
| 66 | .1 | 4.0 | .0 | .495 | -2.850 | 15.289 | -94.312 | 54.240 | -41.801 | 96.040 | 66 |
| 67 | .1 | 4.0 | 0 | .495 | 6.914 | -3.990 | -57.285 | 30.609 | -27.635 | 58.294 | 67 |
| 68 | .1 | 4.0 | .0 | .495 | .138 | -.012 | .221 | .187 | -.071 | .258 | 68 |
| 69 | 212.9 | 423.8 | 75.4 | .411 | .234 | -.219 | .213 | .258 | -.243 | .501 | 69 |
| 70 | .1 | 4.0 | .0 | .495 | .958 | 10.837 | -1.178 | 10.872 | .923 | 9.949 | 70 |
| 71 | .1 | 4.0 | 0 | .495 | -12.207 | 26.837 | -13.061 | 27.900 | -13.271 | 41.171 | 71 |
| 72 | .1 | 4.0 | .0 | .496 | -7.342 | 17.239 | -32.714 | 25.406 | -15.512 | 40.920 | 72 |
| 73 | .1 | 4.0 | .0 | .495 | 16.736 | -10.286 | -25.987 | 21.966 | -15.496 | 37.461 | 73 |
| 74 | .1 | 4.0 | .0 | .495 | .280 | -.193 | -7.481 | 3.766 | -3.899 | 7.465 | 74 |
| 75 | 338.1 | 439.8 | 123.6 | .359 | .009 | .080 | .018 | .081 | .008 | .082 | 75 |
| 76 | .1 | 4.0 | .0 | .495 | -11.268 | 16.443 | 4.321 | 16.599 | -11.421 | 30.020 | 76 |
| 77 | .1 | 4.0 | .0 | .495 | -10.136 | 18.299 | -6.344 | 18.747 | -10.483 | 29.230 | 77 |
| 78 | .1 | 4.0 | .0 | .495 | 20.073 | -14.675 | -10.682 | 20.875 | -15.577 | 36.353 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .263 | .514 | .008 | .514 | .263 | .126 | 1.825 | 1.958 | .081 | 1 |
| 2 | .242 | .497 | .040 | .503 | .236 | .133 | 8.641 | 2.131 | .089 | 2 |
| 3 | .348 | .372 | .134 | .494 | .224 | .135 | 42.256 | 2.206 | .082 | 3 |
| 4 | .383 | .554 | .005 | .554 | .383 | .086 | 1.321 | 1.447 | 1.713 | 4 |
| 5 | .371 | .550 | .015 | .551 | .370 | .091 | 4.865 | 1.489 | 1.612 | 5 |
| 6 | .462 | .656 | .013 | .658 | .461 | .098 | 3.852 | 1.424 | 1.965 | 6 |
| 7 | .512 | .712 | .007 | .712 | .511 | .100 | 1.924 | 1.392 | 2.003 | 7 |
| 8 | .333 | .523 | -.002 | .523 | .333 | .095 | -.526 | 1.572 | 1.905 | 8 |
| 9 | .360 | .997 | .023 | .998 | .359 | .319 | 2.037 | 2.775 | .186 | 9 |
| 10 | .406 | 1.447 | .028 | 1.448 | .405 | .522 | 1.552 | 3.576 | .290 | 10 |
| 11 | .440 | 1.429 | -.186 | 1.464 | .416 | .519 | -9.895 | 3.489 | .285 | 11 |
| 12 | .381 | .910 | -.100 | .928 | .362 | .283 | -10.388 | 2.560 | .164 | 12 |
| 13 | .189 | .306 | -.008 | .306 | .188 | .059 | 3.805 | 1.630 | .042 | 13 |
| 14 | .134 | .215 | .087 | .253 | .096 | .078 | 28.483 | 2.629 | .063 | 14 |
| 15 | .103 | .174 | .013 | .177 | .100 | .038 | 10.170 | 1.761 | .784 | 15 |
| 16 | .276 | .288 | .038 | .321 | .243 | .039 | 40.401 | 1.318 | .774 | 16 |
| 17 | .334 | .417 | .017 | .420 | .331 | .045 | 11.180 | 1.270 | .894 | 17 |
| 18 | .382 | .488 | .010 | .489 | .381 | .054 | 5.507 | 1.301 | 1.087 | 18 |
| 19 | .352 | .484 | .012 | .486 | .351 | .067 | 5.000 | 1.328 | 1.142 | 19 |
| 20 | .492 | .606 | .009 | .606 | .491 | .056 | 4.727 | 1.235 | 1.163 | 20 |
| 21 | .310 | .417 | .005 | .417 | .310 | .054 | 2.759 | 1.345 | 1.071 | 21 |
| 22 | .336 | 1.668 | .060 | 1.670 | .333 | .668 | 2.578 | 5.009 | .400 | 22 |
| 23 | .323 | 1.211 | -.179 | 1.246 | .288 | .479 | -10.977 | 4.325 | .301 | 23 |
| 24 | .319 | .665 | -.109 | .697 | .287 | .205 | -16.105 | 2.425 | .129 | 24 |
| 25 | .176 | .083 | .076 | .218 | .040 | .089 | 60.761 | 5.408 | .078 | 25 |
| 26 | .031 | .007 | .023 | .045 | -.007 | .026 | 53.909 | -6.097 | -1.000 | 26 |
| 27 | .089 | .000 | -.001 | .089 | .000 | .029 | -88.856 | -4350.187 | -1.000 | 27 |
| 28 | .117 | .034 | .000 | .117 | .034 | .042 | -89.950 | 3.472 | .834 | 28 |
| 29 | .162 | .253 | .006 | .284 | .161 | .046 | 3.926 | 1.570 | .920 | 29 |
| 30 | .199 | .288 | -.002 | .288 | .199 | .044 | -1.319 | 1.445 | .885 | 30 |
| 31 | .235 | .351 | -.008 | .351 | .235 | .058 | -2.933 | 1.495 | 1.166 | 31 |
| 32 | .191 | .290 | -.013 | .291 | .190 | .051 | -7.213 | 1.534 | 1.014 | 32 |
| 33 | .494 | .608 | .002 | .608 | .494 | .057 | .791 | 1.231 | 1.139 | 33 |
| 34 | .569 | .669 | .000 | .669 | .569 | .050 | .016 | 1.176 | 1.000 | 34 |
| 35 | .473 | 1.709 | -.126 | 1.722 | .460 | .631 | -5.636 | 3.747 | .332 | 35 |
| 36 | .067 | .308 | -.008 | .304 | .067 | .119 | -2.072 | 4.544 | .093 | 36 |
| 37 | .377 | .176 | -.195 | .486 | .055 | .220 | -58.618 | 8.800 | 2.899 | 37 |
| 38 | .191 | .054 | .066 | .220 | .025 | .098 | 67.351 | 8.770 | 2.665 | 38 |
| 39 | .182 | .320 | .173 | .431 | .051 | .190 | 32.687 | 8.465 | 2.775 | 39 |
| 40 | -.202 | .227 | -.121 | .259 | -.234 | .246 | -14.763 | -1.107 | -1.000 | 40 |
| 41 | -.257 | .628 | -.338 | .684 | -.382 | .516 | -20.283 | -1.710 | -1.000 | 41 |
| 42 | -.784 | .333 | .119 | .346 | -.797 | .571 | 5.997 | -.433 | -1.000 | 42 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 43 | .214 | .798 | -.177 | .847 | .185 | .341 | -15.584 | 5.140 | 1 539 | 43 |
| 44 | .383 | 1.507 | - 118 | 1.519 | .370 | .575 | -5.937 | 4.104 | 1.154 | 44 |
| 45 | -.170 | .287 | .181 | .385 | -.238 | .302 | 19.687 | -1.535 | -1.000 | 45 |
| 46 | .000 | .024 | 011 | .028 | -.005 | .017 | 21.422 | -5.760 | -1.000 | 46 |
| 47 | .057 | 141 | .110 | .217 | -.019 | 118 | 34.469 | -11.338 | -1.000 | 47 |
| 48 | 254 | 457 | 267 | 841 | 071 | 285 | 34 574 | 9 085 | 3 005 | 48 |
| 49 | -.133 | .114 | -.012 | .115 | -.134 | 124 | -2.772 | -.859 | -1.000 | 49 |
| 50 | -.005 | .256 | -.070 | .273 | -.022 | .148 | -14.196 | -12.226 | -1.000 | 50 |
| 51 | -.043 | 1.146 | -.614 | 1.407 | -.303 | .855 | -22.968 | -4.638 | -1.000 | 51 |
| 52 | - 312 | 857 | 288 | 924 | -.379 | 651 | 13 102 | -2 437 | -1.000 | 52 |
| 53 | -.444 | .356 | .168 | .360 | -.478 | 434 | 11.390 | -.615 | -1.000 | 53 |
| 54 | .042 | .084 | .080 | .134 | -.028 | 081 | 41.019 | -4.783 | -1.000 | 54 |
| 55 | .200 | 309 | .275 | .534 | -.028 | .280 | 39.400 | -20.600 | -1.000 | 55 |
| 56 | - 166 | 198 | 127 | 238 | - 206 | 222 | 17 513 | -1 155 | -1 000 | 56 |
| 57 | -.036 | .160 | -.075 | .185 | -.062 | .124 | -18.608 | -3.007 | -1.000 | 57 |
| 58 | -1.851 | 1 181 | -.780 | 1 342 | -2.032 | 1.687 | -13.388 | -.661 | -1 000 | 58 |
| 59 | -1.983 | .615 | .590 | .743 | -2.111 | 1.427 | 12.215 | -.352 | -1.000 | 59 |
| 60 | - 356 | 302 | .047 | 305 | - 359 | 332 | 4.080 | - 850 | -1 000 | 60 |
| 61 | .512 | .016 | -.003 | .018 | .010 | .004 | -31.366 | 1.727 | 270 | 61 |
| 62 | .169 | .127 | .115 | .284 | .031 | 118 | 30.175 | 8.439 | 2.785 | 62 |
| 63 | .788 | -.180 | .484 | .974 | -.367 | .870 | 88.112 | -2.857 | -1.000 | 63 |
| 64 | 471 | 607 | - 140 | 695 | 383 | 158 | -32 073 | 1 813 | 302 | 64 |
| 65 | .681 | 722 | -.010 | .724 | .679 | .023 | -12.482 | 1 066 | .025 | 65 |
| 66 | .506 | 537 | -.038 | .582 | .481 | .041 | -33.648 | 1.170 | 063 | 66 |
| 67 | .232 | .318 | -.023 | .323 | .228 | .049 | -13.943 | 1.429 | .160 | 67 |
| 68 | 037 | 031 | 033 | 068 | 001 | 034 | 47 571 | 73 736 | 27 036 | 68 |
| 69 | .441 | -.265 | .204 | .496 | -.310 | .403 | 74.622 | -1 600 | -1 000 | 69 |
| 70 | .503 | .589 | -.035 | .601 | .490 | 055 | -19.512 | 1.225 | .084 | 70 |
| 71 | .585 | .633 | -.005 | .633 | .584 | 025 | -6.104 | 1.084 | 031 | 71 |
| 72 | 402 | 438 | - 013 | 442 | 398 | 022 | -17 738 | 1 113 | 042 | 72 |
| 73 | .286 | .281 | -.010 | .294 | .273 | .011 | -61.168 | 1.078 | .029 | 73 |
| 74 | .011 | .019 | -.001 | .020 | .011 | .004 | -6.294 | 1.741 | .275 | 74 |
| 75 | .351 | 588 | .019 | .570 | .349 | 110 | 4.858 | 1.631 | .234 | 75 |
| 76 | 291 | 332 | 002 | 332 | 291 | 020 | 2 420 | 1 140 | 052 | 76 |
| 77 | .336 | .375 | -.003 | .376 | .336 | .020 | -3.626 | 1.120 | .044 | 77 |
| 78 | .246 | .235 | -.004 | .248 | .234 | .007 | -70.746 | 1.056 | .022 | 78 |

```
SSTIPN: 1 LAYER OF GEOTEXTILE, P=2000 PPI, T=0

TOTAL NUMBER OF NODES------------------- 55
NUMBER OF BAR ELEMENTS------------------  9
NUMBER OF DIFF. BAR MATERIALS-----------  1
NUMBER OF BEAM ELEMENTS-----------------  0
NUMBER OF DIFF. BEAM MATERIALS----------  0
NUMBER OF NODAL LINKS ------------------  0
NUMBER OF INTERFACE ELEMENTS------------  0
NO  OF INTERFACE ELE. IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE  IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS-----------  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF  SOIL MATERIALS----------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 36
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS----------  0
NUMBER OF PREEXISTING NODES-------------  0
NUMBER OF CONSTRUCTION LAYERS-----------  6
NUMBER OF LOAD CASES--------------------  1

CALING FACTOR ----------      1 00000

ATMOSPHERIC PRESSURE ---      1.05800

UNIT WEIGHT OF WATER ---       03120


OMPUTATION SEQUENCE FOR A TOTAL OF     7  INCREMENTS
----------------------------------------------------


 INCREMENT NO.  1      PUT ON LAYER NO.  1

 INCREMENT NO.  2      PUT ON LAYER NO.  2

 INCREMENT NO.  3      PUT ON LAYER NO.  3

 INCREMENT NO.  4      PUT ON LAYER NO.  4

 INCREMENT NO.  5      PUT ON LAYER NO.  5

 INCREMENT NO   6      PUT ON LAYER NO.  6

 INCREMENT NO.  7      APPLY LOAD CASE   1
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B.C. CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | .000 | .000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 38.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58.000 | .000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | .000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30.000 | 4.000 | 0 | 0 | 0 |
| 18 | 38.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54.000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82.000 | 4.000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 38.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.000 | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10.000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.000 | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 38.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10.000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 38.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11.500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74.000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.000 | 14.000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | 15.000 | 0 | 0 | 0 |
| 83 | 82.000 | 15.000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17.000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17.000 | 1 | 0 | 1 |

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 80. | 1.00 | 0. |

| ELMT NO. | CONNECTED NODES I | J | MATL NO. |
|---|---|---|---|
| 1 | 43 | 44 | 1 |
| 2 | 44 | 45 | 1 |
| 3 | 45 | 46 | 1 |
| 4 | 46 | 47 | 1 |
| 5 | 47 | 48 | 1 |
| 6 | 48 | 49 | 1 |
| 7 | 49 | 50 | 1 |
| 8 | 50 | 51 | 1 |
| 9 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODUL CONSTANT | EXPONENT | ATIO | BULK MODULUS CONSTANT | EXPONENT | STRENGTH PARAMETERS C | PHI | DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .0880 | 8000.00 | .500 | .800 | 1500.00 | .800 | .00 | 35.00 | .00 | .50 |
| 2 | .0830 | 10.00 | .300 | .900 | 20.00 | .200 | .05 | .00 | .00 | .50 |
| 3 | .0800 | 1000.00 | .400 | .700 | 500.00 | .500 | .50 | 40.00 | .00 | .50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO. | CONNECTED NODES I | J | K | L | MATL NO. | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5.000 | 2.000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15.000 | 2.000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25.000 | [illegible] |
| 4 | 4 | 5 | 18 | 17 | 2 | 37.000 | [illegible] |
| 5 | 5 | 6 | 19 | 18 | 2 | 39.000 | 2.000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 45.000 | 2.000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52.000 | 2.000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 58.000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62.000 | 2.000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2.000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78.000 | 2.000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86.000 | 2.000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5.000 | 5.500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15.000 | 5.500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25.000 | 5.500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33.000 | 5.500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5.500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5.500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 58.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5.500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5.500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78.000 | 5.500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86.000 | 5.500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5.000 | 8.500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15.000 | 8.500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25.000 | 8.500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33.000 | 8.500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39.000 | 8.500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46.000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52.000 | 8.500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 58.000 | 8.500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62.000 | 8.500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70.000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78.000 | 8.500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86.000 | 8.500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34.500 | 10.750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39.000 | 10.750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 45.000 | 10.750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52.000 | 10.750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 56.000 | 10.750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62.000 | 10.750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70.000 | 10.750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78.000 | 10.750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86.000 | 10.750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40.500 | 12.250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46.000 | 12.250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52.000 | 12.250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 56.000 | 12.250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62.000 | 12.250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70.000 | 12.250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78.000 | 12.250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86.000 | 12.250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47.000 | 13.500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52.000 | 13.500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 56.000 | 17.500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62.000 | 13.500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70.000 | 13.500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 75.000 | 13.500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86.000 | 13.500 |
| 61 | 70 | 71 | 78 | 78 | 1 | 48.000 | 14.500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52.000 | 14.500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 56.000 | 14.500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62.000 | 14.500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70.000 | 14.500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78.000 | 14.500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 86.000 | 14.500 |
| 68 | 78 | 79 | 85 | 85 | 1 | 53.000 | 15.500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 56.000 | 15.500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62.000 | 15.500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70.000 | 15.500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78.000 | 15.500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86.000 | 15.500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57.000 | 16.500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62.000 | 16.500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70.000 | 16.500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78.000 | 16.500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86.000 | 16.500 |

```
SSTIPN: 1 LAYER OF GEOTEXTILE, P=2000 PPI, T=0

*******************************************************
*******************************************************
*                                                     *
*  LOAD CASE ------------------------------     1     *
*                                                     *
*******************************************************
*******************************************************

LARGEST ELE  NO. IN THIS INCREMENT   78

LARGEST N P  NO  IN THIS INCREMENT   96


BAND WIDTH------------------------  40

TOTAL NUMBER OF EQUATIONS--------- 222

NUMBER OF EQUATIONS IN BLOCK------  86

NUMBER OF BLOCKS------------------   3

NUMBER OF N P. FORCE CARDS--------   3

NUMBER OF PRESSURE CARDS----------   0
```

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0. | 0. |
| 2 | 0 | 0 |
| 3 | 0. | 0. |
| 4 | 0. | 0. |
| 5 | 0. | 0. |
| 6 | 0 | 0 |
| 7 | 0. | 0. |
| 8 | 0. | 0. |
| 9 | 0. | 0. |
| 10 | 0 | 0 |
| 11 | 0. | 0. |
| 12 | 0. | 0. |
| 13 | 0. | 0. |
| 14 | 0 | 0 |
| 15 | 0. | 0. |
| 16 | 0. | 0. |
| 17 | 0. | 0. |
| 18 | 0 | 0 |
| 19 | 0. | 0. |
| 20 | 0. | 0. |
| 21 | 0. | 0. |
| 22 | 0 | 0 |
| 23 | 0. | 0. |
| 24 | 0. | 0. |
| 25 | 0 | 0. |
| 26 | 0 | 0 |
| 27 | 0. | 0. |
| 28 | 0. | 0. |
| 29 | 0. | 0. |
| 30 | 0 | 0 |
| 31 | 0. | 0. |
| 32 | 0. | 0. |
| 33 | 0. | 0. |
| 34 | 0 | 0 |
| 35 | 0. | 0. |
| 36 | 0. | 0. |
| 37 | 0. | 0. |
| 38 | 0 | 0 |
| 39 | 0. | 0. |
| 40 | 0. | 0. |
| 41 | 0. | 0. |
| 42 | 0 | 0 |
| 43 | 0. | 0. |
| 44 | 0. | 0. |
| 45 | 0. | 0. |
| 46 | 0 | 0 |
| 47 | 0. | 0. |
| 48 | 0. | 0. |
| 49 | 0. | 0. |
| 50 | 0 | 0 |
| 51 | 0. | 0. |
| 52 | 0. | 0. |
| 53 | 0. | 0. |
| 54 | 0 | 0 |
| 55 | 0 | 0. |
| 56 | 0. | 0. |
| 57 | 0. | 0. |
| 58 | 0 | 0 |
| 59 | 0. | 0. |
| 60 | 0. | 0. |
| 61 | 0. | 0. |
| 62 | 0. | 0. |
| 63 | 0. | 0. |
| 64 | 0. | 0. |
| 65 | 0. | 0. |
| 66 | 0 | 0. |
| 67 | 0. | 0. |
| 68 | 0 | 0 |
| 69 | 0. | 0. |
| 70 | 0. | 0. |
| 71 | 0. | 0 |
| 72 | 0 | 0 |
| 73 | 0. | 0. |
| 74 | 0. | 0. |
| 75 | 0. | 0. |
| 76 | 0 | 0 |
| 77 | 0. | 0. |
| 78 | 0. | 0. |
| 79 | 0 | 0 |
| 80 | 0 | 0 |
| 81 | 0. | 0. |
| 82 | 0. | 0. |
| 83 | 0. | 0. |
| 84 | 0 | 0 |
| 85 | 0. | 0. |
| 86 | 0. | 0. |
| 87 | 0. | 0. |
| 88 | 0 | 0 |
| 89 | 0. | 0. |
| 90 | 0. | 0. |
| 91 | 0. | 0. |
| 92 | 0 | -4.50 |
| 93 | 0. | -4.50 |
| 94 | 0. | -2.00 |
| 95 | 0. | 0. |

LOAD CASE : 1    ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0030 | 1 |
| 2 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 2 |
| 3 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 3 |
| 4 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 4 |
| 5 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 5 |
| 6 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 6 |
| 7 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 7 |
| 8 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 8 |
| 9 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 9 |
| 10 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 10 |
| 11 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 11 |
| 12 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 12 |
| 13 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 13 |
| 14 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 14 |
| 15 | .0000 | .0000 | .0000 | -.0002 | .0000 | .0000 | .0002 | 15 |
| 16 | .0000 | .0000 | .0000 | -.0004 | -.0006 | .0000 | .0007 | 16 |
| 17 | -.0004 | .0002 | .0000 | -.0048 | .0071 | .0000 | .0082 | 17 |
| 18 | -.0222 | .0128 | .0000 | -.2274 | .0571 | .0000 | .2344 | 18 |
| 19 | -.0463 | .0039 | .0000 | -.3416 | .0661 | .0000 | .3479 | 19 |
| 20 | -.0494 | -.0076 | .0000 | -.2136 | -.1340 | .0000 | .2584 | 20 |
| 21 | -.0319 | -.0237 | .0000 | -.0836 | -.1609 | .0000 | .1882 | 21 |
| 22 | -.0011 | -.0012 | .0000 | -.0011 | -.0081 | .0000 | .0082 | 22 |
| 23 | -.0010 | -.0018 | .0000 | -.0003 | -.0050 | .0000 | .0050 | 23 |
| 24 | .0007 | -.0055 | .0000 | .0012 | -.0104 | .0000 | .0105 | 24 |
| 25 | .0020 | -.0021 | .0000 | .0021 | -.0055 | .0000 | .0059 | 25 |
| 26 | .0000 | .0004 | .0000 | .0000 | -.0028 | .0000 | .0028 | 26 |
| 27 | .0000 | .0000 | .0000 | .0000 | .0001 | .0000 | .0001 | 27 |
| 28 | .0000 | .0000 | .0000 | .0000 | -.0003 | .0000 | .0003 | 28 |
| 29 | -.0001 | .0000 | .0000 | -.0017 | .0002 | .0000 | .0017 | 29 |
| 30 | -.0131 | .0048 | .0000 | -.2375 | .0835 | .0000 | .2458 | 30 |
| 31 | -.0375 | .0264 | .0000 | -.3529 | .1129 | .0000 | .3705 | 31 |
| 32 | -.0678 | .0145 | .0000 | -.4458 | -.1100 | .0000 | .4592 | 32 |
| 33 | -.1024 | -.0080 | .0000 | -.3940 | -.2848 | .0000 | .4748 | 33 |
| 34 | -.1149 | -.0318 | .0000 | -.3377 | -.2787 | .0000 | .4388 | 34 |
| 35 | -.1011 | -.0485 | .0000 | -.2350 | -.2028 | .0000 | .3103 | 35 |
| 36 | -.0009 | -.0048 | .0000 | .0007 | -.0139 | .0000 | .0139 | 36 |
| 37 | .0016 | -.0108 | .0000 | .0019 | -.0182 | .0000 | .0182 | 37 |
| 38 | .0022 | -.0039 | .0000 | .0019 | -.0106 | .0000 | .0108 | 38 |
| 39 | .0009 | .0018 | .0000 | .0000 | -.0045 | .0000 | .0045 | 39 |
| 40 | .0000 | .0000 | .0000 | .0000 | .0001 | .0000 | .0001 | 40 |
| 41 | .0000 | .0000 | .0000 | .0002 | -.0003 | .0000 | .0003 | 41 |
| 42 | -.0138 | .0069 | .0000 | -.1440 | .0508 | .0000 | .1533 | 42 |
| 43 | -.0421 | .0102 | .0000 | -.3120 | .0817 | .0000 | .3282 | 43 |
| 44 | -.0485 | .0347 | .0000 | -.3187 | .1222 | .0000 | .3414 | 44 |
| 45 | -.0488 | .0212 | .0000 | -.3050 | -.1628 | .0000 | .3411 | 45 |
| 46 | -.0485 | -.0071 | .0000 | -.2814 | -.3823 | .0000 | .4487 | 46 |
| 47 | -.0500 | -.0350 | .0000 | -.2283 | -.3742 | .0000 | .4373 | 47 |
| 48 | -.0488 | -.0702 | .0000 | -.1825 | -.3378 | .0000 | .3840 | 48 |
| 49 | -.0236 | -.0884 | .0000 | -.0731 | -.2294 | .0000 | .2408 | 49 |
| 50 | -.0014 | -.0271 | .0000 | -.0057 | -.0456 | .0000 | .0460 | 50 |
| 51 | -.0001 | -.0039 | .0000 | -.0014 | -.0126 | .0000 | .0127 | 51 |
| 52 | .0000 | .0025 | .0000 | .0000 | -.0076 | .0000 | .0076 | 52 |
| 53 | -.0433 | .0347 | .0000 | -.5707 | .1880 | .0000 | .5822 | 53 |
| 54 | -.0432 | .0212 | .0000 | -.4842 | -.1374 | .0000 | .5034 | 54 |
| 55 | -.0413 | -.0071 | .0000 | -.2778 | -.3438 | .0000 | .4420 | 55 |
| 56 | -.0383 | -.0356 | .0000 | -.2109 | -.3910 | .0000 | .4442 | 56 |
| 57 | -.0319 | -.0731 | .0000 | -.1841 | -.3671 | .0000 | .4021 | 57 |
| 58 | -.0148 | -.0812 | .0000 | -.0871 | -.2672 | .0000 | .2758 | 58 |
| 59 | -.0067 | -.0307 | .0000 | .0385 | -.0974 | .0000 | .1048 | 59 |
| 60 | -.0031 | -.0039 | .0000 | -.0044 | -.0117 | .0000 | .0125 | 60 |
| 61 | .0000 | .0025 | .0000 | .0000 | -.0059 | .0000 | .0059 | 61 |
| 62 | -.0400 | .0212 | .0000 | -.0889 | .0082 | .0000 | .0893 | 62 |
| 63 | -.0307 | -.0071 | .0000 | -.0658 | -.1487 | .0000 | .1715 | 63 |
| 64 | -.0286 | -.0376 | .0000 | -.0873 | -.2074 | .0000 | .2252 | 64 |
| 65 | -.0233 | -.0749 | .0000 | -.0785 | -.2489 | .0000 | .2823 | 65 |
| 66 | -.0220 | -.0825 | .0000 | -.0850 | -.1911 | .0000 | .2049 | 66 |
| 67 | -.0143 | -.0328 | .0000 | -.0321 | -.1270 | .0000 | .1309 | 67 |
| 68 | -.0084 | -.0044 | .0000 | -.0082 | -.0107 | .0000 | .0135 | 68 |
| 69 | .0000 | .0025 | .0000 | .0000 | .0040 | .0000 | .0040 | 69 |
| 70 | -.4854 | .0175 | .0000 | -.5249 | -.0254 | .0000 | .5255 | 70 |
| 71 | -.6116 | .0051 | .0000 | -.6840 | -.0463 | .0000 | .6856 | 71 |
| 72 | -.6148 | -.0486 | .0000 | -.6587 | -.1635 | .0000 | .6787 | 72 |
| 73 | -.5193 | -.1283 | .0000 | -.6639 | -.2502 | .0000 | .7095 | 73 |
| 74 | -.0309 | -.0943 | .0000 | -.0708 | -.1703 | .0000 | .1844 | 74 |
| 75 | -.0151 | -.0335 | .0000 | -.0379 | -.1382 | .0000 | .1433 | 75 |
| 76 | -.0081 | -.0048 | .0000 | -.0102 | -.0100 | .0000 | .0148 | 76 |
| 77 | .0000 | .0029 | .0000 | .0002 | -.0030 | .0000 | .0030 | 77 |
| 78 | -.5591 | .0057 | .0000 | -.6208 | -.0471 | .0000 | .6226 | 78 |
| 79 | -.6888 | -.0496 | .0000 | -.6214 | -.1182 | .0000 | .6321 | 79 |
| 80 | -.6008 | -.1252 | .0000 | -.6249 | -.2008 | .0000 | .6564 | 80 |
| 81 | -.6333 | -.2578 | .0000 | -.9580 | -.3074 | .0000 | 1.0062 | 81 |
| 82 | -.0031 | -.2207 | .0000 | -.0184 | -.3434 | .0000 | .3438 | 82 |
| 83 | .6866 | -.0587 | .0000 | .5950 | -.0604 | .0000 | .5961 | 83 |
| 84 | .0000 | .0823 | .0000 | .0009 | .0730 | .0000 | .0790 | 84 |
| 85 | -.6338 | -.0640 | .0000 | -.6120 | -.0731 | .0000 | .6462 | 85 |
| 86 | -.6910 | -.0819 | .0000 | -.7005 | -.1089 | .0000 | .7089 | 86 |
| 87 | -.6673 | -.3843 | .0000 | -.6971 | -.4167 | .0000 | .8131 | 87 |
| 88 | -.6612 | -.5708 | .0000 | -.6667 | -.6029 | .0000 | .8868 | 88 |
| 89 | .2751 | -.1378 | .0000 | .2720 | -.1400 | .0000 | .3060 | 89 |
| 90 | .0000 | .2035 | .0000 | .0000 | .2017 | .0000 | .2017 | 90 |
| 91 | -.6500 | -.0616 | .0000 | -.6500 | -.0615 | .0000 | .6551 | 91 |
| 92 | .6518 | -.3951 | .0000 | -.6518 | -.3951 | .0000 | .7622 | 92 |
| 93 | -.6456 | -.5754 | .0000 | -.6456 | -.5754 | .0000 | .8648 | 93 |
| 94 | -.1127 | -.3158 | .0000 | -.1127 | -.3158 | .0000 | .3353 | 94 |
| 95 | .0000 | .3075 | .0000 | .0000 | .3075 | .0000 | .3075 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | -.0438 |
| 2 | -.0041 |
| 3 | -.0121 |
| 4 | -.0222 |
| 5 | .0485 |
| 6 | .1749 |
| 7 | .1665 |
| 8 | .0083 |
| 9 | .0010 |
| TOTAL VALUES | |
| 1 | -.0875 |
| 2 | .1372 |
| 3 | .3275 |
| 4 | .5256 |
| 5 | .6584 |
| 6 | .6205 |
| 7 | .5064 |

8 .0320
9 . .0108

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 528 3 | 330 5 | 227 7 | 155 | 001 | 000 | 002 | 002 | - 001 | 002 | 1 |
| 2 | 523.9 | 333.0 | 225.5 | 161 | .001 | .007 | .010 | .010 | - 002 | .011 | 2 |
| 3 | 524.2 | 330.1 | 225.6 | .157 | .022 | -.019 | .052 | .035 | -.032 | .067 | 3 |
| 4 | .6 | 17.2 | .2 | .494 | 1.855 | -.739 | 2.444 | 2.340 | -1 224 | 3.564 | 4 |
| 5 | .6 | 17 1 | 2 | 494 | 952 | 114 | 5 139 | 4.624 | -3.558 | 8 182 | 5 |
| 6 | .7 | 17.9 | .2 | .494 | -.796 | 2.601 | 7.427 | 4.924 | -3.191 | 8.115 | 6 |
| 7 | .7 | 18 4 | .2 | .493 | -1.562 | 3.886 | 4.240 | 4.436 | -2.312 | 6 747 | 7 |
| 8 | .6 | 16.8 | 2 | .494 | -1..67 | 2.088 | - 751 | 2.131 | -1.199 | 3.330 | 8 |
| 9 | 457 3 | 338 6 | 186 8 | 224 | - 005 | 139 | 011 | 140 | - 005 | 145 | 9 |
| 10 | 471.5 | 362.2 | 190.6 | .237 | - 010 | .193 | .022 | .194 | - 010 | .204 | 10 |
| 11 | 475.5 | 370.9 | 191.4 | .242 | -.008 | .198 | -.073 | .205 | - 012 | .217 | 11 |
| 12 | 510.2 | 382.8 | 210.9 | .209 | .013 | .193 | - 044 | .106 | .008 | .099 | 12 |
| 13 | 438 7 | 257 3 | 194 7 | 122 | 001 | 002 | - 001 | .002 | 001 | 002 | 13 |
| 14 | 468.2 | 273.3 | 209.7 | 118 | .010 | - 006 | .019 | .014 | -.013 | 026 | 14 |
| 15 | 2.1 | 13.8 | .7 | .475 | 1.201 | -1.036 | 3.571 | 2.190 | -2.025 | 4.214 | 15 |
| 16 | 4.4 | 16.0 | 1.5 | .453 | 2.816 | -1.954 | 5.101 | 3.922 | -3.061 | 6.983 | 16 |
| 17 | 1 6 | 16 8 | 5 | 484 | 1 727 | - 199 | 6 713 | 4 256 | -2 728 | 6 983 | 17 |
| 18 | .6 | 17.1 | .2 | .494 | -1.092 | 2.914 | 6.061 | 4 540 | -2.716 | 7.256 | 18 |
| 19 | .6 | 17.1 | .2 | .494 | -2.265 | 4.112 | 7.474 | 5.836 | -3 989 | 9.825 | 19 |
| 20 | .7 | 18.2 | .2 | .494 | -2.441 | 5.204 | 5.108 | 5.978 | -3 215 | 9.193 | 20 |
| 21 | 6 | 17 2 | 2 | 494 | -1 479 | 3 423 | 2 898 | 3 769 | -1 825 | 5 594 | 21 |
| 22 | 420.1 | 341 5 | 167.4 | .258 | - 017 | .294 | .037 | .298 | - 016 | .313 | 22 |
| 23 | 402.0 | 307.5 | 163.3 | 231 | -.006 | .231 | -.093 | .240 | -.015 | .254 | 23 |
| 24 | 453.0 | 307.4 | 190.2 | 191 | .025 | .115 | - 052 | .122 | .018 | .103 | 24 |
| 25 | 408 6 | 229 5 | 186 9 | 093 | - 001 | 000 | 001 | 001 | - 001 | 002 | 25 |
| 26 | .0 | .1 | .0 | 495 | .733 | -.839 | 2.124 | 1.268 | -1.374 | 2.643 | 26 |
| 27 | 1.5 | 13.5 | 5 | 481 | 2.015 | -1 310 | 3.103 | 2.627 | -1.922 | 4 549 | 27 |
| 28 | 2.6 | 13.9 | .9 | 468 | 1 017 | -.626 | 007 | 1.017 | -.625 | 1 643 | 28 |
| 29 | 1 3 | 14 1 | 4 | 485 | 980 | 558 | 1 234 | 1 226 | - 010 | 1 238 | 29 |
| 30 | .5 | 15.0 | .2 | .494 | - 587 | 2.338 | -2 279 | 2.725 | -.966 | 3.713 | 30 |
| 31 | .6 | 15.6 | .2 | .494 | -1.142 | 3.248 | -3 773 | 3.947 | -1 841 | 5 788 | 31 |
| 32 | .6 | 15.6 | .2 | 494 | -1.831 | 3.879 | -4 114 | 4.543 | -2 495 | 7.038 | 32 |
| 33 | 7 | 17 8 | 2 | 494 | -2 157 | 5 845 | -1 503 | 5 916 | -2 227 | 8 142 | 33 |
| 34 | .7 | 17.3 | .2 | .494 | - 425 | 4.032 | 242 | 4.035 | -.432 | 4.468 | 34 |
| 35 | 279.5 | 246.0 | 109.2 | 280 | - 027 | .475 | - 078 | 477 | -.029 | .507 | 35 |
| 36 | 344.5 | 216.9 | 148.9 | .157 | 003 | .085 | -.013 | .085 | .003 | .083 | 36 |
| 37 | 1 | 4 0 | 0 | 495 | 139 | 254 | 16 798 | 8 596 | -8 203 | 16 798 | 37 |
| 38 | 1238.7 | 819.3 | 518.3 | .000 | - 831 | 2.067 | 20 126 | 10.786 | -9.550 | 20.336 | 38 |
| 39 | 408.2 | 449.5 | 152.7 | .330 | -1 548 | 3.930 | 10 272 | 7.012 | -4 830 | 11.641 | 39 |
| 40 | 250.5 | 428.8 | 88.8 | 395 | -1 258 | 4.748 | 1.970 | 4.905 | -1 414 | 6.319 | 40 |
| 41 | 116 0 | 412 2 | 40 7 | 451 | -1 101 | 5 200 | - 678 | 5 219 | -1 119 | 6 338 | 41 |
| 42 | 11.9 | 398.6 | 4 0 | 495 | -1.244 | 4.292 | -1 348 | 4.372 | -1.325 | 5.697 | 42 |
| 43 | 11.9 | 398.6 | 4.0 | 495 | -1.050 | 3.574 | -3 603 | 4.282 | -1 858 | 5.941 | 43 |
| 44 | 684.6 | 583.4 | 280 2 | .277 | 244 | 1.885 | -2 102 | 2.382 | - 273 | 2.655 | 44 |
| 45 | 1174 9 | 893 7 | 523.1 | 123 | - 037 | 083 | 031 | 085 | - 039 | 104 | 45 |
| 46 | 188.5 | 420.6 | 66.4 | .421 | -.036 | .043 | .167 | .109 | - 104 | 213 | 46 |
| 47 | 1 | 4.0 | .0 | .495 | - 110 | 049 | .463 | .215 | - 275 | .490 | 47 |
| 48 | 231.0 | 426.1 | 82.3 | .403 | - 126 | 154 | .186 | .182 | - 154 | 336 | 48 |
| 49 | 11 9 | 398 6 | 4 0 | 495 | - 323 | 295 | 331 | 338 | - 364 | 700 | 49 |
| 50 | 359.6 | 443.1 | 133.3 | .350 | - 369 | .374 | -.147 | 381 | - 376 | .758 | 50 |
| 51 | 617.7 | 535.8 | 242.5 | 274 | -.388 | 2.918 | 091 | 2.913 | - 389 | 3 288 | 51 |
| 52 | 748.0 | 587.5 | 290.9 | .282 | -.218 | 2.769 | - 281 | 2 777 | - 222 | 2.997 | 52 |
| 53 | 643 9 | 486 7 | 250 0 | 236 | - 079 | 077 | 052 | 082 | - 083 | 165 | 53 |
| 54 | 1 | 4.0 | .0 | .495 | .563 | -1.1'0 | 49 963 | 24.940 | -25 067 | 50.007 | 54 |
| 55 | 1 | 4 0 | .0 | .495 | .020 | 009 | 59.457 | 29.743 | -29 713 | 59 457 | 55 |
| 56 | 1 | 4 0 | .0 | .495 | - 059 | 3.249 | 60.614 | 31.947 | -28 757 | 60 704 | 56 |
| 57 | 1 | 4 0 | 0 | 495 | -3 801 | 2 606 | 30 113 | 14 917 | -15 912 | 30 829 | 57 |
| 58 | 808.3 | 834.6 | 325.2 | .244 | - 388 | 2.853 | 850 | 2.908 | - 424 | 3.332 | 58 |
| 59 | 1410 7 | 814 3 | 635.4 | .110 | - 280 | 2.734 | -.513 | 2.756 | - 302 | 3.058 | 59 |
| 60 | 435 0 | 453 6 | 165 0 | 318 | - 117 | .084 | 082 | .088 | - 121 | 220 | 60 |
| 61 | 1 | 4.0 | 0 | 496 | 3.204 | -.084 | - 577 | 3.230 | 066 | 3.316 | 61 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | 435.8 | 452.8 | 181.4 | .318 | .051 | -.022 | -.028 | .054 | -.025 | .078 | 62 |
| 63 | 289.7 | 428.7 | 93.3 | .391 | .075 | -.028 | .272 | .172 | -.121 | .283 | 63 |
| 64 | .1 | 4.0 | .0 | .495 | -1.826 | 8.168 | 44.807 | 28.202 | -19.662 | 45.884 | 64 |
| 65 | .1 | 4.0 | .0 | .495 | -6.032 | 21.934 | 44.578 | 34.283 | -18.381 | 52.624 | 65 |
| 66 | .1 | 4.0 | .0 | .495 | -3.919 | 16.385 | -33.019 | 25.599 | -13.153 | 38.752 | 66 |
| 67 | .1 | 4.0 | .0 | .495 | 3.652 | -1.370 | -31.194 | 13.941 | -14.658 | 31.599 | 67 |
| 68 | .1 | 4.0 | .0 | .495 | .001 | .438 | 4.464 | 2.381 | -2.223 | 4.684 | 68 |
| 69 | .1 | 4.0 | .0 | .495 | .748 | -1.945 | 7.642 | 3.453 | -4.650 | 8.103 | 69 |
| 70 | .1 | 4.0 | .0 | .495 | 2.053 | 4.686 | -5.017 | 6.201 | .536 | 5.066 | 70 |
| 71 | .1 | 4.0 | .0 | .495 | -6.036 | 22.652 | 21.902 | 26.354 | -9.738 | 36.093 | 71 |
| 72 | .1 | 4.0 | .0 | .495 | -9.634 | 19.861 | 44.659 | 31.972 | -21.728 | 53.666 | 72 |
| 73 | .1 | 4.0 | .0 | .495 | 5.424 | -1.974 | 13.184 | 9.284 | -5.434 | 15.118 | 73 |
| 74 | .1 | 4.0 | .0 | .495 | 1.429 | -.035 | -3.397 | 2.347 | -1.153 | 3.699 | 74 |
| 75 | 1032.5 | 586.2 | 472.4 | .097 | -.012 | .024 | .092 | .055 | [illegible] | .088 | 75 |
| 76 | 380.7 | 443.2 | 133.7 | .349 | -.201 | .369 | -.323 | .319 | -.251 | .571 | 76 |
| 77 | .1 | 4.0 | .0 | .495 | -9.170 | 9.129 | 14.182 | 11.555 | -11.598 | 23.152 | 77 |
| 78 | .1 | 4.0 | .0 | .495 | 1.002 | 3.702 | 13.261 | 9.118 | [illegible] | 13.533 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .245 | .483 | .005 | .483 | .245 | .119 | 1.280 | 1.970 | .079 | 1 |
| 2 | .253 | .520 | .022 | .522 | .252 | .135 | 4.669 | 2.075 | .069 | 2 |
| 3 | .348 | .680 | .124 | .684 | .243 | .128 | 40.166 | 2.031 | .083 | 3 |
| 4 | .366 | .535 | .005 | .535 | .366 | .085 | 1.889 | 1.464 | 1.698 | 4 |
| 5 | .353 | .529 | .017 | .531 | .352 | .090 | 5.371 | 1.510 | 1.783 | 5 |
| 6 | .461 | .654 | .016 | .655 | .459 | .098 | 4.724 | 1.427 | 1.961 | 6 |
| 7 | .527 | .730 | .010 | .730 | .527 | .102 | 2.706 | 1.386 | 2.038 | 7 |
| 8 | .322 | .515 | -.001 | .515 | .322 | .097 | -.422 | 1.601 | 1.932 | 8 |
| 9 | .324 | 1.069 | .015 | 1.070 | .324 | .373 | 1.179 | 3.301 | .225 | 9 |
| 10 | .400 | 1.381 | .042 | 1.383 | .398 | .492 | 2.441 | 3.471 | .275 | 10 |
| 11 | .438 | 1.426 | -.142 | 1.446 | .418 | .514 | -7.982 | 3.461 | .282 | 11 |
| 12 | .374 | .919 | -.092 | .934 | .359 | .288 | -9.283 | 2.601 | .187 | 12 |
| 13 | .140 | .280 | -.002 | .280 | .140 | .070 | -.814 | 2.000 | .053 | 13 |
| 14 | .175 | .235 | .038 | .253 | .158 | .048 | 25.951 | 1.620 | .038 | 14 |
| 15 | .122 | .182 | .015 | .186 | .119 | .038 | 11.827 | 1.646 | .768 | 15 |
| 16 | .280 | .282 | .033 | .294 | .228 | .033 | 44.249 | 1.287 | .855 | 16 |
| 17 | .329 | .402 | .019 | .407 | .325 | .041 | 13.702 | 1.252 | .820 | 17 |
| 18 | .362 | .467 | .012 | .468 | .361 | .054 | 6.591 | 1.297 | 1.073 | 18 |
| 19 | .362 | .476 | .015 | .478 | .360 | .059 | 7.486 | 1.328 | 1.183 | 19 |
| 20 | .521 | .644 | .012 | .645 | .520 | .062 | 5.483 | 1.240 | 1.247 | 20 |
| 21 | .381 | .481 | .006 | .482 | .381 | .056 | 2.898 | 1.282 | 1.111 | 21 |
| 22 | .384 | 1.575 | .061 | 1.578 | .381 | .598 | 2.925 | 4.143 | .341 | 22 |
| 23 | .314 | 1.208 | -.154 | 1.231 | .288 | .472 | -9.542 | 4.277 | .297 | 23 |
| 24 | .300 | .683 | -.099 | .707 | .276 | .216 | -13.734 | 2.564 | .137 | 24 |
| 25 | .042 | .091 | .003 | .091 | .042 | .025 | 2.946 | 2.186 | .022 | 25 |
| 26 | .001 | -.006 | .003 | .003 | -.007 | .005 | 69.306 | -.378 | -1.000 | 26 |
| 27 | .082 | .011 | .009 | .083 | .010 | .041 | 83.660 | 9.119 | .829 | 27 |
| 28 | .100 | .025 | .005 | .100 | .025 | .038 | 86.553 | 4.042 | .782 | 28 |
| 29 | .133 | .214 | .007 | .214 | .132 | .041 | 4.781 | 1.622 | .822 | 29 |
| 30 | .196 | .299 | -.007 | .299 | .195 | .052 | -3.835 | 1.533 | 1.040 | 30 |
| 31 | .253 | .359 | -.010 | .359 | .252 | .053 | -5.233 | 1.420 | 1.061 | 31 |
| 32 | .241 | .348 | -.016 | .351 | .239 | .056 | -8.472 | 1.469 | 1.120 | 32 |
| 33 | .523 | .640 | -.002 | .641 | .523 | .059 | -1.184 | 1.226 | 1.180 | 33 |
| 34 | .517 | .615 | .006 | .615 | .517 | .049 | 2.278 | 1.190 | .984 | 34 |
| 35 | .422 | 1.681 | -.074 | 1.685 | .417 | .634 | -3.334 | 4.039 | .348 | 35 |
| 36 | .055 | .337 | -.017 | .338 | .055 | .142 | -3.387 | 6.198 | .121 | 36 |
| 37 | .078 | .071 | -.085 | .139 | .010 | .065 | -46.546 | 14.525 | 5.028 | 37 |
| 38 | .089 | .124 | -.008 | .125 | .087 | .019 | -12.811 | 1.441 | .164 | 38 |
| 39 | .017 | .253 | .031 | .257 | .013 | .122 | 7.365 | 19.787 | 5.587 | 39 |
| 40 | -.024 | .310 | .105 | .341 | -.054 | .197 | 16.083 | -6.337 | -1.000 | 40 |
| 41 | -.111 | .465 | -.014 | .465 | -.111 | .288 | -1.386 | -4.177 | -1.000 | 41 |
| 42 | -.011 | .414 | -.068 | .424 | -.022 | .223 | -8.893 | -19.588 | -1.000 | 42 |
| 43 | .227 | .602 | -.132 | .631 | .198 | .318 | -12.355 | 4.186 | 1.168 | 43 |
| 44 | .285 | 1.403 | -.055 | 1.406 | .283 | .572 | -2.783 | 5.353 | 1.818 | 44 |
| 45 | -.157 | .361 | .126 | .390 | -.186 | .288 | 13.016 | -2.092 | -1.000 | 45 |
| 46 | .029 | .061 | .021 | .071 | .019 | .026 | 28.267 | 3.828 | 1.051 | 46 |
| 47 | .057 | .123 | .114 | .209 | -.029 | .119 | 38.953 | -7.263 | -1.000 | 47 |
| 48 | -.090 | .418 | .133 | .451 | -.123 | .287 | 13.848 | -3.682 | -1.000 | 48 |
| 49 | -.167 | .043 | -.109 | .089 | -.213 | .151 | -22.946 | -.419 | -1.000 | 49 |
| 50 | -.377 | .480 | .161 | .510 | -.408 | .458 | 10.289 | -1.256 | -1.000 | 50 |
| 51 | -.476 | .894 | -.847 | 1.152 | -.733 | .942 | -21.884 | -1.571 | -1.000 | 51 |
| 52 | -.270 | .955 | .225 | .995 | -.310 | .652 | 10.073 | -3.214 | -1.000 | 52 |
| 53 | -.332 | .344 | .120 | .364 | -.352 | .356 | 9.756 | -1.035 | -1.000 | 53 |
| 54 | .035 | .055 | .114 | .160 | -.070 | .115 | 42.404 | -2.289 | -1.000 | 54 |
| 55 | .080 | .205 | .129 | .286 | -.001 | .143 | 31.846 | -482.010 | -1.000 | 55 |
| 56 | .175 | .344 | .027 | .348 | .171 | .089 | 8.711 | 2.037 | .388 | 56 |
| 57 | -.009 | .154 | -.082 | .186 | -.043 | .115 | -22.481 | -4.343 | -1.000 | 57 |
| 58 | -.871 | 1.004 | -.302 | 1.061 | -.916 | .985 | -8.936 | -1.145 | -1.000 | 58 |
| 59 | -1.589 | .823 | .172 | .838 | -1.601 | 1.218 | 4.066 | -.522 | -1.000 | 59 |
| 60 | -.419 | .242 | .108 | .259 | -.436 | .348 | 9.053 | -.594 | -1.000 | 60 |
| 61 | .126 | .121 | .011 | .136 | .112 | .011 | 51.306 | 1.206 | .076 | 61 |
| 62 | .305 | .046 | .002 | .305 | .046 | .129 | 89.611 | 6.587 | 2.069 | 62 |
| 63 | .483 | .073 | .317 | .655 | -.100 | .377 | 61.473 | -6.581 | -1.000 | 63 |
| 64 | .381 | .450 | -.089 | .505 | .306 | .100 | -31.766 | 1.652 | .242 | 64 |
| 65 | .701 | .775 | .013 | .777 | .699 | .039 | 9.448 | 1.111 | .041 | 65 |
| 66 | .505 | .538 | -.013 | .543 | .500 | .021 | -19.216 | 1.085 | .031 | 66 |
| 67 | .200 | .308 | -.008 | .309 | .199 | .055 | -4.078 | 1.551 | .205 | 67 |
| 68 | .040 | .038 | -.002 | .041 | .036 | .003 | -54.609 | 1.140 | .052 | 68 |
| 69 | .025 | .024 | .054 | .078 | -.029 | .054 | 45.066 | -2.669 | -1.000 | 69 |
| 70 | .321 | .385 | -.020 | .391 | .315 | .038 | -16.302 | 1.242 | .090 | 70 |
| 71 | .686 | .708 | .009 | .710 | .686 | .022 | 11.825 | 1.085 | .024 | 71 |
| 72 | .414 | .454 | .018 | .461 | .407 | .027 | 20.713 | 1.133 | .049 | 72 |
| 73 | .218 | .253 | .006 | .254 | .217 | .018 | 9.150 | 1.169 | .063 | 73 |
| 74 | .085 | .072 | .001 | .072 | .085 | .004 | 5.461 | 1.118 | .043 | 74 |
| 75 | -.085 | .271 | .432 | .580 | -.375 | .488 | 33.811 | -1.493 | -1.000 | 75 |
| 76 | -.311 | .964 | -.432 | 1.097 | -.443 | .770 | -17.088 | -2.474 | -1.000 | 76 |
| 77 | .008 | .040 | .006 | .041 | .007 | .017 | 9.847 | 5.733 | 1.760 | 77 |
| 78 | .203 | .223 | .005 | .224 | .202 | .011 | 14.450 | 1.108 | .040 | 78 |

```
SSTIPN: 1 LAYER OF GEOTEXTILE, P=2000 PPI, T=1000

TOTAL NUMBER OF NODES------------------ 95
NUMBER OF BAR ELEMENTS-----------------  9
NUMBER OF DIFF  BAR MATERIALS----------  1
NUMBER OF BEAM ELEMENTS----------------  0
NUMBER OF DIFF. BEAM MATERIALS---------  0
NUMBER OF NODAL LINKS -----------------  0
NUMBER OF INTERFACE ELEMENTS-----------  0
NO. OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE. IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS----------  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF  SOIL MATERIALS---------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 36
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS---------  0
NUMBER OF PREEXISTING NODES------------  0
NUMBER OF CONSTRUCTION LAYERS----------  6
NUMBER OF LOAD CASES-------------------  2

CALING FACTOR ---------       1 00000

ATMOSPHERIC PRESSURE ---      1.05800

UNIT WEIGHT OF WATER ---        03120


OMPUTATION SEQUENCE FOR A TOTAL OF    8  INCREMENTS
-------------------------------------------------

 INCREMENT NO.   1      APPLY LOAD CASE   1

 INCREMENT NO    2      PUT ON LAYER NO   1

 INCREMENT NO    3      PUT ON LAYER NO.  2

 INCREME<T NO    4      PUT ON LAYER NO   3

 INCREMENT NO    5      PUT ON LAYER NO   4

 INCREMENT NO    6      PUT ON LAYER NO   5

 INCREMENT NO.   7      PUT ON LAYER NO   6

 INCREMENT NO    A      APPLY LOAD CASE   2
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B.C CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | .000 | .000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 36.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58.000 | .000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | .000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30.000 | 4.000 | 0 | 0 | 0 |
| 18 | 36.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54.000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82.000 | 4.000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 36.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.000 | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10.000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.000 | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 36.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10.000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 36.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11.500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74.000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.000 | 14.000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | 15.000 | 0 | 0 | 0 |
| 83 | 82.000 | 15.000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17.000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17.000 | 1 | 0 | 1 |

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 80. | 1.00 | 0. |

| ELMT NO. | CONNECTED NODES I | J | MATL NO. |
|---|---|---|---|
| 1 | 43 | 44 | 1 |
| 2 | 44 | 45 | 1 |
| 3 | 45 | 46 | 1 |
| 4 | 46 | 47 | 1 |
| 5 | 47 | 48 | 1 |
| 6 | 48 | 49 | 1 |
| 7 | 49 | 50 | 1 |
| 8 | 50 | 51 | 1 |
| 9 | 51 | 52 | 1 |

SOIL MATEPIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | EXPONENT | RATIO | BULK MODULUS CONSTANT | EXPONENT | STRENGTH PARAMETERS C | PHI | DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .0680 | 6000.00 | .500 | .500 | 1500.00 | .600 | .00 | 35.00 | .00 | .50 |
| 2 | 053C | 40 00 | 300 | 900 | 20 00 | 200 | 05 | 00 | 00 | 50 |
| 3 | .0600 | 1000 00 | .400 | .700 | 500.00 | .500 | .50 | 40.00 | .00 | .50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO | CONNECTED NODES I | J | K | L | MATL NO | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5.000 | 2.000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15 000 | 2.000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25 000 | 2 000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33.000 | 2.000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39.000 | 2.000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46.000 | 2 000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52 000 | 2 000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 58.000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62.000 | 2.000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | [illegible].000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78 00 | 2 000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86.000 | 2.000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5.000 | 5.500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15.000 | 5.500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25 000 | 5 500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33.000 | 5.500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5.500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5.500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 56.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5.500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5.500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78.000 | 5.500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86.000 | 5.500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5 000 | 8 500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15.000 | 8 500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25.000 | 8.500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33.000 | 8.500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39.000 | 8 500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46.000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52.000 | 8.500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 56.000 | 8.500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62 000 | 8 500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70.000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78.000 | 8.500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86.000 | 8.500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34.500 | 10 750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39.000 | 10.750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46.000 | 10.750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52.000 | 10.750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 58 000 | 10 750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62.000 | 10.750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70.000 | 10.750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78.000 | 10.750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86 000 | 10 750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40 500 | 12.250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46 000 | 12.250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52 000 | 12 250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 58 000 | 12 250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62.000 | 12.250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70.000 | 12.250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78.000 | 12 250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86.000 | 12 250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47.000 | 13.500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52.000 | 13 500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 58.000 | 13 500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62 000 | 13 500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70.000 | 13.500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78 000 | 13 500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86.000 | 13.500 |
| 61 | 70 | 71 | 78 | 77 | 1 | 49 000 | 14 500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52 000 | 14 500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 56.000 | 14 500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62.000 | 14 500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70 000 | 14 500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78.000 | 14 500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 86.000 | 14 500 |
| 68 | 78 | 79 | 85 | 84 | 1 | 53.000 | 15 500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 58 000 | 15.500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62.000 | 15 500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70 000 | 15 500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78.000 | 15.500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86 000 | 15 500 |
| 74 | 85 | 86 | 91 | 90 | 1 | 57 000 | 16 500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62 000 | 16 500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70 000 | 16 500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78.000 | 16 500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86.000 | 16 500 |

CONSTRUCTION LAYER INFORMATION

SSTIPN- 1 LAYER OF GEOTEXTILE, P=2000 PPI, T=1000

```
****************************************************
****************************************************
*                                                  *
*  LOAD CASE -----------------------------   2     *
*                                                  *
****************************************************
****************************************************
```

LARGEST ELE NO IN THIS INCREMENT 78

LARGEST N P NO IN THIS INCREMENT 95

BAND WIDTH---------------------- 40

TOTAL NUMBER OF EQUATIONS--------- 222

NUMBER OF EQUATIONS IN BLOCK------ 84

NUMBER OF BLOCKS----------------- 3

NUMBER OF N.P. FORCE CARDS------- 3

NUMBER OF PRESSURE CARDS---------- 0

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0. | 0. |
| 2 | 0 | 0 |
| 3 | 0. | 0 |
| 4 | 0. | 0. |
| 5 | 0. | 0 |
| 6 | 0 | 0 |
| 7 | 0 | 0 |
| 8 | 0 | 0. |
| 9 | 0. | 0. |
| 10 | 0 | 0 |
| 11 | 0. | 0. |
| 12 | 0. | 0. |
| 13 | 0. | 0. |
| 14 | 0 | 0 |
| 15 | 0. | 0. |
| 16 | 0. | 0. |
| 17 | 0. | 0. |
| 18 | 0 | 0 |
| 19 | 0. | 0. |
| 20 | 0. | 0. |
| 21 | 0. | 0. |
| 22 | 0. | 0 |
| 23 | 0 | 0. |
| 24 | 0. | 0. |
| 25 | 0. | 0. |
| 26 | 0 | 0 |
| 27 | 0. | 0. |
| 28 | 0. | 0. |
| 29 | 0 | 0 |
| 30 | 0 | 0 |
| 31 | 0. | 0. |
| 32 | 0. | 0 |
| 33 | 0. | 0 |
| 34 | 0 | 0 |
| 35 | 0. | 0 |
| 36 | 0. | 0. |
| 37 | 0. | 0 |
| 38 | 0 | 0 |
| 39 | 0 | 0. |
| 40 | 0 | 0. |
| 41 | 0. | 0. |
| 42 | 0 | 0. |
| 43 | 0. | 0. |
| 44 | 0 | 0. |
| 45 | 0 | 0 |
| 46 | 0 | 0 |
| 47 | 0. | 0. |
| 48 | 0. | 0. |
| 49 | 0. | 0. |
| 50 | 0 | 0. |
| 51 | 0. | 0. |
| 52 | 0. | 0. |
| 53 | 0. | 0. |
| 54 | 0 | 0 |
| 55 | 0. | 0. |
| 56 | 0 | 0. |
| 57 | 0 | 0. |
| 58 | 0 | 0. |
| 59 | 0. | 0. |
| 60 | 0 | 0. |
| 61 | 0 | 0 |
| 62 | 0. | 0 |
| 63 | 0. | 0. |
| 64 | 0. | 0. |
| 65 | 0. | 0 |
| 66 | 0. | 0. |
| 67 | 0. | 0. |
| 68 | 0 | 0. |
| 69 | 0. | 0. |
| 70 | 0 | 0 |
| 71 | 0. | 0 |
| 72 | 0 | 0 |
| 73 | 0. | 0. |
| 74 | 0. | 0. |
| 75 | 0. | 0. |
| 76 | 0 | 0 |
| 77 | 0. | 0 |
| 78 | 0 | 0 |
| 79 | 0 | 0. |
| 80 | 0 | 0 |
| 81 | 0 | 0. |
| 82 | 0. | 0 |
| 83 | 0 | 0 |
| 84 | 0 | 0 |
| 85 | 0. | 0 |
| 86 | 0. | 0. |
| 87 | 0. | 0. |
| 88 | 0 | 0 |
| 89 | 0 | 0. |
| 90 | 0 | 0. |
| 91 | 0. | 0. |
| 92 | 0 | -4.50 |
| 93 | 0 | -4.50 |
| 94 | 0 | -2.00 |
| 95 | 0. | 0 |

LOAD CASE : 2 ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 1 |
| 2 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 2 |
| 3 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 3 |
| 4 | 0000 | .0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 4 |
| 5 | .0000 | 0000 | .0000 | 0000 | .0000 | 0000 | .0000 | 5 |
| 6 | .0000 | .0000 | .0000 | 0000 | .0000 | .0000 | .0000 | 6 |
| 7 | .0000 | .0000 | .0000 | 0000 | .0000 | .0000 | .0000 | 7 |
| 8 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 8 |
| 9 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 9 |
| 10 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 10 |
| 11 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 11 |
| 12 | 0000 | .0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 12 |
| 13 | .0000 | .0000 | 0000 | .0000 | .0000 | .0000 | .0000 | 13 |
| 14 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 14 |
| 15 | .0000 | .0000 | .0000 | -.0003 | -.0001 | .0000 | .0003 | 15 |
| 16 | 0000 | - 0001 | 0000 | - 0007 | - 0007 | 0000 | 0010 | 16 |
| 17 | -.0005 | .0001 | .0000 | -.0056 | .0027 | .0000 | .0062 | 17 |
| 18 | -.0128 | .0010 | .0000 | -.2357 | .0501 | .0000 | .2409 | 18 |
| 19 | -.0146 | -.0034 | .0000 | -.3349 | -.0724 | 0000 | .3426 | 19 |
| 20 | - 0080 | - 0042 | 0000 | - 1882 | - 1389 | 0000 | 2335 | 20 |
| 21 | -.0051 | .0001 | .0000 | -.0721 | -.1415 | 0000 | .1566 | 21 |
| 22 | .0002 | .0010 | .0000 | .0002 | -.0040 | .0000 | .0040 | 22 |
| 23 | -.0013 | -.0029 | .0000 | -.0009 | -.0081 | .0000 | .0082 | 23 |
| 24 | 0009 | - 0057 | 0000 | 0009 | - 0107 | 0000 | 0107 | 24 |
| 25 | .0021 | -.0020 | .0000 | .0021 | -.0065 | .0000 | .0068 | 25 |
| 26 | .0000 | .0006 | .0000 | .0000 | -.0018 | .0000 | 0018 | 26 |
| 27 | .0000 | .0000 | .0000 | .0000 | .0002 | 0000 | .0002 | 27 |
| 28 | .0000 | 0000 | 0000 | 0000 | - 0004 | 0000 | 0004 | 28 |
| 29 | -.0001 | .0000 | .0000 | -.0026 | .0002 | .0000 | .0026 | 29 |
| 30 | - 0293 | .0088 | .0000 | -.3311 | .0874 | .0000 | .3424 | 30 |
| 31 | -.0478 | .0034 | .0000 | -.4596 | 0905 | .0000 | .4684 | 31 |
| 32 | - 0519 | - 0084 | 0000 | - 4889 | - 1380 | 0000 | 5056 | 32 |
| 33 | -.0470 | -.0082 | .0000 | -.3719 | -.2780 | .0000 | .4649 | 33 |
| 34 | -.0587 | .0125 | .0000 | -.3029 | -.2441 | .0000 | .3890 | 34 |
| 35 | -.0793 | -.0103 | .0000 | -.2251 | -.1685 | .0000 | .2312 | 35 |
| 36 | -.0030 | - 0074 | 0000 | - 0017 | - 0185 | 0000 | 0186 | 36 |
| 37 | .0018 | -.0110 | .0000 | 0014 | -.0194 | 0000 | .0194 | 37 |
| 38 | .0025 | - 0037 | .0000 | .0013 | -.0109 | .0000 | .0110 | 38 |
| 39 | .0000 | 0020 | .0000 | .0000 | -.0027 | .0000 | .0027 | 39 |
| 40 | 0000 | 0000 | 0000 | 0000 | 0002 | 0000 | 0002 | 40 |
| 41 | .0000 | .0000 | .0000 | .0002 | -.0004 | .0000 | .0004 | 41 |
| 42 | -.0227 | .0082 | .0000 | -.1811 | .0812 | 0000 | 1804 | 42 |
| 43 | -.0525 | .0141 | .0000 | -.4323 | 1513 | .0000 | .4580 | 43 |
| 44 | - 0534 | .0033 | .0000 | - 4261 | 0728 | 0000 | 4323 | 44 |
| 45 | -.0538 | -.0083 | .0000 | -.3951 | -.1982 | .0000 | 4447 | 45 |
| 46 | -.0517 | -.0112 | .0000 | -.3373 | - 3893 | .0000 | 5151 | 46 |
| 47 | - 0483 | .0183 | .0000 | -.2861 | -.3407 | 0000 | 4449 | 47 |
| 48 | - 0509 | 0124 | 0000 | - 2398 | - 2660 | 0000 | 3582 | 48 |
| 49 | -.0347 | -.1148 | .0000 | -.1188 | -.2824 | .0000 | .2880 | 49 |
| 50 | -.0005 | -.0266 | .0000 | -.0260 | -.0462 | .0000 | .0530 | 50 |
| 51 | -.0001 | -.0030 | .0000 | - 0133 | -.0159 | .0000 | .0207 | 51 |
| 52 | 0000 | 0028 | 0000 | 0000 | - 0782 | 0000 | 0752 | 52 |
| 53 | -.0503 | 0035 | .0000 | - 5581 | .1316 | .0000 | .6036 | 53 |
| 54 | -.0514 | -.0081 | .0000 | -.5048 | -.1585 | 0000 | .5294 | 54 |
| 55 | -.0551 | -.0115 | .0000 | -.3058 | -.3830 | .0000 | .4748 | 55 |
| 56 | - 0543 | 0187 | 0000 | - 2575 | - 3535 | 0000 | 4374 | 56 |
| 57 | - 0336 | .0106 | .0000 | -.1752 | -.2907 | .0000 | .3394 | 57 |
| 58 | -.0088 | -.1185 | .0000 | - 0586 | -.2984 | .0000 | .3041 | 58 |
| 59 | -.0045 | -.0304 | .0000 | .0458 | -.0973 | .0000 | .1076 | 59 |
| 60 | -.0029 | -.0028 | .0000 | .0104 | -.0124 | .0000 | .0162 | 60 |
| 61 | .0000 | .0028 | .0000 | .0000 | - 0737 | 0000 | .0737 | 61 |
| 62 | -.0484 | -.0088 | .0000 | -.1288 | -.0241 | 0000 | 1291 | 62 |
| 63 | -.0781 | -.0119 | 0000 | - 1534 | - 1670 | 0000 | .2268 | 63 |
| 64 | -.0847 | .0184 | .0000 | -.1594 | - 1782 | .0000 | 2376 | 64 |
| 65 | -.1063 | .0272 | .0000 | -.1792 | -.1782 | .0000 | .2507 | 65 |
| 66 | - 0226 | - 1219 | 0000 | - 0729 | - 2238 | 0000 | 2354 | 66 |
| 67 | -.0146 | -.0326 | .0000 | -.0785 | - 1200 | .0000 | 1434 | 67 |
| 68 | -.0060 | -.0030 | .0000 | -.0153 | -.0363 | 0000 | .0394 | 68 |
| 69 | .0000 | .0027 | .0000 | .0000 | -.0292 | .0000 | .0292 | 69 |
| 70 | - 1053 | - 0087 | 0000 | - 1625 | - 0581 | 0000 | 1726 | 70 |
| 71 | -.1187 | - 0113 | .0000 | -.1777 | -.1180 | .0000 | .2133 | 71 |
| 72 | -.1242 | .0211 | .0000 | -.1841 | -.1182 | .0000 | .2188 | 72 |
| 73 | -.1357 | .0319 | .0000 | -.1988 | -.1195 | 0000 | .2300 | 73 |
| 74 | - 0363 | - 1231 | 0000 | - 0879 | - 2039 | 0000 | 2220 | 74 |
| 75 | -.0218 | -.0333 | .0000 | - 0449 | -.1386 | 0000 | 1457 | 75 |
| 76 | -.0080 | -.0034 | .0000 | - 0098 | -.0089 | .0000 | .0132 | 76 |
| 77 | .0000 | 0023 | .0000 | .0000 | -.0028 | .0000 | 0028 | 77 |
| 78 | - 1288 | - 0108 | 0000 | - 1608 | - 0737 | 0000 | 1769 | 78 |
| 79 | -.1307 | .0218 | .0000 | - 1637 | -.0626 | .0000 | .1753 | 79 |
| 80 | -.1401 | .0383 | .0000 | - 1749 | -.0588 | .0000 | .1848 | 80 |
| 81 | -.6142 | -.3121 | .0000 | - 6517 | -.3866 | 0000 | .7477 | 81 |
| 82 | 5587 | - 2828 | 0000 | 5215 | - 3512 | 0000 | 6288 | 82 |
| 83 | 1.0717 | - 0438 | .0000 | 1.0702 | -.0477 | 0000 | 1 0712 | 83 |
| 84 | 0000 | 1178 | .0000 | .0000 | .1143 | 0000 | 1143 | 84 |
| 85 | -.1410 | .0222 | .0000 | -.1529 | 0004 | .0000 | .1529 | 85 |
| 86 | - 7023 | .1848 | 0000 | - 7154 | 1574 | 0000 | 7325 | 86 |
| 87 | -.7041 | -.5883 | .0000 | -.7175 | -.5957 | .0000 | .9326 | 87 |
| 88 | .5744 | -.5799 | 0000 | 5303 | -.6325 | 0000 | .8254 | 88 |
| 89 | 1.4861 | -.0867 | 0000 | 1.4773 | -.0878 | .0000 | 1 4799 | 89 |
| 90 | 0000 | 3636 | 0000 | 0000 | 3451 | 0000 | 3451 | 90 |
| 91 | -.6081 | .1872 | .0000 | - 6081 | .1872 | .0000 | .6362 | 91 |
| 92 | -.6093 | -.5730 | 0000 | -.6093 | -.5730 | .0000 | .8364 | 92 |
| 93 | .3907 | -.9831 | 0000 | 3907 | -.9831 | .0000 | 1 0578 | 93 |
| 94 | 1 5448 | - 0867 | 0000 | 1 5446 | -.0887 | 0000 | 1 5470 | 94 |
| 95 | .0000 | .6519 | .0000 | 0000 | .6519 | .0000 | .6518 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO. | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | - 0091 |
| 2 | - 0038 |
| 3 | 0158 |
| 4 | 0807 |
| 5 | - 0683 |
| 6 | 1216 |
| 7 | 2561 |
| 8 | 0036 |
| 9 | 0005 |
| TOTAL VALUES | |
| 1 | 0818 |
| 2 | 2700 |
| 3 | 4638 |
| 4 | 7687 |
| 5 | 6953 |
| 1 | 9071 |
| 7 | 6961 |

8 .0958
9 .0995

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 528 7 | 332 8 | 229 1 | 158 | 001 | 001 | 004 | 003 | - 001 | 004 | 1 |
| 2 | 524.6 | 335.2 | 225 4 | 164 | 002 | 010 | .015 | .014 | -.003 | 017 | 2 |
| 3 | 498.3 | 314.8 | 215 1 | .158 | .025 | - 025 | .082 | .040 | -.039 | .079 | 3 |
| 4 | 7 | 17.3 | 2 | .494 | 1.917 | - 659 | 2 621 | 2.467 | -1.209 | 3.676 | 4 |
| 5 | 6 | 17 0 | 2 | 494 | 827 | 279 | 8 153 | 4 639 | -3 532 | 8 171 | 5 |
| 6 | 7 | 17.9 | .2 | .494 | - 511 | 2.616 | 6.864 | 4 751 | -3.046 | 7 797 | 6 |
| 7 | .7 | 18.4 | .2 | 493 | -1.463 | 3 480 | 3 324 | 3.987 | -1.970 | 5.958 | 7 |
| 8 | .6 | 18.8 | 2 | 494 | -.903 | 1 818 | -.819 | 1.879 | -.964 | 2.842 | 8 |
| 9 | 482 7 | 342 5 | 189 0 | 224 | 008 | 128 | 022 | 127 | 005 | 122 | 9 |
| 10 | 477.0 | 367.9 | 192.6 | .238 | -.011 | .210 | .028 | .211 | -.012 | .223 | 10 |
| 11 | 474 7 | 371.4 | 191.0 | .243 | -.007 | .202 | -.070 | .208 | - 013 | .220 | 11 |
| 12 | 500.8 | 352.9 | 207.8 | .208 | .013 | .091 | - 048 | .098 | 008 | 092 | 12 |
| 13 | 442 5 | 281 0 | 197 2 | 122 | 002 | .003 | - 001 | 003 | 001 | 001 | 13 |
| 14 | 460.9 | 271.2 | 208.6 | .121 | .018 | - 010 | .029 | 021 | - 017 | 038 | 14 |
| 15 | 2.2 | 14 0 | .7 | .473 | 1.867 | -1 427 | 5.004 | 3 062 | -2.822 | 5.884 | 15 |
| 16 | 2.8 | 15 7 | .9 | .470 | 2.988 | -2 085 | 8.739 | 5.502 | -4.599 | 10 102 | 16 |
| 17 | 9 | 16 5 | 3 | 491 | 1 055 | 387 | 9 174 | 5 320 | -3 878 | 9 198 | 17 |
| 18 | .8 | 17 1 | .2 | 494 | -1 630 | 3 428 | 6.876 | 5.167 | -3.369 | 8 536 | 18 |
| 19 | .6 | 17.0 | .2 | 494 | -2.328 | 4.078 | 6.513 | 5.443 | -3.691 | 9 134 | 19 |
| 20 | .7 | 18.2 | .2 | 494 | -1.675 | 4.453 | 4.937 | 5.302 | -2.724 | 8.026 | 20 |
| 21 | 6 | 17 1 | 2 | 494 | -1 390 | 2 816 | 2.832 | 3 340 | -1 814 | 5 154 | 21 |
| 22 | 432.6 | 361 7 | 172.6 | .255 | -.030 | 318 | 082 | 320 | -.032 | 352 | 22 |
| 23 | 408 9 | 309.8 | 165.9 | 232 | -.006 | 239 | - 081 | 241 | - 013 | 255 | 23 |
| 24 | 412.5 | 278.1 | 173 7 | .188 | .021 | 104 | -.082 | 114 | 011 | 103 | 24 |
| 25 | 408 9 | 229 7 | 187 1 | 093 | - 001 | 000 | 002 | 001 | - 001 | 002 | 25 |
| 26 | .0 | 1 | 0 | 495 | .615 | -1 349 | 2.227 | 1.290 | -1.819 | 3 109 | 26 |
| 27 | 4 | 13.4 | 1 | .494 | 2.998 | -2 415 | 3.541 | 3.528 | -2.943 | 6 469 | 27 |
| 28 | 2.3 | 13.6 | .8 | 471 | 1 019 | - 771 | 1 757 | 1.378 | -1 131 | 2 509 | 28 |
| 29 | 12 9 | 16.0 | 4 8 | 350 | 003 | 1 297 | 2.107 | 1 886 | - 586 | 2 472 | 29 |
| 30 | .5 | 18.0 | 2 | 494 | -1.106 | 2 642 | .068 | 2.642 | -1.106 | 3.648 | 30 |
| 31 | 6 | 15.7 | 2 | .494 | -1 501 | 3 450 | -1.900 | 3.626 | -1 677 | 5 303 | 31 |
| 32 | 6 | 15.5 | 2 | 494 | -1 551 | 3 236 | -1.913 | 3 420 | -1 735 | 5 155 | 32 |
| 33 | 7 | 17 8 | 2 | 494 | -2 153 | 5 723 | 1 224 | 5 770 | -2 200 | 7 970 | 33 |
| 34 | 7 | 17 3 | 2 | .494 | - 583 | 4.545 | 1.077 | 4.601 | -.655 | 5.256 | 34 |
| 35 | 310 4 | 275 9 | 121 2 | 280 | -.079 | 531 | .457 | 607 | - 155 | 762 | 35 |
| 36 | 360.6 | 220 0 | 158 1 | 141 | - 075 | 1 343 | 581 | 1 400 | - 132 | 1 532 | 36 |
| 37 | 11.9 | 398 6 | 4 0 | 495 | 063 | 241 | 17 481 | 8 893 | -8 588 | 17 481 | 37 |
| 38 | 283.9 | 434 2 | 106 7 | 377 | - 603 | 2 039 | 19 311 | 10 674 | -9 439 | 20 113 | 38 |
| 39 | 436 5 | 453 9 | 165 7 | 317 | -1.521 | 3 896 | 10.481 | 7 086 | -4 711 | 11 798 | 39 |
| 40 | 199 3 | 422 1 | 70 3 | 417 | -1.141 | 4 821 | 2 058 | 4 994 | -1 314 | 6 307 | 40 |
| 41 | 177 5 | 419 4 | 62 2 | 428 | -1 498 | 5 289 | - 465 | 5 277 | -1 506 | 6 783 | 41 |
| 42 | 242 4 | 427 5 | 86.6 | 399 | -1.364 | 4 292 | -.839 | 4 323 | -1.395 | 5 717 | 42 |
| 43 | 11 9 | 398 6 | 4.0 | 495 | -1 130 | 3 733 | -4 989 | 4 785 | -2.182 | 6 968 | 43 |
| 44 | 694.8 | 814 5 | 271 6 | 279 | 207 | 1 883 | -2 870 | 2 707 | - 617 | 3 322 | 44 |
| 45 | 1492 0 | 874.9 | 666 7 | 119 | 048 | 005 | 320 | 187 | - 136 | 322 | 45 |
| 46 | 120.8 | 412.5 | 41 7 | 450 | - 047 | 046 | 063 | 061 | - 063 | 124 | 46 |
| 47 | 1 | 4 0 | 0 | 495 | 145 | 077 | 1.115 | 670 | - 447 | 1 117 | 47 |
| 48 | 66 7 | 406.2 | 22 6 | 472 | 164 | 400 | 418 | 521 | 043 | 478 | 48 |
| 49 | 1 | 4 0 | 0 | 495 | - 437 | 578 | 2 785 | 1 544 | -1 402 | 2 946 | 49 |
| 50 | 1 | 4 0 | .0 | 495 | -1 077 | 481 | 4 485 | 2 087 | -2 673 | 4 760 | 50 |
| 51 | 501 7 | 483.4 | 184 4 | 290 | - 093 | 2 752 | 1 702 | 2 987 | - 329 | 3 316 | 51 |
| 52 | 637 8 | 566.1 | 250 1 | 275 | - 456 | 3 439 | 1 755 | 3 628 | - 645 | 4 273 | 52 |
| 53 | 849 1 | 547 9 | 383 4 | 188 | - 123 | 1 809 | 294 | 1 820 | - 134 | 1 954 | 53 |
| 54 | 1 | 4 0 | 0 | 495 | 344 | - 234 | 4 611 | 2 477 | -2 366 | 4 845 | 54 |
| 55 | 11 9 | 398.6 | 4.0 | 495 | 133 | - 143 | 3.849 | 1 825 | -1 835 | 3 660 | 55 |
| 56 | 11 9 | 398 6 | 4 0 | 495 | 365 | - 318 | 3 473 | 1 805 | -1 739 | 3 544 | 56 |
| 57 | 1 | 4 0 | 0 | 495 | -1 348 | 030 | 4 033 | 1 472 | -2 789 | 4 261 | 57 |
| 58 | 1324 2 | 778 7 | 550 8 | 121 | - 458 | 2 914 | 1 155 | 3 010 | - 552 | 3 562 | 58 |
| 59 | 1473 0 | 828 5 | 673 5 | 094 | - 352 | 2 755 | - 381 | 2 765 | - 362 | 3 127 | 59 |
| 60 | 448 9 | 466 8 | 171 5 | 312 | - 108 | 087 | 040 | 099 | - 110 | 209 | 60 |
| 61 | 1 | 4 0 | 0 | 495 | 384 | - 081 | 1 421 | 887 | - 593 | 1 480 | 61 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | 222.1 | 424.9 | 78.9 | .407 | 104 | -.045 | .059 | .109 | -.051 | .160 | 62 |
| 63 | 241.2 | 427.4 | 66.2 | .399 | .264 | -.271 | .256 | .298 | -.263 | .549 | 63 |
| 64 | .1 | 4.0 | .0 | .495 | 2.301 | 9.287 | 32.233 | 22.281 | -10.892 | 32.883 | 64 |
| 65 | .1 | 4.0 | .0 | .495 | -7.522 | 23.631 | .987 | 23.839 | -7.830 | 31 168 | 65 |
| 66 | .1 | 4.0 | .0 | .495 | -3.574 | 16.172 | -83.960 | 49.424 | -38.626 | 88.250 | 66 |
| 67 | 1 | 4 0 | 0 | 495 | 6 630 | -3 718 | -55 023 | 29 460 | -26 536 | 55 996 | 67 |
| 68 | 180.5 | 421.0 | 67.0 | .420 | .082 | -.051 | .242 | .132 | -.131 | .263 | 68 |
| 69 | 1 | 4.0 | .0 | .495 | 7.143 | -7.443 | 26.446 | 14 951 | -15.251 | 30.201 | 69 |
| 70 | .1 | 4.0 | .0 | .495 | 2.975 | 5.447 | 39.489 | 23.994 | -15.572 | 39 566 | 70 |
| 71 | 1 | 4 0 | 0 | 495 | -15 049 | 29 787 | 4 581 | 29 904 | -15 166 | 45 070 | 71 |
| 72 | .1 | 4 0 | .0 | .495 | -9.283 | 19.031 | -25.156 | 23.612 | -14.064 | 37 676 | 72 |
| 73 | .1 | 4.0 | .0 | .495 | 15.927 | -9.346 | -24.035 | 20.729 | -14.148 | 34.477 | 73 |
| 74 | .1 | 4.0 | .0 | 495 | 14 033 | -.256 | -13.489 | 16.713 | -2.936 | 19.649 | 74 |
| 75 | 522 3 | 486 5 | 203 8 | 282 | 019 | 057 | 008 | 058 | 019 | 039 | 75 |
| 76 | .1 | 4.0 | .0 | .495 | -14.240 | 20.341 | 7.072 | 20.699 | -14.598 | 35.297 | 76 |
| 77 | .1 | 4.0 | .0 | .495 | -12.910 | 21.168 | -2.649 | 21.205 | -12.958 | 34 163 | 77 |
| 78 | .1 | 4.0 | .0 | .495 | 18.942 | -13.414 | -10.229 | 19.731 | -14.203 | 33.934 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .249 | 486 | .008 | 486 | .249 | .119 | 2.253 | 1 955 | .078 | 1 |
| 2 | 261 | 536 | 034 | 541 | 256 | 142 | 7 015 | 2 110 | 093 | 2 |
| 3 | .356 | 366 | .142 | .602 | .218 | 142 | 43.634 | 2.301 | 097 | 3 |
| 4 | .390 | .559 | .005 | 560 | .390 | 085 | ' 795 | 1.435 | 1.637 | 4 |
| 5 | .359 | .537 | .017 | .538 | .358 | .090 | 6 287 | 1.504 | 1.205 | 5 |
| 6 | 455 | 650 | 015 | 651 | 454 | 098 | 4 347 | 1 433 | 1 968 | 6 |
| 7 | .506 | 709 | .007 | .710 | .506 | .101 | 2.094 | 1.397 | 2.017 | 7 |
| 8 | .320 | .511 | -.002 | 511 | .320 | .095 | -.470 | 1.597 | 1.910 | 8 |
| 9 | .365 | 1 021 | .038 | 1.023 | .363 | .330 | 3.327 | 2.822 | 192 | 9 |
| 10 | 423 | 1 483 | 054 | 1.486 | 420 | 533 | 2.918 | 3.536 | 291 | 10 |
| 11 | .436 | 1 439 | - 136 | 1.457 | .417 | .520 | -7.500 | 3.490 | 286 | 11 |
| 12 | .353 | .850 | - 100 | .870 | 334 | 268 | -10.850 | 2.603 | .180 | 12 |
| 13 | .144 | 283 | -.002 | .283 | 144 | .069 | - 816 | 1 962 | 052 | 13 |
| 14 | 157 | 231 | 058 | 275 | 154 | 060 | 36 824 | 1 786 | 045 | 14 |
| 15 | .139 | 197 | .026 | .208 | 129 | .039 | 20 714 | 1 596 | .772 | 15 |
| 16 | .250 | 282 | .042 | .311 | 221 | 045 | 34.379 | 1 403 | 892 | 16 |
| 17 | .308 | .396 | .019 | .400 | 304 | .048 | 12.018 | 1.314 | .958 | 17 |
| 18 | 356 | 465 | 014 | 468 | 354 | 056 | 7 195 | 1 318 | 1 125 | 18 |
| 19 | .346 | 459 | .013 | .461 | .344 | .059 | 6.466 | 1.341 | 1.171 | 19 |
| 20 | .491 | .606 | .011 | .607 | .489 | .059 | 5.588 | 1.241 | 1.160 | 20 |
| 21 | .310 | .418 | .006 | .419 | .310 | .054 | 3.126 | 1.350 | 1.085 | 21 |
| 22 | 363 | 1 714 | 090 | 1 720 | 357 | 681 | 3 814 | 4 817 | 397 | 22 |
| 23 | .316 | 1 229 | -.135 | 1.248 | 298 | .476 | -8.215 | 4 217 | 297 | 23 |
| 24 | .257 | 607 | -.107 | .637 | 227 | 205 | -15.730 | 2.801 | 138 | 24 |
| 25 | .042 | 091 | .003 | .091 | .042 | 025 | 3.485 | 2 171 | 021 | 25 |
| 26 | 009 | - 003 | 007 | 012 | - 006 | 009 | 65 131 | -1 872 | -1 000 | 26 |
| 27 | .161 | 023 | .040 | .162 | .012 | 075 | 73.933 | 13 661 | 1.604 | 27 |
| 28 | .098 | .025 | -.003 | .098 | .025 | 037 | -87.804 | 4.008 | 738 | 28 |
| 29 | .166 | 198 | 026 | .213 | 151 | .031 | 29.069 | 1 409 | 618 | 29 |
| 30 | 186 | 309 | - 004 | 309 | 186 | 062 | -1 702 | 1 667 | 1 237 | 30 |
| 31 | 227 | 332 | -.006 | .333 | .227 | .053 | -3.239 | 1.468 | 1 062 | 31 |
| 32 | 183 | .292 | -.013 | .293 | .182 | .056 | -6.492 | 1.614 | 1 116 | 32 |
| 33 | .500 | .619 | 001 | .619 | 500 | .059 | .698 | 1.237 | 1 187 | 33 |
| 34 | 575 | 676 | 005 | 676 | 575 | 051 | 2 598 | 1 176 | 1 010 | 34 |
| 35 | .483 | 1 774 | -.041 | 1 775 | 481 | 647 | -1.825 | 3.686 | 334 | 35 |
| 36 | .056 | .228 | -.009 | .229 | .056 | 086 | -3.138 | 4.095 | .074 | 36 |
| 37 | .033 | .080 | -.053 | .102 | -.008 | .055 | -37 852 | -12.858 | -1.000 | 37 |
| 38 | 062 | 119 | 044 | 143 | 038 | 053 | 28 536 | 3 803 | 1 042 | 38 |
| 39 | .113 | .303 | .129 | .368 | .047 | .160 | 26.450 | 7.803 | 2 529 | 39 |
| 40 | -.129 | .340 | -.168 | .394 | - 183 | .288 | -17.805 | -2.154 | -1.000 | 40 |
| 41 | -.526 | .150 | -.160 | .186 | -.562 | .374 | -12.657 | -.331 | -1.000 | 41 |
| 42 | -.867 | .557 | .071 | .561 | -.871 | .616 | 3.281 | - 637 | -1.000 | 42 |
| 43 | .108 | .709 | -.182 | .750 | .067 | .342 | -14 167 | 11 240 | 3.807 | 43 |
| 44 | .374 | 1.527 | -.135 | 1 543 | .359 | .592 | -6.582 | 4.300 | 1.227 | 44 |
| 45 | .030 | .286 | .364 | .563 | -.247 | .406 | 35.784 | -2.274 | -1.000 | 45 |
| 46 | .028 | 016 | 008 | .032 | 012 | 010 | 64.438 | 2.632 | 607 | 46 |
| 47 | .024 | 151 | 107 | 208 | -.033 | .120 | 29.134 | -6.350 | -1 000 | 47 |
| 48 | 169 | 323 | 297 | 552 | - 061 | 307 | 37 735 | -9 085 | -1 000 | 48 |
| 49 | -.006 | .297 | -.073 | .313 | -.022 | .168 | -12.808 | -14.004 | -1.000 | 49 |
| 50 | -.019 | 210 | -.084 | .227 | - 036 | 131 | -14.508 | -6.387 | -1.000 | 50 |
| 51 | .019 | 1 170 | -.577 | 1.410 | -.220 | 815 | -22.548 | -6.397 | : 000 | 51 |
| 52 | - 209 | 874 | 281 | 943 | - 277 | 610 | 13 683 | -3 397 | -1 000 | 52 |
| 53 | -.402 | 330 | 166 | .366 | - 438 | .402 | 12.180 | - 834 | -1.000 | 53 |
| 54 | .035 | .088 | .115 | .167 | -.065 | 116 | 40.850 | -2.581 | -1.000 | 54 |
| 55 | -.069 | .083 | 179 | 198 | - 184 | .191 | 33.288 | -1.077 | -1.000 | 55 |
| 56 | 088 | 493 | 111 | 521 | 060 | 231 | 14 342 | 6 740 | 2 877 | 56 |
| 57 | -.074 | .115 | - 063 | 133 | - 093 | 113 | -16.749 | -1 433 | -1 000 | 57 |
| 58 | -1.734 | 1 111 | - 776 | 1.309 | -1 932 | 1.621 | -14.204 | - 676 | -1.000 | 58 |
| 59 | -2.112 | 701 | 621 | .832 | -2 243 | 1.537 | 11 907 | -.371 | -1 000 | 59 |
| 60 | -.342 | 274 | 061 | 280 | - 348 | 314 | 5 800 | - 804 | -1 000 | 60 |
| 61 | 021 | 025 | .007 | .031 | 016 | .006 | 36.466 | 1.955 | 355 | 61 |
| 62 | .436 | 159 | '34 | 490 | 104 | .193 | 68.009 | 4 689 | 1 371 | 62 |
| 63 | 772 | - 273 | .356 | .882 | - 383 | 632 | 72.849 | -2 303 | -1.000 | 63 |
| 64 | 569 | 662 | - 113 | 737 | 494 | 122 | -33 639 | 1 493 | 183 | 64 |
| 65 | .547 | .589 | .000 | .589 | .547 | 021 | 528 | 1.085 | .024 | 65 |
| 66 | .511 | .544 | -.023 | .565 | 490 | 037 | -31.967 | 1.152 | .058 | 66 |
| 67 | .236 | .318 | - 021 | .323 | .230 | 046 | -13.808 | 1 400 | 149 | 67 |
| 68 | 091 | - 048 | 182 | 216 | - 174 | 195 | 55 462 | -1.246 | -1 000 | 68 |
| 69 | 074 | .045 | 065 | 146 | - 027 | 087 | 49.667 | -5.367 | -1 000 | 69 |
| 70 | .363 | 451 | - 023 | 457 | .358 | 050 | -13.690 | 1 278 | 103 | 70 |
| 71 | 587 | 639 | 002 | 639 | 587 | 026 | 1 981 | 1 090 | 034 | 71 |
| 72 | 394 | 434 | - 010 | 436 | 392 | 022 | -13 439 | 1 113 | 042 | 72 |
| 73 | 289 | 286 | - 010 | 298 | 278 | 010 | -49 667 | 1 070 | 026 | 73 |
| 74 | .563 | 561 | - 003 | 566 | 558 | 004 | -56 780 | 1 013 | 005 | 74 |
| 75 | 294 | 466 | 017 | 468 | 292 | 088 | 5 470 | 1 600 | 223 | 75 |
| 76 | .246 | 291 | 003 | 291 | 246 | 022 | 3 605 | 1 182 | 068 | 76 |
| 77 | .332 | .376 | - 001 | .376 | 332 | 022 | -1 317 | 1 133 | 049 | 77 |
| 78 | .250 | .241 | - 004 | 252 | 240 | 006 | -68.583 | 1 050 | 019 | 78 |

```
SSTIPN. 1 LAYER OF GEOTEXTILE, P=2000 PPI, EXTENDED, T=1000

TOTAL NUMBER OF NODES------------------ 95
NUMBER OF BAR ELEMENTS----------------- 11
NUMBER OF DIFF  BAR MATERIALS----------  1
NUMBER OF BEAM ELEMENTS----------------  0
NUMBER OF DIFF  BEAM MATERIALS---------  0
NUMBER OF NODAL LINKS -----------------  0
NUMBER OF INTERFACE ELEMENTS-----------  0
NO  OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE  IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS----------  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF  SOIL MATERIALS---------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 36
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS---------  0
NUMBER OF PREEXISTING NODES------------  0
NUMBER OF CONSTRUCTION LAYERS----------  6
NUMBER OF LOAD CASES-------------------  2

CALING FACTOR ---------      1 00000

ATMOSPHERIC PRESSURE ---      1 05800

UNIT WEIGHT OF WATER ---        03120


OMPUTATION SEQUENCE FOR A TOTAL OF    8  INCREMENTS
--------------------------------------------------


 INCREMENT NO.  1      APPLY LOAD CASE   1

 INCREMENT NO.  2      PUT ON LAYER NO   1

 INCREMENT NO.  3      PUT ON LAYER NO   2

 INCREMENT NO   4      PUT ON LAYER NO   3

 INCREMENT NO   5      PUT ON LAYER NO   4

 INCREMENT NO   6      PUT ON LAYER NO   5

 INCREMENT NO   7      PUT ON LAYER NO   6

 INCREMENT NO   8      APPLY LOAD CASE   2
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B.C CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | .000 | .000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 38.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58.000 | .000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | .000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30.000 | 4.000 | 0 | 0 | 0 |
| 18 | 38.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54.000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82.000 | 4.000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 38.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.000 | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10.000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.000 | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 38.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10.000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 38.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11.500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74.000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.000 | 14.000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | 15.000 | 0 | 0 | 0 |
| 83 | 82.000 | 15.000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17.000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17.000 | 1 | 0 | 1 |

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 80 | 1 00 | 0 |

| ELMT NO. | CONNECTED NODES I | J | MATL NO |
|---|---|---|---|
| 1 | 41 | 42 | 1 |
| 2 | 42 | 43 | 1 |
| 3 | 43 | 44 | 1 |
| 4 | 44 | 45 | 1 |
| 5 | 45 | 46 | 1 |
| 6 | 46 | 47 | 1 |
| 7 | 47 | 48 | 1 |
| 8 | 48 | 49 | 1 |
| 9 | 49 | 50 | 1 |
| 10 | 50 | 51 | 1 |
| 11 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | EXPONENT | RATIO | BULK MODULUS CONSTANT | EXPONENT | STRENGTH PARAMETERS C | PHI | DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0650 | 8000 00 | 500 | 500 | 1500.00 | .600 | 00 | 35 00 | 00 | 50 |
| 2 | 0530 | 40.00 | 300 | 900 | 20.00 | 200 | .05 | 00 | 00 | .50 |
| 3 | 0800 | 1000.00 | 400 | 700 | 500.00 | 500 | .50 | 40.00 | 00 | 50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO | CONNECTED NODES I | J | K | L | MATL NO | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5 000 | 2 000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15 000 | 2 000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25.000 | 2 000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33.000 | 2 000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39 000 | 2 000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46.000 | 2.000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52.000 | 2.000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 58.000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62 000 | 2 000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2.000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78.000 | 2 000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86 000 | 2.000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5 000 | 5 500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15.000 | 5 500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25.000 | 5 500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33.000 | 5 500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5 500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5 500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 58.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62 000 | 5.500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5 500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78 000 | 5 500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86.000 | 5 500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5.000 | 8 500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15.000 | 8.500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25 000 | 8 500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33.000 | 8.500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39.000 | 8.500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46 000 | 8 500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52 000 | 8 500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 58 000 | 8 500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62.000 | 8.500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70.000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78 000 | 8 500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86.000 | 8.500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34 500 | 10 750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39 000 | 10 750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46 000 | 10 750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52.000 | 10.750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 58.000 | 10 750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62 000 | 10.750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70.000 | 10 750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78.000 | 10 750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86.000 | 10 750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40.500 | 12 250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46 000 | 12 250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52.000 | 12 250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 58 000 | 12 250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62 000 | 12 250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70 000 | 12 250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78 000 | 12 250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86 000 | 12 250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47.000 | 13 500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52 000 | 13 500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 58.000 | 13 500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62 000 | 13 500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70.000 | 13 500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78 000 | 13 500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86.000 | 13 500 |
| 61 | 70 | 71 | 78 | 78 | 1 | 49.000 | 14 500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52 000 | 14 500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 58 000 | 14 500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62.000 | 14 500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70.000 | 14 500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78 000 | 14 500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 86.000 | 14 500 |
| 68 | 78 | 79 | 85 | 85 | 1 | 53.000 | 15 500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 56 000 | 15 500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62 000 | 15 500 |
| 71 | 81 | 82 | 88 | 87 | . | 70 000 | 15 500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78 000 | 15 500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86 000 | 15 500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57.000 | 16 500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62 000 | 16 500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70 000 | 16 500 |
| 77 | 88 | 09 | 94 | 93 | 1 | 78.000 | 16 500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86.000 | 16 500 |

SSTIPN: 1 LAYER OF GEOTEXTILE P=2000 PPI, EXTENDED, T=1000

```
*****************************************************
*****************************************************
*                                                   *
*  LOAD CASE ------------------------------    2    *
*                                                   *
*****************************************************
*****************************************************
```

LARGEST ELE NO IN THIS INCREMENT 76

LARGEST N P NO IN THIS INCREMENT 95

BAND WIDTH----------------------- 40

TOTAL NUMBER OF EQUATIONS--------- 222

NUMBER OF EQUATIONS IN BLOCK------ 84

NUMBER OF BLOCKS------------------ 3

NUMBER OF N.P FORCE CARDS--------- 3

NUMBER OF PRESSURE CARDS---------- 0

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0 | 0 |
| 2 | 0 | 0 |
| 3 | 0 | 0 |
| 4 | 0 | 0 |
| 5 | 0 | 0 |
| 6 | 0 | 0 |
| 7 | 0 | 0 |
| 8 | 0 | 0 |
| 9 | 0 | 0 |
| 10 | 0 | 0 |
| 11 | 0 | 0 |
| 12 | 0 | 0 |
| 13 | 0 | 0 |
| 14 | 0 | 0 |
| 15 | 0 | 0 |
| 16 | 0 | 0 |
| 17 | 0 | 0 |
| 18 | 0 | 0 |
| 19 | 0 | 0 |
| 20 | 0 | 0 |
| 21 | 0 | 0 |
| 22 | 0 | 0 |
| 23 | 0 | 0 |
| 24 | 0 | 0 |
| 25 | 0 | 0 |
| 26 | 0 | 0 |
| 27 | 0 | 0 |
| 28 | 0 | 0 |
| 29 | 0 | 0 |
| 30 | 0 | 0 |
| 31 | 0 | 0 |
| 32 | 0 | 0 |
| 33 | 0 | 0 |
| 34 | 0 | 0 |
| 35 | 0 | 0 |
| 36 | 0 | 0 |
| 37 | 0 | 0 |
| 38 | 0 | 0 |
| 39 | 0 | 0 |
| 40 | 0 | 0 |
| 41 | 0 | 0 |
| 42 | 0 | 0 |
| 43 | 0 | 0 |
| 44 | 0 | 0 |
| 45 | 0 | 0 |
| 46 | 0 | 0 |
| 47 | 0 | 0 |
| 48 | 0 | 0 |
| 49 | 0 | 0 |
| 50 | 0 | 0 |
| 51 | 0 | 0 |
| 52 | 0 | 0 |
| 53 | 0 | 0 |
| 54 | 0 | 0 |
| 55 | 0 | 0 |
| 56 | 0 | 0 |
| 57 | 0 | 0 |
| 58 | 0 | 0 |
| 59 | 0 | 0 |
| 60 | 0 | 0 |
| 61 | 0 | 0 |
| 62 | 0 | 0 |

| | | |
|---|---|---|
| 63 | 0 | 0. |
| 64 | 0. | 0. |
| 65 | 0 | 0. |
| 66 | 0. | 0. |
| 67 | 0. | 0. |
| 68 | 0 | 0 |
| 69 | 0 | 0. |
| 70 | 0 | 0. |
| 71 | 0 | 0. |
| 72 | 0 | 0 |
| 73 | 0 | 0 |
| 74 | 0 | 0. |
| 75 | 0. | 0. |
| 76 | 0 | 0 |
| 77 | 0 | 0. |
| 78 | 0. | 0. |
| 79 | 0. | 0. |
| 80 | 0 | 0 |
| 81 | 0 | 0 |
| 82 | 0 | 0 |
| 83 | 0 | 0. |
| 84 | 0 | 0 |
| 85 | 0 | 0 |
| 86 | 0 | 0. |
| 87 | 0 | 0. |
| 88 | 0 | 0 |
| 89 | 0 | 0 |
| 90 | 0. | 0. |
| 91 | 0 | 0 |
| 92 | 0 | -4 50 |
| 93 | 0. | -4.50 |
| 94 | 0 | -2.00 |
| 95 | 0 | 0 |

LOAD CASE : 2 ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | .0000 | 0000 | .0000 | 0000 | .0000 | .0000 | 0000 | 1 |
| 2 | .0000 | 0000 | .0000 | 0000 | 0000 | 0000 | .0000 | 2 |
| 3 | .0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 0000 | 3 |
| 4 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 4 |
| 5 | .0000 | 0000 | .0000 | 0000 | .0000 | .0000 | 0000 | 5 |
| 6 | .0000 | .0000 | .0000 | .0000 | .0000 | 0000 | .0000 | 6 |
| 7 | .0000 | .0000 | 0000 | .0000 | .0000 | 0000 | .0000 | 7 |
| 8 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 8 |
| 9 | .0000 | .0000 | .0000 | 0000 | .0000 | 0000 | 0000 | 9 |
| 10 | 0000 | 0000 | 0000 | 0000 | .0000 | 0000 | .0000 | 10 |
| 11 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 11 |
| 12 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 12 |
| 13 | 0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 0000 | 13 |
| 14 | 0000 | - 0001 | 0000 | 0000 | - 0007 | 0000 | 0007 | 14 |
| 15 | 0000 | .0000 | 0000 | - 0008 | 0003 | 0000 | 0007 | 15 |
| 16 | 0000 | - 0001 | 0000 | - 0005 | - 0004 | 0000 | 0007 | 16 |
| 17 | -.0005 | 0002 | .0000 | - 0049 | 0023 | .0000 | .0055 | 17 |
| 18 | -.0198 | .0087 | 0000 | -.2025 | 0357 | 0000 | .2056 | 18 |
| 19 | -.0394 | 0026 | 0000 | - 2946 | - 0881 | .0000 | .3024 | 19 |
| 20 | - 0418 | - 0030 | 0000 | - 1886 | - 1285 | 0000 | 2254 | 20 |
| 21 | -.0271 | - 0210 | .0000 | - 0788 | - 1609 | 0000 | 1702 | 21 |
| 22 | - 0010 | - 0010 | .0000 | - 0007 | - 0059 | 0000 | 0060 | 22 |
| 23 | - 0010 | - 0018 | 0000 | - 0001 | - 0048 | 0000 | 0049 | 23 |
| 24 | 0007 | - 0058 | 0000 | 0014 | - 0106 | 0000 | 0107 | 24 |
| 25 | 0019 | - 0020 | 0000 | 0022 | - 0054 | 0000 | 0059 | 25 |
| 26 | 0000 | 0004 | 0000 | 0000 | -.0028 | 0000 | 0028 | 26 |
| 27 | 0000 | - 0001 | 0000 | 0000 | - 00 2 | 0000 | 0012 | 27 |
| 28 | - 0002 | 0001 | 0000 | - 0017 | 0004 | 0000 | 0017 | 28 |
| 29 | .0000 | - 0001 | 0000 | - 0013 | 0001 | 0000 | 0013 | 29 |
| 30 | -.0183 | 0058 | .0000 | - 1756 | .0594 | 0000 | 1854 | 30 |
| 31 | - 0328 | 0177 | 0000 | - 2785 | .0709 | 0000 | 2874 | 31 |
| 32 | - 0582 | 0112 | 0000 | - 3583 | - 1127 | 0000 | 3756 | 32 |
| 33 | - 0893 | - 0088 | 0000 | - 3298 | - 2453 | 0000 | 4109 | 33 |
| 34 | - 1023 | - 0270 | 0000 | - 2807 | - 2540 | 0000 | 3881 | 34 |
| 35 | - 0914 | - 0442 | 0000 | - 2041 | - 1914 | 0000 | 2798 | 35 |
| 36 | - 0006 | - 0045 | 0000 | 0015 | - 0133 | 0000 | 0134 | 36 |
| 37 | 0018 | - 0113 | 0000 | 0024 | - 0195 | 0000 | 0197 | 37 |
| 38 | 0020 | - 0036 | 0000 | 0020 | - 0104 | 0000 | 0106 | 38 |
| 39 | 0000 | 0015 | 0000 | 0000 | - 0046 | 0000 | 0048 | 39 |
| 40 | 0000 | - 0002 | 0000 | 0000 | - 0017 | 0000 | 0017 | 40 |
| 41 | - 0007 | 0002 | 0000 | - 0060 | 0012 | 0000 | 0061 | 41 |
| 42 | - 0137 | 0034 | 0000 | - 0798 | 0184 | 0000 | 0813 | 42 |
| 43 | - 0349 | 0145 | 0000 | - 1894 | 1028 | 0000 | 2155 | 43 |
| 44 | - 0371 | 0213 | 0000 | - 2144 | 0695 | 0000 | 2254 | 44 |
| 45 | - 0401 | 0173 | .0000 | - 2188 | - 1509 | 0000 | 2658 | 45 |
| 46 | - 0423 | - 0084 | 0000 | - 1980 | - 3321 | 0000 | 3856 | 46 |
| 47 | 0448 | - 0289 | 0000 | - 1705 | - 3415 | 0000 | 3817 | 47 |
| 48 | - 0415 | - 0852 | 0000 | - 1331 | - 3173 | 0000 | 3453 | 48 |
| 49 | -.0092 | - 0829 | 0000 | - 0408 | - 2178 | 0000 | 2213 | 49 |
| 50 | -.0018 | - 0287 | 0000 | - 0043 | - 0470 | 0000 | 0482 | 50 |
| 51 | - 0008 | - 0031 | 0000 | - 0019 | - 0119 | 0000 | 0121 | 51 |
| 52 | 0000 | 0020 | 0000 | 0000 | - 0081 | 0000 | 0061 | 52 |
| 53 | - 0380 | 0216 | 0000 | - 4601 | 1103 | 0000 | 4927 | 53 |
| 54 | - 0389 | 0174 | 0000 | - 4088 | - 1324 | 0000 | 4278 | 54 |
| 55 | - 0363 | - 0084 | 0000 | 2188 | - 3111 | 0000 | 3804 | 55 |
| 56 | - 0345 | - 0287 | 0000 | - 1636 | - 3555 | 0000 | 3913 | 56 |
| 57 | - 0298 | - 0883 | 0000 | - 1172 | - 3481 | 0000 | 3875 | 57 |
| 58 | - 0189 | - 0883 | 0000 | - 0489 | - 2501 | 0000 | 2553 | 58 |
| 59 | - 0080 | - 0294 | 0000 | 0413 | - 0913 | 0000 | 1032 | 59 |
| 60 | - 0033 | - 0033 | 0000 | - 0044 | - 0114 | 0000 | 0120 | 60 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 61 | 0000 | .0021 | .0000 | 0000 | - 0083 | 0000 | 0083 | 61 |
| 62 | - 0310 | .0172 | .0000 | -.0790 | - 0028 | .0000 | 0790 | 62 |
| 63 | -.0237 | -.0087 | .0000 | -.0781 | -.1355 | 0000 | .1554 | 63 |
| 64 | -.0282 | -.0288 | 0000 | -.0770 | -.1915 | .0000 | .2084 | 64 |
| 65 | -.0226 | -.07?7 | .0000 | -.0706 | -.2437 | .0000 | 2538 | 65 |
| 66 | - 0238 | - 0877 | 0000 | - 0810 | - 1798 | 0000 | 1898 | 66 |
| 67 | -.0183 | - 0318 | .0000 | - 0327 | - 1247 | 0000 | 1289 | 67 |
| 68 | -.0084 | - 0039 | .0000 | - 0080 | -.0102 | 0000 | 0130 | 68 |
| 69 | .0000 | .0019 | 0000 | .0000 | - 0044 | 0000 | .0044 | 69 |
| 70 | - 0258 | 0039 | 0000 | - 0558 | - 0358 | 0000 | 0662 | 70 |
| 71 | -.0238 | -.0031 | .0000 | -.0849 | -.0879 | .0000 | .1038 | 71 |
| 72 | -.0249 | -.0288 | 0000 | -.0578 | -.1388 | .0000 | 1483 | 72 |
| 73 | -.3115 | -.0993 | 0000 | - 3483 | -.2228 | .0000 | 4118 | 73 |
| 74 | - 0317 | -.0890 | 0000 | - 0639 | - 1592 | 0000 | 1715 | 74 |
| 75 | - 0218 | - 0327 | .0000 | -.0378 | - 1380 | .0000 | 1511 | 75 |
| 76 | -.0084 | - 0049 | .0000 | -.0089 | -.0101 | 0000 | .0142 | 76 |
| 77 | .0000 | 0017 | 0000 | 0000 | -.0032 | 0000 | 0032 | 77 |
| 78 | - 5459 | - 0055 | 0000 | - 5525 | - 0483 | 0000 | 5616 | 78 |
| 79 | -.6830 | 0022 | .0000 | -.7073 | -.0615 | 0000 | 7100 | 79 |
| 80 | - 6888 | - 0678 | 0000 | -.7181 | -.1458 | .0000 | .7308 | 80 |
| 81 | -.9124 | - 2448 | 0000 | -.9346 | -.2890 | 0000 | .9782 | 81 |
| 82 | - 0135 | - 2831 | 0000 | - 0255 | - 3445 | 0000 | 3454 | 82 |
| 83 | .8019 | - 0567 | .0000 | .8003 | - 0808 | 0000 | .8033 | 83 |
| 84 | 0000 | 0825 | 0000 | .0000 | .0793 | 0000 | .0793 | 84 |
| 85 | - 8768 | 0032 | .0000 | -.8818 | - 0134 | 0000 | .8817 | 85 |
| 86 | - 6804 | - 0853 | 0000 | - 6866 | - 0867 | 0000 | 6920 | 86 |
| 87 | -.6774 | -.3898 | .0000 | -.6644 | -.3887 | .0000 | 7671 | 87 |
| 88 | -.6618 | - 5772 | 0000 | - 8881 | -.5084 | .0000 | 9021 | 88 |
| 89 | 2757 | -.1374 | .0000 | 2745 | - 1400 | 0000 | 3081 | 89 |
| 90 | 0000 | 2043 | 0000 | 0000 | 2025 | 0000 | 2025 | 90 |
| 91 | - 6410 | - 0661 | .0000 | -.6410 | - 0661 | 0000 | .6444 | 91 |
| 92 | -.6424 | - 3700 | .0000 | -.6424 | - 3700 | 0000 | .7414 | 92 |
| 93 | -.6400 | - 5804 | 0000 | -.8400 | -.5804 | 0000 | .8640 | 93 |
| 94 | - 1137 | - 3158 | 0000 | - 1137 | - 3158 | 0000 | 3355 | 94 |
| 95 | 0000 | 3085 | 0000 | 0000 | .3085 | 0000 | .3085 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | - 0984 |
| 2 | -.1088 |
| 3 | - 0228 |
| 4 | -.0300 |
| 5 | - 0162 |
| 6 | -.0372 |
| 7 | 0493 |
| 8 | .2428 |
| 9 | 0587 |
| 10 | 0069 |
| 11 | 0061 |
| TOTAL VALUES | |
| 1 | - 4427 |
| 2 | -.8577 |
| 3 | -.2501 |
| 4 | -.0412 |
| 5 | .1690 |
| 6 | 3822 |
| 7 | .5188 |
| 8 | .7168 |
| 9 | .2717 |
| 10 | 0181 |
| 11 | 0143 |

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 539 0 | 341 3 | 232 5 | 159 | 003 | 006 | 003 | 007 | 002 | 004 | 1 |
| 2 | 504.3 | 321 4 | 218.3 | .159 | - 001 | 002 | 018 | .010 | - 008 | 018 | 2 |
| 3 | 511 1 | 321 2 | 221 1 | 156 | 022 | - 023 | .054 | .035 | - 036 | 071 | 3 |
| 4 | 6 | 17 2 | 2 | 494 | 1 646 | - 475 | 2.315 | 2 168 | - 984 | 3 140 | 4 |
| 5 | 6 | 17 2 | 2 | 494 | 788 | 406 | 7 080 | 4 131 | -2 958 | 7 089 | 5 |
| 6 | 7 | 18 0 | 2 | 494 | - 676 | 2 433 | 6.360 | 4.426 | -2.670 | 7.097 | 6 |
| 7 | 7 | 18 4 | 2 | 493 | -1.348 | 3.468 | 3 623 | 4.073 | -1 953 | 6 023 | 7 |
| 8 | 6 | 16 9 | 2 | 494 | - 975 | 1 961 | - 819 | 2 017 | -1 031 | 3.048 | 8 |
| 9 | 458 7 | 336 7 | 186 6 | 223 | - 004 | 135 | .005 | 135 | - 004 | 139 | 9 |
| 10 | 471 4 | 380 5 | 190 6 | 235 | -.010 | .193 | 020 | .194 | - 010 | 204 | 10 |
| 11 | 475 7 | 372.0 | 191 4 | .243 | - 005 | .201 | - 078 | 208 | - 012 | 220 | 11 |
| 12 | 514 2 | 366 7 | 212.4 | 210 | 014 | .102 | - 045 | 108 | 009 | 099 | 12 |
| 13 | 504 5 | 299 8 | 223.9 | 127 | 012 | 006 | 004 | 012 | 005 | 007 | 13 |
| 14 | 383.5 | 224 5 | 171.6 | 116 | - 002 | -.012 | 036 | .011 | - 026 | 037 | 14 |
| 15 | 1 9 | 13.6 | 6 | 476 | .894 | -.981 | 2.549 | 1.542 | -1 610 | 3.152 | 15 |
| 16 | 5 7 | 18.4 | 2 0 | 439 | 2.504 | -1 539 | 3.738 | 3 235 | -2.271 | 5 506 | 16 |
| 17 | 1 7 | 17 0 | 6 | 483 | 1 433 | 155 | 4 724 | 3 241 | -1 653 | 4 893 | 17 |
| 18 | 6 | 17 2 | 2 | 494 | - 885 | 2 723 | 6 839 | 3.464 | -1.995 | 5 459 | 18 |
| 19 | 6 | 17 1 | 2 | 494 | -1 834 | 3.699 | 6 331 | 5 137 | -3 272 | 8 408 | 19 |
| 20 | 7 | 18.2 | 2 | 494 | -2 086 | 4 810 | 4 327 | 5 435 | -2 882 | 8 118 | 20 |
| 21 | 6 | 17 2 | 2 | 494 | -1.289 | 3 232 | 2 242 | 3 495 | -1 552 | 5 046 | 21 |
| 22 | 426 0 | 341 7 | 170 3 | 251 | -.015 | 289 | 031 | 289 | - 016 | 305 | 22 |
| 23 | 406 3 | 307 | 184.9 | 232 | - 003 | 231 | - 102 | 242 | - 014 | 256 | 23 |
| 24 | 465 3 | 311 0 | 185.3 | 191 | 027 | 113 | - 049 | .119 | .020 | 099 | 24 |
| 25 | 371 8 | 222 1 | 164 6 | 130 | 038 | - 008 | 049 | 049 | - 017 | 066 | 25 |
| 26 | 4 | 13 4 | 1 | 485 | 387 | - 269 | 1.311 | 778 | - 675 | 1 457 | 26 |
| 27 | 0 | 1 | 0 | .495 | 1 420 | - 979 | 804 | 1 485 | -1.044 | 2 530 | 27 |
| 28 | 1 9 | 13.8 | 6 | 477 | 1 066 | - 700 | - 657 | 1.125 | - 759 | 1 884 | 28 |
| 29 | 2 0 | 14 6 | 7 | 477 | 700 | 661 | - 031 | 705 | 655 | 050 | 29 |
| 30 | 5 | 16.2 | .2 | 484 | -.320 | 2 063 | -2 595 | 2 690 | - 667 | 3 537 | 30 |
| 31 | 6 | 15 6 | .2 | 494 | - 805 | 2.904 | -4 004 | 3 778 | -1 679 | 5 457 | 31 |
| 32 | 6 | 15.6 | .2 | 494 | -1.513 | 3.556 | -4 222 | 4.320 | -2 277 | 6.597 | 32 |
| 33 | 7 | 17 6 | 2 | 494 | -1 882 | 5 504 | -2 170 | 5 660 | -2 038 | 7 698 | 33 |
| 34 | 7 | 17 1 | .2 | 493 | - 232 | 3.830 | - 227 | 3 833 | - 235 | 4 068 | 34 |
| 35 | 308 6 | 269.7 | 121 5 | 275 | -.013 | 450 | - 028 | 454 | -.017 | 471 | 35 |
| 36 | 346.8 | 217 4 | 150.2 | 154 | 001 | 084 | 005 | .084 | .001 | 083 | 36 |
| 37 | 271 5 | 431.3 | 97 9 | 387 | 431 | - 032 | 18 584 | 9 494 | -9 086 | 18 590 | 37 |
| 38 | 396 6 | 448.1 | 148.3 | .335 | -.576 | 1.813 | 19 619 | 10 599 | -9.364 | 19 963 | 38 |
| 39 | 426.8 | 482.5 | 161 5 | 322 | -1.304 | 3 710 | 10 303 | 6 932 | -4.526 | 11 458 | 39 |
| 40 | 245 5 | 427 9 | 87 9 | 397 | - 998 | 4 522 | 2.301 | 4 752 | -1.226 | 5.978 | 40 |
| 41 | 182 3 | 417 5 | 58 7 | 432 | - 980 | 5 124 | - 132 | 5 125 | - 986 | 6 110 | 41 |
| 42 | 11 9 | 396 6 | 4 0 | 495 | - 983 | 4 166 | - 861 | 4 202 | -1 019 | 5 221 | 42 |
| 43 | 233 7 | 426 4 | 83.3 | 402 | - 784 | 3.427 | -3.038 | 3 919 | -1 256 | 5 176 | 43 |
| 44 | 639 7 | 556.1 | 250 8 | .275 | .276 | 1 790 | -2 158 | 2.351 | - 285 | 2 637 | 44 |
| 45 | 1112 4 | 873 8 | 489 2 | 137 | - 039 | 066 | 030 | 068 | - 041 | 109 | 45 |
| 46 | 1 | 4.0 | 0 | 495 | -.050 | 040 | - 171 | 091 | - 102 | 193 | 46 |
| 47 | 11 9 | 398 6 | 4 0 | 495 | -.035 | .048 | 248 | 137 | - 124 | 261 | 47 |
| 48 | 324 0 | 438.2 | 118 7 | 385 | -.049 | 090 | 157 | .125 | - 084 | 210 | 48 |
| 49 | 11 8 | 398 6 | 4 0 | 495 | - 391 | 200 | 857 | 425 | - 616 | 1 041 | 49 |
| 50 | 256 6 | 429.4 | 92.2 | 393 | -.255 | 294 | 112 | 300 | - 261 | 561 | 50 |
| 51 | 577 3 | 485.2 | 227.2 | 271 | -.306 | 2.855 | 220 | 2 859 | - 310 | 3 169 | 51 |
| 52 | 749 2 | 670.9 | 282.1 | .282 | -.226 | 2 759 | - 284 | 2 765 | - 230 | 2 995 | 52 |
| 53 | 512 7 | 465 1 | 199 4 | 286 | - 078 | 082 | 054 | 087 | - 082 | 169 | 53 |
| 54 | 11 9 | 398.6 | 4 0 | 495 | -.036 | .044 | - 063 | 055 | - 048 | 103 | 54 |
| 55 | 288 5 | 433.5 | 104 6 | 379 | 021 | - 013 | 120 | 067 | - 058 | 125 | 55 |
| 56 | 1 | 4 0 | .0 | 495 | 3.509 | 1 425 | 15 687 | 10 380 | -5 446 | 15.825 | 56 |
| 57 | 1 | 4 0 | 0 | 495 | -1 828 | 1 620 | 14 481 | 7 344 | -7 552 | 14 896 | 57 |
| 58 | 851 3 | 635.1 | 346.8 | .227 | - 301 | 2.830 | 705 | 2 869 | - 340 | 3 209 | 58 |
| 59 | 671 6 | 586 5 | 263.3 | 276 | -.293 | 2 750 | - 584 | 2 778 | - 321 | 3 099 | 59 |
| 60 | 362 4 | 443.4 | 134 4 | 346 | -.110 | 107 | 031 | 108 | - 111 | 219 | 60 |
| 61 | 1 | 4.0 | 0 | 495 | - 046 | - 359 | 52 630 | 26.113 | -26.518 | 52.631 | 61 |
| 62 | 1 | 4 0 | 0 | 495 | 1.867 | -1.726 | 59 700 | 29 975 | -29 833 | 59.808 | 62 |
| 63 | 1 | 4 0 | 0 | 495 | 3.685 | -3 135 | 54 601 | 27 768 | -27.237 | 55 025 | 63 |
| 64 | 1 | 4.0 | 0 | 495 | -.403 | 6.229 | 64.295 | 35.231 | -29 405 | 64 636 | 64 |
| 65 | 1 | 4 0 | 0 | 495 | -5.794 | 21.689 | 44 132 | 33.942 | -18 048 | 51 990 | 65 |
| 66 | 1 | 4.0 | .0 | 495 | -4.032 | 16.502 | -32.821 | 25.593 | -13 122 | 38 715 | 66 |
| 67 | 1 | 4 0 | 0 | 495 | 3 891 | -1 402 | -31 419 | 17 059 | -14 770 | 31 829 | 67 |
| 68 | 1 | 4 0 | 0 | 495 | 3.885 | - 103 | -1 800 | 3 889 | - 306 | 4 195 | 68 |
| 69 | 220 5 | 424.7 | 78 3 | 408 | 139 | - 117 | 048 | 141 | - 119 | 260 | 69 |
| 70 | 1 | 4.0 | 0 | 495 | 1.325 | 8.179 | -9.672 | 9 163 | -1 659 | 10 822 | 70 |
| 71 | 1 | 4 0 | 0 | 495 | -5 746 | 22 238 | 22 183 | 26 101 | -9 608 | 35 709 | 71 |
| 72 | 1 | 4.0 | 0 | 495 | -6 746 | 20 052 | 44 347 | 31.667 | -21 562 | 53 429 | 72 |
| 73 | 1 | 4 0 | 0 | 495 | 5 471 | -2.019 | 13 303 | 9.369 | -5 908 | 15 287 | 73 |
| 74 | 1 | 4 0 | 0 | 495 | .069 | -.017 | -2 207 | 1.140 | -1 069 | 2 209 | 74 |
| 75 | 1292 0 | 649 1 | 643 0 | 005 | - 009 | 015 | 074 | 042 | - 036 | 078 | 75 |
| 76 | 557 1 | 475.1 | 219 5 | 269 | -.114 | 183 | - 216 | 219 | - 149 | 368 | 76 |
| 77 | 1 | 4 0 | 0 | 495 | -1 147 | 9.069 | 13 987 | 11 444 | -11 522 | 22 966 | 77 |
| 78 | 1 | 4 0 | 0 | 495 | 1 012 | 3.899 | 13.432 | 9.204 | -4.494 | 13.698 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 284 | .517 | 007 | .517 | .284 | 128 | 1 863 | 1 958 | .082 | 1 |
| 2 | 238 | 492 | 039 | 498 | 232 | 133 | 6 571 | 2 141 | 089 | 2 |
| 3 | 343 | 389 | 127 | 484 | 228 | 128 | 2 119 | 2 117 | 088 | 3 |
| 4 | 374 | 546 | 005 | 546 | 374 | 086 | 1 564 | 1 458 | 1 715 | 4 |
| 5 | 371 | 549 | 015 | 550 | 369 | 090 | 4 654 | 1 489 | 1 805 | 5 |
| 6 | 466 | 658 | 014 | 659 | 465 | 097 | 4 090 | 1 419 | 1 548 | 6 |
| 7 | 528 | 728 | 008 | 729 | 527 | 101 | 2 346 | 1 382 | 2 015 | 7 |
| 8 | 331 | 523 | - 002 | 523 | 331 | 096 | - 467 | 1 580 | 1 920 | 8 |
| 9 | 324 | 1 046 | 003 | 1 046 | 724 | 381 | 243 | 3 229 | 218 | 9 |
| 10 | 399 | 1 380 | 037 | 1 382 | 397 | 492 | 2 164 | 3 479 | 275 | 10 |
| 11 | 444 | 1 438 | - 152 | 1 461 | 422 | 520 | -8 476 | 3 465 | 284 | 11 |
| 12 | 378 | 920 | - 084 | 938 | 362 | 287 | -8.584 | 2 584 | 166 | 12 |
| 13 | 195 | 307 | 008 | 308 | 194 | 057 | 4 289 | 1 583 | 040 | 13 |
| 14 | 118 | 220 | 085 | 251 | 087 | 082 | 26 899 | 2 893 | 067 | 14 |
| 15 | 089 | 183 | 011 | 185 | .87 | 039 | 7 899 | 1 886 | 773 | 15 |
| 16 | 277 | 278 | 032 | 309 | 246 | 032 | 44 509 | 1 257 | 632 | 16 |
| 17 | 337 | 414 | 014 | 417 | 335 | 041 | 10 157 | 1 245 | 820 | 17 |
| 18 | 371 | 474 | 010 | 475 | 370 | 052 | 5 246 | 1 283 | 1 047 | 18 |
| 19 | 386 | 478 | 013 | 475 | 385 | 057 | 8 624 | 1 313 | 1 142 | 19 |
| 20 | 521 | 640 | 010 | 641 | 520 | 061 | 4 844 | 1 233 | 1 211 | 20 |
| 21 | 382 | 491 | 005 | 491 | 381 | 055 | 2 448 | 1 287 | 1 095 | 21 |
| 22 | 382 | 1 557 | 050 | 1 559 | 380 | 590 | 2 448 | 4 107 | 336 | 22 |
| 23 | 330 | 1 220 | - 171 | 1 251 | 298 | 477 | -10 507 | 4 198 | 296 | 23 |
| 24 | 305 | 680 | - 096 | 703 | 282 | 210 | -13 562 | 2 490 | 133 | 24 |
| 25 | 198 | 086 | 059 | 247 | 037 | 105 | 61 200 | 6 635 | 092 | 25 |
| 26 | 029 | 004 | 0. | 042 | - 010 | 026 | 58 203 | -4 047 | -1 000 | 26 |
| 27 | 043 | 000 | - 00. | 043 | 001 | 022 | -85 813 | -70 045 | -1 000 | 27 |
| 28 | 093 | 025 | - 021 | 099 | 019 | 040 | -73 869 | 5 096 | 793 | 28 |
| 29 | 156 | 232 | 002 | 232 | [illegible] | 038 | 1 418 | 1 488 | 761 | 29 |
| 30 | 202 | 301 | - 007 | 302 | 202 | 050 | -4 237 | 1 496 | 1 001 | 30 |
| 31 | 255 | 356 | - 010 | 357 | 254 | 052 | -5 633 | 1 407 | 1 037 | 31 |
| 32 | 243 | 347 | - 017 | 349 | 241 | 054 | -8 888 | 1 453 | 1 089 | 32 |
| 33 | 513 | 628 | - 005 | 628 | 513 | 058 | -2 447 | 1 225 | 1 154 | 33 |
| 34 | 517 | 613 | 000 | 613 | 517 | 048 | - 162 | 1 186 | 380 | 34 |
| 35 | 457 | 695 | - 107 | 1 705 | 448 | 628 | -4 666 | 3 802 | 334 | 35 |
| 36 | 047 | 330 | 008 | 331 | 047 | 142 | 1 592 | 7 004 | 122 | 36 |
| 37 | 357 | 152 | - 186 | 467 | 042 | 213 | -59 488 | 11 183 | 3 785 | 37 |
| 38 | 182 | 053 | 022 | 186 | 050 | 068 | 80 552 | 3 723 | 1 012 | 38 |
| 39 | 142 | 308 | 112 | 366 | 085 | 140 | 26 630 | 4 280 | 1 219 | 39 |
| 40 | 012 | 2.5 | - 029 | 229 | 008 | 110 | -7 683 | 27 453 | 9 633 | 40 |
| 41 | - 051 | 55% | 088 | 569 | - 063 | 316 | 6 088 | -9 006 | -1 000 | 41 |
| 42 | - 216 | 215 | - 042 | 219 | - 220 | 219 | -5 471 | - 996 | -1 000 | 42 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 43 | 138 | 1.178 | -.294 | 1.2[illegible] | [illegible] | .580 | -14.748 | 20.528 | 7.258 | 43 |
| 44 | 141 | 1.129 | 085 | 1.134 | 133 | .501 | 4.883 | 8.514 | 2.793 | 44 |
| 45 | -.190 | 423 | 113 | .443 | -.310 | 328 | 10.158 | -2.108 | -1.000 | 45 |
| 46 | 003 | 022 | 009 | 025 | 000 | .013 | 21.848 | -2858.018 | -1.000 | 46 |
| 47 | 058 | 144 | 100 | .209 | -.009 | 109 | 13.119 | -22.635 | -1.000 | 47 |
| 48 | 037 | 407 | 187 | 485 | -.041 | 283 | 22.650 | -11.922 | -1.000 | 48 |
| 49 | -.228 | -.014 | -.098 | 023 | -.283 | 143 | -21.037 | -.088 | -1.000 | 49 |
| 50 | -.108 | .519 | 119 | 541 | -.129 | 335 | 10.359 | -4.153 | -1.000 | 50 |
| 51 | -.421 | 909 | -.571 | 1.121 | -.832 | .878 | -20.322 | -1.773 | -1.000 | 51 |
| 52 | -.492 | 911 | 210 | 942 | -.522 | 732 | 8.351 | -1.803 | -1.000 | 52 |
| 53 | -.283 | 382 | 118 | .391 | -.284 | 333 | 10.094 | -1.348 | -1.000 | 53 |
| 54 | 035 | .083 | 033 | [illegible] | -.024 | .083 | 43.510 | -5.928 | -1.000 | 54 |
| 55 | 125 | 098 | 212 | 173 | -.102 | 212 | 48.968 | -3.182 | -1.000 | 55 |
| 56 | 293 | 489 | 064 | 579 | 282 | 098 | 13.193 | 1.897 | 259 | 56 |
| 57 | 042 | 188 | -.102 | .224 | -.018 | 120 | -28.427 | -14.179 | -1.000 | 57 |
| 58 | -.787 | 1.097 | -.205 | 1.119 | -.785 | 954 | -8.211 | -1.418 | -1.000 | 58 |
| 59 | -1.057 | 828 | 117 | 833 | -1.085 | 849 | 3.978 | -.598 | -1.000 | 59 |
| 60 | -.308 | 371 | 052 | 325 | -.312 | 319 | 4.689 | -1.043 | -1.000 | 60 |
| 61 | -.008 | 001 | 023 | 020 | -.027 | 023 | 39.925 | -.747 | -1.000 | 61 |
| 62 | 131 | 102 | 088 | 214 | 019 | .098 | 49.450 | 11.244 | 3.808 | 62 |
| 63 | 275 | 131 | 172 | 390 | 018 | 187 | 58.339 | 23.980 | 8.542 | 63 |
| 64 | 379 | 425 | -.059 | 485 | 339 | 083 | -34.180 | 1.373 | 139 | 64 |
| 65 | 888 | 772 | 004 | 772 | 888 | 043 | 2.892 | 1.128 | 047 | 65 |
| 66 | 506 | 539 | -.013 | 544 | 501 | 021 | -19.051 | 1.085 | .031 | 66 |
| 67 | 189 | .309 | -.011 | 310 | 188 | 081 | -5.155 | 1.848 | .241 | 67 |
| 68 | 190 | 155 | 014 | 195 | 190 | 022 | 70.388 | 1.297 | 111 | 68 |
| 69 | 333 | -.088 | 087 | .343 | -.088 | 221 | 81.229 | -3.488 | -1.000 | 69 |
| 70 | 409 | 414 | -.031 | 443 | 381 | .031 | -42.722 | 1.183 | .080 | 70 |
| 71 | 853 | 703 | .009 | 704 | 981 | .022 | 12.111 | 1.065 | .024 | 71 |
| 72 | 418 | 457 | 018 | 483 | 405 | 027 | 20.470 | 1.132 | 049 | 72 |
| 73 | 210 | 253 | 005 | 253 | 210 | 022 | 8.323 | 1.208 | 077 | 73 |
| 74 | 011 | 020 | .001 | .020 | .011 | 004 | 7.844 | 1.778 | .289 | 74 |
| 75 | -.101 | .233 | 475 | .589 | -.438 | 504 | 38.337 | -1.301 | -1.000 | 75 |
| 76 | -.308 | 1.017 | -.475 | 1.170 | -.459 | 814 | -17.840 | -2.549 | -1.000 | 76 |
| 77 | 007 | 038 | 006 | 039 | 006 | 017 | 9.740 | 6.918 | 2.199 | 77 |
| 78 | 204 | .223 | 005 | .224 | 202 | 011 | 14.813 | 1.108 | .040 | 78 |

```
SSTIPN  1 LAYER OF GEOTEXTILE, P=4000 PPI, T=0

TOTAL NUMBER OF NODES------------------ 95
NUMBER OF BAR ELEMENTS----------------   9
NUMBER OF DIFF. BAR MATERIALS---------   1
NUMBER OF BEAM ELEMENTS---------------   0
NUMBER OF DIFF  BEAM MATERIALS--------   0
NUMBER OF NODAL LINKS ----------------   0
NUMBER OF INTERFACE ELEMENTS----------   0
NO  OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE. IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS---------   0
TOTAL NUMBER OF SOIL ELEMENTS--------- 78
NUMBER OF DIFF  SOIL MATERIALS--------   3
NUMBER OF ELEMENTS IN FOUNDATION------- 36
NUMBER OF NODES IN FOUNDATION--------- 52
NUMBER OF PREEXISTING ELEMENTS--------   0
NUMBER OF PREEXISTING NODES-----------   0
NUMBER OF CONSTRUCTION LAYERS---------   6
NUMBER OF LOAD CASES------------------   1

CALING FACTOR ----------       1 00000

ATMOSPHERIC PRESSURE ---       1 05800

UNIT WEIGHT OF WATER ---         03120


OMPUTATION SEQUENCE FOR A TOTAL OF     7  INCREMENTS
--------------------------------------------------

 INCREMENT NO    1      PUT ON LAYER NO    1

 INCREMENT NO    2      PUT ON LAYER NO    2

 INCREMENT NO    3      PUT ON LAYER NO    3

 INCREMENT NO    4      PUT ON LAYER NO    4

 INCREMENT NO    5      PUT ON LAYER NO    5

 INCREMENT NO    6      PUT ON LAYER NO    6

 INCREMENT NO    7      APPLY LOAD CASE    1
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B C. CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | .000 | .000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 36.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58.000 | .000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | .000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30.000 | 4.000 | 0 | 0 | 0 |
| 18 | 36.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54.000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82.000 | 4.000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 36.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.000 | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10.000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.000 | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 36.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10.000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 36.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11.500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74.000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.000 | 14.000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | 15.000 | 0 | 0 | 0 |
| 83 | 82.000 | 15.000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17.000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17.000 | 1 | 0 | 1 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 120 | 1.00 | 0 |

| ELMT NO | CONNECTED NODES I | J | MATL NO. |
|---|---|---|---|
| 1 | 43 | 44 | 1 |
| 2 | 44 | 45 | 1 |
| 3 | 45 | 46 | 1 |
| 4 | 46 | 47 | 1 |
| 5 | 47 | 48 | 1 |
| 6 | 48 | 49 | 1 |
| 7 | 49 | 50 | 1 |
| 8 | 50 | 51 | 1 |
| 9 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | YOUNG'S MODULUS EXPONENT | RATIO | BULK MODULUS CONSTANT | BULK MODULUS EXPONENT | STRENGTH PARAMETERS C | PHI | DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0680 | 6000.00 | .500 | .500 | 1500.00 | .600 | 00 | 35.00 | 00 | 50 |
| 2 | 0530 | 40.00 | 300 | 900 | 20.00 | 200 | 05 | 00 | 00 | 50 |
| 3 | 0600 | 1000.00 | .400 | 700 | 500.00 | .500 | .50 | 40.00 | 00 | 50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO | CONNECTED NODES I | J | K | L | MATL NO | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5.000 | 2.000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15.000 | 2.000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25.000 | 2.000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33.000 | 2.000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39.000 | 2.000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46.000 | 2.000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52.000 | 2.000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 58.000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62.000 | 2.000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2.000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78.000 | 2.000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86.000 | 2.000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5.000 | 5.500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15.000 | 5.500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25.000 | 5.500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33.000 | 5.500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5.500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5.500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 58.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5.500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5.500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78.000 | 5.500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86.000 | 5.500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5.000 | 8.500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15.000 | 8.500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25.000 | 8.500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33.000 | 8.500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39.000 | 8.500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46.000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52.000 | 8.500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 58.000 | 8.500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62.000 | 8.500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70.000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78.000 | 8.500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86.000 | 8.500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34.500 | 10.750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39.000 | 10.750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46.000 | 10.750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52.000 | 10.750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 58.000 | 10.750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62.000 | 10.750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70.000 | 10.750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78.000 | 10.750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86.000 | 10.750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40.500 | 12.250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46.000 | 12.250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52.000 | 12.250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 58.000 | 12.250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62.000 | 12.250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70.000 | 12.250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78.000 | 12.250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86.000 | 12.250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47.000 | 13.500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52.000 | 13.500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 58.000 | 13.500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62.000 | 13.500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70.000 | 13.500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78.000 | 13.500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86.000 | 13.500 |
| 61 | 70 | 71 | 78 | 78 | 1 | 49.000 | 14.500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52.000 | 14.500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 56.000 | 14.500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62.000 | 14.500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70.000 | 14.500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78.000 | 14.500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 86.000 | 14.500 |
| 68 | 78 | 79 | 85 | 85 | 1 | 53.000 | 15.500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 56.000 | 15.500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62.000 | 15.500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70.000 | 15.500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78.000 | 15.500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86.000 | 15.500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57.000 | 16.500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62.000 | 16.500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70.000 | 16.500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78.000 | 16.500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86.000 | 16.500 |

CONSTRUCTION LAYER INFORMATION

```
SSTIPN- 1 LAYER OF GEOTEXTILE, P=4000 PPI, T=0

*********************************************************
*********************************************************
*                                                       *
*  LOAD CASE ------------------------------   1         *
*                                                       *
*********************************************************
*********************************************************

LARGEST ELE. NO  IN THIS INCREMENT   78

LARGEST N P  NO  IN THIS INCREMENT   95


BAND WIDTH------------------------  40

TOTAL NUMBER OF EQUATIONS--------- 222

NUMBER OF EQUATIONS IN BLOCK------  85

NUMBER OF BLOCKS------------------   3

NUMBER OF N.P  FORCE CARDS--------   3

NUMBER OF PRESSURE CARDS----------   0
```

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0. | 0. |
| 2 | 0 | 0 |
| 3 | 0. | 0 |
| 4 | 0. | 0 |
| 5 | 0. | 0 |
| 6 | 0 | 0 |
| 7 | 0 | 0. |
| 8 | 0 | 0. |
| 9 | 0 | 0 |
| 10 | 0 | 0 |
| 11 | 0. | 0. |
| 12 | 0 | 0 |
| 13 | 0. | 0 |
| 14 | 0 | 0 |
| 15 | 0 | 0 |
| 16 | 0. | 0 |
| 17 | 0 | 0 |
| 18 | 0 | 0 |
| 19 | 0 | 0 |
| 20 | 0 | 0 |
| 21 | 0. | 0 |
| 22 | 0 | 0 |
| 23 | 0 | 0. |
| 24 | 0 | 0 |
| 25 | 0. | 0 |
| 26 | 0 | 0 |
| 27 | 0 | 0 |
| 28 | 0. | 0. |
| 29 | 0 | 0. |
| 30 | 0 | 0 |
| 31 | 0. | 0. |
| 32 | 0 | 0 |
| 33 | 0. | 0. |
| 34 | 0 | 0 |
| 35 | 0. | 0 |
| 36 | 0. | 0. |
| 37 | 0. | 0. |
| 38 | 0 | 0 |
| 39 | 0 | 0. |
| 40 | 0 | 0 |
| 41 | 0 | 0 |
| 42 | 0 | 0 |
| 43 | 0. | 0. |
| 44 | 0 | 0 |
| 45 | 0 | 0. |
| 46 | 0 | 0 |
| 47 | 0 | 0 |
| 48 | 0. | 0 |
| 49 | 0. | 0 |
| 50 | 0 | 0 |
| 51 | 0. | 0. |
| 52 | 0 | 0. |
| 53 | 0 | 0 |
| 54 | 0 | 0 |
| 55 | 0 | 0. |
| 56 | 0 | 0 |
| 57 | 0. | 0. |
| 58 | 0 | 0 |
| 59 | 0. | 0. |
| 60 | 0. | 0 |
| 61 | 0. | 0. |
| 62 | 0. | 0. |
| 63 | 0 | 0 |
| 64 | 0. | 0 |
| 65 | 0. | 0. |
| 66 | 0. | 0 |
| 67 | 0 | 0. |
| 68 | 0 | 0 |
| 69 | 0 | 0. |
| 70 | 0 | 0. |
| 71 | 0. | 0 |
| 72 | 0 | 0 |
| 73 | 0. | 0 |
| 74 | 0 | 0 |
| 75 | 0. | 0 |
| 76 | 0 | 0 |
| 77 | 0 | 0. |
| 78 | 0 | 0 |
| 79 | 0. | 0 |
| 80 | 0 | 0 |
| 81 | 0. | 0 |
| 82 | 0 | 0. |
| 83 | 0. | 0. |
| 84 | 0 | 0 |
| 85 | 0. | 0 |
| 86 | 0 | 0. |
| 87 | 0. | 0 |
| 88 | 0 | 0 |
| 89 | 0. | 0 |
| 90 | 0. | 0. |
| 91 | 0. | 0 |
| 92 | 0 | -4.50 |
| 93 | 0 | -4.50 |
| 94 | 0 | -2.00 |
| 95 | 0 | 0 |

LOAD CASE : 1    ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | 0000 | .0000 | .0000 | 0000 | .0000 | .0000 | 0000 | 1 |
| 2 | .0000 | 0000 | .0000 | 0000 | .0000 | .0000 | 0000 | 2 |
| 3 | .0000 | .0000 | 0000 | .0000 | 0000 | .0000 | .0000 | 3 |
| 4 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 4 |
| 5 | 0000 | 0000 | 0000 | 0000 | 0000 | .0000 | 0000 | 5 |
| 6 | .0000 | 0000 | .0000 | 0000 | 0000 | .0000 | .0000 | 6 |
| 7 | .0000 | 0000 | 0000 | 0000 | 0000 | 0000 | .0000 | 7 |
| 8 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 8 |
| 9 | 0000 | .0000 | .0000 | .0000 | 0000 | 0000 | .0000 | 9 |
| 10 | .0000 | 0000 | .0000 | .0000 | 0000 | .0000 | 0000 | 10 |
| 11 | .0000 | 0000 | .0000 | .0000 | .0000 | 0000 | .0000 | 11 |
| 12 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 12 |
| 13 | 0000 | 0000 | 0000 | .0000 | 0000 | .0000 | .0000 | 13 |
| 14 | 0000 | 0000 | .0000 | 0000 | 0000 | .0000 | 0000 | 14 |
| 15 | 0000 | 0000 | 0000 | -.0001 | .0000 | 0000 | 0001 | 15 |
| 16 | 0000 | -0001 | 0000 | -0003 | -0006 | 0000 | 0007 | 16 |
| 17 | -0010 | 0005 | .0000 | -0053 | 0024 | .0000 | 0058 | 17 |
| 18 | -.0304 | 0086 | 0000 | -.2218 | 0451 | 0000 | .2264 | 18 |
| 19 | -0428 | -0074 | 0000 | -.3158 | -0780 | .0000 | 3253 | 19 |
| 20 | -0097 | -0257 | 0000 | -1636 | -1470 | 0000 | 2222 | 20 |
| 21 | .0007 | -.0010 | 0000 | -.0588 | -.1388 | 0000 | .1478 | 21 |
| 22 | 0001 | 0000 | 0000 | 0003 | -0048 | .0000 | 0048 | 22 |
| 23 | -0010 | -0015 | .0000 | -.0008 | -0047 | 0000 | 0047 | 23 |
| 24 | 0006 | -0058 | 0000 | 0007 | -0109 | 0000 | 0110 | 24 |
| 25 | 0021 | -0022 | .0000 | 0020 | -.0057 | .0000 | 0061 | 25 |
| 26 | .0000 | 0004 | 0000 | 0000 | -0020 | 0000 | .0020 | 26 |
| 27 | 0000 | .0000 | 0000 | 0000 | .0001 | .0000 | .0001 | 27 |
| 28 | 0000 | 0000 | 0000 | 0000 | -0002 | 0000 | 0002 | 28 |
| 29 | .0000 | -.0001 | 0000 | -0014 | .0000 | .0000 | .0014 | 29 |
| 30 | -0280 | 0105 | 0000 | -2082 | 0639 | .0000 | 2178 | 30 |
| 31 | -0444 | 0149 | 0000 | -.3110 | 0858 | 0000 | 3228 | 31 |
| 32 | -0542 | -0134 | 0000 | -3825 | -1374 | 0000 | 4064 | 32 |
| 33 | -.0334 | -.0812 | 0000 | -2897 | -2851 | 0000 | 4135 | 33 |
| 34 | -0346 | 0085 | 0000 | -2295 | -2322 | 0000 | 3265 | 34 |
| 35 | -0483 | -0164 | 0000 | -.1823 | -1637 | .0000 | .2305 | 35 |
| 36 | -0003 | -0033 | 0000 | 0016 | -0119 | .0000 | 0120 | 36 |
| 37 | 0015 | -0113 | 0000 | 0011 | -0200 | .0000 | .0201 | 37 |
| 38 | .0024 | -.0042 | .0000 | .0011 | -.0113 | 0000 | .0114 | 38 |
| 39 | .0000 | 0019 | .0000 | 0000 | -.0030 | .0000 | 0030 | 39 |
| 40 | 0000 | 0000 | 0000 | 0000 | 0001 | 0000 | 0001 | 40 |
| 41 | 0000 | 0000 | .0000 | .0001 | -0002 | 0000 | 0003 | 41 |
| 42 | -.0108 | .0087 | 0000 | -1107 | .0397 | 0000 | 1178 | 42 |
| 43 | -0471 | 0226 | .0000 | -.2584 | .0972 | .0000 | .2761 | 43 |
| 44 | -0479 | 0131 | 0000 | -2583 | 0823 | 0000 | 2711 | 44 |
| 45 | -0500 | -0168 | .0000 | -2468 | -1885 | .0000 | .3119 | 45 |
| 46 | -.0485 | -.0723 | 0000 | -.2128 | -.4080 | .0000 | 4601 | 46 |
| 47 | -.0424 | 0131 | 0000 | -1778 | -3194 | 0000 | 3658 | 47 |
| 48 | -0328 | -0155 | 0000 | -1420 | -2663 | 0000 | 3018 | 48 |
| 49 | -0183 | -0708 | 0000 | -.0884 | -2066 | .0000 | .2147 | 49 |
| 50 | -0011 | -.0271 | .0000 | -.0068 | -.0458 | 0000 | .0461 | 50 |
| 51 | -0005 | -0038 | 0000 | -0038 | -0146 | 0000 | 0153 | 51 |
| 52 | 0000 | 0022 | 0000 | 0000 | -0725 | 0000 | 0725 | 52 |
| 53 | -.0421 | 0132 | .0000 | -.5127 | .1185 | 0000 | .5262 | 53 |
| 54 | -.0406 | -.0187 | 0000 | -.4267 | -1713 | 0000 | 4617 | 54 |
| 55 | -.0397 | -0733 | .0000 | -.2342 | -.3868 | .0000 | 4540 | 55 |
| 56 | -0372 | 0115 | 0000 | -1774 | -3239 | 0000 | 3693 | 56 |
| 57 | -.0258 | -0175 | .0000 | -1384 | -.3011 | .0000 | .3314 | 57 |
| 58 | -0135 | -.0735 | 0000 | -0575 | -2403 | .0000 | .2471 | 58 |
| 59 | -.0068 | -0301 | .0000 | .0437 | -0972 | 0000 | 1066 | 59 |
| 60 | -0032 | -0040 | 0000 | 0091 | -.0138 | 0000 | .0165 | 60 |
| 61 | .0000 | .0023 | 0000 | 0000 | -.0898 | .0000 | .0898 | 61 |
| 62 | -0334 | -0168 | 0000 | -.0804 | -0327 | .0000 | .0868 | 62 |
| 63 | -0728 | -.0745 | 0000 | -1720 | -.2060 | 0000 | .2394 | 63 |
| 64 | -.0734 | 0119 | .0000 | -.1244 | -.1515 | .0000 | 1960 | 64 |
| 65 | -.0089 | -0173 | 0000 | -0585 | -1906 | 0000 | .1997 | 65 |
| 66 | -0171 | -0748 | 0000 | -0806 | -2072 | 0000 | 2159 | 66 |
| 67 | -0138 | -.0315 | .0000 | -.0418 | -.1088 | 0000 | .1163 | 67 |
| 68 | -.0069 | -.0047 | 0000 | -0181 | -0380 | 0000 | 0413 | 68 |
| 69 | .0000 | 0022 | 0000 | .0000 | -.0297 | 0000 | .0297 | 69 |
| 70 | -0757 | -0407 | 0000 | -1066 | -0812 | 0000 | 1340 | 70 |
| 71 | -.0940 | -.0744 | .0000 | -.1275 | -.1584 | 0000 | 2033 | 71 |
| 72 | -0865 | 0116 | 0000 | -1313 | -0882 | .0000 | 1640 | 72 |
| 73 | -1064 | -.0019 | .0000 | -.1431 | -1257 | 0000 | 1904 | 73 |
| 74 | -0231 | -0757 | 0000 | -0586 | -1853 | 0000 | 1944 | 74 |
| 75 | -0179 | -0318 | .0000 | -.0348 | -1287 | 0000 | .1314 | 75 |
| 76 | -0088 | -0052 | 0000 | -0114 | -0108 | .0000 | 0155 | 76 |
| 77 | .0000 | 0017 | 0000 | 0000 | -.0034 | 0000 | 0034 | 77 |
| 78 | -0952 | -0713 | 0000 | -1093 | -1103 | 0000 | 1553 | 78 |
| 79 | -0888 | 0111 | .0000 | -.1120 | -.0399 | .0000 | .1169 | 79 |
| 80 | -.1033 | .0014 | .0000 | -1200 | -0552 | 0000 | 1321 | 80 |
| 81 | -2814 | -2738 | .0000 | -.2792 | -3176 | 0000 | .4229 | 81 |
| 82 | 7315 | -2455 | 0000 | 7208 | -3074 | 0000 | 7823 | 82 |
| 83 | 1.1195 | -.0420 | .0000 | 1.1176 | -.0483 | 0000 | 1 1186 | 83 |
| 84 | .0000 | 1197 | 0000 | 0000 | 1163 | 0000 | 1163 | 84 |
| 85 | -0949 | .0111 | .0000 | -.1008 | -0091 | 0000 | 1013 | 85 |
| 86 | -1053 | 0058 | 0000 | -1124 | -0136 | 0000 | 1139 | 86 |
| 87 | -.1074 | -4934 | 0000 | -1150 | -5159 | .0000 | .5256 | 87 |
| 88 | 8681 | -5382 | .0000 | .8634 | -5887 | 0000 | 1 0344 | 88 |
| 89 | 1 5763 | -0513 | 0000 | 1 5752 | -0539 | 0000 | 1 5761 | 89 |
| 90 | 0000 | 3711 | 0000 | 0000 | 3883 | 0000 | 3893 | 90 |
| 91 | -0430 | 0072 | 0000 | -0430 | 0072 | 0000 | .0436 | 91 |
| 92 | -0445 | -4962 | 0000 | -.0445 | -4962 | 0000 | 4982 | 92 |
| 93 | 7595 | -9017 | 0000 | 7595 | -9017 | 0000 | 1 1789 | 93 |
| 94 | 1 6485 | -0530 | 0000 | 1 6485 | -0530 | 0000 | 1 6494 | 94 |
| 95 | 0000 | 6661 | 0000 | .0000 | 6661 | .0000 | 6661 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO. | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | -0160 |
| 2 | -0429 |
| 3 | 0231 |
| 4 | 1818 |
| 5 | 1092 |
| 6 | .3376 |
| 7 | 2272 |
| 8 | 0100 |
| 9 | 0072 |
| TOTAL VALUES | |
| 1 | 0014 |
| 2 | 1953 |
| 3 | 5389 |
| 4 | 1 0474 |
| 5 | 1 0749 |
| 6 | 1 2538 |
| 7 | .7752 |

| | |
|---|---|
| 8 | .0473 |
| 9 | .0541 |

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 525 8 | 330 2 | 227 5 | 155 | 001 | 000 | 002 | 001 | - 001 | 002 | 1 |
| 2 | 523 1 | 332.3 | 225.3 | .161 | 001 | .008 | .008 | .010 | - 001 | 011 | 2 |
| 3 | 532.2 | 333.8 | 230.4 | .156 | .025 | - 023 | .054 | 037 | -.035 | 072 | 3 |
| 4 | .6 | 17.1 | 2 | 494 | 1 805 | -.594 | 2.483 | 2 332 | -1.121 | 3 452 | 4 |
| 5 | 6 | 17 1 | 2 | 494 | 783 | 412 | 7 748 | 4 475 | -3.280 | 7 755 | 5 |
| 6 | .7 | 18.0 | .2 | .494 | - 533 | 2.613 | 6.461 | 4.675 | -2.794 | 7.468 | 6 |
| 7 | 7 | 18.4 | .2 | 493 | -1.305 | 3 548 | 2.852 | 3 882 | -1 719 | 5.601 | 7 |
| 8 | 6 | 18.9 | 2 | 494 | - 701 | 1 770 | -.557 | 1.880 | - 791 | 2.650 | 8 |
| 9 | 470 2 | 345 5 | 182 5 | 221 | 005 | 118 | 002 | 118 | 005 | 113 | 9 |
| 10 | 478.7 | 389 5 | 183 3 | .238 | -.008 | 195 | .037 | .197 | -.010 | 208 | 10 |
| 11 | 474.4 | 372.3 | 180 7 | 244 | - 008 | 208 | - 088 | .213 | -.013 | .228 | 11 |
| 12 | 500.6 | 362 3 | 207.7 | .205 | 012 | .096 | - 048 | 103 | 008 | 097 | 12 |
| 13 | 435 9 | 258 6 | 194 4 | 121 | 001 | 002 | - 002 | 002 | 000 | 002 | 13 |
| 14 | 466.5 | 272.6 | 206.6 | .117 | 006 | - 006 | 017 | 012 | - 010 | .022 | 14 |
| 15 | 1.9 | 13.6 | .6 | 477 | 1.059 | -1.034 | 3.066 | 1 669 | -1 643 | 3.712 | 15 |
| 16 | 7.5 | 16 5 | 2 6 | 420 | 2 861 | -1.702 | 4.332 | 3 554 | -2.593 | 6.148 | 16 |
| 17 | 1 9 | 16 3 | 6 | 481 | 1 379 | 311 | 5 484 | 3 939 | -1 949 | 5 587 | 17 |
| 18 | .6 | 17 1 | .2 | 494 | -1.513 | 3 456 | 4.581 | 4.351 | -2 406 | 6.758 | 18 |
| 19 | .6 | 17 1 | .2 | .494 | -2.138 | 4.057 | 4.033 | 4.656 | -2.738 | 7.392 | 19 |
| 20 | .7 | 18.2 | 2 | .494 | -1.541 | 4 239 | 3.088 | 4 628 | -1.930 | 6.557 | 20 |
| 21 | 6 | 17 2 | 2 | .494 | -1 019 | 2 768 | 1 726 | 2 956 | -1 208 | 4 162 | 21 |
| 22 | 461.5 | 382 1 | 180.5 | .261 | - 005 | 271 | .046 | 273 | - 007 | 280 | 22 |
| 23 | 408.7 | 310 6 | 165 7 | .233 | - 008 | 245 | - 078 | 251 | -.014 | 265 | 23 |
| 24 | 410.2 | 276.0 | 172.8 | 187 | 019 | 111 | -.061 | 120 | .010 | 110 | 24 |
| 25 | 408 7 | 229 6 | 187 0 | 093 | - 001 | 000 | 001 | 001 | - 001 | 002 | 25 |
| 26 | .0 | 1 | .0 | .495 | 561 | -.683 | 1.619 | .964 | -1.066 | 2 030 | 26 |
| 27 | 1.9 | 13 6 | .6 | 476 | 1 773 | -1 219 | 2.051 | 2.091 | -1.537 | 3 627 | 27 |
| 28 | 3.1 | 13.7 | 1.0 | 462 | 856 | - 497 | - 100 | 858 | - 499 | 1 357 | 28 |
| 29 | 1.3 | 14 2 | 5 | 484 | 514 | 910 | 1 004 | 1 252 | 173 | 1 079 | 29 |
| 30 | .5 | 15.1 | .2 | .494 | - 604 | 2 734 | -1.157 | 2 626 | - 696 | 3 722 | 30 |
| 31 | 6 | 15 8 | 2 | 494 | -1.189 | 3.335 | -4.035 | 4 105 | -1.958 | 6 063 | 31 |
| 32 | 6 | 15 8 | .2 | 494 | -1.287 | 3 163 | -2.720 | 3 546 | -1.670 | 5.216 | 32 |
| 33 | 7 | 17 8 | 2 | 494 | -1 547 | 4 955 | - 881 | 4 972 | -1 563 | 6 535 | 33 |
| 34 | .6 | 17 2 | .2 | 494 | - 320 | 3.672 | 176 | 3.674 | -.322 | 3 996 | 34 |
| 35 | 306.6 | 278 7 | 120.3 | .283 | - 020 | 485 | -.038 | 486 | -.021 | 506 | 35 |
| 36 | 381.4 | 220 1 | 158 5 | 140 | -.016 | 1 217 | .387 | 1 246 | - 045 | 1 291 | 36 |
| 37 | 163.0 | 417 6 | 56 9 | 432 | 023 | 256 | 17 566 | 8 924 | -8 645 | 17 570 | 37 |
| 38 | 666 7 | 487 9 | 267.9 | .225 | - 774 | 2.008 | 20 060 | 10.714 | -9 478 | 20 193 | 38 |
| 39 | 335.9 | 440 0 | 124 0 | 359 | -1 625 | 3.830 | 10 444 | 7 048 | -4 643 | 11 691 | 39 |
| 40 | 11 9 | 398 6 | 4 0 | 495 | -1 130 | 4 273 | - 175 | 4 274 | -1 131 | 5 406 | 40 |
| 41 | 270 5 | 431 1 | 97 5 | 387 | - 910 | 4 935 | - 031 | 4 935 | - 910 | 5 845 | 41 |
| 42 | 235.7 | 426 6 | 84 5 | 401 | - 992 | 4 317 | - 220 | 4 319 | - 995 | 5 314 | 42 |
| 43 | 209.6 | 423 4 | 74.2 | 412 | - 927 | 3 526 | -3.341 | 4.083 | -1 484 | 5 567 | 43 |
| 44 | 670 1 | 588 1 | 282.3 | 277 | 199 | 1.854 | -2.798 | 2 662 | -.599 | 3 251 | 44 |
| 45 | 1318 4 | 623 5 | 571 8 | 153 | 035 | 021 | 288 | 171 | - 115 | 287 | 45 |
| 46 | 430.3 | 453 0 | 163.0 | 320 | - 061 | .031 | .220 | 105 | - 134 | 239 | 46 |
| 47 | .1 | 4 0 | 0 | 495 | 228 | 076 | 2 142 | 1.225 | - 922 | 2 147 | 47 |
| 48 | 411 2 | 450 2 | 154 8 | 328 | - 037 | 075 | 455 | 254 | - 215 | 469 | 48 |
| 49 | 1 | 4 0 | 0 | 495 | -1 018 | 075 | 1 410 | 422 | -1 362 | 1 783 | 49 |
| 50 | 359.0 | 444 3 | 137 1 | .348 | - 236 | 1 572 | 100 | 1 573 | - 237 | 1 810 | 50 |
| 51 | 981.9 | 702 3 | 405.2 | 211 | - 257 | 3 628 | 241 | 3 632 | -.261 | 3 893 | 51 |
| 52 | 837.4 | 696.5 | 331.8 | .262 | - 231 | 3 075 | 565 | 3 099 | -.255 | 3 354 | 52 |
| 53 | 567.6 | 472 0 | 220 1 | 267 | - 130 | 1 822 | 298 | 1 833 | - 141 | 1 974 | 53 |
| 54 | 1 | 4 0 | 0 | 495 | 612 | - 369 | 3.202 | 1 735 | -1 563 | 3 316 | 54 |
| 55 | 1086.2 | 624 0 | 497 0 | 102 | 053 | 019 | 065 | 073 | - 001 | .073 | 55 |
| 56 | 1 | 4 0 | 0 | 495 | - 683 | - 710 | 6 537 | 2 572 | -3.965 | 6 537 | 56 |
| 57 | 1 | 4 0 | 0 | 495 | - 527 | - 620 | 5 989 | 2 411 | -3 558 | 5 969 | 57 |
| 58 | 1370 1 | 785 5 | 619 6 | 108 | - 498 | 2 776 | 1 627 | 2.966 | - 688 | 3 653 | 58 |
| 59 | 1661.1 | 903 1 | 775.8 | 070 | - 045 | 2 717 | 1.154 | 2.832 | - 161 | 2 993 | 59 |
| 60 | 413.4 | 450 6 | 155.8 | .327 | - 123 | 100 | 080 | 104 | - 127 | 231 | 60 |
| 61 | .1 | 4 0 | .0 | 495 | 504 | - 319 | 1 222 | 629 | - 644 | 1 473 | 61 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | 1 | 4.0 | .0 | .495 | 066 | - 127 | -1 987 | 968 | -1 029 | 1.996 | 62 |
| 63 | 445.1 | 455.1 | 189.4 | .314 | .220 | - 126 | 175 | .241 | - 147 | .388 | 63 |
| 64 | 1 | 4.0 | .0 | 495 | 461 | 9 788 | 13.916 | 13 485 | -3.258 | 16 741 | 64 |
| 65 | 1 | 4.0 | .0 | 495 | -6.329 | 21 950 | -25.594 | 26 881 | -11.280 | 38 141 | 65 |
| 66 | 1 | 4.0 | 0 | 495 | -2.586 | 13 908 | -95.703 | 54.225 | -42.886 | 97 111 | 66 |
| 67 | 1 | 4 0 | 0 | 495 | 6 916 | -4 002 | -67 499 | 30 720 | -27 806 | 58 526 | 67 |
| 68 | 1 | 4.0 | .0 | 495 | .051 | - 005 | -2.228 | 1 137 | -1.091 | 2.229 | 68 |
| 69 | 203.9 | 422 7 | 72 1 | 415 | .226 | - 215 | .228 | .253 | -.243 | 496 | 69 |
| 70 | 1 | 4 0 | .0 | 495 | 1 005 | 10 778 | -2.788 | 10.970 | .812 | 10 158 | 70 |
| 71 | 1 | 4 0 | 0 | 495 | -12 338 | 26 916 | -14 445 | 28 203 | -13 624 | 41 827 | 71 |
| 72 | .1 | 4.0 | 0 | .495 | -6.867 | 16 413 | -34.165 | 25.437 | -15.922 | 41.359 | 72 |
| 73 | 1 | 4.0 | 0 | 495 | 16.837 | -12 079 | -26.488 | 21.985 | -17.227 | 39.213 | 73 |
| 74 | 1 | 4.0 | 0 | 495 | 259 | - 151 | -6.090 | 3.106 | -2 998 | 6 104 | 74 |
| 75 | 897 2 | 505 2 | 235 7 | 287 | 023 | 064 | 008 | 064 | 022 | 042 | 75 |
| 76 | .1 | 4.0 | .0 | 495 | -11.122 | 18 313 | 5 100 | 18.532 | -11 341 | 29.873 | 76 |
| 77 | 1 | 4.0 | 0 | .495 | -9.983 | 18 258 | -0 529 | 18.631 | -10 355 | 28.986 | 77 |
| 78 | .1 | 4.0 | 0 | .495 | 20.155 | -14 764 | -10.760 | 20.965 | -15 574 | 36 539 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .244 | 481 | 004 | 481 | .244 | 118 | .998 | 1 971 | 078 | 1 |
| 2 | 252 | 524 | 020 | 525 | 251 | 137 | 4 127 | 2 094 | 090 | 2 |
| 3 | .361 | .375 | .130 | 498 | .238 | 130 | 45.483 | 2 081 | .087 | 3 |
| 4 | .362 | .552 | 005 | .552 | .361 | 085 | 1 691 | 1 447 | 1 704 | 4 |
| 5 | .374 | .552 | .016 | 554 | .373 | .090 | 5 077 | 1.485 | 1 810 | 5 |
| 6 | 486 | 682 | 014 | 683 | 485 | 099 | 4 061 | 1 408 | 1 977 | 6 |
| 7 | .535 | 737 | 008 | 737 | 535 | .101 | 1.868 | 1 377 | 2.016 | 7 |
| 8 | 346 | .536 | - 002 | 536 | 346 | .095 | - 560 | 1.549 | 1 900 | 8 |
| 9 | 349 | .982 | 001 | .982 | .349 | 317 | .116 | 2.815 | 186 | 9 |
| 10 | 416 | 1 408 | 073 | 1 413 | 411 | 501 | 4 171 | 3 441 | 277 | 10 |
| 11 | 441 | 1 473 | -.127 | 1 488 | 428 | .531 | -6 930 | 3 498 | .289 | 11 |
| 12 | .358 | .878 | - 089 | 896 | .340 | .278 | -10 476 | 2 637 | 165 | 12 |
| 13 | 139 | 278 | - 003 | 278 | 138 | .070 | -1 302 | 2 009 | 053 | 13 |
| 14 | 187 | 245 | 034 | 258 | 154 | 052 | 20 708 | 1 673 | 038 | 14 |
| 15 | 102 | 177 | 013 | 177 | 100 | .038 | 9.799 | 1 763 | 784 | 15 |
| 16 | .284 | .270 | 038 | .316 | .238 | 039 | 60 310 | 1 329 | 781 | 16 |
| 17 | .353 | 433 | 017 | 437 | .350 | .043 | 11 630 | 1 249 | 870 | 17 |
| 18 | 381 | 490 | 009 | 490 | 380 | 055 | 4 854 | 1 290 | 1 104 | 18 |
| 19 | .374 | .488 | .008 | 489 | .374 | .057 | 4 046 | 1 308 | 1.150 | 19 |
| 20 | 514 | 628 | 007 | 628 | 513 | .057 | 3.653 | 1 224 | 1 150 | 20 |
| 21 | .350 | .456 | 004 | .456 | 350 | 053 | 1.915 | 1.303 | 1 081 | 21 |
| 22 | 417 | 1 550 | 089 | 1 557 | 410 | 573 | 4 486 | 3 796 | 317 | 22 |
| 23 | .322 | 1.277 | -.129 | 1.294 | .305 | .495 | -7.587 | 4 243 | .305 | 23 |
| 24 | .286 | .633 | - 104 | 660 | 229 | .216 | -14 488 | 2.887 | 145 | 24 |
| 25 | 041 | 091 | .002 | 091 | 041 | 025 | 2 480 | 2 207 | .022 | 25 |
| 26 | 002 | - 008 | 003 | 003 | - 007 | 005 | 68 988 | - 442 | -1 000 | 26 |
| 27 | .087 | 008 | 007 | 088 | 006 | 041 | 85.461 | 18 587 | 829 | 27 |
| 28 | .091 | .024 | - 008 | 092 | 023 | .034 | -83.150 | 3 988 | 888 | 28 |
| 29 | .160 | .245 | .008 | 246 | .159 | 043 | 4.124 | 1 543 | .885 | 29 |
| 30 | 224 | 329 | - 005 | 329 | 223 | 053 | -2 816 | 1 473 | 1 056 | 30 |
| 31 | .260 | .384 | -.011 | .385 | .259 | .063 | -5.016 | 1 413 | 1.069 | 31 |
| 32 | 218 | .319 | - 014 | .321 | .216 | .053 | -7.972 | 1.487 | 1.052 | 32 |
| 33 | 478 | .589 | - 001 | 589 | 478 | 055 | -.743 | 1 231 | 1 105 | 33 |
| 34 | 476 | 571 | 003 | 571 | 476 | 048 | 1 801 | 1 201 | 956 | 34 |
| 35 | 420 | 620 | - 026 | 620 | 490 | 065 | -1.065 | 3 717 | .341 | 35 |
| 36 | 051 | 259 | - 006 | 259 | .051 | 104 | -1 668 | 5 061 | 089 | 36 |
| 37 | .101 | .078 | - 185 | .275 | - 098 | 185 | -46 739 | -2.867 | -1.000 | 37 |
| 38 | 079 | 104 | 018 | 113 | 070 | 022 | 27 579 | 1 623 | 231 | 38 |
| 39 | .033 | 373 | .198 | .484 | - 058 | 261 | 24.612 | -8 016 | -1 000 | 39 |
| 40 | -.110 | .137 | - 106 | 176 | -.149 | .162 | -20.333 | -1 178 | -1.000 | 40 |
| 41 | -.604 | .356 | .073 | .381 | - 610 | .485 | 4.316 | -.592 | -1.000 | 41 |
| 42 | -.605 | .423 | 104 | .433 | -.616 | .524 | 5.724 | - 704 | -1 000 | 42 |
| 43 | -.086 | .912 | - 443 | 1 080 | - 254 | .667 | -20.788 | -4 247 | -1.000 | 43 |
| 44 | 202 | 1.276 | .027 | 1.276 | 202 | .537 | 1.462 | 6 332 | 1.982 | 44 |
| 45 | .018 | .402 | .312 | 576 | -.156 | .366 | 29.195 | -3 696 | -1.000 | 45 |
| 46 | - 083 | .037 | .025 | 042 | - 088 | .065 | 11 169 | - 477 | -1.000 | 46 |
| 47 | .081 | 129 | .111 | 219 | -.009 | .114 | 38 869 | -24 769 | -1.000 | 47 |
| 48 | 025 | 433 | 408 | 685 | - 227 | 456 | 31 706 | -3 020 | -1 000 | 48 |
| 49 | - 082 | .123 | - 184 | 218 | - 158 | .188 | -30.229 | -1 384 | -1.000 | 49 |
| 50 | -.054 | 381 | .311 | 543 | -.216 | 380 | 27.499 | -2.511 | -1.000 | 50 |
| 51 | -.450 | 1.034 | - 642 | 1 414 | -.830 | 1 122 | -24.318 | -1 703 | -1 000 | 51 |
| 52 | - 384 | 865 | 177 | 889 | - 409 | 649 | 7 897 | -2 175 | -1 000 | 52 |
| 53 | - 302 | .350 | 131 | 376 | -.328 | .352 | 10 928 | -1 146 | -1 000 | 53 |
| 54 | .056 | .078 | 081 | 149 | - 015 | .082 | 41.008 | -10 196 | -1.000 | 54 |
| 55 | 617 | .328 | 352 | .852 | .091 | .381 | 56.227 | 9.393 | 3.120 | 55 |
| 56 | 115 | 035 | 134 | 214 | - 064 | 139 | 53 283 | -3 325 | -1 000 | 56 |
| 57 | .066 | .213 | - 120 | 281 | -.001 | 141 | -29.212 | -243 258 | -1.000 | 57 |
| 58 | -.663 | 1 108 | -.316 | 1 162 | - 718 | .940 | -9.826 | -1 620 | -1.000 | 58 |
| 59 | -1.609 | 735 | 105 | 740 | -1.613 | 1.177 | 2 563 | - 459 | -1 000 | 59 |
| 60 | - 425 | 244 | 102 | 259 | - 440 | 350 | 8 480 | - 589 | -1 000 | 60 |
| 61 | 018 | 024 | .003 | 026 | 016 | 005 | 16.506 | 1 607 | .226 | 61 |
| 62 | .138 | .099 | 104 | 225 | .013 | 106 | 50.346 | 17 580 | 6.163 | 62 |
| 63 | 1.164 | -.156 | .389 | 1.251 | -.253 | 752 | 75.298 | -4.948 | -1.000 | 63 |
| 64 | 498 | 592 | - 081 | 638 | 451 | 094 | -29 886 | 1 415 | 154 | 64 |
| 65 | .649 | .764 | -.022 | 772 | .645 | .063 | -10 071 | 1 197 | 073 | 65 |
| 66 | .462 | .493 | - 038 | 519 | 437 | 041 | -34.224 | 1 188 | .070 | 66 |
| 67 | 228 | .331 | -.019 | 335 | 225 | 055 | -10 196 | 1 487 | 181 | 67 |
| 68 | 049 | 039 | 014 | 059 | 029 | 015 | 55 036 | 2 003 | 373 | 68 |
| 69 | .415 | -.256 | 216 | 479 | - 323 | 401 | 73.527 | -1 486 | -1 000 | 69 |
| 70 | 522 | 591 | - 037 | 607 | 506 | 051 | -23.502 | 1 200 | 074 | 70 |
| 71 | 583 | .631 | - 006 | 631 | .582 | .025 | -5 706 | 1 085 | .032 | 71 |
| 72 | 387 | 423 | - 014 | 427 | 382 | 022 | -13 716 | 1 117 | 044 | 72 |
| 73 | .274 | .298 | -.011 | 301 | 270 | .015 | -21.478 | 1 113 | 042 | 73 |
| 74 | 013 | 021 | .000 | 021 | .013 | .004 | -2.559 | 1 633 | 235 | 74 |
| 75 | 358 | 587 | 018 | 589 | .356 | 107 | 4 904 | 1 604 | .224 | 75 |
| 76 | 292 | 332 | 002 | 332 | 292 | 020 | 2 869 | 1 139 | 052 | 76 |
| 77 | 338 | 375 | - 003 | 375 | .335 | 020 | -3 752 | 1 119 | 044 | 77 |
| 78 | 246 | 235 | - 004 | 247 | 233 | 007 | -70.821 | 1 059 | 022 | 78 |

```
SSTIPN. 1 LAYER OF GEOTEXTILE, P=4000 PPI, T=1000

TOTAL NUMBER OF NODES------------------ 95
NUMBER OF BAR ELEMENTS-----------------  9
NUMBER OF DIFF  BAR MATERIALS----------  1
NUMBER OF BEAM ELEMENTS----------------  0
NUMBER OF DIFF  BEAM MATERIALS---------  0
NUMBER OF NODAL LINKS -----------------  0
NUMBER OF INTERFACE ELEMENTS-----------  0
NO  OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE  IN FOUNDATION-  0
NUMBEP OF INTERFACE MATERIALS----------  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF  SOIL MATERIALS---------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 36
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS---------  0
NUMBER OF PREEXISTING NODES------------  0
NUMBER OF CONSTRUCTION LAYERS----------  6
NUMBER OF LOAD CASES-------------------  2

CALING FACTOR ---------      1 00000

ATMOSPHERIC PRESSURE ---      1 05800

UNIT WEIGHT OF WATER ---       03120


OMPUTATION SEQUENCE FOR A TOTAL OF    8  INCREMENTS
-----------------------------------------------------

 INCREMENT NO   1     APPLY LOAD CASE   1

 INCREMENT NO   2     PUT ON LAYER NO   1

 INCREMENT NO   3     PUT ON LAYER NO   2

 INCREMENT NO   4     PUT ON LAYER NO   3

 INCREMENT NO   5     PUT ON LAYER NO   4

 INCREMENT NO   6     PUT ON LAYER NO   5

 INCREMENT NO   7     PUT ON LAYER NO   6

 INCREMENT NO   8     APPLY LOAD CASE   2
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B.C. CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | .000 | .000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 36.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58.000 | .000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | .000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30.000 | 4.000 | 0 | 0 | 0 |
| 18 | 36.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54.000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82.000 | 4.000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 36.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.000 | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10.000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.000 | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 36.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10.000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 36.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11.500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74.000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.000 | 14.000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | [illegible] | 0 | 0 | 0 |
| 83 | 82.000 | 15 [illegible] | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17.000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17.000 | 1 | 0 | 1 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 120 | 1 00 | 0. |

| ELMT NO | CONNECTED NODES I | J | MATL NO. |
|---|---|---|---|
| 1 | 43 | 44 | 1 |
| 2 | 44 | 45 | 1 |
| 3 | 45 | 46 | 1 |
| 4 | 46 | 47 | 1 |
| 5 | 47 | 48 | 1 |
| 6 | 48 | 49 | 1 |
| 7 | 49 | 50 | 1 |
| 8 | 50 | 51 | 1 |
| 9 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | YOUNG'S MODULUS EXPONENT | RATIO | BULK MODULUS CONSTANT | BULK MODULUS EXPONENT | STRENGTH PARAMETERS C | PHI | DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .0680 | 6000 00 | 500 | .500 | 1500.00 | .600 | 00 | 35 00 | 00 | 50 |
| 2 | 0530 | 40 00 | 300 | 900 | 20 00 | 200 | 05 | 00 | 00 | 50 |
| 3 | .0600 | 1000 00 | 400 | 700 | 500.00 | .500 | 50 | 40 00 | 00 | .50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO | CONNECTED NODES I | J | K | L | MATL NO | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5 000 | 2.000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15.000 | 2.000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25 000 | 2 000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33 000 | 2.000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39 000 | 2 000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46 000 | 2.000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52 000 | 2 000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 56.000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62.000 | 2 000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2.000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78 000 | 2 000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86.000 | 2 000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5 000 | 5.500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15 000 | 5.500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25 000 | 5 500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33 000 | 5.500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5 500 |
| 13 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5 500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 56.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5 500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5.500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78.000 | 5.500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86.000 | 5.500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5 000 | 8 500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15 000 | 8.500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25.000 | 8.500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33.000 | 8.500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39 000 | 8 500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46 000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52.000 | 8.500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 56 000 | 8.500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62 000 | 8 500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70.000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78.000 | 8.500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86 000 | 8 500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34 500 | 10 750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39 000 | 10.750 |
| 39 | 45 | 46 | 55 | 54 | | 46 000 | 10.750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52 000 | 10 750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 56 000 | 10 750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62.000 | 10.750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70 000 | 10.750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78 000 | 10.750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86 000 | 10 750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40 500 | 12.250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46 000 | 12 250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52.000 | 12 250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 56 000 | 12 250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62 000 | 12 250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70 000 | 12 250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78 000 | 12.250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86 000 | 12 250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47.000 | 13 500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52.000 | 13.500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 56 000 | 13.500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62 000 | 13 500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70 000 | 13 500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78 000 | 13.500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86 000 | 13 500 |
| 61 | 70 | 71 | 78 | 78 | 1 | 49 000 | 14 500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52 000 | 14 500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 56 000 | 14 500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62 000 | 14.500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70 000 | 14 500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78 000 | 14 500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 86 000 | 14 500 |
| 68 | 78 | 79 | 86 | 85 | 1 | 53 000 | 15.500 |
| 69 | 79 | 80 | 88 | 85 | 1 | 56 000 | 15.500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62 000 | 15 500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70 000 | 15 500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78 000 | 15 500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86 000 | 16 500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57 000 | 16 500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62 000 | 16 500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70 000 | 16.500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78 000 | 16 500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86 000 | 16 500 |

CONSTRUCTION LAYER INFORMATION

```
SSTIPN. 1 L.YER OF GEOTEXTILE, P=4000 PPI, T=1000

****************************************************
****************************************************
*                                                  *
*  LOAD CASE ----------------------------   2      *
*                                                  *
****************************************************
****************************************************

LARGEST ELE. NO  IN THIS INCREMENT   78

LARGEST N P  NO  IN THIS INCREMENT   95


BAND WIDTH-----------------------  40

TOTAL NUMBER OF EQUATIONS---------  222

NUMBER OF EQUATIONS IN BLOCK------  84

NUMBER OF BLOCKS-----------------   3

NUMBER OF N.P  FORCE CARDS--------  3

NUMBER OF PRESSURE CARDS----------  0
```

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0. | 0 |
| 2 | 0 | 0 |
| 3 | 0 | 0. |
| 4 | 0 | 0 |
| 5 | 0 | 0. |
| 6 | 0 | 0 |
| 7 | 0 | 0 |
| 8 | 0 | 0. |
| 9 | 0 | 0. |
| 10 | 0 | 0 |
| 11 | 0 | 0. |
| 12 | 0 | 0. |
| 13 | 0 | 0 |
| 14 | 0 | 0 |
| 15 | 0 | 0 |
| 16 | 0 | 0. |
| 17 | 0 | 0 |
| 18 | 0 | 0 |
| 19 | 0 | 0 |
| 20 | 0 | 0. |
| 21 | 0 | 0 |
| 22 | 0 | 0 |
| 23 | 0 | 0 |
| 24 | 0 | 0 |
| 25 | 0 | 0 |
| 26 | 0 | 0 |
| 27 | 0 | 0 |
| 28 | 0 | 0. |
| 29 | [illegible] | 0. |
| 30 | [illegible] | 0 |
| 31 | [illegible] | 0 |
| 32 | 0 | 0 |
| 33 | 0 | 0 |
| 34 | 0 | 0 |
| 35 | 0 | 0. |
| 36 | 0 | 0 |
| 37 | 0 | 0. |
| 38 | 0 | 0 |
| 39 | 0 | 0 |
| 40 | 0 | 0 |
| 41 | 0 | 0. |
| 42 | 0 | 0 |
| 43 | 0 | 0 |
| 44 | 0 | 0 |
| 45 | 0 | 0 |
| 46 | 0 | 0 |
| 47 | 0 | 0 |
| 48 | 0 | 0. |
| 49 | 0 | 0 |
| 50 | 0 | 0 |
| 51 | 0. | 0 |
| 52 | 0 | 0 |
| 53 | 0 | 0 |
| 54 | 0 | 0 |
| 55 | 0 | 0 |
| 56 | 0 | 0. |
| 57 | 0 | 0 |
| 58 | 0 | 0 |
| 59 | 0 | 0. |
| 60 | 0 | 0 |
| 61 | 0. | 0. |
| 62 | 0 | 0 |
| 63 | 0 | 0 |
| 64 | 0 | 0 |
| 65 | 0 | 0. |
| 66 | 0 | 0. |
| 67 | 0 | 0 |
| 68 | 0 | 0 |
| 69 | 0. | 5. |
| 70 | 0 | 0. |
| 71 | 0 | 0. |
| 72 | 0 | 0 |
| 73 | 0 | 0 |
| 74 | 0 | 0. |
| 75 | 0 | 0 |
| 76 | 0 | 0 |
| 77 | 0 | 0 |
| 78 | 0 | 0 |
| 79 | 0 | 0. |
| 80 | 0 | 0 |
| 81 | 0 | 0 |
| 82 | 0. | 0 |
| 83 | 0 | 0. |
| 84 | 0 | 0 |
| 85 | 0 | 0 |
| 86 | 0 | 0 |
| 87 | 0 | 0. |
| 88 | 0 | 0 |
| 89 | 0 | 0 |
| 90 | 0 | 0 |
| 91 | 0 | 0 |
| 92 | 0 | -4 50 |
| 93 | 0 | -4 50 |
| 94 | 0 | -2 00 |
| 95 | 0 | 0 |

LOAD CASE : 2 ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | 0000 | 0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 1 |
| 2 | 0000 | 0000 | 0000 | .0000 | .0000 | 0000 | .0000 | 2 |
| 3 | .0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 3 |
| 4 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 4 |
| 5 | 0000 | .0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 5 |
| 6 | .0000 | .0000 | 0000 | 0000 | .0000 | 0000 | .0000 | 6 |
| 7 | 0000 | .0000 | .0000 | .0000 | .0000 | 0000 | 0000 | 7 |
| 8 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 8 |
| 9 | .0000 | .0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 9 |
| 10 | .0000 | 0000 | .0000 | .0000 | .0000 | 0000 | 0000 | 10 |
| 11 | .0000 | 0000 | 0000 | .0000 | .0000 | 0000 | .0000 | 11 |
| 12 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 12 |
| 13 | .0000 | .0000 | .0000 | 0000 | 0000 | 0000 | 0000 | 13 |
| 14 | 0000 | 0000 | 0000 | .0000 | .0000 | .0000 | 0000 | 14 |
| 15 | .0000 | 0000 | 0000 | - 0002 | 0000 | 0000 | 0002 | 15 |
| 16 | 0000 | - 0001 | 0000 | - 0005 | - 0007 | 0000 | 0009 | 16 |
| 17 | -.0005 | 0002 | 0000 | - 0052 | 0026 | 0000 | 0059 | 17 |
| 18 | -.0217 | 0105 | 0000 | - 2247 | 0491 | 0000 | .2300 | 18 |
| 19 | - 0418 | 0008 | 0000 | - 3303 | - 0879 | 0000 | .3372 | 19 |
| 20 | - 0389 | - 0110 | 0000 | - 2039 | - 1353 | 0000 | 2447 | 20 |
| 21 | -.0220 | - 0187 | 0000 | - 0439 | -.1672 | 0000 | 1762 | 21 |
| 22 | -.0005 | -.0006 | 0000 | - 0005 | - 0056 | 0000 | .0056 | 22 |
| 23 | -.0010 | -.0018 | 0000 | - 0006 | - 0051 | 0000 | .0051 | 23 |
| 24 | 0006 | - 0057 | 0000 | 0005 | - 0107 | 0000 | 0107 | 24 |
| 25 | 0020 | - 0021 | 0000 | 0018 | - 0055 | 0000 | 0058 | 25 |
| 26 | .0000 | 0004 | 0000 | .0000 | - 0020 | 0000 | .0020 | 26 |
| 27 | 0000 | 0000 | .0000 | 0000 | 0001 | 0000 | .0001 | 27 |
| 28 | 0000 | 0000 | 0000 | 0000 | - 0003 | 0000 | 0003 | 28 |
| 29 | .0000 | .0000 | 0000 | - 0021 | 0000 | 0000 | 0021 | 29 |
| 30 | - 0222 | 0080 | 0000 | - 27.3 | 0775 | 0000 | 2828 | 30 |
| 31 | -.0398 | .0204 | .0000 | -.3788 | 0859 | 0000 | 3884 | 31 |
| 32 | - 0538 | 0056 | 0000 | - 4124 | - 1205 | 0000 | 4297 | 32 |
| 33 | -.0744 | - 0171 | .0000 | - 3850 | -.2854 | 0000 | 4433 | 33 |
| 34 | -.0840 | - 0232 | 0000 | -.3018 | -.2893 | 0000 | 4044 | 34 |
| 35 | -.0802 | - 0358 | 0000 | -.2107 | - 1901 | 0000 | 2838 | 35 |
| 36 | - 0007 | - 0044 | 0000 | 0008 | - 0133 | 0000 | 0133 | 36 |
| 37 | .0014 | -.0109 | .0000 | .0007 | - 0194 | 0000 | 0194 | 37 |
| 38 | .0022 | -.0039 | .0000 | .0008 | -.0110 | 0000 | .0111 | 38 |
| 39 | .0000 | .0018 | 0000 | .0000 | - 0032 | .0000 | .0032 | 39 |
| 40 | 0000 | 0000 | 0000 | 0000 | 0001 | 0000 | 0001 | 40 |
| 41 | .0000 | .0000 | 0000 | 0002 | - 0002 | 0000 | 0003 | 41 |
| 42 | -.0155 | .0068 | 0000 | -.1129 | 0644 | 0000 | 1300 | 42 |
| 43 | - 0387 | 0122 | .0000 | - 3324 | 1318 | 0000 | .3585 | 43 |
| 44 | - 0391 | 0224 | 0000 | - 3246 | 0688 | 0000 | 3314 | 44 |
| 45 | - 0400 | 0070 | 0000 | - 3028 | - 1720 | 0000 | 3482 | 45 |
| 46 | - 0330 | - 0198 | 0000 | - 2543 | - 3624 | 0000 | 4427 | 46 |
| 47 | - 0377 | -.0268 | 0000 | -.2186 | - 3658 | 0000 | 4267 | 47 |
| 48 | - 0354 | - 0452 | 0000 | - 1822 | - 3103 | 0000 | 3599 | 48 |
| 49 | -.0214 | - 0626 | .0000 | -.0941 | -.2252 | 0000 | 2441 | 49 |
| 50 | -.0021 | -.0286 | 0000 | -.0258 | - 0483 | 0000 | 0530 | 50 |
| 51 | - 0004 | -.0037 | 0000 | -.0123 | -.0162 | 0000 | .0203 | 51 |
| 52 | .0000 | .0022 | 0000 | 0000 | - 0787 | 0000 | .0787 | 52 |
| 53 | - 0380 | 0224 | 0000 | - 5121 | 1254 | .0000 | 5272 | 53 |
| 54 | - 0351 | .0071 | .0000 | -.4303 | - 1355 | 0000 | 4518 | 54 |
| 55 | -.0346 | - 0202 | 0000 | - 2337 | - 3521 | 0000 | 4226 | 55 |
| 56 | - 0325 | - 0272 | 0000 | - 1721 | - 3737 | 0000 | 4114 | 56 |
| 57 | -.0280 | -.0488 | 0000 | - 1384 | -.3353 | 0000 | .3819 | 57 |
| 58 | -.0122 | -.0880 | 0000 | -.0572 | -.2582 | .0000 | 2644 | 58 |
| 59 | -.0064 | -.0298 | .0000 | .0442 | -.0987 | .0000 | .1084 | 59 |
| 60 | -.0031 | -.0036 | 0000 | .0101 | -.0133 | .0000 | .0167 | 60 |
| 61 | .0000 | .0021 | 0000 | 0000 | -.0744 | 0000 | .0744 | 61 |
| 62 | - 0310 | 0072 | 0000 | - 0878 | - 0031 | 0000 | 0879 | 62 |
| 63 | - 0323 | -.0203 | 0000 | - 0863 | -.1683 | 0000 | 1891 | 63 |
| 64 | - 0312 | - 0290 | 0000 | - 0884 | - 2033 | 0000 | .2210 | 64 |
| 65 | -.0171 | - 0488 | 0000 | -.0713 | - 2268 | 0000 | 2377 | 65 |
| 66 | - 0195 | - 0866 | 0000 | - 0826 | - 1847 | 0000 | 1950 | 66 |
| 67 | -.0158 | -.0318 | .0000 | - 0772 | - 1186 | 0000 | 1418 | 67 |
| 68 | -.0061 | -.0044 | 0000 | - 0155 | -.0378 | 0000 | .0408 | 68 |
| 69 | 0000 | 0021 | 0000 | .0000 | - 0299 | 0000 | .0299 | 69 |
| 70 | - 0274 | - 0063 | 0000 | - 0614 | - 0515 | 0000 | 0802 | 70 |
| 71 | -.0289 | - 0202 | 0000 | -.0671 | - 1208 | .0000 | .1363 | 71 |
| 72 | - 0327 | - 0290 | 0000 | - 0722 | - 1500 | 0000 | 1665 | 72 |
| 73 | - 0394 | - 0565 | 0000 | -.0810 | -.1851 | 0000 | .2021 | 73 |
| 74 | - 0289 | - 0873 | 0000 | - 0655 | - 1631 | 0000 | 1758 | 74 |
| 75 | - 0212 | - 0323 | 0000 | - 0387 | - 1388 | 0000 | .1424 | 75 |
| 76 | - 0082 | - 0052 | 0000 | - 0101 | -.0107 | 0000 | .0147 | 76 |
| 77 | 0000 | 0018 | 0000 | 0000 | - 0033 | 0000 | .0033 | 77 |
| 78 | - 0281 | - 0198 | 0000 | - 0479 | - 0818 | 0000 | 0948 | 78 |
| 79 | - 0288 | - 0293 | 0000 | - 0483 | - 1033 | 0000 | 1141 | 79 |
| 80 | -.0322 | - 0544 | 0000 | -.0533 | - 1345 | 0000 | 1447 | 80 |
| 81 | -.4091 | -.2258 | 0000 | - 4326 | -.2756 | 0000 | .5129 | 81 |
| 82 | 2951 | - 2848 | 0000 | 2830 | - 3518 | 0000 | 4515 | 82 |
| 83 | 7491 | - 0501 | 0000 | 7475 | -.0642 | .0000 | 7495 | 83 |
| 84 | 0000 | .0921 | 0000 | .0000 | 0886 | 0000 | .0886 | 84 |
| 85 | -.0230 | - 0295 | 0000 | - 0291 | -.0480 | .0000 | 0561 | 85 |
| 86 | - 0287 | - 0525 | 0000 | - 0340 | - 0761 | 0000 | 0834 | 86 |
| 87 | - 0234 | -.3579 | 0000 | -.0311 | -.3822 | 0000 | .3835 | 87 |
| 88 | .0037 | - 5249 | 0000 | - 0010 | -.5615 | 0000 | 5615 | 88 |
| 89 | .5908 | - 1018 | 0000 | 5900 | - 1040 | 0000 | .5991 | 89 |
| 90 | 0000 | 2415 | 0000 | 0000 | 2395 | 0000 | 2395 | 90 |
| 91 | 0136 | - 0519 | 0000 | 0136 | - 0519 | 0000 | 0537 | 91 |
| 92 | .0105 | - 3591 | 0000 | 0105 | - 3591 | 0000 | 3592 | 92 |
| 93 | 0184 | - 5298 | 0000 | 0184 | - 5298 | 0000 | 5301 | 93 |
| 94 | 2919 | - 2287 | 0000 | 2919 | - 2287 | 0000 | 3709 | 94 |
| 95 | .0000 | 3663 | 0000 | .0000 | .3663 | 0000 | 3663 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | - 0071 |
| 2 | - 0181 |
| 3 | 0143 |
| 4 | 0409 |
| 5 | 0888 |
| 6 | 2104 |
| 7 | 2895 |
| 8 | 0264 |
| 9 | 0053 |
| TOTAL VALUES | |
| 1 | 1780 |
| 2 | 4357 |
| 3 | 7273 |
| 4 | 1 0400 |
| 5 | 1 1221 |
| 6 | 1 3216 |
| 7 | 1 0245 |

| | |
|---|---|
| 8 | .2038 |
| 9 | 1839 |

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 528 2 | 331 8 | 228 5 | 156 | 001 | 000 | 003 | 002 | - 001 | 003 | 1 |
| 2 | 523.8 | 334 2 | 225 2 | 163 | 001 | 009 | 013 | 013 | -.002 | .015 | 2 |
| 3 | 513.7 | 322.9 | 222.2 | 156 | 024 | - 024 | 055 | 036 | -.037 | 073 | 3 |
| 4 | 6 | 17.2 | 2 | 494 | 1 829 | -.848 | 2 487 | 2.345 | -1.163 | 3.508 | 4 |
| 5 | 6 | 17 1 | 2 | 494 | 880 | 235 | 7 912 | 4 527 | -3 412 | 7 939 | 5 |
| 6 | 7 | 17.9 | .2 | 494 | -.790 | 2 540 | 7 068 | 4 795 | -3.045 | 7.840 | 6 |
| 7 | .7 | 18.4 | .2 | 493 | -1 500 | 3.856 | 3.871 | 4.301 | -2.146 | 6.447 | 7 |
| 8 | .6 | 16.9 | .2 | .484 | -1.041 | 2.035 | - 839 | 2.091 | -1.097 | 3.188 | 8 |
| 9 | 465 5 | 344 2 | 190 2 | 224 | 000 | 133 | 011 | 133 | 000 | 134 | 9 |
| 10 | 479.5 | 389.8 | 193 7 | 238 | - 008 | .197 | 035 | 199 | -.008 | 208 | 10 |
| 11 | 475.1 | 371.8 | 191.1 | .243 | -.007 | 203 | -.083 | .207 | -.012 | .219 | 11 |
| 12 | 498.8 | 351 4 | 206 9 | 206 | 011 | 084 | - 044 | 100 | .008 | 094 | 12 |
| 13 | 439 9 | 259 1 | 196 1 | 122 | 001 | 002 | - 001 | 002 | 001 | 002 | 13 |
| 14 | 465 4 | 273 4 | 207 8 | 120 | 012 | -.007 | 024 | 017 | - 013 | 030 | 14 |
| 15 | 2.2 | 13.7 | 8 | 472 | 1.372 | -1 280 | 4.084 | 2 477 | -2 385 | 4.842 | 15 |
| 16 | 4 3 | 15 9 | 1 5 | 453 | 2 721 | -1 863 | 6 554 | 4 428 | -3 570 | 7 998 | 16 |
| 17 | 1 1 | 16 5 | 4 | 489 | 1 160 | 263 | 6 633 | 4 058 | -2 835 | 6 893 | 17 |
| 18 | .6 | 17.1 | 2 | .494 | -1 149 | 3 045 | 5.215 | 4 294 | -2.398 | 6 692 | 18 |
| 19 | 6 | 17 1 | 2 | 494 | -2 187 | 4.038 | 6 472 | 5 418 | -3.548 | 8.966 | 19 |
| 20 | .7 | 18.2 | 2 | 494 | -2.177 | 4.944 | 4.246 | 5.528 | -2.762 | 8.291 | 20 |
| 21 | 6 | 17 2 | 2 | 494 | -1 322 | 3 211 | 2 370 | 3 502 | -1 613 | 5 116 | 21 |
| 22 | 448.3 | 381.2 | 175 5 | 282 | - 007 | 282 | 046 | 254 | - 009 | 263 | 22 |
| 23 | 407 0 | 308 3 | 165.1 | 232 | - 007 | 237 | - 070 | .242 | - 012 | 254 | 23 |
| 24 | 406 2 | 273.9 | 171.0 | 188 | 016 | 111 | -.054 | 118 | 009 | 109 | 24 |
| 25 | 408 9 | 229 7 | 187 1 | 093 | - 001 | 000 | 001 | 001 | - 001 | 002 | 25 |
| 26 | 0 | 1 | .0 | 495 | 576 | -1.073 | 1 520 | 873 | -1 370 | 2 242 | 26 |
| 27 | 4 | 13.4 | 1 | 494 | 2 451 | -1 978 | 2 149 | 2 698 | -2.225 | 4 923 | 27 |
| 28 | 4 0 | 13.8 | 1 4 | 450 | 819 | - 586 | 596 | 879 | - 646 | 1 525 | 28 |
| 29 | 17 9 | 16 9 | 5 9 | 295 | 098 | 1 177 | 979 | 1 388 | - 080 | 1 456 | 29 |
| 30 | 5 | 15 0 | 2 | 494 | - 662 | 2.474 | -1 410 | 2.625 | - 813 | 3 438 | 30 |
| 31 | 6 | 15.8 | .2 | 494 | -1 101 | 3 225 | -2.954 | 3 681 | -1 557 | 5 238 | 31 |
| 32 | 6 | 15.6 | 2 | 494 | -1 804 | 3.612 | -3.526 | 4 152 | -2.144 | 6 296 | 32 |
| 33 | 7 | 17 8 | 2 | 494 | -1 873 | 5 536 | - 529 | 5 546 | -1 882 | 7 428 | 33 |
| 34 | 7 | 17 2 | .2 | 494 | - 426 | 3.980 | 946 | 4 030 | - 476 | 4 507 | 34 |
| 35 | 301 7 | 270 0 | 117 7 | 282 | - 022 | 532 | 420 | 528 | - 150 | 747 | 35 |
| 36 | 359 6 | 219.8 | 157 5 | 142 | - 072 | 1 344 | 559 | 1 397 | - 125 | 1 522 | 36 |
| 37 | 11 9 | 398 6 | 4 0 | 495 | - 008 | 259 | 17 772 | 9 013 | -8 762 | 17 774 | 37 |
| 38 | 220 4 | 424 7 | 76 3 | 406 | - 763 | 1 995 | 19 907 | 10 664 | -9 432 | 20 097 | 38 |
| 39 | 323 3 | 438 1 | 118 4 | 365 | -1 446 | 4 294 | 10 793 | 7 536 | -4.687 | 12 223 | 39 |
| 40 | 122 3 | 412 7 | 42 2 | 449 | -1 118 | 5 027 | 2 105 | 5 202 | -1 293 | 6 498 | 40 |
| 41 | 233 8 | 428 4 | 83 3 | 402 | - 822 | 4 986 | - 584 | 5 000 | - 836 | 5 836 | 41 |
| 42 | 215.8 | 424.1 | 76 5 | 410 | - 947 | 4 134 | - 939 | 4 177 | - 990 | 5 167 | 42 |
| 43 | 11 9 | 395 6 | 4 0 | 495 | - 973 | 3 583 | -3 933 | 4 315 | -1 704 | 6 019 | 43 |
| 44 | 748 4 | 870 1 | 291 8 | 282 | 186 | 1 882 | -2 898 | 2 697 | - 649 | 3 346 | 44 |
| 45 | 1473 4 | 873.0 | 654 9 | 125 | 041 | 013 | 316 | 185 | - 131 | 317 | 45 |
| 46 | 1 | 4.0 | 0 | 495 | - 040 | 070 | - 230 | 142 | - 113 | 255 | 46 |
| 47 | 11.9 | 398.6 | 4 0 | 495 | - 070 | 086 | 698 | 366 | - 350 | 715 | 47 |
| 48 | 311 8 | 438 6 | 113 8 | 370 | - 140 | 184 | 137 | 198 | - 154 | 351 | 48 |
| 49 | 11 9 | 398 6 | 4 0 | 495 | - 365 | 296 | 219 | 307 | - 383 | 690 | 49 |
| 50 | 289 9 | 431 1 | 97 3 | 387 | - 293 | 320 | 081 | 322 | - 295 | 617 | 50 |
| 51 | 1084 7 | 887 9 | 455.4 | 189 | - 050 | 2 631 | 1 554 | 2 840 | - 259 | 3 099 | 51 |
| 52 | 594 9 | 512 8 | 233 8 | 272 | - 460 | 3 428 | 1 882 | 3 598 | - 630 | 4 229 | 52 |
| 53 | 551 4 | 471 0 | 217 2 | 269 | - 125 | 1 628 | 283 | 1 835 | - 135 | 1 970 | 53 |
| 54 | 1 | 4 0 | 0 | 495 | 029 | - 021 | 367 | 159 | - 161 | 370 | 54 |
| 55 | 397.7 | 448 3 | 149 1 | 334 | 044 | 003 | 149 | 101 | - 054 | 155 | 55 |
| 56 | 1 | 4 0 | 0 | 495 | - 097 | 417 | 1 800 | 1 096 | - 776 | 1 872 | 56 |
| 57 | 1 | 4 0 | 0 | 495 | - 154 | 544 | 1 742 | 1 134 | - 744 | 1 877 | 57 |
| 58 | 1400 9 | 822 9 | 625.4 | 120 | - 295 | 2 800 | 801 | 2 851 | - 346 | 3 197 | 58 |
| 59 | 935 0 | 880 8 | 387 4 | 207 | - 309 | 2 747 | - 514 | 2 789 | - 331 | 3 100 | 59 |
| 60 | 390.7 | 447 4 | 146 2 | 337 | - 111 | 107 | 036 | 109 | - 112 | 221 | 60 |
| 61 | 1 | 4 0 | 0 | 495 | 113 | - 058 | 1 037 | 553 | - 498 | 1 051 | 61 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | .1 | 4 0 | .0 | 495 | 054 | -.007 | .057 | 069 | - 022 | .091 | 62 |
| 63 | 434.4 | 453.6 | 164.7 | 318 | 139 | - 081 | .124 | 155 | - 098 | 253 | 63 |
| 64 | .1 | 4.0 | .0 | .495 | 2 271 | 6 852 | 19 906 | 14 775 | -5.652 | 20.427 | 64 |
| 65 | .1 | 4.0 | .0 | 495 | -4.570 | 21.165 | 3 832 | 21.327 | -4 712 | 26.039 | 65 |
| 66 | .1 | 4 0 | .0 | 495 | -3.025 | 16.508 | -55.687 | 36 248 | -22.765 | 59.014 | 66 |
| 67 | 1 | 4 0 | 0 | 495 | 4 612 | -2 222 | -38 793 | 20 890 | -18 500 | 39 390 | 67 |
| 68 | .1 | 4 0 | .0 | .495 | -.006 | 017 | - 302 | 157 | - 146 | .303 | 68 |
| 69 | 325.4 | 438 4 | 119.3 | 364 | 108 | - 087 | 086 | 117 | - 098 | .213 | 69 |
| 70 | .1 | 4.0 | .0 | .495 | 2.337 | 6.515 | -16 584 | 12 977 | -4.125 | 17.102 | 70 |
| 71 | 1 | 4 0 | 0 | 495 | -4 610 | 20 909 | -3 155 | 21 006 | -4 707 | 25 714 | 71 |
| 72 | .1 | 4 0 | .0 | 495 | -6.553 | 16.896 | 18.007 | 19.554 | -9.612 | 29.566 | 72 |
| 73 | .1 | 4.0 | .0 | 495 | 8.385 | -4.881 | 4.679 | 8.801 | -5 297 | 14.097 | 73 |
| 74 | 1 | 4.0 | .0 | 495 | 092 | -.052 | -3.461 | 1 752 | -1 712 | 3.464 | 74 |
| 75 | 875 3 | 509 6 | 274 3 | 231 | - 001 | 034 | 118 | .077 | - 044 | 122 | 75 |
| 76 | 273.1 | 431.5 | 98.6 | 368 | - 218 | .302 | - 319 | 347 | -.264 | 611 | 76 |
| 77 | 1 | 4.0 | .0 | 495 | -5 379 | 6.597 | 9.662 | 8 309 | -7.091 | 15.400 | 77 |
| 78 | .1 | 4.0 | .0 | 495 | 5.517 | -.886 | 8.958 | 7.821 | -3.190 | 11.011 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .247 | 484 | .007 | .484 | 247 | 119 | 1.756 | 1.961 | 078 | 1 |
| 2 | 257 | 532 | 028 | 535 | 254 | 141 | 5.831 | 2 106 | 092 | 2 |
| 3 | 360 | 366 | 129 | 466 | 230 | 129 | 43.066 | 2 124 | 067 | 3 |
| 4 | .377 | .546 | 005 | 547 | 376 | 08? | 1 694 | 1 452 | 1 701 | 4 |
| 5 | .361 | 538 | 016 | 540 | 360 | 090 | 5 172 | 1 500 | 1 799 | 5 |
| 6 | 464 | 657 | 015 | 659 | 463 | 098 | 4 499 | 1 424 | 1 961 | 6 |
| 7 | 533 | 736 | .009 | .736 | .533 | 102 | 2 474 | 1 381 | 2.031 | 7 |
| 8 | .332 | .525 | -.002 | 525 | 332 | 096 | - 476 | 1 579 | 1.925 | 8 |
| 9 | .342 | 1 053 | 018 | 1.053 | 347 | 356 | 1 442 | 3.082 | 211 | 9 |
| 10 | 420 | 1 419 | 068 | 1 424 | 415 | 504 | 3 857 | 3 429 | 277 | 10 |
| 11 | 437 | 1 445 | -.121 | 1 460 | 422 | 518 | -6 729 | 3 455 | .283 | 11 |
| 12 | .348 | 884 | - 091 | .880 | 333 | .274 | -9 701 | 2.644 | 164 | 12 |
| 13 | .142 | .280 | - 003 | .280 | 142 | 069 | -1 157 | 1.973 | 052 | 13 |
| 14 | 184 | 243 | 048 | 270 | 157 | 056 | 29 195 | 1 721 | 042 | 14 |
| 15 | .116 | 182 | .020 | .188 | .113 | 036 | 15 660 | 1 666 | 751 | 15 |
| 16 | .248 | 270 | .033 | .294 | 224 | .035 | 35 459 | 1 314 | 702 | 16 |
| 17 | 307 | .391 | .014 | .394 | 304 | .045 | 9.457 | 1 294 | 893 | 17 |
| 18 | 374 | 480 | 011 | 481 | 373 | 054 | 5 741 | 1 288 | 1 076 | 18 |
| 19 | .366 | 479 | .013 | .481 | .364 | 056 | 6.557 | 1.320 | 1 167 | 19 |
| 20 | .523 | .643 | .010 | 644 | .522 | .061 | 4.710 | 1 233 | 1.217 | 20 |
| 21 | .372 | .481 | .005 | 481 | .372 | 055 | 2.596 | 1 294 | 1 094 | 21 |
| 22 | 424 | 1 601 | 088 | 1 607 | 417 | 595 | 4 273 | 3 854 | 326 | 22 |
| 23 | .314 | 1 235 | -.114 | 1.249 | .300 | .475 | -6 970 | 4 166 | 295 | 23 |
| 24 | .241 | 627 | -.093 | 649 | .219 | .215 | -12 855 | 2 957 | 146 | 24 |
| 25 | 042 | 091 | 002 | 091 | 042 | 024 | 2 730 | 2 163 | 021 | 25 |
| 26 | 008 | - 002 | 006 | 010 | - 005 | 008 | 64 675 | -2.033 | -1 000 | 26 |
| 27 | .127 | 016 | .034 | 137 | .007 | 065 | 74 461 | 20.941 | 1.301 | 27 |
| 28 | 081 | .030 | -.020 | 088 | 023 | 032 | -71 028 | 3.802 | 848 | 28 |
| 29 | .177 | 182 | -.002 | 183 | 177 | 003 | -18 710 | 1.036 | 063 | 29 |
| 30 | 201 | 318 | - 006 | 318 | 201 | 059 | -2 863 | 1 585 | 1 174 | 30 |
| 31 | .257 | 359 | -.008 | .360 | .256 | 052 | -4 437 | 1 404 | 1 037 | 31 |
| 32 | 236 | 342 | -.015 | 344 | 233 | .055 | -6.007 | 1 475 | 1 109 | 32 |
| 33 | 520 | .636 | -.003 | 636 | 520 | 058 | -1.266 | 1 222 | 1 153 | 33 |
| 34 | 509 | 606 | 004 | 606 | 509 | 049 | 2.340 | 1 191 | 974 | 34 |
| 35 | .436 | 1 756 | .007 | 1.756 | 436 | 661 | 306 | 4 036 | .358 | 35 |
| 36 | .045 | .266 | -.008 | .288 | 045 | 111 | -2.010 | 5 909 | 095 | 36 |
| 37 | 022 | 047 | -.069 | .105 | - 035 | .070 | -39.829 | -2.986 | -1 000 | 37 |
| 38 | 023 | 111 | 038 | 125 | 009 | 058 | 20 299 | 13 563 | 4 619 | 38 |
| 39 | .029 | .306 | 078 | 327 | .009 | 159 | 14 646 | 36.227 | 13.085 | 39 |
| 40 | -.089 | .224 | - 084 | 232 | - 108 | .170 | -9 315 | -2 162 | -1 000 | 40 |
| 41 | -.157 | 446 | .055 | 451 | - 162 | 306 | 5 16? | -2.787 | -1.000 | 41 |
| 42 | - 436 | .491 | -.069 | .496 | - 440 | .468 | -4.287 | -1 127 | -1.000 | 42 |
| 43 | .151 | .729 | - 127 | 755 | 124 | .316 | -11.850 | 6 085 | 1 890 | 43 |
| 44 | 174 | 1 411 | - 098 | 1 419 | 166 | 627 | -4 486 | 8.555 | 2 808 | 44 |
| 45 | -.002 | 366 | .352 | 579 | -.215 | 397 | 31.212 | -2.689 | -1.000 | 45 |
| 46 | - 020 | - 004 | .005 | -.002 | -.022 | 010 | 16.747 | 110 | -1.000 | 46 |
| 47 | 045 | 171 | .112 | .237 | - 021 | 129 | 30.254 | -11.526 | -1.000 | 47 |
| 48 | 034 | 440 | 194 | 518 | - 043 | 281 | 21 849 | -11 912 | -1 000 | 48 |
| 49 | -.385 | - 108 | - 137 | -.051 | - 441 | 195 | -22.388 | .116 | -1 000 | 49 |
| 50 | - 185 | .484 | .245 | 564 | - 265 | 415 | 18.081 | -2 126 | -1.000 | 50 |
| 51 | - 470 | 1 069 | - 715 | 1 350 | - 751 | 1 051 | -21 446 | -1 798 | -1 000 | 51 |
| 52 | - 321 | 791 | 249 | 844 | - 374 | 609 | 12 069 | -2 257 | -1 000 | 52 |
| 53 | -.247 | .370 | 095 | .384 | - 261 | .323 | 8.522 | -1 469 | -1 000 | 53 |
| 54 | 044 | .051 | .090 | 138 | -.042 | .090 | 43.871 | -3.257 | -1 000 | 54 |
| 55 | .277 | .240 | 254 | .513 | 005 | 254 | 47.084 | 107.805 | 39.702 | 55 |
| 56 | 101 | 268 | 057 | 286 | 084 | 101 | 17 204 | 3 423 | 901 | 56 |
| 57 | 070 | 199 | - 087 | 251 | 018 | 117 | -28 166 | 14 275 | 4 834 | 57 |
| 58 | -.774 | 1 132 | -.333 | 1.188 | -.831 | 1 010 | -9 634 | -1 430 | -1 000 | 58 |
| 59 | -1.392 | 509 | .205 | 630 | -1 413 | 1 021 | 5.801 | - 446 | -1 000 | 59 |
| 60 | - 302 | 307 | 058 | 312 | - 307 | 310 | 5 190 | -1 015 | -1 000 | 60 |
| 61 | .011 | .019 | 002 | 020 | .010 | 005 | 15.309 | 1.983 | 358 | 61 |
| 62 | 133 | 102 | 094 | 213 | 023 | .095 | 49.732 | 9 407 | 3 125 | 62 |
| 63 | 720 | - 089 | 255 | 794 | - 162 | 478 | 73.902 | -4.887 | -1 000 | 63 |
| 64 | 474 | 569 | - 075 | 610 | 432 | 089 | -28 882 | 1 411 | 153 | 64 |
| 65 | 669 | 707 | 002 | 707 | 669 | 019 | 2 327 | 1 056 | 021 | 65 |
| 66 | 547 | 579 | - 022 | 591 | 535 | .028 | -26 867 | 1 103 | 036 | 66 |
| 67 | 201 | 298 | -.016 | .298 | 198 | .050 | -9 112 | 1 504 | 188 | 67 |
| 68 | 041 | 021 | 014 | 048 | 014 | 017 | 62 221 | 3 501 | 929 | 68 |
| 69 | .355 | -.113 | .122 | 385 | - 143 | .264 | 76.256 | -2.697 | -1 000 | 69 |
| 70 | .400 | .470 | -.034 | 484 | 386 | 049 | -22.299 | 1 254 | 095 | 70 |
| 71 | 657 | 694 | - 001 | 694 | 657 | 019 | -1 927 | 1 057 | 021 | 71 |
| 72 | 420 | 456 | 007 | 457 | 419 | 019 | 10 955 | 1 092 | 034 | 72 |
| 73 | 220 | 253 | 002 | 253 | 220 | 016 | 4 312 | 1 149 | 055 | 73 |
| 74 | 010 | 019 | 001 | 019 | 010 | 004 | 4 619 | 1 841 | 312 | 74 |
| 75 | .067 | 301 | 319 | 530 | - 142 | 336 | 35 725 | -3 718 | -1 000 | 75 |
| 76 | - 137 | 907 | - 315 | 994 | - 225 | 610 | -15 548 | -4 424 | -1 000 | 76 |
| 77 | 061 | 087 | 004 | 088 | 060 | 014 | 8 107 | 1 459 | 171 | 77 |
| 78 | 204 | 218 | 004 | 217 | 203 | 007 | 15 490 | 1 068 | 025 | 78 |

```
SSTIPN· 1 LAYER OF GEOTEXTILE, P=4000 PPI, EXTENDED, T=1000

TOTAL NUMBER OF NODES------------------ 95
NUMBER OF BAR ELEMENTS----------------- 11
NUMBER OF DIFF  BAR MATERIALS----------  1
NUMBER OF BEAM ELEMENTS---------------  0
NUMBER OF DIFF  BEAM MATERIALS---------  0
NUMBER OF NODAL LINKS ----------------  0
NUMBER OF INTERFACE ELEMENTS-----------  0
NO  OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE  IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS----------  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF  SOIL MATERIALS---------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 36
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS---------  0
NUMBER OF PREEXISTING NODES------------  0
NUMBER OF CONSTRUCTION LAYERS----------  6
NUMBER OF LOAD CASES-------------------  2

CALING FACTOR ---------      1 00000

ATMOSPHERIC PRESSURE ---      1 05800

UNIT WEIGHT OF WATER ---        03120

OMPUTATION SEQUENCE FOR A TOTAL OF    8  INCREMENTS
*****************************************************

 INCREMENT NO   1     APPLY LOAD CASE   1

 INCREMENT NO   2     PUT ON LAYER NO   1

 INCREMENT NO   3     PUT ON LAYER NO   2

 INCREMENT NO   4     PUT ON LAYER NO   3

 INCREMENT NO   5     PUT ON LAYER NO   4

 INCREMENT NO   6     PUT ON LAYER NO   5

 INCREMENT NO   7     PUT ON LAYER NO   6

 INCREMENT NO   8     APPLY LOAD CASE   2
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B.C. CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | .000 | .000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 38.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58.000 | .000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | .000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30.000 | 4.000 | 0 | 0 | 0 |
| 18 | 38.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54.000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82.000 | 4.000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 38.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.[illegible] | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10.000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.00[illegible] | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 38.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10.000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 38.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11.500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74.000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.000 | 14.000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | 15.000 | 0 | 0 | 0 |
| 83 | 82.000 | 15.000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.[illegible] | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17.000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17.000 | 1 | 0 | 1 |

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 120. | 1.00 | 0 |

| ELMT NO. | CONNECTED NODES I | CONNECTED NODES J | MATL NO |
|---|---|---|---|
| 1 | 41 | 42 | 1 |
| 2 | 42 | 43 | 1 |
| 3 | 43 | 44 | 1 |
| 4 | 44 | 45 | 1 |
| 5 | 45 | 46 | 1 |
| 6 | 46 | 47 | 1 |
| 7 | 47 | 48 | 1 |
| 8 | 48 | 49 | 1 |
| 9 | 49 | 50 | 1 |
| 10 | 50 | 51 | 1 |
| 11 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | YOUNG'S MODULUS EXPONENT | RATIO | BULK MODULUS CONSTANT | BULK MODULUS EXPONENT | STRENGTH PARAMETERS C | STRENGTH PARAMETERS PHI | STRENGTH PARAMETERS DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .0880 | 6000.00 | .500 | .500 | 1500.00 | .600 | .00 | 35.00 | .00 | .50 |
| 2 | .0530 | 40.00 | .300 | .500 | 20.00 | .200 | .05 | .00 | .00 | .50 |
| 3 | .0800 | 1000.00 | .400 | .700 | 500.00 | .500 | .50 | 40.00 | .00 | .50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO | CONNECTED NODES I | J | K | L | MATL NO | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5.000 | 2.000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15.000 | 2.000 |
| 3 | 3 | 4 | 17 | 16 | 2 | 25.000 | 2.000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33.000 | 2.000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39.000 | 2.000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46.000 | 2.000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52.000 | 2.000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 58.000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62.000 | 2.000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2.000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78.000 | 2.000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86.000 | 2.000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5.000 | 5.500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15.000 | 5.500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25.000 | 5.500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33.000 | 5.500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5.500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5.500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 58.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5.500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5.500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78.000 | 5.500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86.000 | 5.500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5.000 | 8.500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15.000 | 8.500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25.000 | 8.500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33.000 | 8.500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39.000 | 8.500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46.000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52.000 | 8.500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 58.000 | 8.500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62.000 | 8.500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70.000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78.000 | 8.500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86.000 | 8.500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34.500 | 10.750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39.000 | 10.750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46.000 | 10.750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52.000 | 10.750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 58.000 | 10.750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62.000 | 10.750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70.000 | 10.750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78.000 | 10.750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86.000 | 10.750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40.500 | 12.250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46.000 | 12.250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52.000 | 12.250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 58.000 | 12.250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62.000 | 12.250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70.000 | 12.250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78.000 | 12.250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86.000 | 12.250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47.000 | 13.500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52.000 | 13.500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 58.000 | 13.500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62.000 | 13.500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70.000 | 13.500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78.000 | 13.500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86.000 | 13.500 |
| 61 | 70 | 71 | 78 | 78 | 1 | 49.000 | 14.500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52.000 | 14.500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 58.000 | 14.500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62.000 | 14.500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70.000 | 14.500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78.000 | 14.500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 86.000 | 14.500 |
| 68 | 78 | 79 | 85 | 85 | 1 | 53.000 | 15.500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 58.000 | 15.500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62.000 | 15.500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70.000 | 15.500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78.000 | 15.500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86.000 | 15.500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57.000 | 16.500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62.000 | 16.500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70.000 | 16.500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78.000 | 16.500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86.000 | 16.500 |

SSTIPN 1 LAYER OF GEOTEXTILE, P=4000 PPI, EXTENDED, T=1000

```
****************************************************
****************************************************
*                                                  *
*  LOAD CASE ------------------------------   2    *
*                                                  *
****************************************************
****************************************************
```

LARGEST ELE. NO IN THIS INCREMENT 76

LARGEST N P NO IN THIS INCREMENT 92

BAND WIDTH---------------------- 40

TOTAL NUMBER OF EQUATIONS--------- 222

NUMBER OF EQUATIONS IN BLOCK------ 84

NUMBER OF BLOCKS------------------ 3

NUMBER OF N.P. FORCE CARDS-------- 3

NUMBER OF PRESSURE CARDS---------- 0

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0 | 0. |
| 2 | 0 | 0 |
| 3 | 0. | 0 |
| 4 | 0 | 0. |
| 5 | 0. | 0. |
| 6 | 0. | 0 |
| 7 | 0. | 0. |
| 8 | 0 | 0 |
| 9 | 0. | 0. |
| 10 | 0 | 0 |
| 11 | 0. | 0. |
| 12 | 0. | 0 |
| 13 | 0 | 0 |
| 14 | 0 | 0 |
| 15 | 0. | 0 |
| 16 | 0 | 0 |
| 17 | 0. | 0. |
| 18 | 0 | 0 |
| 19 | 0 | 0. |
| 20 | 0 | 0. |
| 21 | 0. | 0 |
| 22 | 0 | 0 |
| 23 | 0. | 0. |
| 24 | 0 | 0 |
| 25 | 0 | 0 |
| 26 | 0 | 0 |
| 27 | 0 | 0 |
| 28 | 0. | 0 |
| 29 | 0 | 0 |
| 30 | 0 | 0 |
| 31 | 0. | 0. |
| 32 | 0 | 0 |
| 33 | 0 | 0 |
| 34 | 0 | 0 |
| 35 | 0. | 0 |
| 36 | 0. | 0. |
| 37 | 0. | 0. |
| 38 | 0 | 0 |
| 39 | 0 | 0 |
| 40 | 0 | 0 |
| 41 | 0. | 0. |
| 42 | 0 | 0 |
| 43 | 0. | 0 |
| 44 | 0. | 0 |
| 45 | 0. | 0 |
| 46 | 0 | 0 |
| 47 | 0 | 0 |
| 48 | 0 | 0 |
| 49 | 0 | 0 |
| 50 | 0 | 0 |
| 51 | 0 | 0 |
| 52 | 0 | 0 |
| 53 | 0. | 0 |
| 54 | 0 | 0 |
| 55 | 0 | 0 |
| 56 | 0 | 0 |
| 57 | 0 | 0 |
| 58 | 0 | 0 |
| 59 | 0. | 0. |
| 60 | 0 | 0 |
| 61 | 0 | 0 |
| 62 | 0 | 0 |

| | | |
|---|---|---|
| 63 | 0. | 0 |
| 64 | 0. | 0 |
| 65 | 0. | 0 |
| 66 | 0 | 0 |
| 67 | 0. | 0 |
| 68 | 0 | 0 |
| 69 | 0 | 0 |
| 70 | 0. | 0 |
| 71 | 0. | 0 |
| 72 | 0 | 0 |
| 73 | 0 | 0 |
| 74 | 0. | 0 |
| 75 | 0. | 0 |
| 76 | 0 | 0 |
| 77 | 0 | 0 |
| 78 | 0. | 0 |
| 79 | 0. | 0 |
| 80 | 0 | 0 |
| 81 | 0 | 0 |
| 82 | 0. | 0 |
| 83 | 0. | 0 |
| 84 | 0 | 0 |
| 85 | 0 | 0 |
| 86 | 0 | 0 |
| 87 | 0 | 0 |
| 88 | 0 | 0 |
| 89 | 0 | 0 |
| 90 | 0. | 0 |
| 91 | 0 | 0 |
| 92 | 0 | -4.50 |
| 93 | 0. | -4.50 |
| 94 | 0. | -2.00 |
| 95 | 0. | 0 |

LOAD CASE : 2 ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 1 |
| 2 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 2 |
| 3 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 3 |
| 4 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 4 |
| 5 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 5 |
| 6 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 6 |
| 7 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 7 |
| 8 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 8 |
| 9 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 9 |
| 10 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 10 |
| 11 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 11 |
| 12 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 12 |
| 13 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 13 |
| 14 | .0000 | -.0001 | .0000 | .0000 | -.0010 | .0000 | .0010 | 14 |
| 15 | -.0001 | .0001 | .0000 | -.0006 | .0005 | .0000 | .0008 | 15 |
| 16 | .0000 | -.0001 | .0000 | -.0004 | -.0005 | .0000 | .0007 | 16 |
| 17 | -.0005 | .0002 | .0000 | -.0048 | .0023 | .0000 | .0053 | 17 |
| 18 | -.0177 | .0060 | .0000 | -.1889 | .0259 | .0000 | .1906 | 18 |
| 19 | -.0310 | -.0013 | .0000 | -.2652 | -.0742 | .0000 | .2754 | 19 |
| 20 | -.0277 | -.0089 | .0000 | -.1559 | -.1232 | .0000 | .1987 | 20 |
| 21 | -.0170 | -.0155 | .0000 | -.0608 | -.1413 | .0000 | .1538 | 21 |
| 22 | -.0004 | -.0005 | .0000 | .0002 | -.0049 | .0000 | .0049 | 22 |
| 23 | -.0009 | -.0018 | .0000 | -.0001 | -.0047 | .0000 | .0047 | 23 |
| 24 | .0008 | -.0058 | .0000 | .0015 | -.0107 | .0000 | .0108 | 24 |
| 25 | .0022 | -.0022 | .0000 | .0024 | -.0057 | .0000 | .0062 | 25 |
| 26 | .0000 | .0004 | .0000 | .0000 | -.0028 | .0000 | .0028 | 26 |
| 27 | .0000 | -.0002 | .0000 | .0000 | -.0018 | .0000 | .0018 | 27 |
| 28 | -.0002 | .0001 | .0000 | -.0020 | .0010 | .0000 | .0023 | 28 |
| 29 | .0001 | -.0001 | .0000 | -.0003 | -.0005 | .0000 | .0006 | 29 |
| 30 | -.0143 | .0064 | .0000 | -.1411 | .0538 | .0000 | .1510 | 30 |
| 31 | -.0267 | .0116 | .0000 | -.2326 | .0518 | .0000 | .2383 | 31 |
| 32 | -.0420 | .0018 | .0000 | -.2978 | -.1265 | .0000 | .3235 | 32 |
| 33 | -.0599 | -.0137 | .0000 | -.2577 | -.2405 | .0000 | .3525 | 33 |
| 34 | -.0687 | -.0187 | .0000 | -.2189 | -.2373 | .0000 | .3228 | 34 |
| 35 | -.0666 | -.0300 | .0000 | -.1535 | -.1640 | .0000 | .2246 | 35 |
| 36 | -.0002 | -.0036 | .0000 | .0020 | -.0124 | .0000 | .0126 | 36 |
| 37 | .0019 | -.0113 | .0000 | .0027 | -.0198 | .0000 | .0200 | 37 |
| 38 | .0025 | -.0041 | .0000 | .0025 | -.0108 | .0000 | .0111 | 38 |
| 39 | .0000 | .0016 | .0000 | .0000 | -.0045 | .0000 | .0045 | 39 |
| 40 | .0000 | -.0002 | .0000 | .0000 | -.0025 | .0000 | .0025 | 40 |
| 41 | -.0009 | .0002 | .0000 | -.0086 | .0020 | .0000 | .0088 | 41 |
| 42 | -.0120 | .0018 | .0000 | -.0752 | .0196 | .0000 | .0777 | 42 |
| 43 | -.0230 | .0137 | .0000 | -.1408 | .0943 | .0000 | .1695 | 43 |
| 44 | -.0247 | .0123 | .0000 | -.1512 | .0416 | .0000 | .1568 | 44 |
| 45 | -.0288 | .0036 | .0000 | -.1507 | -.1701 | .0000 | .2273 | 45 |
| 46 | -.0274 | -.0167 | .0000 | -.1337 | -.3261 | .0000 | .3524 | 46 |
| 47 | -.0244 | -.0224 | .0000 | -.1113 | -.3231 | .0000 | .3417 | 47 |
| 48 | -.0221 | -.0375 | .0000 | -.0872 | -.2606 | .0000 | .2748 | 48 |
| 49 | -.0064 | -.0733 | .0000 | -.0300 | -.2035 | .0000 | .2056 | 49 |
| 50 | .0006 | -.0278 | .0000 | -.0027 | -.0487 | .0000 | .0488 | 50 |
| 51 | -.0001 | -.0038 | .0000 | -.0014 | -.0125 | .0000 | .0126 | 51 |
| 52 | .0000 | .0023 | .0000 | .0000 | -.0078 | .0000 | .0078 | 52 |
| 53 | -.0239 | .0125 | .0000 | -.1260 | .0837 | .0000 | .1513 | 53 |
| 54 | -.0235 | .0039 | .0000 | -.2117 | -.1309 | .0000 | .2489 | 54 |
| 55 | -.0240 | -.0169 | .0000 | -.1537 | -.2988 | .0000 | .3360 | 55 |
| 56 | -.0224 | -.0239 | .0000 | -.1155 | -.3251 | .0000 | .3450 | 56 |
| 57 | -.0124 | -.0366 | .0000 | -.0831 | -.2863 | .0000 | .2981 | 57 |
| 58 | -.0062 | -.0747 | .0000 | -.0369 | -.2329 | .0000 | .2359 | 58 |
| 59 | -.0059 | -.0298 | .0000 | .0433 | -.0949 | .0000 | .1043 | 59 |
| 60 | -.0027 | -.0040 | .0000 | -.0037 | -.0119 | .0000 | .0124 | 60 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 61 | .0000 | 0025 | .0000 | .0000 | -.0059 | 0000 | 0059 | 61 |
| 62 | -.0214 | 0039 | .0000 | -.0539 | -.0220 | 0000 | 0582 | 62 |
| 63 | -.0222 | -.0169 | .0000 | - 0565 | - 1349 | .0000 | 1462 | 63 |
| 64 | -.0238 | - 0244 | 0000 | - 0593 | -.1658 | .0000 | 1799 | 64 |
| 65 | -.0269 | - 0381 | .0000 | - 0630 | - 1852 | 0000 | 1958 | 65 |
| 66 | - 0163 | - 0782 | 0000 | - 0484 | - 1643 | 0000 | 1712 | 66 |
| 67 | -.0121 | -.0314 | .0000 | - 0265 | - 1248 | .0000 | 1276 | 67 |
| 68 | -.0062 | - 0047 | .0000 | - 0076 | - 0110 | .0000 | 0134 | 68 |
| 69 | 0000 | 0027 | 0000 | .0000 | -.0038 | .0000 | 0036 | 69 |
| 70 | - 0193 | - 0064 | 0000 | - 0393 | - 0470 | 0000 | 0613 | 70 |
| 71 | - 0206 | - 0188 | .0000 | - 0423 | -.0887 | .0000 | 0982 | 71 |
| 72 | -.0216 | - 0244 | .0000 | -.0454 | -.1175 | .0000 | 1260 | 72 |
| 73 | - 0237 | - 0378 | .0000 | -.0504 | - 1385 | 0000 | 1455 | 73 |
| 74 | - 0225 | - 0770 | 0000 | - 0498 | - 1428 | 0000 | 1510 | 74 |
| 75 | -.0163 | -.0317 | .0000 | - 0300 | - 1353 | .0000 | 1386 | 75 |
| 76 | -.0090 | - 0049 | 0000 | - 0104 | - 0102 | 0000 | 0146 | 76 |
| 77 | 0000 | .0022 | .0000 | 0000 | - 0028 | .0000 | .0028 | 77 |
| 78 | -.0191 | - 0165 | 0000 | - 0287 | - 0488 | 0000 | 0568 | 78 |
| 79 | -.0191 | - 0247 | .0000 | -.0303 | - 0695 | 0000 | 0756 | 79 |
| 80 | -.0216 | -.0362 | .0000 | - 0345 | -.0862 | 0000 | 0929 | 80 |
| 81 | - 4070 | -.2112 | .0000 | - 4212 | -.2503 | 0000 | 4900 | 81 |
| 82 | 2907 | - 2864 | 0000 | 2820 | - 3277 | 0000 | 4323 | 82 |
| 83 | .7520 | - 0492 | 0000 | 7504 | -.0533 | .0000 | 7523 | 83 |
| 84 | .0000 | 0924 | .0000 | 0000 | 0691 | .0000 | 0891 | 84 |
| 85 | - 0167 | - 0248 | 0000 | - 0201 | - 0419 | .0000 | 0465 | 85 |
| 86 | - 0186 | - 0347 | 0000 | - 0244 | - 0551 | 0000 | 0602 | 86 |
| 87 | -.0150 | -.3392 | 0000 | -.0205 | - 3669 | 0000 | .3575 | 87 |
| 88 | .0005 | - 5283 | .0000 | - 0034 | - 5344 | 0000 | 5344 | 88 |
| 89 | 5899 | - 1008 | .0000 | .5867 | - 1032 | 0000 | 5977 | 89 |
| 90 | 0000 | 2419 | 0000 | 0000 | 2402 | 0000 | 2402 | 90 |
| 91 | .0215 | - 0343 | 0000 | .0215 | -.0343 | .0000 | 0405 | 91 |
| 92 | .0168 | - 3401 | .0000 | 0168 | -.3401 | 0000 | 3405 | 92 |
| 93 | .0202 | - 5315 | 0000 | .0202 | - 5316 | .0000 | 5319 | 93 |
| 94 | 2880 | - 2283 | 0000 | 2880 | - 2283 | 0000 | 3675 | 94 |
| 95 | 0000 | .3665 | 0000 | 0000 | 3665 | 0000 | 3665 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO. | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | - 1324 |
| 2 | - 1326 |
| 3 | - 0342 |
| 4 | - 0432 |
| 5 | - 0068 |
| 6 | .0667 |
| 7 | 0690 |
| 8 | .2359 |
| 9 | .1030 |
| 10 | -.0092 |
| 11 | 0016 |
| TOTAL VALUES | |
| 1 | - 8002 |
| 2 | -.7672 |
| 3 | -.2091 |
| 4 | 0101 |
| 5 | .2564 |
| 6 | 6717 |
| 7 | .7206 |
| 8 | .8693 |
| 9 | 4083 |
| 10 | .0201 |
| 11 | 0209 |

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 540 4 | 342 4 | 233 0 | 160 | 003 | 006 | 001 | 006 | 003 | 003 | 1 |
| 2 | 503.8 | 317.8 | 217 8 | .158 | - 001 | 001 | 018 | 009 | -.009 | 018 | 2 |
| 3 | 523.0 | 327 9 | 228 5 | .155 | 022 | - 022 | 051 | 034 | - 033 | .067 | 3 |
| 4 | .6 | 17.2 | .2 | 494 | 1 534 | - 353 | 2.224 | 2 049 | - 568 | 2 916 | 4 |
| 5 | 7 | 17 3 | 2 | 494 | 636 | 503 | 6 510 | 3 874 | -2 635 | 6 510 | 5 |
| 6 | 7 | 18 0 | 2 | 494 | - 683 | 2 467 | 5.576 | 4.092 | -2 308 | 6 399 | 6 |
| 7 | .7 | 18 4 | 2 | 493 | -1.201 | 3 306 | 2.923 | 3.739 | -1.634 | 5.373 | 7 |
| 8 | 6 | 17 0 | 2 | .494 | - 750 | 1 828 | - 960 | 1.914 | - 837 | 2.751 | 8 |
| 9 | 473 1 | 344 3 | 194 2 | 218 | 002 | 120 | - 003 | 120 | 002 | 119 | 9 |
| 10 | 472.2 | 362 6 | 190 9 | .237 | - 010 | .133 | 020 | 193 | - 010 | 204 | 10 |
| 11 | 478.5 | 372 5 | 191 7 | 243 | - 008 | 205 | - 031 | 212 | - 013 | 225 | 11 |
| 12 | 512.6 | 365.3 | 211 8 | .210 | 015 | .106 | -.048 | 112 | 009 | 102 | 12 |
| 13 | 519 4 | 308 6 | 230 5 | 127 | 013 | 008 | 001 | 213 | 006 | 008 | 13 |
| 14 | 378.0 | 223 4 | 168 2 | 123 | - 010 | - 010 | 034 | 207 | - 027 | 034 | 14 |
| 15 | 1 7 | 13 5 | 6 | 478 | 728 | - 880 | 1 983 | 1 203 | -1.337 | 2.540 | 15 |
| 16 | 7.2 | 16 7 | 2 5 | 424 | 2 286 | -1 290 | 2 820 | 2.784 | -1.778 | 4.583 | 16 |
| 17 | 1 6 | 17 0 | 5 | 485 | 1 179 | 442 | 3 592 | 2 644 | -1 023 | 3 667 | 17 |
| 18 | 6 | 17.2 | 2 | .494 | - 933 | 2 828 | 3 258 | 3.438 | -1 540 | 4.976 | 18 |
| 19 | 6 | 17 1 | 2 | .494 | -1 687 | 3.555 | 4 534 | 4 399 | -2.532 | 6.931 | 19 |
| 20 | 7 | 18 2 | 2 | .494 | -1 568 | 4 252 | 2 591 | 4 527 | -1 843 | 6 370 | 20 |
| 21 | 6 | 17 1 | 2 | 494 | - 970 | 2 781 | 1 578 | 2 940 | -1 129 | 4 069 | 21 |
| 22 | 431 4 | 346 2 | 172 4 | 251 | - 014 | 281 | 029 | 281 | - 015 | 296 | 22 |
| 23 | 408.3 | 307 7 | 165 0 | .232 | - 005 | 238 | - 109 | 250 | - 016 | 286 | 23 |
| 24 | 460 0 | 312.4 | 193 1 | 191 | 031 | 114 | - 058 | .124 | 022 | 102 | 24 |
| 25 | 352 1 | 218 3 | 153 2 | 149 | 053 | - 007 | 071 | 069 | - 024 | 093 | 25 |
| 26 | .0 | .1 | .0 | 495 | 324 | - 352 | 1 276 | 709 | -.736 | 1.445 | 26 |
| 27 | .0 | 1 | 0 | 495 | 1.032 | -1 009 | 588 | 1.075 | -1 052 | 2.127 | 27 |
| 28 | 2 2 | 13.6 | .8 | 472 | 850 | - 505 | - 905 | 987 | -.642 | 1.629 | 28 |
| 29 | 1 7 | 14 6 | 6 | 480 | 539 | 895 | - 558 | 1 047 | 387 | 880 | 29 |
| 30 | 5 | 15 2 | .2 | .494 | -.387 | 2 153 | -2 831 | 2 768 | - 994 | 3.763 | 30 |
| 31 | 6 | 15 8 | 2 | 494 | - 786 | 2 856 | -3 939 | 3 721 | -1 631 | 5 351 | 31 |
| 32 | .6 | 15.5 | 2 | 494 | -1 118 | 3.036 | -4 594 | 4 058 | -2 137 | 6 195 | 32 |
| 33 | 7 | 17 7 | 2 | 494 | -1 330 | 4 792 | -1 878 | 4 932 | -1 470 | 6 403 | 33 |
| 34 | .7 | 17 2 | 2 | .493 | - 175 | 3 631 | - 311 | 3.637 | - 181 | 3.818 | 34 |
| 35 | 289.7 | 256 2 | 113 3 | .279 | - 007 | 476 | - 115 | .482 | -.014 | 498 | 35 |
| 36 | 344 8 | 217.0 | 149.1 | 156 | 007 | 083 | - 004 | 083 | 007 | .076 | 36 |
| 37 | 445 7 | 455 2 | 162 8 | 314 | 184 | - 080 | - 681 | 428 | - 304 | 733 | 37 |
| 38 | 455.4 | 455 6 | 173.9 | .310 | 710 | 1.115 | 5.366 | 3 603 | -1 778 | 5.381 | 38 |
| 39 | 471.9 | 459.0 | 181 1 | .303 | - 480 | 2.793 | 5 541 | 4.379 | -2 048 | 6 425 | 39 |
| 40 | 198.4 | 421.7 | 59 3 | 418 | - 747 | 3.881 | 2 014 | 4.071 | - 958 | 5 029 | 40 |
| 41 | 173 8 | 418 9 | 60 9 | 427 | - 685 | 4 435 | - 310 | 4 498 | - 680 | 5 189 | 41 |
| 42 | 358.9 | 442.7 | 132.1 | 351 | - 617 | 3 842 | 035 | 3 842 | - 617 | 4.459 | 42 |
| 43 | 443 6 | 454.9 | 168 7 | .315 | - 646 | 3 281 | -2 678 | 3 741 | -1 118 | 4.858 | 43 |
| 44 | 805 0 | 729 6 | 313 2 | 285 | 288 | 1 759 | -2 154 | 2 328 | - 281 | 2.609 | 44 |
| 45 | 1304 9 | 754 7 | 587 3 | 111 | - 031 | 085 | 015 | 066 | - 031 | 097 | 45 |
| 46 | 382 4 | 446.2 | 142 7 | 340 | - 015 | 027 | 166 | 093 | - 080 | 173 | 46 |
| 47 | 1 | 4.0 | 0 | 495 | - 002 | 034 | 634 | .334 | - 302 | 635 | 47 |
| 48 | 315.9 | 437 1 | 115 5 | .368 | - 017 | 062 | 505 | 278 | -.233 | 511 | 48 |
| 49 | 1 | 4 0 | 0 | 495 | - 154 | 084 | 922 | 429 | - 519 | 947 | 49 |
| 50 | 1 | 4 0 | 0 | .495 | - 192 | 162 | 955 | . 94 | -.525 | 1 019 | 50 |
| 51 | 815.8 | 613 7 | 331 7 | .230 | - 224 | 2.816 | 082 | 2 816 | -.225 | 3.041 | 51 |
| 52 | 636.2 | 554.5 | 249 5 | 275 | - 189 | 2 739 | - 419 | 2 754 | - 203 | 2 957 | 52 |
| 53 | 902 7 | 582 7 | 386 3 | 169 | - 071 | 072 | 046 | 075 | - 074 | 150 | 53 |
| 54 | 189.9 | 420 9 | 66.6 | 421 | 036 | -.015 | 066 | .062 | - 040 | 102 | 54 |
| 55 | 385.9 | 448.1 | 148 4 | .334 | 046 | 009 | 049 | 058 | -.004 | 062 | 55 |
| 56 | 508.5 | 464 8 | 198 0 | 287 | .086 | 006 | 096 | 108 | -.017 | 125 | 56 |
| 57 | 1 | 4 0 | 0 | 495 | - 102 | 084 | 572 | 292 | - 310 | 601 | 57 |
| 58 | 1518.9 | 627 3 | 708.7 | .072 | -.223 | 2.718 | 664 | 2 755 | -.260 | 3.015 | 58 |
| 59 | 2192.5 | 1096.3 | 1096.3 | 000 | - 208 | 2 672 | - 633 | 2 707 | - 243 | 2 949 | 59 |
| 60 | 463.7 | 457 8 | 177.5 | 308 | -.111 | .084 | 060 | .088 | - 115 | .203 | 60 |
| 61 | 1 | 4 0 | 0 | .495 | 047 | - 035 | 183 | .106 | -.095 | .201 | 61 |
| 62 | 339.0 | 440.2 | 124 8 | 358 | 035 | .004 | 043 | 046 | - 007 | 054 | 62 |
| 63 | 454 3 | 466.4 | 173 4 | 310 | 076 | - 056 | 120 | 089 | - 079 | .179 | 63 |
| 64 | .1 | 4.0 | 0 | 495 | 2 404 | 6.654 | 20 437 | 14.966 | -5 909 | 20 874 | 64 |
| 65 | 1 | 4 0 | 0 | .495 | -4 471 | 19 781 | 4.300 | 19 970 | -4 660 | 24 631 | 65 |
| 66 | 1 | 4 0 | .0 | 495 | -3 003 | 15 297 | -55 326 | 35 284 | -22.990 | 58.274 | 66 |
| 67 | 1 | 4 0 | 0 | 495 | 4.628 | -2 250 | -38 989 | 20 973 | -18 598 | 39 571 | 67 |
| 68 | 148.0 | 415 6 | 51 5 | 438 | 013 | 007 | - 007 | 015 | .005 | 010 | 68 |
| 69 | 363 4 | 443.6 | 134 8 | 348 | 089 | - 074 | 085 | 099 | - 085 | 184 | 69 |
| 70 | 1 | 4 0 | 0 | 495 | 2 387 | 6 328 | -18 708 | 12.940 | -4 225 | 17 165 | 70 |
| 71 | 1 | 4 0 | 0 | 495 | -4 481 | 19 541 | -3 636 | 19 677 | -4 618 | 24 295 | 71 |
| 72 | 1 | 4.0 | 0 | 496 | -6 597 | 15 736 | 18 606 | 19 106 | -9 965 | 29 071 | 72 |
| 73 | 1 | 4 0 | 0 | 495 | 8 374 | -4 866 | 5 087 | 8.846 | -5.338 | 14 184 | 73 |
| 74 | 1 | 4 0 | 0 | 495 | .073 | - 036 | -3 865 | 1 952 | -1.915 | 3.866 | 74 |
| 75 | 527 9 | 487 4 | 208 3 | 278 | 000 | 027 | 187 | 098 | - 071 | 169 | 75 |
| 76 | 448.5 | 455 6 | 170 9 | 312 | - 119 | 207 | - 199 | 235 | - 147 | 381 | 76 |
| 77 | 1 | 4.0 | 0 | 495 | -5 358 | 6 537 | 9 546 | 8.215 | -7 035 | 15 251 | 77 |
| 78 | 1 | 4.0 | 0 | .495 | 5 487 | - 854 | 9 112 | 7 867 | -3 234 | 11 102 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .285 | 518 | 001 | 518 | 285 | 127 | 282 | 1.958 | 082 | 1 |
| 2 | 233 | 481 | 040 | 487 | 227 | 130 | 8 888 | 2 151 | 088 | 2 |
| 3 | .348 | 378 | 118 | 482 | .241 | 120 | 41 272 | 1.897 | 080 | 3 |
| 4 | 375 | 548 | 004 | 548 | 375 | 088 | 1 481 | 1 458 | 1 725 | 4 |
| 5 | 381 | 581 | 013 | 582 | .380 | 091 | 4 248 | 1 478 | 1 815 | 5 |
| 6 | 470 | 883 | 012 | 884 | 488 | 097 | 3 558 | 1 414 | 1 945 | 6 |
| 7 | 528 | 725 | 007 | .725 | 525 | 100 | 1 833 | 1 380 | 1 838 | 7 |
| 8 | 347 | 528 | - 002 | 538 | 347 | 095 | - 558 | 1 548 | 1 906 | 8 |
| 9 | 333 | 988 | - 008 | 988 | 333 | 327 | - 782 | 2 983 | 195 | 9 |
| 10 | 387 | 1 378 | 037 | 1 380 | 388 | 492 | 2 134 | 3 484 | 276 | 10 |
| 11 | 447 | 1 460 | - 158 | 1 484 | 423 | 531 | -8 641 | 3 506 | 288 | 11 |
| 12 | 380 | 840 | - 102 | 858 | 372 | 293 | -10 181 | 2 578 | 188 | 12 |
| 13 | 205 | .307 | 003 | 307 | 205 | 051 | 1 822 | 1 498 | 035 | 13 |
| 14 | 087 | 225 | 081 | 248 | 085 | 092 | 20 652 | 3 843 | 077 | 14 |
| 15 | 078 | 158 | 008 | 158 | 078 | 039 | 5 770 | 2.018 | 788 | 15 |
| 16 | 280 | 288 | 029 | 313 | 255 | 029 | 41 054 | 1 228 | 577 | 16 |
| 17 | 340 | 422 | 011 | 424 | 339 | 042 | 7 350 | 1 251 | 849 | 17 |
| 18 | 375 | 478 | 007 | 479 | 375 | 052 | 3 708 | 1 280 | 1 047 | 18 |
| 19 | 387 | 478 | 008 | 478 | 387 | 058 | 4 845 | 1 305 | 1 117 | 19 |
| 20 | 511 | 828 | 008 | 828 | 511 | 058 | 3 119 | 1 228 | 1 154 | 20 |
| 21 | 381 | 488 | 003 | 487 | 381 | 053 | 1 748 | 1 294 | 1 080 | 21 |
| 22 | 375 | 1 530 | 017 | 1 532 | 373 | 579 | 2 350 | 4 105 | 332 | 22 |
| 23 | 331 | 1 250 | - 162 | 1 284 | 298 | 494 | -10 757 | 4 338 | 308 | 23 |
| 24 | 328 | 883 | - 112 | 725 | 298 | 214 | -15 758 | 2 445 | 133 | 24 |
| 25 | 282 | 089 | 123 | 318 | 023 | 148 | 61 733 | 14 011 | 133 | 25 |
| 26 | 001 | 001 | 000 | 001 | 001 | 000 | 58 238 | 1 588 | 004 | 26 |
| 27 | 081 | 000 | - 005 | .081 | 000 | 026 | -83 960 | -133 788 | -1 000 | 27 |
| 28 | 082 | 029 | - 027 | 093 | 018 | 038 | -68 879 | 5 322 | 757 | 28 |
| 29 | 185 | 245 | - 001 | 245 | 185 | 040 | - 584 | 1 489 | 805 | 29 |
| 30 | [illegible] | 306 | - 008 | 307 | 207 | 050 | -4 880 | 1 482 | 998 | 30 |
| 31 | 284 | 354 | - 011 | 355 | .283 | 051 | -8 087 | 1 404 | 1 022 | 31 |
| 32 | 227 | 328 | - 018 | 329 | 224 | 052 | -10 230 | 1 488 | 1 048 | 32 |
| 33 | 460 | 598 | - 008 | 598 | 489 | 055 | -3 082 | 1 223 | 1 090 | 33 |
| 34 | 484 | 589 | - 002 | 589 | 484 | 047 | -1 085 | 1 192 | 947 | 34 |
| 35 | 502 | 1 742 | - 134 | 1 757 | 488 | 634 | -6 078 | 3 601 | 325 | 35 |
| 36 | 070 | 331 | - 007 | 331 | 070 | 130 | -1 488 | 4 725 | 108 | 36 |
| 37 | 581 | 108 | - 171 | 838 | 051 | 293 | -72 081 | 12 587 | 4 307 | 37 |
| 38 | 252 | 121 | 080 | 275 | 087 | 089 | 68 897 | 2 829 | 680 | 38 |
| 39 | 112 | 252 | 147 | 375 | 039 | 173 | 25 248 | 12 888 | 4 418 | 39 |
| 40 | - 034 | 283 | - 006 | 283 | - 084 | 188 | - 841 | -3 023 | -1 000 | 40 |
| 41 | - 418 | 244 | - 017 | 244 | - 418 | 332 | -1 475 | - 583 | -1 000 | 41 |
| 42 | - 484 | 424 | 198 | 488 | - 505 | 485 | 11 509 | - 921 | -1 000 | 42 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 43 | -.051 | 1 070 | -.836 | 1.357 | -.338 | .848 | -24.298 | -4.017 | -1 000 | 43 |
| 44 | .215 | 1 130 | 126 | 1 147 | 198 | 475 | 7.704 | 5.803 | 1 745 | 44 |
| 45 | -.135 | .428 | 088 | 437 | -.143 | 290 | 6.759 | -3.088 | -1 000 | 45 |
| 46 | -.002 | .080 | [illegible]33 | .074 | -.018 | 045 | 23.120 | -4.613 | -1 [illegible]00 | 46 |
| 47 | 102 | 127 | [illegible]43 | .257 | -.029 | 143 | 42.476 | -8 884 | -1 000 | 47 |
| 48 | 113 | 408 | 318 | 608 | -.089 | 349 | 32 571 | -6 801 | -1 000 | 48 |
| 49 | -.067 | 138 | .151 | .218 | -.147 | .182 | -27 929 | -1.485 | -1 000 | 49 |
| 50 | 029 | 337 | -.078 | 355 | 009 | 173 | -12 994 | 41.220 | 14 951 | 50 |
| 51 | -.069 | 1 110 | -.387 | 1 228 | -.185 | 703 | -18.857 | -8.841 | -1 000 | 51 |
| 52 | -.206 | 785 | 044 | 787 | -.208 | 497 | 2 558 | -3 779 | -1 000 | 52 |
| 53 | -.426 | 386 | 145 | 424 | -.452 | 436 | 9 942 | -.937 | -1 000 | 53 |
| 54 | 175 | .071 | 112 | 247 | -.001 | 124 | 57 465 | -264.999 | -1.000 | 54 |
| 55 | 416 | .200 | 128 | 475 | 141 | .167 | 65.089 | 3.380 | 885 | 55 |
| 56 | 726 | 248 | 247 | 831 | 144 | 344 | 67 038 | 5 785 | 1 779 | 56 |
| 57 | 109 | 227 | -.131 | .312 | 02[illegible] | 144 | -32.934 | 12 963 | 4 447 | 57 |
| 58 | -.922 | 993 | -.389 | 1 082 | -.998 | 1 034 | -11 066 | -1 071 | -1 000 | 58 |
| 59 | -1.8[illegible] | 820 | 190 | 834 | -1.844 | 1 339 | 4.083 | -.452 | -1 000 | 59 |
| 60 | -.[illegible]0 | 222 | 114 | 242 | -.459 | 350 | 9 540 | -.528 | -1 000 | 60 |
| 61 | 050 | .029 | 043 | 084 | -.005 | 045 | 51 908 | -17 914 | -1 000 | 61 |
| 62 | 274 | 150 | 098 | 328 | .098 | .116 | 61 096 | 3.413 | 897 | 62 |
| 63 | .441 | -.128 | 288 | .548 | -.233 | .390 | 68 484 | -2.341 | -1 000 | 63 |
| 64 | 477 | 551 | -.081 | 603 | 425 | 089 | -32 712 | 1 421 | 156 | 64 |
| 65 | 609 | 712 | -.023 | 717 | 605 | 056 | -12.074 | 1 186 | 069 | 65 |
| 66 | 538 | 595 | -.016 | 599 | 534 | 032 | -14 628 | 1 121 | .045 | 66 |
| 67 | 186 | 285 | -.007 | 288 | 185 | 050 | -4.291 | 1 542 | 201 | 67 |
| 68 | 099 | 095 | 001 | 099 | 094 | 002 | 76 689 | 1 048 | 017 | 68 |
| 69 | .333 | -.139 | 153 | .378 | -.184 | 281 | 73 570 | -2.058 | -1 000 | 69 |
| 70 | 451 | 457 | -.038 | 4[illegible] | .415 | 039 | -42.743 | 1 188 | 070 | 70 |
| 71 | 677 | 733 | -.012 | 738 | 875 | 031 | -11 780 | 1 091 | 034 | 71 |
| 72 | 373 | 407 | 007 | 409 | 371 | 019 | 11 542 | 1 102 | 038 | 72 |
| 73 | .225 | .269 | 007 | 270 | .224 | 023 | 8 760 | 1 205 | 078 | 73 |
| 74 | 010 | .018 | .001 | 018 | 010 | 004 | 3 530 | 1 849 | 315 | 74 |
| 75 | 090 | .219 | 344 | 504 | -.198 | .350 | 39 705 | -2.578 | -1 000 | 75 |
| 76 | -.138 | 990 | -.340 | 1 085 | -.233 | 859 | -15 543 | -4 661 | -1 000 | 76 |
| 77 | .059 | 086 | 004 | 088 | 059 | 014 | 8.016 | 1.465 | 174 | 77 |
| 78 | 204 | 216 | 004 | 217 | 203 | 007 | 15.855 | 1.069 | 028 | 78 |

```
SSTIPN  1 LAYER OF GEOTEXTILE, P=2000 PPI, E=5%, T=0

TOTAL NUMBER OF NODES------------------ 95
NUMBER OF BAR ELEMENTS-----------------  5
NUMBER OF DIFF  BAR MATERIALS----------  1
NUMBER OF BEAM ELEMENTS----------------  0
NUMBER OF DIFF  BEAM MATERIALS---------  0
NUMBER OF NODAL LINKS -----------------  0
NUMBER OF INTERFACE ELEMENTS-----------  0
NO  OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE. IN FOUNDATION-  6
NUMBER OF INTERFACE MATERIALS----------  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF. SOIL MATERIALS---------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 36
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS---------  0
NUMBER OF PREEXISTING NODES------------  0
NUMBER OF CONSTRUCTION LAYERS----------  6
NUMBER OF LOAD CASES-------------------  1

CALING FACTOR ----------      1 00000

ATMOSPHERIC PRESSURE ---      1 05800

UNIT WEIGHT OF WATER ---        03120


OMPUTATION SEQUENCE FOR A TOTAL OF     7  INCREMENTS
----------------------------------------------------


 INCREMENT NO    1       PUT ON LAYER NO    1

 INCREMENT NO    2       PUT ON LAYER NO    2

 INCREMENT NO    3       PUT ON LAYER NO    3

 INCREMENT NO    4       PUT ON LAYER NO    4

 INCREMENT NO    5       PUT ON LAYER NO    5

 INCREMENT NO    6       PUT ON LAYER NO    6

 INCREMENT NO    7       APPLY LOAD CASE    1
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B.C. CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | .000 | .000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 36.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58.000 | .000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | .000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30.000 | 4.000 | 0 | 0 | 0 |
| 18 | 36.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54.000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82.000 | 4.000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 36.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.000 | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10.000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.000 | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 36.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10.000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 36.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11.500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74.000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.000 | 14.000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | 15.000 | 0 | 0 | 0 |
| 83 | 82.000 | 15.000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17.000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17.000 | 1 | 0 | 1 |

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 240 | 1.00 | 0 |

| ELMT NO | CONNECTED NODES I | CONNECTED NODES J | MATL NO |
|---|---|---|---|
| 1 | 43 | 44 | 1 |
| 2 | 44 | 45 | 1 |
| 3 | 45 | 46 | 1 |
| 4 | 46 | 47 | 1 |
| 5 | 47 | 48 | 1 |
| 6 | 48 | 49 | 1 |
| 7 | 49 | 50 | 1 |
| 8 | 50 | 51 | 1 |
| 9 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | YOUNG'S MODULUS EXPONENT | RATIO | BULK MODULUS CONSTANT | BULK MODULUS EXPONENT | STRENGTH PARAMETERS C | STRENGTH PARAMETERS PHI | STRENGTH PARAMETERS DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0680 | 6000.00 | .500 | .500 | 1500.00 | .600 | 00 | 35.00 | 00 | .50 |
| 2 | 0530 | 40 00 | 300 | 900 | 20 00 | 200 | 05 | 00 | 00 | 50 |
| 3 | .0600 | 1000 00 | 400 | 700 | 500 00 | 500 | .50 | 40 00 | 00 | 50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO | CONNECTED NODES I | J | K | L | MATL NO | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5 000 | 2.000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15 000 | 2 000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25 000 | 2 000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33.000 | 2 000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39.000 | 2 000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46.000 | 2 000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52 000 | 2 000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 58.000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62.000 | 2.000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2.000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78 000 | 2 000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86.000 | 2 000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5.000 | 5.500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15 000 | 5 500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25 000 | 5 500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33.000 | 5 500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5 500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5.500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52 000 | 5.500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 58.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5 500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5.500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78.000 | 5 500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86 000 | 5 500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5 000 | 8 500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15.000 | 8.500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25.000 | 8.500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33.000 | 8.500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39 000 | 8 500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46 000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52.000 | 8.500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 58.000 | 8.500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62 000 | 8 500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70.000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78 000 | 8 500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86.000 | 8.500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34 500 | 10 750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39 000 | 10.750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46.000 | 10 750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52 000 | 10.750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 58 000 | 10 750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62 000 | 10 750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70.000 | 10 750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78.000 | 10 750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86 000 | 10 750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40.500 | 12 250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46 000 | 12.250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52 000 | 12 250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 58 000 | 12 250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62.000 | 12 250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70 000 | 12 250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78 000 | 12.250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86 000 | 12 250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47.000 | 13.500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52 000 | 13.500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 56.000 | 13.500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62 000 | 13 500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70 000 | 13 500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78 000 | 13 500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86.000 | 13 500 |
| 61 | 70 | 71 | 78 | 78 | 1 | 49 000 | 14 500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52 000 | 14.500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 56 000 | 14 500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62 000 | 14 500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70 000 | 14 500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78.000 | 14 500 |
| 67 | 73 | 77 | 84 | 83 | 1 | 86.000 | 14 500 |
| 68 | 78 | 79 | 85 | 85 | 1 | 53 000 | 15 500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 58 000 | 15 500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62.000 | 15 500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70 000 | 15 500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78 000 | 15.500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86 000 | 15 500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57 000 | 16 500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62 000 | 16 500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70 000 | 16 500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78 000 | 16 500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86.000 | 16 500 |

CONSTRUCTION LAYER INFORMATION

```
SSTIPN: 1 LAYER OF GEOTEXTILE, P=2000 PPI, E=5%, T=0

******************************************************
******************************************************
*                                                    *
*  LOAD CASE ------------------------------    1     *
*                                                    *
******************************************************
******************************************************

LARGEST ELE  NO   IN THIS INCREMENT   78

LARGEST N P  NO   IN THIS INCREMENT   95

BAND WIDTH------------------------  40

TOTAL NUMBER OF EQUATIONS--------- 222

NUMBER OF EQUATIONS IN BLOCK------  85

NUMBER OF BLOCKS-----------------   3

NUMBER OF N P  FORCE CARDS--------   3

NUMBER OF PRESSURE CARDS----------  0
```

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0. | 0 |
| 2 | 0 | 0 |
| 3 | 0. | 0 |
| 4 | 0. | 0 |
| 5 | 0. | 0. |
| 6 | 0 | 0 |
| 7 | 0 | 0 |
| 8 | 0. | 0 |
| 9 | 0 | 0 |
| 10 | 0 | 0 |
| 11 | 0. | 0 |
| 12 | 0. | 0 |
| 13 | 0 | 0. |
| 14 | 0 | 0 |
| 15 | 0. | 0 |
| 16 | 0 | 0 |
| 17 | 0. | 0 |
| 18 | 0 | 0 |
| 19 | 0 | 0 |
| 20 | 0. | 0 |
| 21 | 0 | 0 |
| 22 | 0 | 0 |
| 23 | 0 | 0 |
| 24 | 0 | 0 |
| 25 | 0. | 0 |
| 26 | 0 | 0 |
| 27 | 0. | 0 |
| 28 | 0. | 0 |
| 29 | 0 | 0 |
| 30 | 0 | 0 |
| 31 | 0 | 0 |
| 32 | 0. | 0 |
| 33 | 0. | 0 |
| 34 | 0 | 0 |
| 35 | 0. | 0 |
| 36 | 0. | 0 |
| 37 | 0 | 0 |
| 38 | 0 | 0 |
| 39 | 0. | 0 |
| 40 | 0. | 0 |
| 41 | 0 | 0 |
| 42 | 0 | 0 |
| 43 | 0 | 0 |
| 44 | 0 | 0 |
| 45 | 0 | 0 |
| 46 | 0 | 0 |
| 47 | 0. | 0 |
| 48 | 0 | 0 |
| 49 | 0 | 0 |
| 50 | 0 | 0 |
| 51 | 0 | 0 |
| 52 | 0 | 0 |
| 53 | 0 | 0 |
| 54 | 0 | 0 |
| 55 | 0. | 0 |
| 56 | 0. | 0 |
| 57 | 0. | 0 |
| 58 | 0 | 0 |
| 59 | 0 | 0 |
| 60 | 0. | 0 |
| 61 | 0 | 0 |
| 62 | 0. | 0 |
| 63 | 0. | 0 |
| 64 | 0. | 0 |
| 65 | 0. | 0 |
| 66 | 0. | 0 |
| 67 | 0 | 0 |
| 68 | 0 | 0 |
| 69 | 0 | 0 |
| 70 | 0. | 0 |
| 71 | 0 | 0 |
| 72 | 0 | 0 |
| 73 | 0 | 0 |
| 74 | 0. | 0 |
| 75 | 0 | 0 |
| 76 | 0 | 0 |
| 77 | 0. | 0 |
| 78 | 0 | 0 |
| 79 | 0. | 0 |
| 80 | 0 | 0 |
| 81 | 0. | 0 |
| 82 | 0. | 0 |
| 83 | 0. | 0 |
| 84 | 0 | 0 |
| 85 | 0. | 0 |
| 86 | 0 | 0 |
| 87 | 0 | 0. |
| 88 | 0 | 0 |
| 89 | 0. | 0 |
| 90 | 0 | 0 |
| 91 | 0. | 0 |
| 92 | 0 | -4 50 |
| 93 | 0 | -4.50 |
| 94 | 0 | -2 00 |
| 95 | 0 | 0 |

LOAD CASE : 1    ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 1 |
| 2 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 2 |
| 3 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 3 |
| 4 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 4 |
| 5 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 5 |
| 6 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 6 |
| 7 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 7 |
| 8 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 8 |
| 9 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 9 |
| 10 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 10 |
| 11 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 11 |
| 12 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 12 |
| 13 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 13 |
| 14 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | 14 |
| 15 | .0000 | .0000 | .0000 | -.0001 | .0000 | .0000 | .0001 | 15 |
| 16 | .0000 | .0000 | .0000 | -.0002 | -.0005 | .0000 | .0005 | 16 |
| 17 | -.0003 | .0001 | .0000 | -.0045 | .0020 | .0000 | .0049 | 17 |
| 18 | -.0133 | .0055 | .0000 | -.1909 | .0345 | .0000 | .1940 | 18 |
| 19 | -.0288 | .0029 | .0000 | -.2771 | -.0893 | .0000 | .2857 | 19 |
| 20 | -.0301 | -.0080 | .0000 | -.1692 | -.1237 | .0000 | .2096 | 20 |
| 21 | -.0192 | -.0147 | .0000 | -.0669 | -.1427 | .0000 | .1565 | 21 |
| 22 | -.0005 | -.0004 | .0000 | -.0003 | -.0053 | .0000 | .0053 | 22 |
| 23 | -.0010 | -.0019 | .0000 | -.0004 | -.0051 | .0000 | .0051 | 23 |
| 24 | .0008 | -.0059 | .0000 | .0011 | -.0109 | .0000 | .0110 | 24 |
| 25 | .0021 | -.0020 | .0000 | .0020 | -.0053 | .0000 | .0056 | 25 |
| 26 | .0000 | .0005 | .0000 | .0000 | -.0025 | .0000 | .0025 | 26 |
| 27 | .0000 | .0000 | .0000 | .0000 | .0001 | .0000 | .0001 | 27 |
| 28 | .0000 | .0000 | .0000 | .0000 | -.0001 | .0000 | .0002 | 28 |
| 29 | -.0001 | .0000 | .0000 | -.0011 | -.0001 | .0000 | .0011 | 29 |
| 30 | -.0113 | .0026 | .0000 | -.1583 | .0515 | .0000 | .1664 | 30 |
| 31 | -.0198 | .0127 | .0000 | -.2466 | .0579 | .0000 | .2557 | 31 |
| 32 | -.0358 | .0109 | .0000 | -.3234 | -.1159 | .0000 | .3436 | 32 |
| 33 | -.0652 | -.0110 | .0000 | -.2878 | -.2411 | .0000 | .3753 | 33 |
| 34 | -.0770 | -.0157 | .0000 | -.2528 | -.2367 | .0000 | .3461 | 34 |
| 35 | -.0788 | -.0319 | .0000 | -.1825 | -.1778 | .0000 | .2548 | 35 |
| 36 | -.0007 | -.0045 | .0000 | .0014 | -.0130 | .0000 | .0131 | 36 |
| 37 | .0018 | -.0115 | .0000 | .0016 | -.0200 | .0000 | .0201 | 37 |
| 38 | .0023 | -.0037 | .0000 | .0014 | -.0103 | .0000 | .0104 | 38 |
| 39 | .0000 | .0019 | .0000 | .0000 | -.0043 | .0000 | .0043 | 39 |
| 40 | .0000 | .0000 | .0000 | .0000 | .0001 | .0000 | .0001 | 40 |
| 41 | .0000 | .0000 | .0000 | .0001 | -.0002 | .0000 | .0002 | 41 |
| 42 | -.0053 | .0033 | .0000 | -.0678 | .0234 | .0000 | .0715 | 42 |
| 43 | -.0210 | .0056 | .0000 | -.1744 | .0770 | .0000 | .1906 | 43 |
| 44 | -.0217 | .0153 | .0000 | -.1737 | .0668 | .0000 | .1861 | 44 |
| 45 | -.0219 | .0166 | .0000 | -.1648 | -.1578 | .0000 | .2279 | 45 |
| 46 | -.0223 | -.0121 | .0000 | -.1408 | -.3264 | .0000 | .3555 | 46 |
| 47 | -.0221 | -.0157 | .0000 | -.1195 | -.3187 | .0000 | .3385 | 47 |
| 48 | -.0224 | -.0378 | .0000 | -.0883 | -.2825 | .0000 | .2991 | 48 |
| 49 | -.0065 | -.0838 | .0000 | -.0423 | -.2157 | .0000 | .2198 | 49 |
| 50 | -.0004 | -.0292 | .0000 | -.0071 | -.0480 | .0000 | .0488 | 50 |
| 51 | -.0008 | -.0029 | .0000 | -.0028 | -.0117 | .0000 | .0120 | 51 |
| 52 | .0000 | .0024 | .0000 | .0000 | -.0085 | .0000 | .0085 | 52 |
| 53 | -.0221 | .0154 | .0000 | -.4383 | .1041 | .0000 | .4504 | 53 |
| 54 | -.0221 | .0165 | .0000 | -.3610 | -.1389 | .0000 | .3868 | 54 |
| 55 | -.0218 | -.0127 | .0000 | -.1781 | -.3054 | .0000 | .3535 | 55 |
| 56 | -.0187 | -.0184 | .0000 | -.1251 | -.3185 | .0000 | .3422 | 56 |
| 57 | -.0104 | -.0387 | .0000 | -.0833 | -.2867 | .0000 | .3015 | 57 |
| 58 | -.0108 | -.0650 | .0000 | -.0482 | -.2468 | .0000 | .2515 | 58 |
| 59 | -.0084 | -.0311 | .0000 | .0380 | -.0971 | .0000 | .1042 | 59 |
| 60 | -.0037 | -.0033 | .0000 | -.0056 | -.0115 | .0000 | .0127 | 60 |
| 61 | .0000 | .0028 | .0000 | .0000 | -.0087 | .0000 | .0087 | 61 |
| 62 | -.0220 | .0165 | .0000 | -.0581 | -.0085 | .0000 | .0585 | 62 |
| 63 | -.0211 | -.0129 | .0000 | -.0585 | -.1323 | .0000 | .1447 | 63 |
| 64 | -.0202 | -.0178 | .0000 | -.0594 | -.1601 | .0000 | .1708 | 64 |
| 65 | -.0154 | -.0413 | .0000 | -.0555 | -.1889 | .0000 | .1950 | 65 |
| 66 | -.0204 | -.0875 | .0000 | -.0558 | -.1787 | .0000 | .1871 | 66 |
| 67 | -.0158 | -.0330 | .0000 | -.0318 | -.1266 | .0000 | .1305 | 67 |
| 68 | -.0075 | -.0043 | .0000 | -.0095 | -.0111 | .0000 | .0145 | 68 |
| 69 | .0000 | .0026 | .0000 | .0000 | -.0047 | .0000 | .0047 | 69 |
| 70 | -.0179 | .0018 | .0000 | -.0386 | -.0358 | .0000 | .0527 | 70 |
| 71 | -.0181 | -.0128 | .0000 | -.0438 | -.0867 | .0000 | .0970 | 71 |
| 72 | -.0208 | -.0180 | .0000 | -.0474 | -.1100 | .0000 | .1197 | 72 |
| 73 | -.0274 | -.0371 | .0000 | -.0559 | -.1380 | .0000 | .1471 | 73 |
| 74 | -.0278 | -.0884 | .0000 | -.0561 | -.1574 | .0000 | .1671 | 74 |
| 75 | -.0210 | -.0333 | .0000 | -.0354 | -.1369 | .0000 | .1414 | 75 |
| 76 | -.0100 | -.0048 | .0000 | -.0118 | -.0106 | .0000 | .0158 | 76 |
| 77 | .0000 | .0021 | .0000 | .0000 | -.0038 | .0000 | .0038 | 77 |
| 78 | -.0161 | -.0125 | .0000 | -.0288 | -.0482 | .0000 | .0561 | 78 |
| 79 | -.0185 | -.0180 | .0000 | -.0303 | -.0659 | .0000 | .0725 | 79 |
| 80 | -.0213 | -.0358 | .0000 | -.0352 | -.0810 | .0000 | .0976 | 80 |
| 81 | -.0217 | -.0914 | .0000 | -.0387 | -.1359 | .0000 | .1407 | 81 |
| 82 | .2472 | -.2848 | .0000 | .2379 | -.3509 | .0000 | .4240 | 82 |
| 83 | .6741 | -.0508 | .0000 | .6727 | -.0550 | .0000 | .6750 | 83 |
| 84 | .0000 | .0858 | .0000 | .0000 | .0815 | .0000 | .0815 | 84 |
| 85 | -.0155 | -.0181 | .0000 | -.0202 | -.0369 | .0000 | .0421 | 85 |
| 86 | -.0170 | -.0342 | .0000 | -.0233 | -.0578 | .0000 | .0622 | 86 |
| 87 | -.0159 | -.2593 | .0000 | -.0228 | -.2617 | .0000 | .2627 | 87 |
| 88 | -.0075 | -.4735 | .0000 | -.0120 | -.5298 | .0000 | .5299 | 88 |
| 89 | .5134 | -.1159 | .0000 | .5124 | -.1163 | .0000 | .5259 | 89 |
| 90 | .0000 | .2279 | .0000 | .0000 | .2259 | .0000 | .2259 | 90 |
| 91 | .0115 | -.0338 | .0000 | .0115 | -.0338 | .0000 | .0357 | 91 |
| 92 | .0119 | -.2602 | .0000 | .0119 | -.2602 | .0000 | .2604 | 92 |
| 93 | .0186 | -.4762 | .0000 | .0186 | -.4762 | .0000 | .4765 | 93 |
| 94 | .2621 | -.2414 | .0000 | .2621 | -.2414 | .0000 | .3563 | 94 |
| 95 | .0000 | .3621 | .0000 | .0000 | .3621 | .0000 | .3621 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | -.0242 |
| 2 | -.0106 |
| 3 | -.0099 |
| 4 | .0076 |
| 5 | -.0177 |
| 6 | .4765 |
| 7 | .1829 |
| 8 | -.0106 |
| 9 | .0237 |
| TOTAL VALUES | |
| 1 | .0269 |
| 2 | .3642 |
| 3 | .7149 |
| 4 | 1.2754 |
| 5 | 1.2722 |
| 6 | 1.6799 |
| 7 | 1.0561 |

8 .1294
3 .0834

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 524 7 | 328 3 | 227 1 | 155 | 001 | 000 | 001 | 001 | -.001 | 002 | 1 |
| 2 | 521.8 | 331 4 | 224.8 | 161 | .001 | 007 | .007 | .008 | -.001 | 008 | 2 |
| 3 | 541.0 | 338.5 | 234.5 | 154 | .021 | -.019 | .048 | .032 | -.029 | .061 | 3 |
| 4 | 6 | 17.1 | 2 | 494 | 1.554 | -.457 | 2.172 | 2 029 | -.831 | 2 860 | 4 |
| 5 | 6 | 17 2 | 2 | 494 | 718 | 435 | 6 716 | 3 938 | -2 784 | 6 722 | 5 |
| 6 | 7 | 18.0 | .2 | 494 | -.674 | 2 413 | 5 819 | 4 207 | -2.469 | 6 676 | 6 |
| 7 | .7 | 18 4 | .2 | .493 | -1.284 | 3 330 | 3.214 | 3.837 | -1 761 | 5 598 | 7 |
| 8 | .6 | 16.9 | .2 | .494 | -.857 | 1.850 | -.852 | 1 915 | -.923 | 2.838 | 8 |
| 9 | 487.3 | 343 3 | 191 3 | 221 | 001 | 129 | 008 | 129 | 000 | 129 | 9 |
| 10 | 477 1 | 366 1 | 182.9 | 237 | -.009 | 199 | 028 | 200 | -.010 | 211 | 10 |
| 11 | 477 7 | 372 4 | 182 3 | 242 | -.008 | 202 | -.074 | .208 | -.012 | 221 | 11 |
| 12 | 503.9 | 358 5 | 208 3 | 209 | 013 | 098 | -.042 | 103 | .008 | 095 | 12 |
| 13 | 434.0 | 255 2 | 193 6 | 121 | 000 | 001 | -.001 | 002 | 000 | 002 | 13 |
| 14 | 460 9 | 263 6 | 206 1 | 116 | .006 | -.008 | 014 | .010 | -.008 | 018 | 14 |
| 15 | 1.7 | 13 5 | 6 | 478 | .807 | -.831 | 2.307 | 1 403 | -1.427 | 2 830 | 15 |
| 16 | 9.7 | 16 9 | 3.5 | 398 | 2.290 | -1.380 | 3.084 | 2.851 | -1.942 | 4 793 | 16 |
| 17 | 1 8 | 17 0 | 6 | 482 | 1 359 | 221 | 4 095 | 2 915 | -1 336 | 4 251 | 17 |
| 18 | 6 | 17 1 | .2 | 494 | -.889 | 2.734 | 3.867 | 3.570 | -1.735 | 5 305 | 18 |
| 19 | 6 | 17.1 | 2 | 494 | -1 681 | 3.524 | 5.215 | 4 604 | -2 771 | 7 375 | 19 |
| 20 | 7 | 18 2 | .2 | 494 | -1 733 | 4 442 | 3.843 | 4.939 | -2 230 | 7 169 | 20 |
| 21 | 6 | 17 2 | 2 | 494 | -1 149 | 3 007 | 1 974 | 3 230 | -1 371 | 4 601 | 21 |
| 22 | 456.0 | 361 6 | 182.3 | 246 | -.010 | 284 | 041 | 286 | -.012 | 297 | 22 |
| 23 | 403.5 | 303 6 | 164 0 | 230 | -.005 | 235 | -.095 | 244 | -.014 | 258 | 23 |
| 24 | 430 8 | 293 7 | 180 7 | 192 | 021 | 112 | -.045 | 117 | 016 | 101 | 24 |
| 25 | 408 6 | 229 6 | 186 9 | 093 | -.001 | 000 | 001 | 000 | -.001 | 001 | 25 |
| 26 | 0 | 1 | 0 | 495 | 344 | -.381 | 989 | 593 | -.639 | 1 232 | 26 |
| 27 | 3.5 | 13 7 | 1 2 | 457 | 1 320 | -.816 | 850 | 1 401 | -.897 | 2 299 | 27 |
| 28 | 2 7 | 13 7 | 9 | 466 | 730 | -.406 | -.999 | 918 | -.594 | 1 513 | 28 |
| 29 | 1 3 | 14 2 | 5 | 464 | 565 | 713 | -.461 | 861 | 397 | 484 | 29 |
| 30 | .5 | 15 1 | 2 | 494 | -.373 | 2 116 | -3 256 | 2 921 | -1 176 | 4 099 | 30 |
| 31 | .6 | 15 8 | .2 | 494 | -.703 | 2 755 | -4.841 | 4 001 | -1 949 | 5 950 | 31 |
| 32 | .6 | 15 6 | 2 | 494 | -1 141 | 3 078 | -4 786 | 4 156 | -2.221 | 6 379 | 32 |
| 33 | 7 | 17 8 | 2 | 494 | -1 499 | 5 123 | -2 122 | 5 289 | -1 665 | 6 954 | 33 |
| 34 | 7 | 17 1 | 2 | 493 | -.221 | 3 846 | -.131 | 3.847 | -.222 | 4 069 | 34 |
| 35 | 274.5 | 245 0 | 107 1 | 281 | -.026 | 491 | -.073 | 494 | -.028 | 522 | 35 |
| 36 | 349 2 | 217 8 | 151 6 | 152 | -.009 | 094 | 012 | 094 | -.009 | 103 | 36 |
| 37 | 11 9 | 398 6 | 4 0 | 495 | 009 | 240 | 17 963 | 9 107 | -8 858 | 17 964 | 37 |
| 38 | 446 5 | 455 6 | 176 9 | 312 | -.712 | 1 954 | 19 902 | 10 661 | -9 418 | 20 080 | 38 |
| 39 | 1 | 4 0 | 0 | 495 | -1 279 | 3 697 | 10 882 | 7 101 | -4 683 | 11 784 | 39 |
| 40 | 269.8 | 431 1 | 97 3 | 367 | -.914 | 4 069 | 2 337 | 4 330 | -1 175 | 5 504 | 40 |
| 41 | 203 5 | 422 6 | 71 9 | 415 | -.643 | 3 773 | 084 | 3 773 | -.643 | 4 417 | 41 |
| 42 | 296 0 | 434 5 | 107 5 | 376 | -.606 | 3 176 | -.051 | 3 179 | -.606 | 3 785 | 42 |
| 43 | 572 7 | 490 6 | 225 4 | 270 | -.736 | 3 349 | -3 035 | 3 851 | -1 238 | 5 088 | 43 |
| 44 | 721 8 | 642 4 | 281 8 | 281 | 249 | 1 797 | -2 138 | 2 343 | -.297 | 2 639 | 44 |
| 45 | 700.8 | 584 2 | 279 9 | 252 | -.052 | 080 | 046 | 084 | -.056 | 140 | 45 |
| 46 | 11 9 | 398 6 | 4 0 | 495 | -.011 | 011 | 460 | 230 | -.230 | 460 | 46 |
| 47 | 1 | 4 0 | 0 | 495 | -.008 | 026 | 615 | 418 | -.397 | 815 | 47 |
| 48 | 256 3 | 429 3 | 92 0 | 393 | -.066 | 098 | 225 | 153 | -.124 | 277 | 48 |
| 49 | 11 3 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 49 |
| 50 | 1 | 4 0 | 0 | 495 | -.079 | 345 | 797 | 584 | -.318 | 903 | 50 |
| 51 | 589 1 | 487 0 | 224 1 | 270 | -.280 | 2 894 | 010 | 2 894 | -.280 | 3 154 | 51 |
| 52 | 501 6 | 463 4 | 194 4 | 290 | -.218 | 2 784 | -.351 | 2 775 | -.228 | 3 003 | 52 |
| 53 | 553 6 | 471 8 | 218 2 | 269 | -.091 | 093 | 074 | 100 | -.099 | 196 | 53 |
| 54 | 120 8 | 412 5 | 41 7 | 450 | 037 | -.023 | 182 | 106 | -.093 | 201 | 54 |
| 55 | 479 3 | 460 1 | 184 4 | 300 | 034 | 015 | 089 | 070 | -.020 | 091 | 55 |
| 56 | 1 | 4 0 | 0 | 495 | 037 | -.187 | 1 162 | 517 | -.667 | 1 184 | 56 |
| 57 | 1 | 4 0 | 0 | 495 | -.002 | -.100 | 1 423 | 662 | -.764 | 1 428 | 57 |
| 58 | 1583 4 | 884 3 | 737 6 | 073 | -.243 | 2 738 | 533 | 2 762 | -.267 | 3 028 | 58 |
| 59 | 1380 5 | 791 8 | 624 2 | 108 | -.251 | 2 694 | -.632 | 2 728 | -.285 | 3 013 | 59 |
| 60 | 448 2 | 455 3 | 169 8 | 313 | -.130 | 104 | 055 | 107 | -.133 | 240 | 60 |
| 61 | 60 0 | 405 4 | 20 4 | 475 | 081 | -.039 | 468 | 258 | -.215 | 473 | 61 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | 252.6 | 428.8 | 90.5 | .394 | 047 | - 013 | - 005 | 047 | - 014 | .061 | 62 |
| 63 | 430.8 | 453.0 | 163.2 | .320 | 140 | - 060 | .094 | .150 | -.071 | .221 | 63 |
| 64 | 268.9 | 429.6 | 93.0 | 392 | 007 | .114 | 010 | 114 | 008 | .108 | 64 |
| 65 | .1 | 4.0 | .0 | 495 | -1 802 | 14.317 | -12 531 | 16.468 | -3 951 | 20.417 | 65 |
| 66 | .1 | 4.0 | .0 | 495 | -2 817 | 16.480 | -49.688 | 33.469 | -19 827 | 53.296 | 66 |
| 67 | 1 | 4 0 | .0 | 495 | 4 134 | -1 848 | -35 096 | 18 844 | -16 859 | 35 603 | 67 |
| 68 | 165 0 | 417.9 | 57.7 | 431 | .021 | .011 | -.158 | .096 | - 064 | .160 | 68 |
| 69 | 377 3 | 445.5 | 140.5 | .342 | 078 | - 078 | 100 | .083 | -.081 | .184 | 69 |
| 70 | 1 | 4.0 | .0 | 495 | 001 | 8.319 | 1.247 | 8 365 | -.045 | 8.411 | 70 |
| 71 | 1 | 4 0 | 0 | 495 | -1 766 | 20 136 | 15 170 | 22 507 | -4 136 | 26 643 | 71 |
| 72 | 1 | 4.0 | 0 | 495 | -5.966 | 15 021 | 18 725 | 17 946 | -8 890 | 26.836 | 72 |
| 73 | .1 | 4.0 | 0 | .495 | 7 411 | -3.811 | 5.043 | 7.952 | -4 352 | 12.304 | 73 |
| 74 | .1 | 4.0 | 0 | 495 | 037 | - 039 | -2.442 | 1.221 | -1.222 | 2.443 | 74 |
| 75 | 818 3 | 540 6 | 347 0 | 179 | - 009 | 023 | 008 | 024 | - 0 | 034 | 75 |
| 76 | 543.4 | 469.8 | 213 5 | 273 | - 094 | 173 | - 013 | .173 | - | 266 | 76 |
| 77 | 1 | 4.0 | 0 | 495 | -4.778 | 6 405 | 7 550 | 7 580 | -5 | 13.493 | 77 |
| 78 | 1 | 4.0 | .0 | .495 | 4.847 | - 432 | 8.843 | 8.450 | -? .35 | 8.485 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .243 | .481 | .003 | .481 | 243 | 119 | .814 | 1.976 | 079 | 1 |
| 2 | 250 | 517 | 016 | 518 | 249 | 134 | 3 358 | 2 080 | 088 | 2 |
| 3 | .346 | .391 | 110 | 480 | .255 | .113 | 39 049 | 1 883 | .074 | 3 |
| 4 | 361 | .533 | 004 | .533 | 361 | .086 | 1 465 | 1 476 | 1 719 | 4 |
| 5 | 367 | 545 | 014 | 547 | .365 | 090 | 4 401 | 1 494 | 1.806 | 5 |
| 6 | 462 | 655 | 013 | 656 | 461 | 097 | 3 789 | 1 421 | 1 944 | 6 |
| 7 | .520 | .720 | .007 | .720 | 520 | .100 | 2.086 | 1 385 | 2.003 | 7 |
| 8 | .333 | .524 | -.002 | .524 | .333 | .096 | - 490 | 1 574 | 1,911 | 8 |
| 9 | .340 | 1.033 | .011 | 1.034 | 340 | 347 | .890 | 3 043 | 206 | 9 |
| 10 | 413 | 1 425 | 055 | 1 428 | 411 | 509 | 3 079 | 3 477 | 281 | 10 |
| 11 | .442 | 1.446 | - 143 | 1 466 | 422 | 522 | -7.956 | 3 475 | 285 | 11 |
| 12 | 382 | 887 | - 088 | 901 | 348 | 277 | -9 251 | 2.590 | 163 | 12 |
| 13 | 138 | 276 | - 003 | 276 | 138 | 069 | -1 191 | 2.006 | 052 | 13 |
| 14 | 181 | 253 | 028 | 261 | 153 | 054 | 15 763 | 1 709 | 040 | 14 |
| 15 | .093 | .170 | .009 | 171 | 092 | .040 | 6.651 | 1 859 | 792 | 15 |
| 16 | .268 | .289 | .024 | .293 | .244 | .024 | 44.736 | 1 200 | 487 | 16 |
| 17 | 336 | 413 | .012 | .415 | .334 | .041 | 8 468 | 1 243 | 811 | 17 |
| 18 | 369 | 468 | 008 | 469 | 365 | 052 | 4 389 | 1 287 | 1 044 | 18 |
| 19 | .361 | 471 | 011 | .472 | .360 | .056 | 5.555 | 1.311 | 1.120 | 19 |
| 20 | 515 | 631 | 009 | .632 | 514 | 059 | 4.237 | 1.229 | 1.175 | 20 |
| 21 | .388 | .475 | 004 | 475 | .388 | .054 | 2 181 | 1.293 | 1 079 | 21 |
| 22 | 409 | 1 614 | 076 | 1 619 | 404 | 607 | 3 584 | 4 004 | 337 | 22 |
| 23 | 318 | 1 215 | - 156 | 1.242 | .292 | .475 | -9 578 | 4 254 | .297 | 23 |
| 24 | .273 | 652 | -.082 | .669 | 256 | 207 | -11.725 | 2 614 | 135 | 24 |
| 25 | 042 | 091 | 002 | 091 | 042 | 025 | 1 810 | 2 187 | .022 | 25 |
| 26 | 001 | - 004 | 003 | 003 | - 005 | 004 | 68 421 | - 461 | -1 000 | 26 |
| 27 | .074 | 008 | 006 | .075 | 008 | 034 | 85 502 | 9 647 | .671 | 27 |
| 28 | 074 | .029 | -.027 | .087 | .016 | .035 | -64.721 | 5.296 | .707 | 28 |
| 29 | 140 | .223 | 000 | 223 | 140 | 041 | 107 | 1 593 | .830 | 29 |
| 30 | 198 | 299 | - 009 | 299 | 197 | 051 | -5 127 | 1 517 | 1 020 | 30 |
| 31 | .248 | 348 | - 013 | .349 | .246 | 052 | -7 156 | 1 420 | 1 033 | 31 |
| 32 | 230 | 328 | - 019 | 332 | 226 | 053 | -10 647 | 1.469 | 1.059 | 32 |
| 33 | 518 | .628 | -.006 | 628 | 517 | .056 | -3 195 | 1.215 | 1 111 | 33 |
| 34 | 523 | 619 | 001 | 619 | 523 | 048 | 625 | 1 184 | 959 | 34 |
| 35 | 440 | 1.731 | -.066 | 1.733 | 438 | 646 | -2.462 | 3.956 | .348 | 35 |
| 36 | 053 | .303 | .010 | .303 | 053 | 125 | 2.204 | 5.710 | 107 | 36 |
| 37 | 031 | .049 | - 036 | .078 | .003 | .037 | -37 960 | 25 129 | 6.969 | 37 |
| 38 | 066 | 136 | 046 | 159 | 044 | 057 | 28 217 | 3 619 | 973 | 38 |
| 39 | 032 | 282 | 068 | .292 | 002 | 145 | 15.644 | 131.087 | 48 356 | 39 |
| 40 | -.038 | 344 | - 063 | 355 | -.049 | .202 | -9 166 | -7 293 | -1.000 | 40 |
| 41 | -.296 | .287 | -.010 | .287 | -.286 | .282 | -1 032 | - 902 | -1.000 | 41 |
| 42 | -.274 | .411 | .298 | .522 | -.385 | .454 | 20.494 | -1.354 | -1 000 | 42 |
| 43 | -.119 | 1 136 | -.711 | 1.457 | - 440 | 949 | -24.289 | -3.312 | -1.000 | 43 |
| 44 | 113 | 1 079 | .183 | 1 113 | .079 | .517 | 10.394 | 14.057 | 4.854 | 44 |
| 45 | -.142 | 425 | .108 | .445 | - 162 | .303 | 10.444 | -2.751 | -1.000 | 45 |
| 46 | .010 | 028 | .016 | 037 | 000 | .016 | 29.858 | 82.722 | 30.378 | 46 |
| 47 | 087 | 154 | 120 | .245 | -.004 | 125 | 37 282 | -63.974 | -1 000 | 47 |
| 48 | 024 | 375 | 275 | 526 | - 127 | 326 | 28 720 | -4 146 | -1 000 | 48 |
| 49 | - 066 | 104 | -.134 | 171 | - 163 | 167 | -26.565 | -1.053 | -1 000 | 49 |
| 50 | 022 | .309 | - 055 | .320 | .011 | 154 | -10.530 | 27 820 | 9.970 | 50 |
| 51 | 120 | 1 185 | -.383 | 1.287 | 008 | .644 | -17.128 | 158 297 | 58 471 | 51 |
| 52 | - 247 | 766 | 076 | 771 | - 253 | 512 | 4 245 | -3.049 | -1 000 | 52 |
| 53 | - 329 | 386 | .164 | .418 | -.361 | 389 | 11 632 | -1 157 | -1.000 | 53 |
| 54 | 109 | .086 | 113 | .202 | -.027 | 115 | 50.422 | -7.371 | -1.000 | 54 |
| 55 | .354 | .223 | 217 | .516 | 061 | .227 | 53 440 | 8.405 | 2 753 | 55 |
| 56 | 161 | 189 | 051 | 228 | 123 | 052 | 37 206 | 1 855 | 318 | 56 |
| 57 | 072 | .232 | -.084 | .268 | 036 | 116 | -23.315 | 7 417 | 2.385 | 57 |
| 58 | -1 088 | 1.106 | - 428 | 1.188 | -1 169 | 1 178 | -10 865 | -1 015 | -1.000 | 58 |
| 59 | -1 666 | .687 | 281 | .715 | -1 695 | 1.205 | 6.250 | - 422 | -1.000 | 59 |
| 60 | - 471 | 260 | 082 | 289 | - 481 | 375 | 6 356 | - 560 | -1 000 | 60 |
| 61 | 035 | 014 | 064 | .089 | - 040 | 065 | 49 646 | -2.229 | -1.000 | 61 |
| 62 | 279 | .107 | 053 | .294 | 092 | .101 | 74.287 | 3 198 | 817 | 62 |
| 63 | 806 | .030 | 242 | .875 | - 039 | .457 | 74.031 | -22 510 | -1 000 | 63 |
| 64 | 447 | 673 | - 082 | 689 | 432 | 128 | -14 361 | 1 595 | 221 | 64 |
| 65 | 509 | 539 | -.006 | .540 | .509 | 016 | -9 253 | 1 062 | 023 | 65 |
| 66 | 553 | .586 | - 020 | .595 | 544 | .026 | -25.374 | 1 094 | .035 | 66 |
| 67 | 199 | .292 | - 012 | .293 | 197 | .048 | -7 112 | 1 487 | 181 | 67 |
| 68 | 184 | 118 | - 077 | 235 | 067 | 084 | -56 509 | 3 502 | 930 | 68 |
| 69 | 260 | .180 | 151 | 298 | -.228 | 263 | 72 423 | -1 310 | -1 000 | 69 |
| 70 | 420 | .446 | - 034 | 469 | 398 | 037 | -34 488 | 1 185 | 069 | 70 |
| 71 | 741 | .775 | 008 | 776 | 740 | 018 | 9 670 | 1 049 | 018 | 71 |
| 72 | 370 | 403 | 007 | 405 | 368 | 018 | 10 784 | 1 098 | 037 | 72 |
| 73 | 231 | 257 | 003 | .258 | 231 | 013 | 7 256 | 1 116 | 043 | 73 |
| 74 | 008 | 017 | 001 | 017 | 008 | 004 | 7 231 | 2 047 | 389 | 74 |
| 75 | - 018 | 224 | 032 | 228 | - 023 | 125 | 7 314 | -10 126 | -1 000 | 75 |
| 76 | - 184 | 976 | - 027 | 976 | - 184 | 580 | -1 321 | -5 299 | -1 000 | 76 |
| 77 | 077 | 103 | 003 | 104 | 077 | 013 | 6 536 | 1 345 | 128 | 77 |
| 78 | 195 | 208 | 003 | 208 | 195 | 007 | 11 247 | 1 071 | 026 | 78 |

```
SSTIPN· 1 LAYER OF GEOTEXTILE, P=2000 PPI, E=5%, T=1000

TOTAL NUMBER OF NODES------------------ 95
NUMBER OF BAR ELEMENTS-----------------  9
NUMBER OF DIFF  BAR MATERIALS----------  1
NUMBER OF BEAM ELEMENTS----------------  0
NUMBER OF DIFF. BEAM MATERIALS---------  0
NUMBER OF NODAL LINKS -----------------  0
NUMBER OF INTERFACE ELEMENTS-----------  0
NO  OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE  IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS----------  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF  SOIL MATERIALS---------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 36
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS---------  0
NUMBER OF PREEXISTING NODES------------  0
NUMBER OF CONSTRUCTION LAYERS----------  6
NUMBER OF LOAD CASES-------------------  2

CALING FACTOR ---------      1 00000

ATMOSPHERIC PRESSURE ---      1.05800

UNIT WEIGHT OF WATER ---       03120


OMPUTATION SEQUENCE FOR A TOTAL OF    8  INCREMENTS
.....................................................

 INCREMENT NO    1      APPLY LOAD CASE   1

 INCREMENT NO    2      PUT ON LAYER NO   1

 INCREMENT NO    3      PUT ON LAYER NO   2

 INCREMENT NO.   4      PUT ON LAYER NO   3

 INCREMENT NO    5      PUT ON LAYER NO   4

 INCREMENT NO.   6      PUT ON LAYER NO   5

 INCREMENT NO    7      PUT ON LAYER NO   6

 INCREMENT NO    8      APPLY LOAD CASE   2
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B.C. CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | 000 | 000 | 1 | 1 | 1 |
| 2 | 10 000 | .000 | 1 | 1 | 1 |
| 3 | 20 000 | 000 | 1 | 1 | 1 |
| 4 | 30.000 | 000 | 1 | 1 | 1 |
| 5 | 38 000 | 000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | 000 | 1 | 1 | 1 |
| 8 | 54 000 | 000 | 1 | 1 | 1 |
| 9 | 58 000 | 000 | 1 | 1 | 1 |
| 10 | 66.000 | 000 | 1 | 1 | 1 |
| 11 | 74 000 | 000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90 000 | 000 | 1 | 1 | 1 |
| 14 | 000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4 000 | 0 | 0 | 0 |
| 17 | 30 000 | 4 000 | 0 | 0 | 0 |
| 18 | 38 000 | 4 000 | 0 | 0 | 0 |
| 19 | 42.000 | 4 000 | 0 | 0 | 0 |
| 20 | 50.000 | 4 000 | 0 | 0 | 0 |
| 21 | 54 000 | 4.000 | 0 | 0 | 0 |
| 22 | 58 000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4 000 | 0 | 0 | 0 |
| 25 | 82 000 | 4 000 | 0 | 0 | 0 |
| 26 | 90 000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7 000 | 0 | 0 | 0 |
| 29 | 20.000 | 7 000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 38.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50 000 | 7 000 | 0 | 0 | 0 |
| 34 | 54 000 | 7 000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7 000 | 0 | 0 | 0 |
| 37 | 74 000 | 7 000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7 000 | 1 | 0 | 1 |
| 40 | 000 | 10 000 | 1 | 0 | 1 |
| 41 | 10 000 | 10 000 | 0 | 0 | 0 |
| 42 | 20 000 | 10.000 | 0 | 0 | 0 |
| 43 | 30 000 | 10 000 | 0 | 0 | 0 |
| 44 | 38.000 | 10 000 | 0 | 0 | 0 |
| 45 | 42 000 | 10 000 | 0 | 0 | 0 |
| 46 | 50 000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66 000 | 10 000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10 000 | 0 | 0 | 0 |
| 52 | 90 000 | 10.000 | 1 | 0 | 1 |
| 53 | 38 000 | 11 500 | 0 | 0 | 0 |
| 54 | 42.000 | 11 500 | 0 | 0 | 0 |
| 55 | 50 000 | 11 500 | 0 | 0 | 0 |
| 56 | 54 000 | 11 500 | 0 | 0 | 0 |
| 57 | 58 000 | 11 500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11 500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90 000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54 000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66 000 | 13.000 | 0 | 0 | 0 |
| 67 | 74 000 | 13 000 | 0 | 0 | 0 |
| 68 | 82.000 | 13 000 | 0 | 0 | 0 |
| 69 | 90.000 | 13 000 | 1 | 0 | 1 |
| 70 | 46 000 | 14 000 | 0 | 0 | 0 |
| 71 | 50 000 | 14 000 | 0 | 0 | 0 |
| 72 | 54 000 | 14 000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14 000 | 0 | 0 | 0 |
| 75 | 74 000 | 14 000 | 0 | 0 | 0 |
| 76 | 82 000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14 000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54 000 | 15 000 | 0 | 0 | 0 |
| 80 | 58 000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74 000 | 15.000 | 0 | 0 | 0 |
| 83 | 82 000 | 15 000 | 0 | 0 | 0 |
| 84 | 90 000 | 15.000 | 1 | 0 | 1 |
| 85 | 54 000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16 000 | 0 | 0 | 0 |
| 87 | 66 000 | 16 000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58 000 | 17 000 | 0 | 0 | 0 |
| 92 | 66 000 | 17 000 | 0 | 0 | 0 |
| 93 | 74.000 | 17 000 | 0 | 0 | 0 |
| 94 | 82.000 | 17 000 | 0 | 0 | 0 |
| 95 | 90 000 | 17 000 | 1 | 0 | 1 |

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 240 | 1.00 | 0 |

| ELMT NO | CONNECTED NODES I | J | MATL NO |
|---|---|---|---|
| 1 | 43 | 44 | 1 |
| 2 | 44 | 45 | 1 |
| 3 | 45 | 46 | 1 |
| 4 | 46 | 47 | 1 |
| 5 | 47 | 48 | 1 |
| 6 | 48 | 49 | 1 |
| 7 | 49 | 50 | 1 |
| 8 | 50 | 51 | 1 |
| 9 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | EXPONENT | RATIO | BULK MODULUS CONSTANT | EXPONENT | STRENGTH PARAMETERS C | PHI | DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .0880 | 8000.00 | 500 | 500 | 1500 00 | 800 | 00 | 35 00 | .00 | 50 |
| 2 | 0530 | 40 00 | 300 | 900 | 20 00 | 200 | 05 | 00 | 00 | 50 |
| 3 | .0800 | 1000.00 | 400 | .700 | 500 00 | 500 | .50 | 40 00 | .00 | 50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO | CONNECTED NODES I | J | K | L | MATL NO | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5 000 | 2.000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15 000 | 2 000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25 000 | 2 000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33 000 | 2.000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39.000 | 2.000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46 000 | 2 000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52 000 | 2 000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 58 000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62.000 | 2 000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70 000 | 2.000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78 000 | 2.000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86 000 | 2 000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5.000 | 5.500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15.000 | 5.500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25 000 | 5 500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33 000 | 5.500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46 000 | 5.500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52 000 | 5.500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 58.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5.500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70 000 | 5.500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78 000 | 5.500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86 000 | 5 500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5 000 | 8 500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15 000 | 8 500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25.000 | 8.500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33 000 | 8 500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39 000 | 8 500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46 000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52.000 | 8.500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 58 000 | 8.500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62 000 | 8 500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70 000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78.000 | 8.500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86 000 | 8 500 |
| 37 | 43 | 44 | 53 | 52 | 1 | 34 500 | 10 750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39 000 | 10 750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46 000 | 10 750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52.000 | 10 750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 58 000 | 10 750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62 000 | 10.750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70.000 | 10.750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78 000 | 10.750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86 000 | 10 750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40 500 | 12 250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46 000 | 12.250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52 000 | 12 250 |
| 49 | 56 | 37 | 65 | 64 | 1 | 58 000 | 12 250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62 000 | 12 250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70 000 | 12.250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78 000 | 12.250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86 000 | 12 250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47.000 | 13 500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52.000 | 13 500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 58 000 | 13 500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62 000 | 13 500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70 000 | 13.500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78 000 | 13 500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86 000 | 13 500 |
| 61 | 70 | 71 | 78 | 77 | 1 | 49 000 | 14 500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52 000 | 14 500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 58 000 | 14 500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62 000 | 14 500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70 000 | 14 500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78.000 | 14 500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 86 000 | 14.500 |
| 68 | 78 | 79 | 85 | 84 | 1 | 53 000 | 15 500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 58 000 | 15 500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62 000 | 15 500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70 000 | 15 500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78 000 | 15 500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86 000 | 15 500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57 000 | 16 500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62 000 | 16 500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70 000 | 16 500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78 000 | 16 500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86 000 | 16 500 |

CONSTRUCTION LAYER INFORMATION

```
SSTIPN. 1 LAYER OF GEOTEXTILE, P=2000 PPI, E=5%, T=1000

****************************************************
****************************************************
*                                                  *
*  LOAD CASE ------------------------------   2    *
*                                                  *
****************************************************
****************************************************

LARGEST ELE  NO   IN THIS INCREMENT   78

LARGEST N P  NO   IN THIS INCREMENT   95


BAND WIDTH------------------------  40
TOTAL NUMBER OF EQUATIONS--------- 222
NUMBER OF EQUATIONS IN BLOCK------  84
NUMBER OF BLOCKS-----------------   3

NUMBER OF N P  FORCE CARDS--------  3
NUMBER OF PRESSURE CARDS----------  0
```

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0 | 0 |
| 2 | 0 | 0 |
| 3 | 0 | 0 |
| 4 | 0 | 0 |
| 5 | 0. | 0. |
| 6 | 0 | 0 |
| 7 | 0. | 0 |
| 8 | 0. | 0 |
| 9 | 0. | 0 |
| 10 | 0 | 0 |
| 11 | 0 | 0 |
| 12 | 0 | 0 |
| 13 | 0 | 0 |
| 14 | 0 | 0 |
| 15 | 0. | 0 |
| 16 | 0. | 0 |
| 17 | 0 | 0 |
| 18 | 0 | 0 |
| 19 | 0 | 0. |
| 20 | 0 | 0 |
| 21 | 0. | 0 |
| 22 | 0 | 0 |
| 23 | 0 | 0 |
| 24 | 0 | 0 |
| 25 | 0 | 0 |
| 26 | 0 | 0 |
| 27 | 0. | 0. |
| 28 | 0. | 0 |
| 29 | 0 | 0 |
| 30 | 0 | 0 |
| 31 | 0 | 0 |
| 32 | 0 | 0 |
| 33 | 0 | 0 |
| 34 | 0 | 0 |
| 35 | 0. | 0 |
| 36 | 0 | 0 |
| 37 | 0 | 0 |
| 38 | 0 | 0 |
| 39 | 0. | 0 |
| 40 | 0. | 0 |
| 41 | 0. | 0 |
| 42 | 0 | 0 |
| 43 | 0 | 0 |
| 44 | 0. | 0 |
| 45 | 0. | 0 |
| 46 | 0 | 0 |
| 47 | 0 | 0 |
| 48 | 0 | 0 |
| 49 | 0 | 0 |
| 50 | 0 | 0 |
| 51 | 0 | 0 |
| 52 | 0. | 0 |
| 53 | 0 | 0 |
| 54 | 0 | 0 |
| 55 | 0. | 0 |
| 56 | 0 | 0. |
| 57 | 0. | 0 |
| 58 | 0 | 0 |
| 59 | 0 | 0. |
| 60 | 0. | 0 |
| 61 | 0. | 0 |
| 62 | 0. | 0 |
| 63 | 0. | 0. |
| 64 | 0 | 0 |
| 65 | 0 | 0. |
| 66 | 0 | 0 |
| 67 | 0. | 0 |
| 68 | 0 | 0 |
| 69 | 0. | 0 |
| 70 | 0 | 0 |
| 71 | 0 | 0 |
| 72 | 0 | 0 |
| 73 | 0 | 0 |
| 74 | 0 | 0 |
| 75 | 0. | 0 |
| 76 | 0 | 0 |
| 77 | 0 | 0. |
| 78 | 0 | 0 |
| 79 | 0 | 0 |
| 80 | 0 | 0 |
| 81 | 0 | 0 |
| 82 | 0 | 0 |
| 83 | 0 | 0 |
| 84 | 0 | 0 |
| 85 | 0. | 0 |
| 86 | 0 | 0 |
| 87 | 0 | 0 |
| 88 | 0 | 0 |
| 89 | 0 | 0 |
| 90 | 0 | 0 |
| 91 | 0. | 0 |
| 92 | 0 | -4.50 |
| 93 | 0 | -4.50 |
| 94 | 0 | -2.00 |
| 95 | 0 | 0 |

LOAD CASE : 2    ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | .0000 | 0000 | .0000 | .0000 | 0000 | 0000 | 0000 | 1 |
| 2 | .0000 | .0000 | 0000 | .0000 | 0000 | .0000 | 0000 | 2 |
| 3 | .0000 | .0000 | .0000 | .0000 | 0000 | 0000 | 0000 | 3 |
| 4 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 4 |
| 5 | .0000 | 0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 5 |
| 6 | 0000 | .0000 | 0000 | .0000 | 0000 | .0000 | .0000 | 6 |
| 7 | 0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 7 |
| 8 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 8 |
| 9 | 0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 9 |
| 10 | 0000 | .0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 10 |
| 11 | 0000 | .0000 | .0000 | 0000 | 0000 | 0000 | 0000 | 11 |
| 12 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 12 |
| 13 | 0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 13 |
| 14 | 0000 | .0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 14 |
| 15 | 0000 | 0000 | 0000 | -.0002 | 0000 | 0000 | 0002 | 15 |
| 16 | 0000 | - 0001 | 0000 | - 0004 | - 0007 | 0000 | 0008 | 16 |
| 17 | - 0007 | .0002 | 0000 | -.0052 | .0025 | 0000 | 0058 | 17 |
| 18 | - 0219 | .0085 | 0000 | -.2151 | 0428 | 0000 | 2193 | 18 |
| 19 | - 0333 | -.0036 | 0000 | -.3034 | - 0773 | 0000 | 3131 | 19 |
| 20 | - 0171 | - 0124 | 0000 | - 1857 | - 1342 | 0000 | 2133 | 20 |
| 21 | - 0070 | -.0075 | 0000 | - 0866 | - 1408 | 0000 | 1528 | 21 |
| 22 | 0003 | .0006 | 0000 | 0008 | - 0040 | 0000 | 0040 | 22 |
| 23 | - 0010 | - 0022 | 0000 | - 0005 | - 0053 | 0000 | 0054 | 23 |
| 24 | 0008 | - 0057 | 0000 | 0010 | - 0108 | 0000 | 0108 | 24 |
| 25 | 0022 | - 0022 | 0000 | .0020 | - 0054 | 0000 | 0057 | 25 |
| 26 | .0000 | .0004 | 0000 | .0000 | - 0027 | 0000 | 0027 | 26 |
| 27 | 0000 | .0000 | 0000 | .0000 | 0001 | .0000 | 0001 | 27 |
| 28 | 0000 | 0000 | 0000 | 0000 | - 0002 | 0000 | 0002 | 28 |
| 29 | -.0001 | .0000 | 0000 | -.0015 | - 0002 | .0000 | 0015 | 29 |
| 30 | -.0243 | 0053 | 0000 | -.2303 | 0702 | .0000 | .2408 | 30 |
| 31 | - 0444 | .0169 | 0000 | - 3346 | 0750 | 0000 | 3429 | 31 |
| 32 | - 0568 | - 0055 | 0000 | - 3884 | - 1405 | 0000 | 3924 | 32 |
| 33 | - 0488 | -.0255 | 0000 | -.2810 | - 2683 | 0000 | 3885 | 33 |
| 34 | - 0484 | - 0086 | 0000 | -.2229 | - 2418 | 0000 | 3287 | 34 |
| 35 | - 0569 | -.0103 | 0000 | - 1588 | - 1533 | .0000 | .2208 | 35 |
| 36 | - 0013 | - 0051 | 0000 | 0006 | - 0135 | 0000 | 0135 | 36 |
| 37 | 0021 | -.0110 | 0000 | 0016 | 0197 | .0000 | 0198 | 37 |
| 38 | .0079 | -.0041 | 0000 | 0016 | - 0105 | .0000 | 0106 | 38 |
| 39 | 0030 | 0017 | 0000 | 0000 | - 0048 | 0000 | 0048 | 39 |
| 40 | 0000 | 0000 | 0000 | 0000 | 0001 | 0000 | 0001 | 40 |
| 41 | .0000 | .0000 | .0000 | .0001 | - 0002 | 0000 | 0003 | 41 |
| 42 | - 0212 | .0078 | .0000 | -.0799 | 0538 | .0000 | 0963 | 42 |
| 43 | - 0472 | 0115 | 0000 | - 2669 | 1194 | 0000 | 2924 | 43 |
| 44 | - 0478 | 0201 | .0000 | -.2598 | 0804 | 0000 | 2687 | 44 |
| 45 | - 0490 | - 0084 | .0000 | -.2447 | - 1974 | .0000 | 3144 | 45 |
| 46 | - 0464 | - 0366 | 0000 | - 2082 | - 3881 | 0000 | 4229 | 46 |
| 47 | - 0359 | - 0131 | 0000 | - 1728 | - 3384 | 0000 | 3781 | 47 |
| 48 | - 0283 | 0012 | 0000 | - 1361 | - 2403 | 0000 | 2762 | 48 |
| 49 | 0008 | -.0664 | 0000 | -.0871 | - 2215 | .0000 | 2288 | 49 |
| 50 | 0021 | - 0294 | 0000 | - 0189 | - 0500 | 0000 | 0535 | 50 |
| 51 | 0002 | - 0038 | 0000 | -.0093 | - 0135 | 0000 | 0164 | 51 |
| 52 | 0000 | 0023 | 0000 | 0000 | - 2785 | 0000 | 2785 | 52 |
| 53 | - 0409 | 0201 | 0000 | - 4625 | 1194 | 0000 | 4776 | 53 |
| 54 | -.0417 | -.0078 | 0000 | - 3851 | - 1815 | 0000 | 4176 | 54 |
| 55 | - 0529 | -.0351 | 0000 | -.2135 | - 3430 | .0000 | 4040 | 55 |
| 56 | - 0589 | - 0220 | 0000 | - 1705 | - 3437 | 0000 | 3837 | 56 |
| 57 | - 0342 | -.0111 | 0000 | -.1234 | - 2825 | 0000 | .3083 | 57 |
| 58 | - 0078 | -.0898 | 0000 | - 0584 | -.2497 | 0000 | .2585 | 58 |
| 59 | - 0050 | -.0319 | 0000 | - 0173 | - 0911 | 0000 | .0927 | 59 |
| 60 | - 0026 | - 0040 | 0000 | 0094 | -.0495 | .0000 | 0504 | 60 |
| 61 | 0000 | .0025 | 0000 | .0000 | - 3113 | 0000 | 3113 | 61 |
| 62 | - 0548 | - 0086 | 0000 | - 0968 | - 0293 | .0000 | 1012 | 62 |
| 63 | - 0642 | -.0344 | 0000 | -.1067 | - 1678 | 0000 | 1988 | 63 |
| 64 | - 0651 | -.0214 | 0000 | -.1094 | - 1817 | .0000 | 2121 | 64 |
| 65 | - 0704 | -.0258 | 0000 | -.1142 | - 1944 | 0000 | 2255 | 65 |
| 66 | - 0195 | - 0909 | 0000 | - 0597 | - 2224 | 0000 | 2303 | 66 |
| 67 | - 0126 | -.0327 | .0000 | .0027 | - 1175 | .0000 | .1175 | 67 |
| 68 | - 0062 | - 0043 | 0000 | -.0082 | - 0108 | .0000 | 0136 | 68 |
| 69 | 0000 | .0025 | 0000 | 0000 | - 0041 | .0000 | 0041 | 69 |
| 70 | - 0649 | -.0195 | 0000 | - 0894 | - 0640 | 0000 | 1099 | 70 |
| 71 | - 0676 | -.0344 | 0000 | -.0961 | - 1226 | 0000 | 1584 | 71 |
| 72 | -.0686 | - 0212 | 0000 | -.0985 | - 1317 | .0000 | 1646 | 72 |
| 73 | - 0719 | -.0248 | 0000 | -.1035 | -.1470 | .0000 | 1798 | 73 |
| 74 | - 0279 | - 0927 | 0000 | - 0801 | - 2026 | 0000 | 2113 | 74 |
| 75 | - 0176 | - 0335 | 0000 | - 0622 | - 1286 | 0000 | 1387 | 75 |
| 76 | - 0083 | - 0047 | 0000 | -.0102 | - 0102 | 0000 | 0144 | 76 |
| 77 | 0000 | 0025 | 0000 | .0000 | - 0028 | 0000 | 0028 | 77 |
| 78 | - 0715 | - 0343 | 0000 | - 0889 | - 0752 | .0000 | 1149 | 78 |
| 79 | - 0698 | -.0216 | 0000 | - 0869 | - 0721 | .0000 | 1122 | 79 |
| 80 | - 0714 | -.0234 | 0000 | - 0893 | -.0781 | 0000 | 1186 | 80 |
| 81 | - 4600 | - 2221 | 0000 | -.4787 | - 2875 | .0000 | 5484 | 81 |
| 82 | 2545 | - 2749 | 0000 | 1875 | - 3575 | 0000 | 4037 | 82 |
| 83 | 7491 | - 0489 | 0000 | 7399 | - 0718 | 0000 | 7434 | 83 |
| 84 | 0000 | .0925 | 0000 | .0000 | 0724 | 0000 | 0724 | 84 |
| 85 | -.0694 | - 0219 | 0000 | -.0785 | - 0428 | 0000 | 0876 | 85 |
| 86 | - 0720 | - 0220 | 0000 | - 0807 | - 0471 | 0000 | 0935 | 86 |
| 87 | - 0673 | -.3426 | 0000 | -.0768 | - 3673 | .0000 | 3752 | 87 |
| 88 | -.0530 | - 5449 | 0000 | - 0948 | - 5972 | 0000 | 6049 | 88 |
| 89 | 5702 | -.1023 | 0000 | 5616 | - 1233 | 0000 | 5749 | 89 |
| 90 | 0000 | 2409 | 0000 | 0000 | 2223 | 0000 | 2223 | 90 |
| 91 | - 0288 | -.0217 | 0000 | - 0288 | - 0217 | 0000 | 0361 | 91 |
| 92 | - 0336 | -.3435 | 0000 | - 0336 | - 3435 | 0000 | 3452 | 92 |
| 93 | - 0318 | - 5480 | 0000 | -.0318 | - 5480 | 0000 | 5489 | 93 |
| 94 | 2566 | - 2340 | 0000 | 2566 | - 2340 | 0000 | 3473 | 94 |
| 95 | 0000 | .3829 | 0000 | .0000 | 3829 | .0000 | 3829 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | - 0253 |
| 2 | - 0470 |
| 3 | 0779 |
| 4 | 6267 |
| 5 | 5808 |
| 6 | 8117 |
| 7 | 0401 |
| 8 | - 0571 |
| 9 | - 0069 |
| TOTAL VALUES | |
| 1 | 2847 |
| 2 | 6022 |
| 3 | 1 0957 |
| 4 | 2 1271 |
| 5 | 2 1970 |
| 6 | 2 3714 |
| 7 | 1 1455 |

8 2870
9 2803

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 526 3 | 330 4 | 227 8 | 155 | 001 | 000 | 002 | 002 | - 001 | 002 | 1 |
| 2 | 522.5 | 333 0 | 224.7 | 162 | .001 | 009 | 010 | .011 | - 002 | 013 | 2 |
| 3 | 527 6 | 330 4 | 228 6 | .154 | 024 | - 023 | 054 | 037 | - 035 | 072 | 3 |
| 4 | .8 | 17 2 | .2 | 494 | 1.749 | - 588 | 2.419 | 2 286 | -1 083 | 3.348 | 4 |
| 5 | 8 | 17 2 | 2 | 494 | 735 | 431 | 7 432 | 4 327 | -3 161 | 7 488 | 5 |
| 6 | 7 | 18 0 | 2 | 494 | - 860 | 2 644 | 6.218 | 4 461 | -2 678 | 7.139 | 6 |
| 7 | 7 | 18 4 | 2 | .493 | -1 338 | 3 439 | 2.888 | 3.842 | -1 741 | 5.583 | 7 |
| 8 | 8 | 17.0 | 2 | 494 | - 741 | 1 811 | - 987 | 1 903 | - 833 | 2.738 | 8 |
| 9 | 478 0 | 349 7 | 195 9 | 220 | 007 | 117 | 007 | 117 | 007 | 110 | 9 |
| 10 | 479.2 | 369 3 | 193 5 | .238 | - 010 | 201 | .028 | 202 | - 011 | 213 | 10 |
| 11 | 479.1 | 372.8 | 193.0 | 241 | - 008 | 202 | - 072 | .208 | - 012 | 220 | 11 |
| 12 | 496 8 | 352.0 | 205.6 | 208 | 013 | 101 | -.042 | 108 | 008 | .098 | 12 |
| 13 | 436 5 | 256 9 | 194 7 | 121 | 001 | 002 | - 002 | 002 | 000 | 002 | 13 |
| 14 | 463 4 | 271 8 | 207 0 | 119 | 009 | - 005 | 019 | 013 | - 010 | 024 | 14 |
| 15 | 2 1 | 13.6 | 7 | .473 | 1 168 | -1 137 | 3.403 | 2.071 | -2 039 | 4 110 | 15 |
| 16 | 7 3 | 16 5 | 2 6 | 422 | 2 818 | -1 665 | 5.367 | 3.810 | -2 957 | 6 866 | 16 |
| 17 | 1 1 | 16 7 | 4 | 489 | 1 000 | 517 | 5 839 | 3 686 | -2 171 | 5 858 | 17 |
| 18 | 6 | 17 2 | 2 | 494 | -1 394 | 3 286 | 4.127 | 4 068 | -2.173 | 6.241 | 18 |
| 19 | 6 | 17 1 | 2 | .494 | -2.065 | 3 912 | 4 408 | 4.637 | -2 790 | 7 427 | 19 |
| 20 | 7 | 18 2 | 2 | 494 | -1 541 | 4 187 | 2 581 | 4 445 | -1 820 | 6 265 | 20 |
| 21 | 6 | 17 2 | 2 | 494 | - 989 | 2 626 | 1 773 | 2 831 | -1 195 | 4 026 | 21 |
| 22 | 464 3 | 369 5 | 186 0 | .248 | - 018 | 285 | 043 | 287 | - 018 | 304 | 22 |
| 23 | 406.6 | 305 5 | 165 5 | 229 | - 006 | 235 | - 094 | 243 | - 015 | 258 | 23 |
| 24 | 403.9 | 275 1 | 169 6 | 192 | 023 | 118 | - 047 | .123 | 017 | 106 | 24 |
| 25 | 408 9 | 229 7 | 187 1 | 093 | - 001 | 000 | 001 | 000 | - 001 | 001 | 25 |
| 26 | .0 | 1 | 0 | 495 | 408 | - 899 | 1 034 | 588 | -1 079 | 1 667 | 26 |
| 27 | 4 | 13 4 | 1 | 494 | 2 079 | -1 719 | 1 238 | 2.177 | -1 817 | 3 994 | 27 |
| 28 | 2 9 | 13 7 | 1 0 | 464 | 810 | - 577 | - 187 | 816 | - 583 | 1 399 | 28 |
| 29 | 11 9 | 15 9 | 4 4 | 363 | 139 | 1 192 | 671 | 1 289 | 042 | 1 248 | 29 |
| 30 | 5 | 15 2 | 2 | 494 | - 762 | 2 612 | -1 375 | 2 746 | - 897 | 3 643 | 30 |
| 31 | .6 | 15 9 | 2 | 494 | -1 170 | 3 243 | -2 779 | 3 644 | -1 571 | 5 215 | 31 |
| 32 | 6 | 15 6 | 2 | 494 | -1.288 | 3 029 | -3 518 | 3 858 | -1 687 | 5 545 | 32 |
| 33 | 7 | 17 8 | 2 | 494 | -1 491 | 4 916 | - 407 | 4 922 | -1 497 | 6 419 | 33 |
| 34 | .7 | 17 2 | 2 | 493 | - 245 | 3 973 | 271 | 3.977 | - 249 | 4 226 | 34 |
| 35 | 250 5 | 228 7 | 97.3 | .287 | - 059 | 555 | 239 | 577 | - 082 | 659 | 35 |
| 36 | 370 8 | 228 2 | 161 8 | 145 | -.048 | 4 615 | 1 602 | 4 783 | - 216 | 4 999 | 36 |
| 37 | 1 | 4 0 | 0 | 495 | - 013 | 248 | 17 380 | 8 808 | -8 574 | 17 382 | 37 |
| 38 | 134 4 | 414 1 | 46 5 | 444 | - 700 | 1 937 | 19 893 | 10 652 | -9 415 | 20 067 | 38 |
| 39 | 84 3 | 408 2 | 28 8 | 465 | -1 233 | 3 652 | 10 680 | 7 081 | -4 663 | 11 744 | 39 |
| 40 | 1 | 4 0 | 0 | 495 | - 915 | 4 327 | 2 899 | 4 701 | -1 289 | 5 991 | 40 |
| 41 | 1 | 4 0 | 0 | 495 | - 978 | 5 391 | 482 | 5 401 | - 987 | 6 388 | 41 |
| 42 | 1 | 4 0 | 0 | 495 | - 827 | 4 469 | 1 552 | 4 581 | - 938 | 5 519 | 42 |
| 43 | 413.3 | 450 5 | 155 7 | 327 | - 427 | 3 080 | - 653 | 3 110 | - 457 | 3 567 | 43 |
| 44 | 526 1 | 487 2 | 205 7 | 280 | - 180 | 2 822 | - 450 | 2 839 | - 197 | 3 036 | 44 |
| 45 | 842 8 | 597 2 | 348 9 | 208 | 044 | 2 521 | 2 897 | 3 188 | - 623 | 3 811 | 45 |
| 46 | 1 | 4 0 | 0 | 495 | - 024 | - 228 | 1 823 | 671 | - 953 | 1 824 | 46 |
| 47 | 1 | 4 0 | 0 | 495 | 115 | - 037 | 1 729 | 907 | - 829 | 1 735 | 47 |
| 48 | 195 4 | 421 6 | 68 9 | 418 | 078 | - 005 | 361 | 222 | - 149 | 371 | 48 |
| 49 | 1 | 4 0 | 0 | 495 | - 314 | 559 | 1 256 | 887 | - 643 | 1 530 | 49 |
| 50 | 1 | 4 0 | 0 | 495 | - 604 | 2 053 | 2 072 | 2 409 | - 961 | 3 370 | 50 |
| 51 | 1313 4 | 809 8 | 572 9 | 148 | - 532 | 3 641 | -1 304 | 3 937 | - 627 | 4 564 | 51 |
| 52 | 1889 3 | 930 5 | 760 0 | 092 | 003 | 2 398 | -1.347 | 2 574 | - 173 | 2 748 | 52 |
| 53 | 725.6 | 542 5 | 295 5 | 228 | - 078 | 076 | 058 | 081 | - 083 | 164 | 53 |
| 54 | 1 | 4 0 | 0 | 495 | 131 | - 066 | 1 015 | 842 | - 196 | 1 038 | 54 |
| 55 | 1273 3 | 638 0 | 610 3 | 043 | 042 | 009 | 024 | 045 | 005 | 040 | 55 |
| 56 | 80 8 | 407 8 | 27 5 | 488 | 103 | - 037 | 384 | 228 | - 162 | 390 | 56 |
| 57 | 1 | 4 0 | 0 | 495 | - 616 | 099 | 1 308 | 488 | -1 003 | 1 489 | 57 |
| 58 | 701 3 | 938 0 | 283 7 | 237 | - 402 | 2 814 | 2 408 | 3 215 | - 803 | 4 018 | 58 |
| 59 | 1255 3 | 778 1 | 546 2 | 149 | - 159 | 2 723 | 2 004 | 3 037 | - 474 | 3 511 | 59 |
| 60 | 982 5 | 582 1 | 444 8 | 104 | - 113 | 071 | 025 | 072 | - 114 | 186 | 60 |
| 61 | 1 | 4 0 | 0 | 495 | 135 | - 013 | 1 090 | 611 | - 489 | 1 100 | 61 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | 190.9 | 421.0 | 87 2 | .420 | 006 | 019 | - 038 | 032 | - 009 | .041 | 62 |
| 63 | 530.9 | 487.9 | 207 7 | .278 | 079 | - 044 | 129 | 106 | - 072 | 178 | 63 |
| 64 | .1 | 4.0 | .0 | 495 | 2 156 | 6.422 | 23.222 | 16.094 | -7 816 | 23.810 | 64 |
| 65 | .1 | 4.0 | 0 | 495 | -4 163 | 20.908 | 10.185 | 21 901 | -5.158 | 27 059 | 65 |
| 66 | .1 | 4.0 | .0 | .495 | -3 672 | 17 595 | -51.290 | 34.724 | -20.801 | 55.525 | 66 |
| 67 | 1 | 4 0 | 0 | 495 | 4 562 | - 482 | -38 437 | 21 424 | -17 343 | 38 787 | 67 |
| 68 | .1 | 4.0 | .0 | 495 | - 040 | .027 | - 320 | 157 | -.170 | 327 | 68 |
| 69 | 383.9 | 443 8 | 135.0 | .348 | 078 | -.057 | .076 | 088 | -.087 | .155 | 69 |
| 70 | .1 | 4.0 | .0 | .495 | 2 404 | 5.987 | -18 380 | 12.557 | -4.186 | 16 743 | 70 |
| 71 | .1 | 4 0 | 0 | 495 | -4 255 | 20.581 | -1 570 | 20 816 | -4 279 | 24 895 | 71 |
| 72 | .1 | 4 0 | 0 | 495 | -7 342 | 18.166 | 21 022 | 21.939 | -11 115 | 33 054 | 72 |
| 73 | .1 | 4.0 | 0 | 495 | 8 187 | -2.988 | 6.290 | 9.012 | -3 794 | 12 806 | 73 |
| 74 | .1 | 4.0 | 0 | .495 | 065 | -.028 | -4 319 | 2 178 | -2.141 | 4 320 | 74 |
| 75 | 807 5 | 509 0 | 240 3 | 284 | 001 | 024 | 169 | 098 | - 073 | 171 | 75 |
| 76 | 503.9 | 463 6 | 196 4 | 289 | - 101 | 186 | - 208 | .221 | - 134 | 355 | 76 |
| 77 | 1 | 4 0 | .0 | .495 | -5.897 | 6 739 | 9.688 | 8 465 | -7 423 | 15 888 | 77 |
| 78 | 1 | 4.0 | .0 | .495 | 5.167 | -.513 | 9.876 | 7.937 | -3.283 | 11 220 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .245 | 481 | 005 | 481 | 245 | 118 | 1 228 | 1.986 | 078 | 1 |
| 2 | 254 | 529 | 023 | 531 | .252 | 139 | 4 703 | 2 104 | 091 | 2 |
| 3 | .357 | .374 | 127 | .493 | .238 | 127 | 43.078 | 2 068 | 085 | 3 |
| 4 | 376 | 547 | 005 | 547 | .376 | 085 | 1 640 | 1 454 | 1 707 | 4 |
| 5 | 389 | 547 | 015 | .548 | .388 | 080 | 4 879 | 1 492 | 1 810 | 5 |
| 6 | 469 | 664 | 013 | 665 | 469 | 098 | 3 934 | 1 419 | 1 964 | 6 |
| 7 | .524 | .725 | 006 | 725 | 524 | 101 | 1 851 | 1.384 | 2 010 | 7 |
| 8 | 346 | 537 | - 002 | 537 | 346 | 095 | - 577 | 1.550 | 1 904 | 8 |
| 9 | .359 | .981 | 011 | 982 | 358 | 312 | .973 | 2 739 | 181 | 9 |
| 10 | 416 | 1 438 | 054 | 1 441 | 413 | 514 | 2 996 | 3 492 | 283 | 10 |
| 11 | 440 | 1 446 | - 140 | 1.465 | 421 | 522 | -7 769 | 3 483 | 285 | 11 |
| 12 | 366 | 901 | - 086 | .914 | .352 | 281 | -8 953 | 2 598 | 165 | 12 |
| 13 | 140 | 278 | - 003 | 278 | 140 | 069 | -1 332 | 1 991 | .052 | 13 |
| 14 | 171 | 280 | 038 | 285 | 155 | 055 | 22 043 | 1 709 | 041 | 14 |
| 15 | 105 | 174 | 016 | 177 | 102 | 038 | 12.384 | 1.741 | .753 | 15 |
| 16 | 272 | .277 | 037 | 312 | .237 | 038 | 43.238 | 1.316 | 750 | 16 |
| 17 | 321 | 408 | 014 | 410 | 319 | 045 | 8 812 | 1 285 | 810 | 17 |
| 18 | 373 | 481 | 009 | 481 | .372 | 055 | 4 552 | 1 293 | 1 091 | 18 |
| 19 | 362 | 475 | 009 | 476 | .361 | 057 | 4.553 | 1 317 | 1 146 | 19 |
| 20 | 501 | 615 | 006 | 615 | 500 | 057 | 3 124 | 1 229 | 1 146 | 20 |
| 21 | .331 | 436 | .004 | .436 | .331 | 053 | 2.005 | 1 319 | 1.054 | 21 |
| 22 | 381 | 1 628 | 082 | 1 633 | 376 | 628 | 3 730 | 4 342 | 359 | 22 |
| 23 | .313 | 1.220 | - 158 | 1 246 | 287 | 480 | -9.500 | 4 339 | 302 | 23 |
| 24 | 275 | 863 | - 080 | .879 | 259 | 210 | -11 165 | 2 619 | 138 | 24 |
| 25 | 042 | 091 | 002 | 091 | 042 | 024 | 2 166 | 2.166 | 021 | 25 |
| 26 | 006 | - 002 | 005 | 008 | -.004 | 006 | 64.329 | -2 089 | -1 000 | 26 |
| 27 | 100 | 010 | 026 | 107 | 003 | 052 | 75.012 | 38 624 | 1 046 | 27 |
| 28 | 063 | .039 | - 031 | 084 | .018 | 033 | -55 719 | 4 633 | 659 | 28 |
| 29 | 177 | 200 | 005 | 201 | 176 | 012 | 12 027 | 1 140 | 247 | 29 |
| 30 | 209 | 323 | - 006 | 323 | 209 | 057 | -2 804 | 1 546 | 1 140 | 30 |
| 31 | 251 | 352 | - 008 | 352 | 250 | 051 | -4 509 | 1 410 | 1 025 | 31 |
| 32 | 203 | 303 | - 016 | .305 | .200 | 052 | -8.628 | 1.524 | 1 050 | 32 |
| 33 | 483 | 592 | - 003 | .592 | .483 | 055 | -1.684 | 1 227 | 1 096 | 33 |
| 34 | .540 | 636 | 002 | 636 | .540 | 048 | 914 | 1 177 | 959 | 34 |
| 35 | 481 | 1.737 | - 068 | 1.740 | 478 | 631 | -2 983 | 3 642 | 327 | 35 |
| 36 | .128 | .307 | - 011 | 307 | 127 | 090 | -3.429 | 2.417 | 069 | 36 |
| 37 | .014 | 041 | - 054 | 083 | - 028 | 056 | -37 845 | -2 971 | -1 000 | 37 |
| 38 | 033 | 105 | 040 | 122 | 018 | 053 | 23 996 | 7 806 | 2 530 | 38 |
| 39 | .139 | 328 | 175 | .433 | .034 | .199 | 30.446 | 12 548 | 4 293 | 39 |
| 40 | .027 | 221 | - 016 | 222 | 025 | 098 | -4.681 | 8.804 | 2.901 | 40 |
| 41 | .040 | 388 | -.002 | .388 | .040 | .184 | - 380 | 9.253 | 3.068 | 41 |
| 42 | 035 | 311 | -.083 | 324 | 022 | 151 | -12.357 | 15.087 | 5.237 | 42 |
| 43 | 181 | 1 181 | - 430 | 1 341 | .022 | 659 | -20.348 | 61 082 | 22 328 | 43 |
| 44 | .290 | 1 128 | 110 | 1 142 | 276 | 433 | 7 345 | 4 137 | 1 166 | 44 |
| 45 | - 054 | 403 | 102 | .425 | -.075 | 250 | 12.038 | -5 636 | -1 000 | 45 |
| 46 | - 018 | 002 | 013 | 009 | - 024 | 017 | 28 525 | -.349 | -1.000 | 46 |
| 47 | .068 | 151 | 105 | .222 | - 004 | 113 | 34.213 | -57.502 | -1 000 | 47 |
| 48 | 390 | 371 | 330 | 711 | 051 | 330 | 45 848 | 14 068 | 4 856 | 48 |
| 49 | 070 | 227 | -.162 | .328 | -.032 | 180 | -32.071 | -10.299 | -1 000 | 49 |
| 50 | .029 | .272 | - 040 | 278 | .023 | .128 | -9.019 | 12 193 | 4 161 | 50 |
| 51 | - 681 | 1 089 | - 594 | 1.244 | -.837 | 1 041 | -17 384 | -1 486 | -1.000 | 51 |
| 52 | - 849 | 937 | 237 | 967 | - 880 | 924 | 7 423 | -1 099 | -1 000 | 52 |
| 53 | -.361 | .333 | 149 | 364 | - 392 | 378 | 11.607 | -.929 | -1 000 | 53 |
| 54 | 083 | 071 | 078 | 156 | - 001 | 078 | 47 175 | -135 844 | -1 000 | 54 |
| 55 | 510 | 169 | 159 | 573 | 107 | 233 | 68 463 | 5.374 | 1 626 | 55 |
| 56 | 383 | 270 | 205 | 539 | 114 | 212 | 52 690 | 4 717 | 1 382 | 56 |
| 57 | 076 | 276 | - 087 | 308 | 044 | 132 | -20 516 | 7 010 | 2 234 | 57 |
| 58 | - 615 | 912 | - 270 | 958 | - 661 | 810 | -9 742 | -1 449 | -1 000 | 58 |
| 59 | -1.251 | 771 | 016 | 771 | -1.252 | 1 011 | 465 | - 616 | -1 000 | 59 |
| 60 | - 822 | 308 | 091 | 315 | - 829 | 572 | 4 589 | - 381 | -1 000 | 60 |
| 61 | 013 | 022 | 002 | 022 | 013 | 005 | 15 369 | 1 768 | 285 | 61 |
| 62 | 156 | 131 | 049 | .195 | 093 | 051 | 52 159 | 2 100 | 409 | 62 |
| 63 | 532 | - 082 | 300 | .664 | - 205 | 429 | 67.841 | -3.198 | -1 000 | 63 |
| 64 | 445 | 541 | - 077 | 584 | 402 | 091 | -29 040 | 1 453 | 188 | 64 |
| 65 | 674 | 711 | 004 | .712 | .674 | 019 | 6 131 | 1 056 | 021 | 65 |
| 66 | .564 | 597 | - 020 | 607 | 554 | 027 | -25 147 | 1 096 | 038 | 66 |
| 67 | 214 | .281 | - 016 | 285 | .210 | 037 | -12.777 | 1.354 | 132 | 67 |
| 68 | 081 | 018 | 034 | 080 | - 001 | 041 | 61 107 | -63 778 | -1 000 | 68 |
| 69 | 329 | - 073 | 138 | .371 | -.115 | 243 | 72.749 | -3.216 | -1 000 | 69 |
| 70 | .418 | 445 | - 049 | .482 | 381 | 050 | -37.384 | 1.264 | 098 | 70 |
| 71 | .658 | .695 | - 001 | 695 | 658 | 018 | - 974 | 1 056 | 021 | 71 |
| 72 | 438 | 476 | 002 | 477 | 437 | 020 | 12 087 | 1 094 | 035 | 72 |
| 73 | 229 | 238 | 003 | 238 | 229 | 005 | 15 871 | 1 042 | 015 | 73 |
| 74 | 010 | 018 | 000 | 018 | 010 | 004 | 2 307 | 1 848 | 314 | 74 |
| 75 | 087 | 213 | 407 | 561 | - 262 | 412 | 40 599 | -2 142 | -1 000 | 75 |
| 76 | - 146 | 1 000 | - 403 | 1 128 | - 274 | 701 | -17 558 | -4 116 | -1 000 | 76 |
| 77 | 064 | 081 | 004 | 081 | 063 | 014 | 8 162 | 1 529 | 197 | 77 |
| 78 | 205 | 217 | 004 | .218 | 204 | 007 | 15.870 | 1.072 | 027 | 78 |

PROGRAM SSTIPN

```
SSTIPN- 1 LAYER OF GEOTEXTILE, P=2000 PPI, E=5%, EXTENDED, T=1000

TOTAL NUMBER OF NODES----------------- 95
NUMBER OF BAR ELEMENTS---------------- 11
NUMBER OF DIFF  BAR MATERIALS----------  1
NUMBER OF BEAM ELEMENTS----------------  0
NUMBER OF DIFF  BEAM MATERIALS---------  0
NUMBER OF NODAL LINKS -----------------  0
NUMBER OF INTERFACE ELEMENTS-----------  0
NO  OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE. IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS----------  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF  SOIL MATERIALS---------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 36
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS---------  0
NUMBER OF PREEXISTING NODES------------  0
NUMBER OF CONSTRUCTION LAYERS----------  6
NUMBER OF LOAD CASES-------------------  2

CALING FACTOR ---------      1 00000

ATMOSPHERIC PRESSURE ---      1 05800

UNIT WEIGHT OF WATER ---       03120

OMPUTATION SEQUENCE FOR A TOTAL OF     8  INCREMENTS
..................................................

 INCREMENT NO   1     APPLY LOAD CASE   1

 INCREMENT NO   2     PUT ON LAYER NO   1

 INCREMENT NO   3     PUT ON LAYER NO   2

 INCREMENT NO   4     PUT ON LAYER NO   3

 INCREMENT NO   5     PUT ON LAYER NO   4

 INCREMENT NO   6     PUT ON LAYER NO   5

 INCREMENT NO   7     PUT ON LAYER NO   6

 INCREMENT NO   8     APPLY LOAD CASE   2
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B.C. CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | .000 | .000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 38.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58.000 | .000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | .000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30.000 | 4.000 | 0 | 0 | 0 |
| 18 | 38.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54.000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82.000 | 4.000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 38.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.000 | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10.000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.000 | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 38.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10.000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 38.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11.500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74.000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.000 | 14.000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | 15.000 | 0 | 0 | 0 |
| 83 | 82.000 | 15.000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17.000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17.000 | 1 | 0 | 1 |

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 240 | 1 00 | 0. |

| ELMT NO | CONNECTED NODES I | J | MATL NO |
|---|---|---|---|
| 1 | 41 | 42 | 1 |
| 2 | 42 | 43 | 1 |
| 3 | 43 | 44 | 1 |
| 4 | 44 | 45 | 1 |
| 5 | 45 | 46 | 1 |
| 6 | 46 | 47 | 1 |
| 7 | 47 | 48 | 1 |
| 8 | 48 | 49 | 1 |
| 9 | 49 | 50 | 1 |
| 10 | 50 | 51 | 1 |
| 11 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | YOUNG'S MODULUS EXPONENT | RATIO | BULK MODULUS CONSTANT | BULK MODULUS EXPONENT | STRENGTH PARAMETERS C | PHI | DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .0880 | 8000 00 | 500 | 500 | 1500 00 | 800 | 00 | 35.00 | .00 | 50 |
| 2 | 0530 | 40 00 | 300 | .900 | 20.00 | 200 | 05 | 00 | 00 | 50 |
| 3 | 0800 | 1000 00 | 400 | 750 | 500 00 | 500 | 50 | 40 00 | 00 | .50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO. | CONNECTED NODES I | J | K | L | MATL NO. | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5 000 | 2 000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15 000 | 2.000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25 000 | 2.000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33.000 | 2 000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39 000 | 2 000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46.000 | 2.000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52 000 | 2.000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 58 000 | 2 000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62 000 | 2 000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2.000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78.000 | 2.000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86.000 | 2.000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5 000 | 5 500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15.000 | 5 500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25 000 | 5.500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33.000 | 5 500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5.500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5 500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 58.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62 000 | 5.500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70 000 | 5 500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78 000 | 5 500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86.000 | 5.500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5.000 | 8.500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15 000 | 8 500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25 000 | 8 500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33 000 | 8 500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39 000 | 8 500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46 000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52 000 | 8 500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 58 000 | 8.500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62.000 | 8 500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70 000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78 000 | 8 500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86 000 | 8.500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34.500 | 10.750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39.000 | 10 750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46 000 | 10 750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52.000 | 10 750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 58 000 | 10.750 |
| 42 | 48 | 49 | [illegible] | 57 | 1 | 62 000 | 10 750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70 000 | 10 750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78 000 | 10 750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86 000 | 10 750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40 500 | 12 250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46 000 | 12 250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52 000 | 12.250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 58 000 | 12.250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62 000 | 12 250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70 000 | 12 250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78 000 | 12 250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86 000 | 12 250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47 000 | 13 500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52 000 | 13 500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 58 000 | 13 500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62 000 | 13 500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70 000 | 13 500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78.000 | 13 500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86 000 | 13 500 |
| 61 | 70 | 71 | 78 | 78 | 1 | 49 000 | 14 500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52.000 | 14 500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 58 000 | 14 500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62 000 | 14 500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70 000 | 14 500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78 000 | 14 500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 86 000 | 14 500 |
| 68 | 78 | 79 | 85 | 84 | 1 | 53 000 | 15 500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 58 000 | 15 500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62 000 | 15 500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70 000 | 15 500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78 000 | 15 500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86 000 | 15 500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57 000 | 16 500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62 000 | 16 500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70 000 | 16 500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78 000 | 16 500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86 000 | 16 500 |

SSTIPN- 1 LAYER OF GEOTEXTILE, P=2000 PPI, E=5%, EXTENDED, T=1000

```
**********************************************************
**********************************************************
*                                                        *
*  LOAD CASE ------------------------------   2          *
*                                                        *
**********************************************************
**********************************************************
```

LARGEST ELE NO. IN THIS INCREMENT 78

LARGEST N P NO IN THIS INCREMENT 95

BAND WIDTH------------------------- 40

TOTAL NUMBER OF EQUATIONS--------- 222

NUMBER OF EQUATIONS IN BLOCK------ 84

NUMBER OF BLOCKS------------------ 3

NUMBER OF N.P FORCE CARDS--------- 3

NUMBER OF PRESSURE CARDS---------- 0

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0 | 0. |
| 2 | 0 | 0 |
| 3 | 0 | 0 |
| 4 | 0. | 0 |
| 5 | 0. | 0 |
| 6 | 0 | 0 |
| 7 | 0. | 0 |
| 8 | 0. | 0 |
| 9 | 0 | 0 |
| 10 | 0 | 0 |
| 11 | 0. | 0. |
| 12 | 0 | 0 |
| 13 | 0 | 0 |
| 14 | 0 | 0 |
| 15 | 0. | 0 |
| 16 | 0 | 0. |
| 17 | 0 | 0. |
| 18 | 0 | 0 |
| 19 | 0 | 0 |
| 20 | 0 | 0. |
| 21 | 0. | 0. |
| 22 | 0 | 0. |
| 23 | 0 | 0 |
| 24 | 0 | 0. |
| 25 | 0 | 0. |
| 26 | 0 | 0 |
| 27 | 0 | 0 |
| 28 | 0 | 0 |
| 29 | 0 | 0 |
| 30 | 0 | 0 |
| 31 | 0 | 0 |
| 32 | 0 | 0 |
| 33 | 0 | 0 |
| 34 | 0 | 0 |
| 35 | 0 | 0 |
| 36 | 0 | 0 |
| 37 | 0 | 0 |
| 38 | 0 | 0 |
| 39 | 0 | 0 |
| 40 | 0 | 0 |
| 41 | 0 | 0 |
| 42 | 0 | 0 |
| 43 | 0 | 0 |
| 44 | 0 | 0 |
| 45 | 0 | 0 |
| 46 | 0 | 0 |
| 47 | 0 | 0 |
| 48 | 0 | 0 |
| 49 | 0 | 0 |
| 50 | 0 | 0 |
| 51 | 0 | 0 |
| 52 | 0 | 0 |
| 53 | 0 | 0 |
| 54 | 0 | 0 |
| 55 | 0 | 0 |
| 56 | 0 | 0 |
| 57 | 0 | 0 |
| 58 | 0 | 0 |
| 59 | 0 | 0 |
| 60 | 0 | 0 |
| 61 | 0 | 0 |
| 62 | 0 | 0 |

| | | |
|---|---|---|
| 63 | 0 | 0. |
| 64 | 0 | 0 |
| 65 | 0. | 0 |
| 66 | 0. | 0 |
| 67 | 0. | 0 |
| 68 | 0 | 0 |
| 69 | 0 | 0 |
| 70 | 0 | 0 |
| 71 | 0. | 0. |
| 72 | 0 | 0 |
| 73 | 0 | 0. |
| 74 | 0 | 0 |
| 75 | 0 | 0 |
| 76 | 0 | 0 |
| 77 | 0 | 0. |
| 78 | 0 | 0. |
| 79 | 0. | 0 |
| 80 | 0 | 0 |
| 81 | 0 | 0 |
| 82 | 0 | 0 |
| 83 | 0 | 0 |
| 84 | 0 | 0 |
| 85 | 0. | 0 |
| 86 | 0 | 0 |
| 87 | 0. | 0 |
| 88 | 0 | 0 |
| 89 | 0 | 0 |
| 90 | 0 | 0 |
| 91 | 0 | 0. |
| 92 | 0 | -4 50 |
| 93 | 0 | -4.50 |
| 94 | 0. | -2.00 |
| 95 | 0 | 0 |

LOAD CASE = 2 ITERATION = 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | 0000 | .0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 1 |
| 2 | 0000 | 0000 | 0000 | .0000 | .0000 | 0000 | 0000 | 2 |
| 3 | 0000 | 0000 | .0000 | 0000 | 0000 | 0000 | .0000 | 3 |
| 4 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 4 |
| 5 | 0000 | 0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 5 |
| 6 | 0000 | 0000 | 0000 | 0000 | 0000 | .0000 | 0000 | 6 |
| 7 | 0000 | .0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 7 |
| 8 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 8 |
| 9 | 0000 | .0000 | 0000 | 0000 | 0000 | .0000 | 0000 | 9 |
| 10 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 10 |
| 11 | 0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 11 |
| 12 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 12 |
| 13 | .0000 | 0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 13 |
| 14 | .0000 | - 0003 | 0000 | 0000 | - 0013 | 0000 | 0013 | 14 |
| 15 | - 0002 | .0001 | 0000 | - 0008 | .0007 | 0000 | 0010 | 15 |
| 16 | - 0001 | 0000 | 0000 | - 0003 | - 0005 | 0000 | 0006 | 16 |
| 17 | - 0004 | 0001 | 0000 | - 0048 | 0022 | 0000 | 0051 | 17 |
| 18 | - 0152 | .0069 | .0000 | - 1782 | .0198 | 0000 | .1793 | 18 |
| 19 | - 0312 | 0020 | 0000 | - 2467 | - 0739 | 0000 | 2575 | 19 |
| 20 | - 0350 | - 0055 | 0000 | - 1461 | - 1162 | 0000 | 1867 | 20 |
| 21 | - 0245 | - 0165 | 0000 | - 0592 | - 1350 | 0000 | 1474 | 21 |
| 22 | - 0008 | - 0009 | 0000 | -.0001 | - 0052 | 0000 | 0052 | 22 |
| 23 | - 0008 | -.0018 | 0000 | 0001 | - 0049 | 0000 | 0049 | 23 |
| 24 | 0009 | - 0054 | 0000 | 0017 | - 0104 | 0000 | 0105 | 24 |
| 25 | 0021 | - 0022 | 0000 | 0024 | - 0057 | 0000 | 0062 | 25 |
| 26 | .0000 | 0002 | 0000 | 0000 | - 0030 | 0000 | 0030 | 26 |
| 27 | .0000 | - 0005 | 0000 | 0000 | - 0024 | 0000 | 0024 | 27 |
| 28 | - 0005 | 0003 | 0000 | - 0026 | 0014 | 0000 | 0030 | 28 |
| 29 | .0000 | 0000 | 0000 | 0003 | - 0006 | 0000 | 0007 | 29 |
| 30 | -.0130 | 0036 | 0000 | - 1263 | 0513 | 0000 | 1363 | 30 |
| 31 | - 0258 | .0142 | 0000 | - 2137 | 0402 | 0000 | 2174 | 31 |
| 32 | - 0491 | 0105 | 0000 | - 2741 | - 1254 | 0000 | 3014 | 32 |
| 33 | - 0830 | - 0049 | 0000 | - 2493 | - 2236 | 0000 | 3349 | 33 |
| 34 | - 0989 | - 0174 | 0000 | - 2252 | - 2199 | 0000 | 3147 | 34 |
| 35 | - 0929 | - 0428 | 0000 | - 1655 | - 1711 | 0000 | 2380 | 35 |
| 36 | - 0006 | - 0048 | 0000 | 0020 | - 0131 | 0000 | 0133 | 36 |
| 37 | 0022 | - 0104 | 0000 | 0031 | - 0190 | 0000 | 0192 | 37 |
| 38 | 0026 | - 0041 | 0000 | 0026 | - 0109 | 0000 | 0112 | 38 |
| 39 | 0000 | 0012 | 0000 | 0000 | - 0049 | 0000 | 0049 | 39 |
| 40 | 0000 | - 0006 | 0000 | 0000 | - 0032 | 0000 | 0032 | 40 |
| 41 | - 0025 | 0098 | 0000 | - 0113 | 0028 | 0000 | 0116 | 41 |
| 42 | - 0160 | 0027 | 0000 | - 0600 | 0142 | 0000 | 0617 | 42 |
| 43 | - 0300 | 0090 | 0000 | - 1081 | 0923 | 0000 | 1422 | 43 |
| 44 | - 0339 | 0185 | 0000 | - 1169 | 0294 | 0000 | 1206 | 44 |
| 45 | - 0369 | 0172 | 0000 | - 1255 | - 1661 | 0000 | 2084 | 45 |
| 46 | - 0422 | - 0028 | 0000 | - 1180 | - 3001 | 0000 | 3225 | 46 |
| 47 | - 0375 | - 0209 | 0000 | - 0993 | - 2980 | 0000 | 3141 | 47 |
| 48 | - 0225 | - 0612 | 0000 | - 0686 | - 2723 | 0000 | 2808 | 48 |
| 49 | - 0023 | - 0848 | 0000 | - 0186 | - 2097 | 0000 | 2105 | 49 |
| 50 | 0020 | - 0250 | 0000 | - 0005 | - 0441 | 0000 | 0441 | 50 |
| 51 | 0002 | - 0039 | 0000 | - 0013 | - 0126 | 0000 | 0127 | 51 |
| 52 | 0000 | 0018 | 0000 | 0000 | - 0084 | 0000 | 0084 | 52 |
| 53 | - 0380 | 0190 | 0000 | - 1013 | 0723 | 0000 | 1244 | 53 |
| 54 | - 0361 | 0178 | 0000 | - 0931 | - 0938 | 0000 | 1322 | 54 |
| 55 | - 0392 | - 0028 | 0000 | - 0907 | - 2259 | 0000 | 2434 | 55 |
| 56 | - 0397 | - 0225 | 0000 | - 0885 | - 2706 | 0000 | 2847 | 56 |
| 57 | - 0114 | - 0627 | 0000 | - 1018 | - 2991 | 0000 | 3160 | 57 |
| 58 | - 0099 | - 0864 | 0000 | - 0388 | - 2397 | 0000 | 2428 | 58 |
| 59 | - 0048 | - 0264 | 0000 | 0449 | - 0911 | 0000 | 1015 | 59 |
| 60 | - 0021 | - 0042 | 0000 | - 0032 | - 0121 | 0000 | 0125 | 60 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 61 | 0000 | 0019 | 0000 | 0000 | - 0065 | 0000 | 0065 | 61 |
| 62 | - 0327 | 0176 | 0000 | - 0541 | - 0156 | 0000 | 0583 | 62 |
| 63 | - 0352 | -.0013 | .0000 | -.0604 | - 1223 | .0000 | 1364 | 63 |
| 64 | - 0413 | - 0232 | 0000 | - 0365 | - 1626 | 0000 | .1764 | 64 |
| 65 | -.0562 | - 0852 | 0000 | -.0851 | -.2217 | 0000 | 2375 | 65 |
| 66 | - 0231 | - 0893 | 0000 | - 0525 | - 1721 | 0000 | 1799 | 66 |
| 67 | -.0104 | - 0271 | 0000 | -.0251 | - 1197 | 0000 | 1223 | 67 |
| 68 | -.0050 | - 0045 | 0000 | - 0087 | - 0111 | 0000 | 0129 | 68 |
| 69 | 0000 | 0020 | .0000 | 0000 | - 0043 | .0000 | 0043 | 69 |
| 70 | - 0317 | 0083 | 0000 | - 0435 | - 0355 | 0000 | 0561 | 70 |
| 71 | - 0315 | - 0006 | 0000 | - 0473 | - 0765 | 0000 | 0899 | 71 |
| 72 | -.0321 | - 0230 | .0000 | -.0511 | - 1131 | .0000 | 1241 | 72 |
| 73 | -.0406 | - 0829 | 0000 | -.0628 | - 1739 | .0000 | 1849 | 73 |
| 74 | - 0518 | - 2855 | 0000 | - 0765 | - 3467 | 0000 | 3550 | 74 |
| 75 | -.0132 | - 0281 | 0000 | - 0272 | - 1309 | .0000 | 1337 | 75 |
| 76 | - 0072 | - 0048 | .0000 | -.0089 | - 0104 | .0000 | 0137 | 76 |
| 77 | .0000 | .0019 | .0000 | 0000 | - 0030 | 0000 | 0030 | 77 |
| 78 | - 0270 | - 0009 | 0000 | - 0356 | - 0366 | 0000 | 0511 | 78 |
| 79 | -.0214 | - 0231 | 0000 | - 0315 | - 0667 | .0000 | .0737 | 79 |
| 80 | - 0204 | - 0819 | 0000 | - 0326 | - 1277 | 0000 | .1318 | 80 |
| 81 | - 0241 | - 2873 | 0000 | - 0378 | -.3229 | .0000 | 3251 | 81 |
| 82 | 0947 | - 2553 | 0000 | 0838 | - 3407 | 0000 | 3508 | 82 |
| 83 | .6645 | - 0597 | 0000 | 6626 | - 0642 | 0000 | 6657 | 83 |
| 84 | 0000 | 0914 | 0000 | 0000 | 0880 | .0000 | 0880 | 84 |
| 85 | - 0108 | - 0244 | 0000 | - 0147 | - 0408 | 0000 | 0432 | 85 |
| 86 | 0017 | - 0814 | 0000 | - 0036 | - 0996 | 0000 | 0997 | 86 |
| 87 | .0031 | - 2493 | 0000 | - 0028 | - 3058 | .0000 | 3058 | 87 |
| 88 | 0042 | - 5033 | 0000 | 0011 | - 5336 | 0000 | .5336 | 88 |
| 89 | 5380 | - 1223 | 0000 | 5036 | - 1456 | 0000 | 5242 | 89 |
| 90 | 0000 | 2353 | 0000 | 0000 | 2159 | 0000 | 2159 | 90 |
| 91 | .0275 | - 0612 | 0000 | 0276 | - 0612 | 0000 | 0657 | 91 |
| 92 | .0294 | - 2899 | .0000 | 0294 | - 2899 | .0000 | 2914 | 92 |
| 93 | 0312 | - 5046 | 0000 | 0312 | -.5046 | 0000 | 5055 | 93 |
| 94 | 2716 | - 2477 | 0000 | 2716 | - 2477 | 0000 | 3676 | 94 |
| 95 | 0000 | 3726 | 0000 | 0000 | 3726 | .0000 | .3726 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | - 3257 |
| 2 | -.3359 |
| 3 | - 1540 |
| 4 | -.2027 |
| 5 | - 0977 |
| 6 | 2842 |
| 7 | .8985 |
| 8 | .8048 |
| 9 | 1308 |
| 10 | -.0555 |
| 11 | - 0052 |
| TOTAL VALUES | |
| 1 | -1 1895 |
| 2 | -1.1534 |
| 3 | - 3534 |
| 4 | -.3613 |
| 5 | .2383 |
| 6 | 1.1202 |
| 7 | 1.8463 |
| 8 | 1.4988 |
| 9 | 5428 |
| 10 | - 0224 |
| 11 | 0376 |

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 540 6 | 342 8 | 233 0 | 160 | 004 | 008 | 000 | 008 | - 004 | 004 | 1 |
| 2 | 500.3 | 314 9 | 216 3 | 157 | - 002 | - 002 | 020 | .008 | - 012 | 020 | 2 |
| 3 | 534.7 | 334.4 | 231 8 | 17 | 021 | - 021 | 048 | 032 | -.032 | .064 | 3 |
| 4 | 6 | 17.2 | 2 | 494 | 1 446 | - 276 | 2 138 | 1 958 | - 787 | 2.745 | 4 |
| 5 | 7 | 17 3 | 2 | 494 | 571 | 675 | 6 082 | 3.669 | -2 423 | 6 093 | 5 |
| 6 | 7 | 18.0 | 2 | 494 | - 625 | 2.376 | 5.174 | 3.465 | -2 118 | 5.583 | 6 |
| 7 | 7 | 18.4 | 2 | 493 | -1 085 | 3.138 | 2 804 | 3.562 | -1 508 | 5.070 | 7 |
| 8 | 6 | 17 0 | 2 | .494 | - 741 | 1.752 | - 880 | 1.827 | -.816 | 2 642 | 8 |
| 9 | 475 0 | 343 8 | 195 3 | 216 | - 001 | 126 | - 002 | 126 | - 001 | 127 | 9 |
| 10 | 472.8 | 362.7 | 191 2 | .236 | - 010 | 191 | 012 | 192 | - 010 | .202 | 10 |
| 11 | 476 4 | 373.6 | 191 5 | 244 | - 005 | .201 | - 081 | .208 | - 012 | .221 | 11 |
| 12 | 513.4 | 366.1 | 212 1 | 210 | 016 | .106 | - 047 | 114 | 010 | 104 | 12 |
| 13 | 530 1 | 315 0 | 235 3 | 127 | 017 | 006 | 003 | 017 | 006 | 011 | 13 |
| 14 | 374.2 | 222 6 | 166 0 | 127 | - 017 | - 010 | - 036 | - 005 | - 032 | - 037 | 14 |
| 15 | 1 7 | 13 5 | 6 | 479 | 854 | - 817 | 1.744 | 1.060 | -1 222 | 2.282 | 15 |
| 16 | 7 9 | 16.9 | 2 6 | 417 | 2 174 | -1 157 | 2 584 | 2 611 | -1.593 | 4 204 | 16 |
| 17 | 1 3 | 16 9 | 4 | 487 | 1 074 | 520 | 3 210 | 2 424 | - 831 | 3 257 | 17 |
| 18 | .6 | 17.2 | .2 | 494 | - 754 | 2.450 | 3 054 | 3.231 | -1 364 | 4.596 | 18 |
| 19 | 6 | 17.1 | 2 | 494 | -1 386 | 3 207 | 4 871 | 4 186 | -2 365 | 6.551 | 19 |
| 20 | 7 | 18.2 | 2 | 494 | -1 487 | 4 181 | 3.289 | 4 624 | -1 929 | 6 553 | 20 |
| 21 | 6 | 17 1 | 2 | 494 | -1 048 | 2 903 | 1 737 | 3.086 | -1 230 | 4 316 | 21 |
| 22 | 442 9 | 361 6 | 177 5 | 246 | - 017 | 260 | 016 | .261 | - 017 | 266 | 22 |
| 23 | 408.2 | 310 3 | 165.5 | 233 | - 002 | 230 | - 107 | 242 | - 014 | 256 | 23 |
| 24 | 480 6 | 313.0 | 193.5 | 191 | 032 | 118 | -.057 | 127 | 023 | 104 | 24 |
| 25 | 337 6 | 215 6 | 145 1 | 184 | 070 | - 011 | 085 | 092 | - 033 | 125 | 25 |
| 26 | .4 | 13.4 | | .485 | 229 | -.271 | 1 102 | .584 | -.626 | 1.210 | 26 |
| 27 | .0 | 1 | .2 | 495 | .873 | -.932 | .052 | .874 | - 932 | 1 806 | 27 |
| 28 | 1 6 | 13.5 | 5 | .481 | 802 | -.505 | -1.298 | 1 070 | - 773 | 1 842 | 28 |
| 29 | 1.6 | 14.7 | 5 | .481 | 579 | 857 | -1 073 | 1 2'2 | 184 | 1 108 | 29 |
| 30 | 6 | 15.2 | 2 | 494 | - 206 | 1 952 | -3.206 | 2.806 | -1 060 | 3.866 | 30 |
| 31 | 6 | 15 6 | 2 | 494 | - 534 | 2 576 | -4 359 | 3 698 | -1 657 | 5 355 | 31 |
| 32 | 6 | 15.5 | 2 | 494 | -1.131 | 2 987 | -4.844 | 4 032 | -2 175 | 6 207 | 32 |
| 33 | 7 | 17 7 | 2 | 494 | -1 368 | 4 942 | -2 652 | 5 228 | -1 626 | 6 854 | 33 |
| 34 | .6 | 17.1 | 3 | 492 | - 120 | 3.694 | - 596 | 3.717 | - 143 | 3.860 | 34 |
| 35 | 299.4 | 265 0 | 117 0 | 279 | 008 | 447 | - 123 | 456 | - 001 | 456 | 35 |
| 36 | 342.5 | 216.5 | 147 8 | 159 | .005 | .068 | 001 | .068 | .005 | 060 | 36 |
| 37 | 349 8 | 441 7 | 129 2 | 354 | 164 | - 063 | - 095 | 164 | - 073 | 238 | 37 |
| 38 | 176 5 | 418 1 | 61 6 | 427 | 009 | - 014 | 1 603 | 913 | - 890 | 1 803 | 38 |
| 39 | 272.5 | 431 4 | 98 4 | 386 | -.058 | .108 | 289 | 182 | - 133 | 316 | 39 |
| 40 | 140.2 | 414 9 | 48 7 | 441 | - 252 | 1 270 | - 012 | 1 270 | - 252 | 1 522 | 40 |
| 41 | 1 | 4 0 | 0 | 495 | - 206 | 3 498 | 1 566 | 3 666 | - 365 | 4 021 | 41 |
| 42 | 302 1 | 436.3 | 110 0 | .374 | - 666 | 3 662 | 1 542 | 3.849 | - 613 | 4 602 | 42 |
| 43 | 637.4 | 555 7 | 244 9 | .276 | - 617 | 3 241 | -2 566 | 3.626 | 1 002 | 4 628 | 43 |
| 44 | 1056 6 | 775 2 | 432 7 | 221 | 309 | 1 723 | -2.094 | 2 280 | - 247 | 2 527 | 44 |
| 45 | 1129 4 | 716 5 | 486 6 | 160 | - 026 | - 068 | 011 | 068 | - 026 | 095 | 45 |
| 46 | 1 | 4.0 | 0 | 498 | - 045 | - 002 | .056 | 015 | - 058 | - 072 | 46 |
| 47 | 173.1 | 416.9 | 60 5 | 426 | 050 | - 032 | 433 | 230 | - 212 | 441 | 47 |
| 48 | 194.1 | 421 4 | 68 4 | 419 | 078 | 017 | 556 | 325 | - 233 | .558 | 48 |
| 49 | 1 | 4 0 | 0 | 495 | - 225 | 822 | 2 839 | 1 810 | -1 217 | 3 027 | 49 |
| 50 | 1 | 4 0 | 0 | 495 | - 255 | 529 | 2 024 | 1.514 | - 839 | 2.353 | 50 |
| 51 | 724 3 | 808.7 | 286 2 | 265 | - 252 | 2 794 | 120 | 2 795 | - 253 | 3.048 | 51 |
| 52 | 1766.9 | 965 7 | 820.2 | 077 | - 182 | 2 689 | - 382 | 2 702 | - 195 | 2.897 | 52 |
| 53 | 1040 8 | 633.1 | 458 8 | .139 | - 061 | 066 | 040 | 068 | - 064 | 134 | 53 |
| 54 | 205 8 | 422 8 | 72.6 | .414 | - 076 | - 045 | 071 | 060 | - 066 | .136 | 54 |
| 55 | 872.3 | 582.4 | 286 3 | .263 | .123 | - 024 | - 046 | 131 | - 021 | 161 | 55 |
| 56 | 503.3 | 483 7 | 185.2 | 280 | 330 | - 116 | .316 | 380 | - 184 | 546 | 56 |
| 57 | 1 | 4 0 | 0 | 495 | - 124 | 9 730 | 1 901 | 9 821 | - 215 | 10 036 | 57 |
| 58 | 1 | 4 0 | 0 | 495 | - 445 | 12 534 | 216 | 12 505 | - 450 | 12 955 | 58 |
| 59 | 1189.6 | 731.4 | 519.8 | .145 | - 201 | 2.708 | -.722 | 2 750 | - 245 | 2 995 | 59 |
| 60 | 758 2 | 505.5 | 320.5 | 183 | -.037 | .072 | 033 | 073 | - 038 | 171 | 60 |
| 61 | 79.0 | 407.8 | 26.9 | .487 | 084 | 005 | .049 | .083 | - 004 | .087 | 61 |
| 62 | 306.8 | 435.9 | 111 3 | 372 | - 033 | 012 | - 154 | 070 | - 080 | 160 | 62 |
| 63 | 428 1 | 482 8 | 182 0 | .321 | 125 | -.042 | - 028 | .128 | - 044 | 170 | 63 |
| 64 | 447.9 | 455.5 | 170.6 | .313 | 107 | 062 | 136 | .153 | 008 | 147 | 64 |
| 65 | 1 | 4 0 | 0 | .435 | -1 032 | 14 009 | -8.033 | 15.014 | -2 037 | 17 051 | 65 |
| 66 | 1 | 4.0 | 0 | 495 | -3.816 | 18 580 | -41.880 | 29.742 | -16.870 | 46.612 | 66 |
| 67 | 1 | 4 0 | 0 | 495 | 4 211 | -1 675 | -33 571 | 19 295 | -16 759 | 36 074 | 67 |
| 68 | 186.8 | 418.1 | 58 3 | .430 | - 127 | 121 | - 475 | 264 | - 271 | 535 | 68 |
| 69 | 343.2 | 440 8 | 128.5 | .357 | - 144 | .037 | - 164 | 069 | - 176 | 245 | 69 |
| 70 | 465.7 | 458.1 | 178 4 | .305 | 022 | 035 | 114 | 118 | - 012 | 130 | 70 |
| 71 | 1 | 4.0 | 0 | 495 | - 768 | 12 534 | 4 382 | 12 883 | -1 116 | 13 999 | 71 |
| 72 | 1 | 4 0 | 0 | 495 | -6 636 | 16 608 | 9 575 | 17.647 | -7 795 | 25 341 | 72 |
| 73 | .1 | 4 0 | 0 | 495 | 7 419 | -2 115 | 5 789 | 8.229 | -2 925 | 11.154 | 73 |
| 74 | .1 | 4.0 | 0 | .495 | -.313 | - 023 | -1 169 | 434 | - 770 | 1 205 | 74 |
| 75 | 981 1 | 596 2 | 430 8 | 139 | - 020 | 016 | - 013 | 018 | - 02 | 038 | 75 |
| 76 | 1075 1 | 659.6 | 472.5 | 142 | - 018 | 092 | 012 | 092 | -.019 | 111 | 76 |
| 77 | 1 | 4 0 | 0 | 495 | -4 838 | 8.338 | 7 988 | 7.818 | -6 118 | 13.737 | 77 |
| 78 | 1 | 4.0 | 0 | 495 | 5 060 | - 588 | 7 208 | 6.814 | -2 343 | 9 157 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 270 | 529 | -.001 | 529 | 270 | 129 | - 131 | 1 957 | .083 | 1 |
| 2 | 226 | 466 | 044 | 476 | 219 | 126 | 10 010 | 2 175 | .089 | 2 |
| 3 | 343 | 381 | 116 | 479 | 245 | 117 | 40 370 | 1 951 | 077 | 3 |
| 4 | .373 | 548 | 004 | 548 | 373 | 087 | 1 427 | 1 484 | 1 731 | 4 |
| 5 | 382 | 582 | 013 | 583 | 381 | 091 | 3.975 | 1 477 | 1 812 | 5 |
| 6 | 434 | 856 | 011 | 857 | 483 | 097 | 3 329 | 1 418 | 1 537 | 6 |
| 7 | 517 | 715 | 008 | 716 | 517 | 099 | 1 843 | 1 384 | 1 266 | 7 |
| 8 | 338 | 526 | - 002 | 526 | 338 | 095 | - 508 | 1 566 | 1 902 | 8 |
| 9 | 325 | 1 013 | - 007 | 1 013 | 325 | 344 | - 611 | 3 114 | 207 | 9 |
| 10 | 398 | 1 371 | 021 | 1 372 | 385 | 488 | 1 259 | 3 472 | 274 | 10 |
| 11 | 448 | 1 442 | - 156 | 1 467 | 423 | 522 | -8.801 | 3 464 | 284 | 11 |
| 12 | .394 | 968 | - 092 | 973 | 377 | .298 | -9.756 | 2 579 | 170 | 12 |
| 13 | 228 | 315 | 006 | 315 | 225 | 045 | 3 545 | 1 397 | .030 | 13 |
| 14 | 081 | 218 | 064 | 241 | 038 | 101 | 19 519 | 6 273 | 089 | 14 |
| 15 | 074 | 152 | 007 | 153 | 073 | 040 | 5.053 | 2 086 | 796 | 15 |
| 16 | 278 | 283 | 026 | 313 | 258 | 027 | 38 761 | 1 212 | .546 | 16 |
| 17 | 335 | 419 | 005 | 419 | 354 | 043 | 6 159 | 1 257 | 857 | 17 |
| 18 | 371 | 473 | 006 | 474 | 370 | 052 | 3 608 | 1 279 | 1 034 | 18 |
| 19 | 381 | 468 | 010 | 469 | 380 | 055 | 5 163 | 1 304 | 1 094 | 19 |
| 20 | 513 | 627 | 008 | 628 | 513 | 058 | 3 979 | 1 225 | 1 154 | 20 |
| 21 | 388 | 475 | 004 | 475 | 388 | 053 | 1 918 | 1 291 | 1 070 | 21 |
| 22 | 361 | 1 545 | 027 | 1 545 | 380 | 583 | 1 314 | 4 289 | 344 | 22 |
| 23 | 334 | 1 219 | - 180 | 1 256 | 299 | 478 | -11 053 | 4 137 | 287 | 23 |
| 24 | 336 | 712 | - 111 | 742 | 306 | 218 | -15 262 | 2 428 | 134 | 24 |
| 25 | .311 | 086 | 159 | 393 | 008 | 194 | 62 522 | 36 663 | 179 | 25 |
| 26 | 002 | 002 | 000 | 002 | 001 | 000 | 55 957 | 1 671 | 009 | 26 |
| 27 | .023 | 000 | - 010 | 032 | 003 | 017 | -72 549 | -9 863 | -1 000 | 27 |
| 28 | 065 | 032 | - 035 | 086 | 009 | 039 | -57 681 | 9 301 | 781 | 28 |
| 29 | 168 | 245 | - 003 | 243 | 165 | .040 | -2 120 | 1 479 | 792 | 29 |
| 30 | 202 | 294 | - 009 | 292 | 201 | 049 | -5 423 | 1 488 | 981 | 30 |
| 31 | 248 | 345 | - 012 | 347 | 247 | 050 | -7 107 | 1 405 | 1 000 | 31 |
| 32 | 219 | 316 | - 020 | 320 | 216 | 052 | -11 154 | 1 483 | 1 041 | 32 |
| 33 | 516 | 624 | - 005 | 525 | 515 | 055 | -4 923 | 1 213 | 1 099 | 33 |
| 34 | 514 | 609 | - 004 | 609 | 514 | 048 | -2 385 | 1 186 | 955 | 34 |
| 35 | 523 | 1 692 | - 151 | 1 711 | 510 | 601 | -7 27. | 3 356 | 302 | 35 |
| 36 | 081 | 351 | 000 | 351 | 081 | 135 | 009 | 4 351 | 111 | 36 |
| 37 | 815 | 087 | - 149 | 844 | 058 | 393 | -78 672 | 14 637 | 5 069 | 37 |
| 38 | 175 | 091 | 084 | 227 | 039 | 094 | 58 166 | 5 802 | 1 785 | 38 |
| 39 | 198 | 302 | 162 | 419 | 078 | 171 | 35 961 | 5 400 | 1 636 | 39 |
| 40 | - 047 | 277 | 213 | 382 | - 153 | 268 | 26 341 | -2 502 | -1 000 | 40 |
| 41 | - 007 | 275 | - 014 | 276 | - 008 | 142 | -2 908 | -34 940 | -1 000 | 41 |
| 42 | - 426 | 403 | 159 | 432 | - 456 | 444 | 10 501 | - 948 | -1 000 | 42 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 43 | - 182 | 1 181 | - 888 | 1 819 | - 820 | 1 120 | -28.256 | -2 813 | -1 000 | 43 |
| 44 | 208 | 1 014 | .308 | 1 116 | 105 | 505 | 18.552 | 10 805 | 3.570 | 44 |
| 45 | -.044 | 483 | .038 | .485 | - 046 | 256 | 4.250 | -10.033 | -1 000 | 45 |
| 46 | 010 | 028 | .016 | .037 | 000 | 018 | 31 723 | 780.280 | 289.877 | 46 |
| 47 | 181 | 082 | .152 | 278 | - 036 | 157 | 52 308 | -7 832 | -1.000 | 47 |
| 48 | 448 | 485 | 488 | 932 | 000 | 466 | 43 881 | -56280 340 | -1 000 | 48 |
| 49 | -.027 | 101 | - 127 | 180 | -.106 | 143 | -31 594 | -1 701 | -1 000 | 49 |
| 50 | 103 | .405 | - 064 | 427 | 081 | 173 | -14 582 | 5 284 | 1.592 | 50 |
| 51 | - 576 | 997 | -.519 | 1 153 | -.732 | 943 | -18 715 | -1.575 | -1.000 | 51 |
| 52 | - 880 | 686 | 098 | 891 | - 886 | 668 | 3 090 | -1 006 | -1 000 | 52 |
| 53 | - 402 | 378 | 128 | 399 | - 422 | .410 | 9.093 | - 948 | -1 000 | 53 |
| 54 | 245 | 030 | 095 | .281 | -.006 | 143 | 89.282 | -49 440 | -1 000 | 54 |
| 55 | 1.019 | 130 | - 165 | 1 049 | 100 | 474 | -79.851 | 10 484 | 3.518 | 55 |
| 56 | 2 0[illegible]5 | 095 | 658 | 2 255 | - 108 | 1 180 | 73 088 | -21 337 | -1 000 | 56 |
| 57 | 603 | 670 | - 132 | 772 | 501 | 138 | -37 782 | 1 543 | .202 | 57 |
| 58 | 454 | 562 | - 081 | 590 | 427 | 081 | -24 359 | 1 381 | 142 | 58 |
| 59 | - 849 | 892 | - 191 | 913 | - 870 | 891 | -8.196 | -1.050 | -1.000 | 59 |
| 60 | - 534 | 280 | 032 | 291 | - 544 | 417 | 6 376 | - 534 | -1 000 | 60 |
| 61 | 016 | 033 | - 056 | .081 | -.032 | 057 | -40 705 | -2.552 | -1.000 | 61 |
| 62 | - 058 | -.031 | - 108 | 084 | -.153 | 109 | -41 272 | - 420 | -1.000 | 62 |
| 63 | 800 | 020 | 012 | 800 | 090 | .355 | 89 057 | 8.918 | 2 942 | 63 |
| 64 | 887 | 709 | 159 | 980 | 615 | 183 | 59 589 | 1 594 | 221 | 64 |
| 65 | 528 | 557 | - 003 | 558 | .528 | 015 | -6.228 | 1 [illegible] | 021 | 65 |
| 66 | 522 | 555 | - 017 | 562 | .515 | 024 | -22.511 | 1 092 | 034 | 66 |
| 67 | 196 | 302 | -.014 | 304 | .194 | .055 | -7 568 | 1 587 | 211 | 67 |
| 68 | - 137 | 116 | - 248 | 288 | - 289 | 279 | -31 475 | - 927 | -1 000 | 68 |
| 69 | -.821 | - 243 | - 171 | - 177 | - 887 | 255 | -21.075 | .257 | -1.000 | 69 |
| 70 | .448 | 685 | 187 | 758 | 358 | 199 | 28 480 | 2 112 | 413 | 70 |
| 71 | .528 | 575 | 013 | .578 | 525 | 027 | 14 818 | 1 102 | 038 | 71 |
| 72 | 398 | 432 | 004 | 433 | 398 | 018 | 8 034 | 1 092 | 034 | 72 |
| 73 | .232 | 242 | 002 | .242 | 232 | 005 | 13 077 | 1 045 | 017 | 73 |
| 74 | - 005 | 004 | 002 | 004 | -.005 | 005 | 10.037 | - 758 | -1 000 | 74 |
| 75 | - 159 | 170 | - 064 | 179 | - 168 | .173 | -9.148 | -1 064 | -1 000 | 75 |
| 76 | - 018 | 1 038 | 059 | 1 039 | - 022 | 531 | 3 188 | -47 722 | -1 000 | 76 |
| 77 | 072 | 098 | 003 | 099 | 072 | 013 | 8.903 | 1.371 | 138 | 77 |
| 78 | 197 | 210 | 003 | 211 | 197 | 007 | 12 347 | 1 070 | 028 | 78 |

PROGRAM SSTIPN

```
SSTIPN. 1 LAYER OF GEOTEXTILE, P=[redacted] PPI, E=5%, T=0

TOTAL NUMBER OF NODES------------------ 95
NUMBER OF BAR ELEMENTS------------------ 9
NUMBER OF DIFF  BAR MATERIALS----------- 1
NUMBER OF BEAM ELEMENTS----------------- 0
NUMBER OF DIFF  BEAM MATERIALS---------- 0
NUMBER OF NODAL LINKS ------------------ 0
NUMBER OF INTERFACE ELEMENTS------------ 0
NO  OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE. IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS----------- 0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF  SOIL MATERIALS---------- 3
NUMBER OF ELEMENTS IN FOUNDATION------- 38
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS --------- 0
NUMBER OF PREEXISTING NODES------------- 0
NUMBER OF CONSTRUCTION LAYERS----------- 6
NUMBER OF LOAD CASES----- -------------- 1

CALING FACTOR ----------      1 00000

ATMOSPHERIC PRESSUPE ---      1 05800

UNIT WEIGHT OF WATER ---        03120


OMPUTATION SEQUENCE FOR A TOTAL OF     7  INCREMENTS
--------------------------------------------------------

 INCREMENT NO   1     PUT ON LAYER NO   1

 INCREMENT NO   2     PUT ON LAYER NO   2

 INCREMENT NO   3     PUT ON LAYER NO.  3

 INCREMENT NO   4     PUT ON LAYER NO   4

 INCREMENT NO   5     PUT ON LAYER NO   5

 INCREMENT NO   6     PUT ON LAYER NO   6

 INCREMENT NO   7     APPLY LOAD CASE   1
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B C. CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | 000 | 000 | 1 | 1 | 1 |
| 2 | 10 000 | .000 | 1 | 1 | 1 |
| 3 | 20 000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | 000 | 1 | 1 | 1 |
| 5 | 38 000 | 000 | 1 | 1 | 1 |
| 6 | 42 000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | 000 | 1 | 1 | 1 |
| 8 | 54.000 | 000 | 1 | 1 | 1 |
| 9 | 58 000 | 000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74 000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90 000 | 000 | 1 | 1 | 1 |
| 14 | .000 | 4 000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20 000 | 4 000 | 0 | 0 | 0 |
| 17 | 30 000 | 4 000 | 0 | 0 | 0 |
| 18 | 38.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4 000 | 0 | 0 | 0 |
| 21 | 54 000 | 4 000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74 000 | 4.000 | 0 | 0 | 0 |
| 25 | 82 000 | 4 000 | 0 | 0 | 0 |
| 26 | 90 000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7 000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20 000 | 7 000 | 0 | 0 | 0 |
| 30 | 30 000 | 7.000 | 0 | 0 | 0 |
| 31 | 38.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7 000 | 0 | 0 | 0 |
| 33 | 50 000 | 7 000 | 0 | 0 | 0 |
| 34 | 54 000 | 7.000 | 0 | 0 | 0 |
| 35 | 58 000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7 000 | 0 | 0 | 0 |
| 37 | 74 000 | 7 000 | 0 | 0 | 0 |
| 38 | 82.000 | 7 000 | 0 | 0 | 0 |
| 39 | 90.000 | 7 000 | 1 | 0 | 1 |
| 40 | 000 | 10.000 | 1 | 0 | 1 |
| 41 | 10 000 | 10 000 | 0 | 0 | 0 |
| 42 | 20 000 | 10.000 | 0 | 0 | 0 |
| 43 | 30 000 | 10 000 | 0 | 0 | 0 |
| 44 | 38 000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10 000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10 000 | 0 | 0 | 0 |
| 48 | 58 000 | 10 000 | 0 | 0 | 0 |
| 49 | 66 000 | 10 000 | 0 | 0 | 0 |
| 50 | 74 000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10 000 | 0 | 0 | 0 |
| 52 | 90 000 | 10.000 | 1 | 0 | 1 |
| 53 | 38 000 | 11 500 | 0 | 0 | 0 |
| 54 | 42.000 | 11 500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54 000 | 11.500 | 0 | 0 | 0 |
| 57 | 58 000 | 11 500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74 000 | 11 500 | 0 | 0 | 0 |
| 60 | 82.000 | 11 500 | 0 | 0 | 0 |
| 61 | 90 000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13 000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74 000 | 13 000 | 0 | 0 | 0 |
| 68 | 82 000 | 13 000 | 0 | 0 | 0 |
| 69 | 90.000 | 13 000 | 1 | 0 | 1 |
| 70 | 46 000 | 14 000 | 0 | 0 | 0 |
| 71 | 50 000 | 14 000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58 000 | 14.000 | 0 | 0 | 0 |
| 74 | 63 000 | 14.000 | 0 | 0 | 0 |
| 75 | 74 000 | 14 000 | 0 | 0 | 0 |
| 76 | 82 000 | 14.000 | 0 | 0 | 0 |
| 77 | 90 000 | 14.000 | 1 | 0 | 1 |
| 78 | 50 000 | 15.000 | 0 | 0 | 0 |
| 79 | 54 000 | 15 000 | 0 | 0 | 0 |
| 80 | 58 000 | 15 000 | 0 | 0 | 0 |
| 81 | 66 000 | 15 000 | 0 | 0 | 0 |
| 82 | 74 000 | 15.000 | 0 | 0 | 0 |
| 83 | 82 000 | 15 000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54 000 | 16 000 | 0 | 0 | 0 |
| 86 | 58 000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16 000 | 0 | 0 | 0 |
| 88 | 74 000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16 000 | 0 | 0 | 0 |
| 90 | 30 000 | 16 000 | 1 | 0 | 1 |
| 91 | 58 000 | 17 000 | 0 | 0 | 0 |
| 92 | 66 000 | 17 000 | 0 | 0 | 0 |
| 93 | 74 000 | 17 000 | 0 | 0 | 0 |
| 94 | 82 000 | 17 000 | 0 | 0 | 0 |
| 95 | 90 000 | 17 000 | 1 | 0 | 1 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 480. | 1.00 | 0 |

| ELMT NO | CONNECTED NODES I | CONNECTED NODES J | MATL NO |
|---|---|---|---|
| 1 | 43 | 44 | 1 |
| 2 | 44 | 45 | 1 |
| 3 | 45 | 46 | 1 |
| 4 | 46 | 47 | 1 |
| 5 | 47 | 48 | 1 |
| 6 | 48 | 49 | 1 |
| 7 | 49 | 50 | 1 |
| 8 | 50 | 51 | 1 |
| 9 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | YOUNG'S MODULUS EXPONENT | RATIO | BULK MODULUS CONSTANT | BULK MODULUS EXPONENT | STRENGTH PARAMETERS C | STRENGTH PARAMETERS PHI | STRENGTH PARAMETERS DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0880 | 8000 00 | 500 | 500 | 1500 00 | 800 | 00 | 35 00 | 00 | 50 |
| 2 | 0530 | 40 00 | 300 | 900 | 20 00 | 200 | 05 | 00 | 00 | 50 |
| 3 | .0800 | 1000.00 | 400 | 700 | 500.00 | 500 | 50 | 40 00 | 00 | 50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO | CONNECTED NODES I | J | K | L | MATL NO | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5.000 | 2.000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15 000 | 2.000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25 000 | 2 000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33.000 | 2 000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39 000 | 2.000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46.000 | 2.000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52 000 | 2 000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 58 000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62.000 | 2.000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2.000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78 000 | 2 000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 88.000 | 2.000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5.000 | 5.500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15 000 | 5.500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25 000 | 5 500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33.000 | 5.500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5 500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5.300 |
| 20 | 21 | 22 | 35 | 34 | 2 | 58 000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5.500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5 500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78 000 | 5.500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 88.000 | 5 500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5 000 | 8 500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15 000 | 8.500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25 000 | 8.500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33 000 | 8 500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39 000 | 8 500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46.000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52.000 | 8 500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 58.000 | 8.500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62 000 | 8 500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70 000 | 8 500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78.000 | 8.500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 88.000 | 8 500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34 500 | 10 750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39 000 | 10 750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46.000 | 10.750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52 000 | 10 750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 58 000 | 10 750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62.000 | 10 750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70.000 | 10.750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78.000 | 10 750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 88 000 | 10 750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40.500 | 12 250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46 000 | 12.250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52 000 | 12 250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 58 000 | 12 250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62 000 | 12 250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70 000 | 12 250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78.000 | 12.250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 88 000 | 12 250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47 000 | 13 500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52 000 | 13.500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 58 000 | 13.500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62 000 | 13 500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70 000 | 13 500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78 000 | 13 500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 88.000 | 13 500 |
| 61 | 70 | 71 | 78 | 78 | 1 | 49 000 | 14 500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52 000 | 14 500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 56 000 | 14 500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62.000 | 14 500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70 000 | 14 500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78.000 | 14 500 |
| 67 | 76 | 77 | 34 | 83 | 1 | 88 000 | 14 500 |
| 68 | 73 | 79 | 85 | 85 | 1 | 53 000 | 15 500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 58 000 | 15 500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62 000 | 15 500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70 000 | 15 500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78.000 | 15 500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 88 000 | 15 500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57 000 | 16.500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62.000 | 16 500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70 000 | 16 500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78 000 | 16 500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 88 000 | 16 500 |

CONSTRUCTION LAYER INFORMATION

```
SSTIPN: 1 LAYER OF GEOTEXTILE, P=2400 PPI, E=5%, T=0

********************************************************
********************************************************
*                                                      *
*  LOAD CASE -----------------------------    1        *
*                                                      *
********************************************************
********************************************************

LARGEST ELE. NO  IN THIS INCREMENT   78

LARGEST N P  NO  IN THIS INCREMENT   95

BAND WIDTH------------------------  40
TOTAL NUMBER OF EQUATIONS--------- 222
NUMBER OF EQUATIONS IN BLOCK------  85
NUMBER OF BLOCKS------------------   3

NUMBER OF N P  FORCE CARDS--------   3
NUMBER OF PRESSURE CARDS----------   0
```

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0. | 0 |
| 2 | 0 | 0 |
| 3 | 0 | 0 |
| 4 | 0 | 0 |
| 5 | 0 | 0 |
| 6 | 0 | 0 |
| 7 | 0 | 0 |
| 8 | 0 | 0 |
| 9 | 0 | 0 |
| 10 | 0 | 0 |
| 11 | 0 | 0. |
| 12 | 0 | 0. |
| 13 | 0. | 0 |
| 14 | 0 | 0 |
| 15 | 0 | 0. |
| 16 | 0 | 0 |
| 17 | 0 | 0 |
| 18 | 0 | 0 |
| 19 | 0 | 0. |
| 20 | 0 | 0 |
| 21 | 0 | 0 |
| 22 | 0 | 0 |
| 23 | 0 | 0 |
| 24 | 0 | 0 |
| 25 | 0 | 0. |
| 26 | 0 | 0 |
| 27 | 0. | 0. |
| 28 | 0 | 0 |
| 29 | 0 | 0 |
| 30 | 0 | 0 |
| 31 | 0. | 0 |
| 32 | 0. | 0 |
| 33 | 0 | 0 |
| 34 | 0 | 0 |
| 35 | 0. | 0. |
| 36 | 0 | 0 |
| 37 | 0 | 0 |
| 38 | 0 | 0 |
| 39 | 0. | 0 |
| 40 | 0 | 0 |
| 41 | 0. | 0. |
| 42 | 0 | 0 |
| 43 | 0 | 0. |
| 44 | 0 | 0. |
| 45 | 0 | 0 |
| 46 | 0 | 0 |
| 47 | 0 | 0 |
| 48 | 0 | 0. |
| 49 | 0 | 0 |
| 50 | 0 | 0 |
| 51 | 0 | 0 |
| 52 | 0 | 0 |
| 53 | 0. | 0 |
| 54 | 0 | 0 |
| 55 | 0 | 0 |
| 56 | 0 | 0 |
| 57 | 0 | 0. |
| 58 | 0 | 0 |
| 59 | 0. | 0 |
| 60 | 0. | 0. |
| 61 | 0. | 0. |
| 62 | 0. | 0 |
| 63 | 0. | 0 |
| 64 | 0. | 0 |
| 65 | 0. | 0 |
| 66 | 0 | 0 |
| 67 | 0 | 0 |
| 68 | 0 | 0 |
| 69 | 0. | 0 |
| 70 | 0 | 0 |
| 71 | 0. | 0 |
| 72 | 0 | 0 |
| 73 | 0 | 0. |
| 74 | 0 | 0 |
| 75 | 0. | 0 |
| 76 | 0 | 0 |
| 77 | 0 | 0. |
| 78 | 0 | 0 |
| 79 | 0 | 0 |
| 80 | 0 | 0 |
| 81 | 0 | 0 |
| 82 | 0. | 0 |
| 83 | 0 | 0 |
| 84 | 0 | 0 |
| 85 | 0 | 0 |
| 86 | 0 | 0. |
| 87 | 0. | 0 |
| 88 | 0 | 0 |
| 89 | 0. | 0 |
| 90 | 0 | 0 |
| 91 | 0 | 0 |
| 92 | 0 | -4 50 |
| 93 | 0 | -4.50 |
| 94 | 0 | -2 00 |
| 95 | 0 | 0 |

LOAD CASE : 1 ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | 0000 | 0000 | 0000 | .0000 | .0000 | .0000 | 0000 | 1 |
| 2 | .0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 2 |
| 3 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 3 |
| 4 | .0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 4 |
| 5 | .0000 | 0000 | 0000 | .0000 | .0000 | .0000 | 0000 | 5 |
| 6 | .0000 | 0000 | .0000 | .0000 | .0000 | .0000 | 0000 | 6 |
| 7 | 0000 | 0000 | .0000 | .0000 | 0000 | 0000 | 0000 | 7 |
| 8 | 0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 0000 | 8 |
| 9 | 0000 | .0000 | .0000 | 0000 | 0000 | 0000 | 0000 | 9 |
| 10 | .0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 0000 | 10 |
| 11 | .0000 | 0000 | .0000 | 0000 | .0000 | 0000 | 0000 | 11 |
| 12 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 12 |
| 13 | .0000 | 0000 | .0000 | 0000 | .0000 | .0000 | .0000 | 13 |
| 14 | 0000 | 0000 | 0000 | .0000 | .0000 | .0000 | 0000 | 14 |
| 15 | 0000 | 0000 | 0000 | - 0001 | 0000 | 0000 | 0001 | 15 |
| 16 | 0000 | 0000 | 0000 | - 0001 | - 0005 | 0000 | 0005 | 16 |
| 17 | -.0004 | .0001 | 0000 | - 0045 | -.0020 | .0000 | 0049 | 17 |
| 18 | - 0177 | 0091 | .0000 | - 1837 | 0291 | 0000 | 1860 | 18 |
| 19 | - 0343 | - 0006 | .0000 | - 2587 | - 0772 | 0000 | .2700 | 19 |
| 20 | - 0350 | - 0088 | 0000 | - 1547 | - 1167 | 0000 | 1938 | 20 |
| 21 | - 0238 | -.0175 | 0000 | - 0441 | - 1404 | 0000 | 1543 | 21 |
| 22 | -.0008 | - 0012 | .0000 | - 0003 | - 0055 | 0000 | 0055 | 22 |
| 23 | - 0007 | - 0014 | 0000 | -.0001 | -.0047 | .0000 | .0047 | 23 |
| 24 | 0008 | - 0051 | 0000 | 0010 | - 0103 | 0000 | 0103 | 24 |
| 25 | .0020 | - 0024 | 0000 | .0019 | -.0057 | 0000 | 0060 | 25 |
| 26 | .0000 | -.0001 | .0000 | 0000 | -.0031 | 0000 | 0031 | 26 |
| 27 | .0000 | 0000 | .0000 | .0000 | 0000 | 0000 | 0000 | 27 |
| 28 | 0000 | 0000 | 0000 | 0001 | - 0001 | 0000 | 0001 | 28 |
| 29 | - 0001 | 0000 | 0000 | - 0007 | - 0003 | .0000 | 0008 | 29 |
| 30 | -.0146 | 0027 | .0000 | -.1241 | .0474 | 0000 | 1328 | 30 |
| 31 | -.0265 | 0173 | .0000 | -.2127 | 0581 | 0000 | 2205 | 31 |
| 32 | - 0490 | 0052 | 0000 | - 2845 | - 1303 | 0000 | 3129 | 32 |
| 33 | -.0776 | - 0040 | 0000 | -.2566 | -.2255 | 0000 | 3416 | 33 |
| 34 | - 0936 | - 0194 | .0000 | -.2321 | - 2300 | 0000 | 3267 | 34 |
| 35 | - 0839 | - 0451 | .0000 | - 1649 | -.1782 | 0000 | 2428 | 35 |
| 36 | 0000 | - 0035 | 0000 | 0022 | - 0119 | 0000 | 0121 | 36 |
| 37 | 0019 | - 0098 | .0000 | .0016 | - 0186 | .0000 | 0187 | 37 |
| 38 | .0028 | - 0047 | .0000 | .0018 | - 0112 | 0000 | .0114 | 38 |
| 39 | 0000 | 0008 | .0000 | 0000 | - 0053 | .0000 | 0053 | 39 |
| 40 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 40 |
| 41 | 0000 | 0000 | .0000 | 0001 | - 0001 | 0000 | 0001 | 41 |
| 42 | - 0176 | 0050 | 0000 | - 0572 | 0200 | 0000 | 0606 | 42 |
| 43 | - 0335 | 0059 | 0000 | - 1306 | 0733 | 0000 | 1497 | 43 |
| 44 | - 0338 | 0220 | 0000 | - 1288 | 0581 | 0000 | 1405 | 44 |
| 45 | - 0340 | 0077 | 0000 | - 1244 | - 1772 | 0000 | .2165 | 45 |
| 46 | - 0304 | - 0084 | 0000 | -.1057 | - 3028 | 0000 | 3207 | 46 |
| 47 | - 0250 | -.0209 | 0000 | - 0891 | - 3071 | 0000 | 3198 | 47 |
| 48 | - 0193 | - 0679 | 0000 | - 0698 | - 2857 | 0000 | 2941 | 48 |
| 49 | - 0023 | - 0707 | .0000 | - 0269 | -.1988 | .0000 | 2007 | 49 |
| 50 | .0017 | - 0272 | .0000 | -.0051 | - 0467 | .0000 | 0470 | 50 |
| 51 | .0010 | - 0054 | 0000 | - 0015 | -.0139 | 0000 | .0140 | 51 |
| 52 | 0000 | 0015 | 0000 | 0000 | - 0097 | 0000 | 0097 | 52 |
| 53 | - 0318 | 0222 | .0000 | - 1769 | .0859 | 0000 | 1967 | 53 |
| 54 | -.0350 | .0079 | 0000 | -.1079 | - 1087 | 0000 | 1539 | 54 |
| 55 | - 0400 | - 0088 | .0000 | - 0992 | -.2398 | 0000 | .2595 | 55 |
| 56 | - 0398 | - 0382 | 0000 | - 0941 | - 2926 | 0000 | 3073 | 56 |
| 57 | -.0198 | - 0707 | 0000 | - 1184 | - 3140 | 0000 | .3349 | 57 |
| 58 | - 0081 | -.0723 | 0000 | -.0518 | - 2277 | .0000 | 2335 | 58 |
| 59 | - 0036 | - 0284 | 0000 | -.0191 | -.0867 | .0000 | .0876 | 59 |
| 60 | -.0019 | -.0057 | 0000 | - 0043 | -.0513 | .0000 | 0515 | 60 |
| 61 | .0000 | .0018 | 0000 | .0000 | -.0457 | .0000 | .0457 | 61 |
| 62 | -.0482 | .0092 | 0000 | - 0783 | - 0290 | 0000 | 0835 | 62 |
| 63 | -.0559 | - 0075 | .0000 | - 0887 | -.1346 | 0000 | 1612 | 63 |
| 64 | - 0811 | - 0387 | 0000 | - 0852 | - 1842 | 0000 | .2073 | 64 |
| 65 | - 0844 | - 0764 | .0000 | -.0883 | - 2198 | 0000 | .2412 | 65 |
| 66 | - 0171 | - 0737 | 0000 | - 0507 | - 1612 | 0000 | 1690 | 66 |
| 67 | -.0090 | - 0290 | 0000 | -.0250 | - 1226 | 0000 | 1251 | 67 |
| 68 | - 0049 | - 0080 | .0000 | - 0070 | - 0127 | 0000 | .0146 | 68 |
| 69 | .0000 | 0019 | 0000 | 0000 | -.0058 | 0000 | 0058 | 69 |
| 70 | - 0504 | 0014 | 0000 | - 0680 | - 0456 | 0000 | 0818 | 70 |
| 71 | - 0508 | - 0072 | .0000 | - 0717 | -.0881 | 0000 | .1136 | 71 |
| 72 | - 0520 | - 0383 | 0000 | - 0759 | - 1344 | .0000 | 1544 | 72 |
| 73 | -.0585 | - 0759 | .0000 | - 0832 | -.1744 | 0000 | 1932 | 73 |
| 74 | - 0895 | - 2334 | 0000 | - 0978 | - 2995 | 0000 | 3150 | 74 |
| 75 | -.0119 | - 0297 | 0000 | - 0274 | - 1334 | 0000 | 1362 | 75 |
| 76 | - 0073 | -.0061 | 0000 | - 0092 | - 0119 | 0000 | 0151 | 76 |
| 77 | .0000 | 0019 | .0000 | .0000 | -.0045 | 0000 | 0045 | 77 |
| 78 | - 0468 | - 0072 | 0000 | - 0573 | - 0488 | 0000 | 0751 | 78 |
| 79 | - 0441 | - 0365 | 0000 | - 0569 | -.0883 | 0000 | 1050 | 79 |
| 80 | -.0428 | - 0752 | .0000 | - 0577 | - 1284 | 0000 | 1408 | 80 |
| 81 | - 0472 | - 2344 | .0000 | - 0631 | -.2739 | 0000 | 2811 | 81 |
| 82 | 2153 | - 2905 | 0000 | 2050 | - 3768 | 0000 | 4290 | 82 |
| 83 | 7452 | - 0466 | .0000 | 7432 | - 0510 | 0000 | 7449 | 83 |
| 84 | 0000 | 0898 | 0000 | .0000 | 0860 | 0000 | 0860 | 84 |
| 85 | - 0345 | - 0389 | 0000 | - 0229 | -.0546 | .0000 | .0671 | 85 |
| 86 | - 0342 | - 0749 | 0000 | - 0400 | - 0951 | 0000 | 1032 | 86 |
| 87 | - 0303 | - 3485 | 0000 | - 0367 | - 3666 | .0000 | 3664 | 87 |
| 88 | - 0237 | - 5429 | 0000 | - 0280 | - 5989 | 0000 | 5995 | 88 |
| 89 | 5570 | - 1060 | 0000 | 5553 | - 1078 | 0000 | 5656 | 89 |
| 90 | 0000 | 2391 | 0000 | 0000 | 2270 | 0000 | 2370 | 90 |
| 91 | 0025 | - 0748 | 0000 | 0025 | - 0748 | 0000 | 0748 | 91 |
| 92 | -.0012 | - 3489 | 0000 | - 0012 | -.3489 | 0000 | 3489 | 92 |
| 93 | - 0017 | -.5445 | 0000 | - 0017 | - 5445 | 0000 | 5445 | 93 |
| 94 | 2832 | - 2339 | 0000 | 2632 | - 2339 | 0000 | [illegible] | 94 |
| 95 | .0000 | 3790 | .0000 | 0000 | 3790 | 0000 | [illegible] | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | - 0240 |
| 2 | - 0154 |
| 3 | 2185 |
| 4 | 6395 |
| 5 | 6846 |
| 6 | 1 0223 |
| 7 | 2403 |
| 8 | - 0425 |
| 9 | - 0605 |
| TOTAL VALUES | |
| 1 | 1415 |
| 2 | 3509 |
| 3 | 1 1232 |
| 4 | 1.9912 |
| 5 | 2.3120 |
| 6 | 2 5730 |
| 7 | 1 3117 |

8 2180
9 0872

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| FLE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-2 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 523 4 | 328 3 | 226 8 | 155 | 000 | 000 | 001 | 001 | - 001 | 001 | 1 |
| 2 | 520.5 | 330.4 | 224.2 | 161 | 000 | 006 | 005 | 007 | - 001 | 006 | 2 |
| 3 | 549 8 | 343.1 | 238.8 | 152 | 022 | - 019 | 045 | .032 | - 029 | 061 | 3 |
| 4 | .6 | 17 1 | .2 | .494 | 1 493 | -.389 | 2.128 | 1 972 | - 868 | 2 [illegible]40 | 4 |
| 5 | 7 | 17 3 | 2 | 494 | 825 | 801 | 6 415 | 3 821 | -2 595 | 6 415 | 5 |
| 6 | 7 | 18.0 | .2 | .494 | - 660 | 2 424 | 5 415 | 4 000 | -2 226 | 6.227 | 6 |
| 7 | 7 | 18.4 | 2 | 493 | -1 133 | 3 214 | 3 031 | 3.890 | -1 609 | 5.299 | 7 |
| 8 | 6 | 17 0 | 2 | .494 | - 797 | 1.825 | - 881 | 1 897 | -.889 | 2 786 | 8 |
| 9 | 483 4 | 351 6 | 198 5 | 218 | - 001 | 128 | 000 | 128 | - 001 | 129 | 9 |
| 10 | 479.4 | 370 0 | 193.5 | .238 | - 007 | 187 | 023 | .187 | - 008 | 195 | 10 |
| 11 | 479.1 | 373 2 | 193.0 | .241 | - 006 | .199 | - 066 | 204 | - 011 | 215 | 11 |
| 12 | 497 9 | 352 8 | 206 1 | .206 | 012 | 110 | - 040 | 114 | 008 | 106 | 12 |
| 13 | 431 4 | 253 4 | 192 8 | 120 | 000 | 001 | - 002 | 001 | - 001 | 002 | 13 |
| 14 | 481.3 | 264.7 | 201 7 | 119 | 004 | - 003 | 011 | .007 | - 006 | 013 | 14 |
| 15 | 1.6 | 13 5 | 5 | 460 | 639 | - 780 | 1 751 | 1 080 | -1 181 | 2 241 | 15 |
| 16 | 11 2 | 17 3 | 4.1 | 382 | 2.232 | -1 240 | 2 183 | 2 541 | -1 549 | 4 090 | 16 |
| 17 | 1 6 | 17 0 | 5 | 484 | 1 223 | 401 | 3 389 | 2 546 | - 922 | 3 468 | 17 |
| 18 | .6 | 17 2 | 2 | .494 | -.824 | 2 898 | 2 970 | 3.241 | -1 367 | 4 607 | 18 |
| 19 | 6 | 17 1 | 2 | .494 | -1.439 | 3 305 | 4 850 | 4 328 | -2 460 | 6.785 | 19 |
| 20 | .7 | 18.2 | .2 | .494 | -1 637 | 4 370 | 3 210 | 4 772 | -2 039 | 6.811 | 20 |
| 21 | 6 | 17 1 | 2 | 494 | -1 046 | 2 998 | 1 860 | 3 162 | -1 209 | 4 371 | 21 |
| 22 | 472 2 | 374 3 | 189.3 | .247 | - 003 | .260 | 029 | .261 | - 004 | 265 | 22 |
| 23 | 407 1 | 305 8 | 185 6 | .229 | -.007 | 227 | - 082 | 239 | - 014 | 252 | 23 |
| 24 | 408 1 | 278.0 | 171.2 | .192 | 023 | 129 | - 051 | 135 | 017 | 117 | 24 |
| 25 | 409 0 | 229 7 | 187 2 | 093 | - 001 | 000 | 001 | 000 | - 001 | 001 | 25 |
| 26 | 0 | 1 | 0 | 495 | 290 | - 339 | 843 | 502 | - 550 | 1 052 | 26 |
| 27 | 4 | 13 4 | 1 | 495 | 983 | - 770 | 546 | 1 025 | - 812 | 1 837 | 27 |
| 28 | 2.1 | 13 6 | 7 | 474 | 724 | - 392 | -1 236 | 998 | - 671 | 1 669 | 28 |
| 29 | 1 4 | 14 4 | 5 | 484 | 581 | 816 | - 552 | 993 | 384 | 609 | 29 |
| 30 | 5 | 15 1 | 2 | 494 | - 291 | 2 071 | -3 803 | 3.126 | -1 344 | 4 476 | 30 |
| 31 | 6 | 15.8 | 2 | 494 | - 514 | 2 575 | -4 789 | 3 879 | -1 819 | 5 698 | 31 |
| 32 | 6 | 15 5 | .2 | 494 | -1 080 | 3 079 | -4 882 | 4 206 | -2 208 | 6 414 | 32 |
| 33 | 7 | 17 5 | 2 | 494 | -1 313 | 4 908 | -2 881 | 5 184 | -1 589 | 6 773 | 33 |
| 34 | 8 | 17 2 | 3 | 492 | - 133 | 3 583 | - 311 | 3 590 | - 139 | 3 729 | 34 |
| 35 | 231 0 | 213 7 | 83 5 | 291 | - 024 | 513 | - 085 | 516 | - 027 | 543 | 35 |
| 36 | 342 8 | 216 6 | 148.0 | 158 | 002 | 118 | - 009 | 118 | 002 | 116 | 36 |
| 37 | 1 | 4 0 | 0 | 495 | - 014 | 797 | 3 413 | 2 145 | -1 363 | 3 508 | 37 |
| 38 | 1 | 4 0 | 0 | 495 | - 605 | 607 | 5 039 | 2 593 | -2 590 | 5 183 | 38 |
| 39 | 40 4 | 403 2 | 13 6 | 483 | - 162 | 850 | 1 416 | 1 080 | - 572 | 1 632 | 39 |
| 40 | 1 | 4 0 | 0 | 495 | - 281 | 2 074 | 1 341 | 2 253 | - 440 | 2 693 | 40 |
| 41 | 1 | 4 0 | 0 | 495 | 051 | 3 972 | 2 441 | 4 321 | - 297 | 4 619 | 41 |
| 42 | 154.4 | 416 6 | 53 8 | 435 | - 654 | 3 870 | 1 776 | 4 038 | - 822 | 4 860 | 42 |
| 43 | 829 7 | 547 9 | 247 0 | 275 | - 324 | 2 936 | - 310 | 2 943 | - 332 | 3 275 | 43 |
| 44 | 1314 9 | 864 4 | 558 6 | 177 | - 111 | 2 718 | 184 | 2 721 | - 114 | 2 835 | 44 |
| 45 | 781 9 | 607 5 | 315 1 | 241 | - 035 | 2 590 | 037 | 2 590 | - 035 | 2 625 | 45 |
| 46 | 1 | 4 0 | .0 | 495 | - 059 | - 042 | 1 446 | 673 | - 775 | 1 448 | 46 |
| 47 | 11 9 | 398 8 | 4 0 | 495 | 058 | - 039 | 1 555 | 788 | - 769 | 1 558 | 47 |
| 48 | 11 9 | 398 6 | 4 0 | 495 | 019 | 035 | 2 216 | 1 135 | -1 081 | 2 216 | 48 |
| 49 | 11 9 | 393 8 | 4 0 | 495 | - 274 | 268 | 3 226 | 1 633 | -1 639 | 3 272 | 49 |
| 50 | 1 | 4 0 | 0 | 495 | - 421 | 337 | 1 688 | 884 | - 967 | 1 851 | 50 |
| 51 | 1098 0 | 883 7 | 475.8 | 152 | - 260 | 2 771 | 124 | 2 773 | - 262 | 3 034 | 51 |
| 52 | 1906 3 | 1028.5 | 895 1 | 065 | - 175 | 2 701 | - 398 | 2 714 | - 189 | 2 903 | 52 |
| 53 | 1384 1 | 741 2 | 653 3 | 059 | - 068 | 067 | 032 | 069 | - 068 | 137 | 53 |
| 54 | 228 7 | 425 6 | 81 4 | 404 | 106 | - 055 | 041 | 109 | - 057 | 166 | 54 |
| 55 | 505.6 | 464 0 | 196.2 | 289 | 111 | - 020 | 069 | 119 | - 029 | 148 | 55 |
| 56 | 522.6 | 488 8 | 203 9 | 282 | 118 | - 030 | 148 | 149 | - 061 | 210 | 56 |
| 57 | 1 | 4 0 | 0 | 495 | - 216 | 8 002 | 3 154 | 8 295 | 509 | 8 803 | 57 |
| 58 | 1 | 4 0 | 0 | 495 | - 567 | 10 677 | 1 674 | 10 755 | - 645 | 11 400 | 58 |
| 59 | 2098 1 | 1048 0 | 1048 0 | 000 | - 194 | 2 694 | - 674 | 2 733 | - 233 | 2 966 | 59 |
| 60 | 1157 0 | 622 4 | 544 4 | 083 | - 096 | 061 | 041 | 083 | - 102 | 185 | 60 |
| 61 | 284 9 | 433 0 | 103 2 | 381 | 063 | - 006 | 058 | 073 | - 016 | 090 | 61 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | 194.7 | 421 5 | 68.6 | 419 | 020 | 006 | 194 | 110 | - 084 | 194 | 62 |
| 63 | 543.5 | 469 8 | 213.5 | 273 | .066 | - 028 | -.082 | 081 | -.044 | 125 | 63 |
| 64 | 304 5 | 435 6 | 110.9 | .373 | .114 | 034 | 155 | 161 | - 013 | .175 | 64 |
| 65 | 1 | 4 0 | 0 | 495 | -2.075 | 15 684 | -12.895 | 17 778 | -4 168 | 21 947 | 65 |
| 66 | 1 | 4.0 | 0 | 495 | -3 429 | 17 677 | -51.215 | 34 821 | -20 573 | 55 394 | 66 |
| 67 | 1 | 4 0 | 0 | 495 | 4 588 | -2 315 | -38 515 | 20 701 | -18 428 | 39 129 | 67 |
| 68 | 67.6 | 406 3 | 23 0 | 472 | - 044 | 039 | - 178 | 086 | - 101 | 196 | 68 |
| 69 | 365.2 | 443 6 | 135.5 | .347 | 002 | 007 | 067 | 038 | - 029 | 067 | 69 |
| 70 | 1 | 4 0 | 0 | 495 | 010 | 5 894 | 1 423 | 5 781 | - 078 | 5 859 | 70 |
| 71 | 1 | 4 0 | 0 | 495 | -1 708 | 19 609 | 13 021 | 21 440 | -3 539 | 24 979 | 71 |
| 72 | 1 | 4 0 | 0 | 495 | -6.976 | 16.450 | 16 646 | 19 469 | -9 595 | 29 065 | 72 |
| 73 | 1 | 4 0 | 0 | 495 | 8.122 | -4 506 | 6 437 | 8.895 | -5 279 | 14 174 | 73 |
| 74 | 1 | 4 0 | .0 | 495 | - 007 | - 011 | -2 723 | 1 353 | -1 370 | 2.723 | 74 |
| 75 | 853 2 | 558 3 | 383 1 | 175 | 000 | 015 | 133 | 075 | - 080 | 134 | 75 |
| 76 | 973.2 | 629 1 | 416 1 | 169 | -.039 | 104 | - 115 | 124 | - 059 | .163 | 76 |
| 77 | 1 | 4 0 | 0 | 495 | -5.284 | 6 526 | 8 912 | 8 019 | -6 777 | 14.796 | 77 |
| 78 | 1 | 4.0 | .0 | .495 | 5.126 | - 554 | 8.707 | 7.484 | -2.512 | 10.396 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 242 | 478 | 002 | 478 | 242 | 118 | 432 | 1 979 | 079 | 1 |
| 2 | 248 | 515 | 012 | 516 | 247 | 134 | 2 577 | 2 085 | 088 | 2 |
| 3 | 349 | 392 | 106 | 481 | .260 | .110 | 39 424 | 1 849 | 072 | 3 |
| 4 | .362 | .534 | 004 | 535 | 362 | 086 | 1 421 | 1 476 | 1 724 | 4 |
| 5 | 379 | 558 | .013 | .559 | 378 | 081 | 4 198 | 1 480 | 1.815 | 5 |
| 6 | 468 | 661 | 012 | 662 | 468 | 097 | 3 481 | 1 415 | 1 941 | 6 |
| 7 | 522 | 720 | 007 | 721 | .521 | 100 | 1 989 | 1 382 | 1 992 | 7 |
| 8 | .339 | .530 | -.002 | .530 | 339 | 095 | - 508 | 1 563 | 1 908 | 8 |
| 9 | 329 | 1.029 | - 003 | 1 029 | 329 | 350 | - 238 | 3 129 | 210 | 9 |
| 10 | 404 | 1 358 | 045 | 1 362 | 402 | 480 | 2 706 | 3 384 | 267 | 10 |
| 11 | 439 | 1 432 | - 126 | 1 448 | 422 | 513 | -7 232 | 3 429 | 280 | 11 |
| 12 | 376 | 954 | - 082 | 965 | 364 | 300 | -7.946 | 2.649 | 174 | 12 |
| 13 | 136 | .273 | - 004 | 273 | 136 | 069 | -1 599 | 2 018 | 052 | 13 |
| 14 | 152 | 281 | 022 | 285 | 148 | 059 | 11 036 | 1 795 | 044 | 14 |
| 15 | 079 | 158 | 007 | 159 | 078 | 040 | 5 013 | 2.024 | 403 | 15 |
| 16 | .285 | 279 | 024 | 306 | 258 | 024 | 48 456 | 1 188 | 484 | 16 |
| 17 | 341 | 422 | 010 | 423 | 340 | 042 | 7.281 | 1 245 | 833 | 17 |
| 18 | 372 | 475 | 006 | 475 | 372 | 052 | 3 482 | 1 279 | 1 037 | 18 |
| 19 | 388 | 476 | 010 | 477 | .367 | 055 | 5 322 | 1 300 | 1 101 | 19 |
| 20 | 520 | 635 | .008 | 636 | 519 | .058 | 3 844 | 1.225 | 1 168 | 20 |
| 21 | 384 | 491 | 003 | 492 | .384 | 054 | 1 827 | 1.279 | 1.074 | 21 |
| 22 | 407 | 1 525 | 056 | 1 528 | 404 | 562 | 2 838 | 3 779 | 312 | 22 |
| 23 | 304 | 1 201 | - 137 | 1 221 | 284 | 469 | -8 481 | 4 305 | 296 | 23 |
| 24 | .292 | 723 | - 088 | 740 | 275 | 233 | -11 053 | 2 695 | 149 | 24 |
| 25 | .042 | 090 | 001 | 090 | 042 | .024 | 1 500 | 2.157 | 021 | 25 |
| 26 | 000 | 000 | 000 | 000 | 000 | 000 | 63 371 | 642 | -1 000 | 26 |
| 27 | .060 | 000 | - 001 | 060 | 000 | 030 | -88 767 | 489 176 | 599 | 27 |
| 28 | .070 | 035 | - 033 | 090 | .015 | 037 | -58 834 | 5 991 | 746 | 28 |
| 29 | 154 | .237 | 000 | 237 | 154 | 041 | - 315 | 1 537 | 829 | 29 |
| 30 | 205 | 303 | - 010 | 305 | 204 | 050 | -5 867 | 1 493 | 1 006 | 30 |
| 31 | .251 | 348 | - 013 | 350 | 249 | .051 | -7 596 | 1.406 | 1 010 | 31 |
| 32 | .241 | .338 | - 020 | 342 | 237 | .052 | -11 454 | 1 443 | 1 049 | 32 |
| 33 | 516 | .623 | -.009 | .624 | 515 | .055 | -4 907 | 1 213 | 1 094 | 33 |
| 34 | 495 | 580 | - 001 | 590 | 495 | 047 | - 838 | 1 190 | 942 | 34 |
| 35 | .435 | 1.661 | -.043 | 1.662 | 433 | .615 | -2 010 | 3.835 | 332 | 35 |
| 36 | 117 | 387 | - 034 | 392 | 113 | 139 | -7.085 | 3.460 | .109 | 36 |
| 37 | 041 | 087 | -.061 | .130 | - 001 | .065 | -34.811 | -111.500 | -1.000 | 37 |
| 38 | 012 | 057 | 029 | 071 | - 002 | 036 | 25 943 | -32 857 | -1 000 | 38 |
| 39 | .076 | .306 | .175 | .400 | - 016 | 209 | 28.310 | -22 145 | -1.000 | 39 |
| 40 | .018 | .314 | .008 | 314 | .018 | 148 | 1.593 | 17 746 | 6.225 | 40 |
| 41 | 034 | .326 | .020 | .327 | 033 | 147 | 3.928 | 9 918 | 3.315 | 41 |
| 42 | - 291 | 353 | 084 | 364 | - 302 | 333 | 7 327 | -1 204 | -1 000 | 42 |
| 43 | -.172 | 1.120 | - 612 | 1 384 | - 416 | .890 | -21.718 | -3.278 | -1 000 | 43 |
| 44 | 115 | 1.118 | 140 | 1 137 | .096 | .521 | 7 794 | 11 815 | 4 020 | 44 |
| 45 | 019 | 447 | 060 | .455 | 011 | 222 | 7 850 | 43 231 | 15 898 | 45 |
| 46 | - 103 | - 054 | 074 | - 001 | - 156 | 078 | 35 858 | 004 | -1 000 | 46 |
| 47 | 065 | 188 | 183 | 320 | -.066 | .193 | 35.736 | -4.809 | -1 000 | 47 |
| 48 | 144 | 422 | 181 | 495 | 070 | 212 | 24 843 | 7 033 | 2 243 | 48 |
| 49 | - 041 | 101 | 006 | 101 | - 041 | 071 | 2 483 | -2 459 | -1 000 | 49 |
| 50 | 068 | 403 | - 087 | 424 | 047 | 188 | -13 677 | 8 984 | 2.980 | 50 |
| 51 | - 736 | 899 | - 439 | 1 009 | - 846 | 928 | -14 118 | -1 193 | -1 000 | 51 |
| 52 | - 857 | 937 | - 004 | 937 | - 857 | 797 | - 131 | -1 427 | -1 000 | 52 |
| 53 | - 530 | 383 | 076 | 389 | - 536 | 463 | 4 736 | - 726 | -1.000 | 53 |
| 54 | 400 | 103 | 072 | 417 | 086 | 165 | 77 069 | 4 831 | 1 424 | 54 |
| 55 | 814 | 151 | 171 | 856 | 108 | 373 | 76.380 | 7.817 | 2 534 | 55 |
| 56 | 896 | 085 | 332 | 1 012 | - 051 | 532 | 70 657 | -19 749 | -1 000 | 56 |
| 57 | 474 | 606 | - 116 | 675 | 405 | 135 | -30 342 | 1 665 | 247 | 57 |
| 58 | .343 | 474 | - 064 | 500 | 317 | 092 | -22 021 | 1.578 | 215 | 58 |
| 59 | -1 159 | 1 017 | - 269 | 1.050 | -1 192 | 1 121 | -6.937 | - 881 | -1 000 | 59 |
| 60 | - 823 | 257 | 117 | 269 | - 836 | 553 | 6 090 | - 322 | -1 000 | 60 |
| 61 | 102 | 066 | - 174 | .259 | - 092 | .175 | -47 991 | -2 812 | -1 000 | 61 |
| 62 | 233 | 085 | 236 | 406 | - 088 | 247 | 53 715 | -4.628 | -1 000 | 62 |
| 63 | 516 | - 034 | - 157 | 558 | - 076 | 317 | -75 190 | -7 360 | -1 000 | 63 |
| 64 | 770 | 635 | 108 | 830 | 575 | 128 | 60 969 | 1 444 | 165 | 64 |
| 65 | 552 | .584 | - 005 | 584 | 552 | .016 | -9 130 | 1 059 | 022 | 65 |
| 66 | 577 | .610 | - 020 | 620 | 567 | 027 | -25 180 | 1 094 | 035 | 66 |
| 67 | 197 | 291 | - 012 | 292 | 195 | 049 | -7 415 | 1 500 | 186 | 67 |
| 68 | - 015 | 006 | - 016 | 014 | - 023 | 019 | -24 241 | - 630 | -1 000 | 68 |
| 69 | 110 | .041 | 135 | 215 | - 064 | 140 | 52 121 | -3 371 | -1 000 | 69 |
| 70 | 332 | 349 | - 040 | 381 | 299 | 041 | -38 974 | 1 276 | 103 | 70 |
| 71 | 722 | 756 | 005 | 757 | 721 | 018 | 8 491 | 1 049 | 018 | 71 |
| 72 | 401 | 437 | 007 | 438 | 400 | 019 | 10 119 | 1 096 | 035 | 72 |
| 73 | 242 | 257 | 005 | 258 | 241 | 009 | 15 752 | 1 073 | 027 | 73 |
| 74 | 008 | 016 | 001 | 016 | 006 | 004 | 6 469 | 2 135 | 422 | 74 |
| 75 | 044 | 176 | 485 | 599 | - 379 | 489 | 41 123 | -1 578 | -1 000 | 75 |
| 76 | - 167 | 1 033 | - 481 | 1 202 | - 336 | 769 | -19 336 | -3 578 | -1 000 | 76 |
| 77 | 082 | 086 | 004 | 089 | 081 | 014 | 7 527 | 1 446 | 166 | 77 |
| 78 | 202 | 214 | 003 | 215 | 201 | 007 | 14 551 | 1 071 | 026 | 78 |

PROGRAM SSTIPN

SSTIPN: 1 LAYER OF GEOTEXTILE, P:2400 PPI, E:5%, T:1000

```
TOTAL NUMBER OF NODES------------------ 95
NUMBER OF BAR ELEMENTS-----------------  9
NUMBER OF DIFF  BAR MATERIALS----------  1
NUMBER OF BEAM ELEMENTS----------------  0
NUMBER OF DIFF  BEAM MATERIALS---------  0
NUMBER OF NODAL LINKS -----------------  0
NUMBER OF INTERFACE ELEMENTS-----------  0
NO  OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE  IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS----------  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF  SOIL MATERIALS---------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 36
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS---------  0
NUMBER OF PREEXISTING NODES------------  0
NUMBER OF CONSTRUCTION LAYERS----------  6
NUMBER OF LOAD CASES-------------------  2

CALING FACTOR ---------      1 00000

ATMOSPHERIC PRESSURE ---      1 05800

UNIT WEIGHT OF WATER ---        03120


OMPUTATION SEQUENCE FOR A TOTAL OF    8  INCREMENTS
-----------------------------------------------------

 INCREMENT NO    1      APPLY LOAD CASE   1
 INCREMENT NO    2      PUT ON LAYER NO   1
 INCREMENT NO    3      PUT ON LAYER NO   2
 INCREMENT NO    4      PUT ON LAYER NO   3
 INCREMENT NO    5      PUT ON LAYER NO   4
 INCREMENT NO    6      PUT ON LAYER NO   5
 INCREMENT NO    7      PUT ON LAYER NO   6
 INCREMENT NO    8      APPLY LOAD CASE   2
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B.C CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | .000 | .000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 36.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58.000 | .000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | .000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30.000 | 4.000 | 0 | 0 | 0 |
| 18 | 36.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54.000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82.000 | 4.000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 36.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.000 | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10.000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.000 | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 36.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10.000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 36.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11.500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74.000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.000 | 14.000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | 15.000 | 0 | 0 | 0 |
| 83 | 82.000 | 15.000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17.000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17.000 | 1 | 0 | 1 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 480 | 1 00 | 0 |

| ELMT NO | CONNECTED NODES I | J | MATL NO. |
|---|---|---|---|
| 1 | 43 | 44 | 1 |
| 2 | 44 | 45 | 1 |
| 3 | 45 | 46 | 1 |
| 4 | 46 | 47 | 1 |
| 5 | 47 | 48 | 1 |
| 6 | 48 | 49 | 1 |
| 7 | 49 | 50 | 1 |
| 8 | 50 | 51 | 1 |
| 9 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | EXPONENT | RATIO | BULK MODULUS CONSTANT | EXPONENT | STRENGTH PARAMETERS C | PHI | DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0880 | 8000 00 | 500 | 500 | 1500 00 | .800 | 00 | 38 00 | 00 | 50 |
| 2 | 0530 | 40 00 | 300 | 900 | 20 00 | 200 | 05 | 00 | 00 | 50 |
| 3 | .0800 | 1000 00 | 400 | 700 | 500 00 | 500 | 50 | 40 00 | 00 | 50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO | CONNECTED NODES I | J | K | L | MATL NO | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5 000 | 2.000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15.000 | 2.000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25 000 | 2 000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33.000 | 2.000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39.000 | 2.000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46 000 | 2.000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52 000 | 2 000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 58.000 | 2.000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 67 000 | 2 000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2 000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78 000 | 2 000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86.000 | 2.000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5.000 | 5.500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15.000 | 5 500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25 000 | 5 500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33 000 | 5.500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39 000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5.500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5.500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 58 000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5 500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5.500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78.000 | 5 500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86.000 | 5.500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5 000 | 8 500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15.000 | 8.500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25.000 | 8.500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33.000 | 8.500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39 000 | 8 500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46.000 | 8.500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52.000 | 8.500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 58.000 | 8 500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62 000 | 8 500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70 000 | 8 500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78 000 | 8 500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86.000 | 8 500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34.500 | 10 750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39 000 | 10 750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46 000 | 10 750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52 000 | 10.750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 58 000 | 10 750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62 000 | 10 750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70 000 | 10 750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78 000 | 10 750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86 000 | 10 750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40 500 | 12 250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46.000 | 12 250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52 000 | 12 250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 58 000 | 12 250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62 000 | 12 250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70.000 | 12 250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78 000 | 12 250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86 000 | 12 250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47 000 | 13 500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52 000 | 13.500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 56 000 | 13 500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62 000 | 13 500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70 000 | 13 500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78 000 | 13 500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86 000 | 13 500 |
| 61 | 70 | 71 | 78 | 78 | 1 | 49 000 | 14 500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52 000 | 14 500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 58 000 | 14 500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62 000 | 14 500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70 000 | 14 500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78 000 | 14.500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 86 000 | 14 500 |
| 68 | 78 | 79 | 85 | 85 | 1 | 53 000 | 15 500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 58 000 | 15 500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62 000 | 15 500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70 000 | 15 500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78 000 | 15 500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86 000 | 15 500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57 000 | 16 500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62 000 | 16 500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70 000 | 16 500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78 000 | 16 500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86 000 | 16 500 |

CONSTRUCTION LAYER INFORMATION

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0. | 0 |
| 2 | 0 | 0 |
| 3 | 0 | 0 |
| 4 | 0 | 0 |
| 5 | 0 | 0 |
| 6 | 0 | 0 |
| 7 | 0 | 0. |
| 8 | 0. | 0 |
| 9 | 0. | 0. |
| 10 | 0 | 0 |
| 11 | 0 | 0. |
| 12 | 0. | 0 |
| 13 | 0. | 0 |
| 14 | 0 | 0 |
| 15 | 0 | 0 |
| 16 | 0 | 0 |
| 17 | 0 | 0 |
| 18 | 0 | 0 |
| 19 | 0. | 0 |
| 20 | 0. | 0. |
| 21 | 0 | 0 |
| 22 | 0 | [illegible] |
| 23 | 0 | |
| 24 | 0 | |
| 25 | 0. | |
| 26 | 0 | 0 |
| 27 | 0 | 0 |
| 28 | 0. | 0 |
| 29 | 0 | 0 |
| 30 | 0 | 0 |
| 31 | 0 | 0 |
| 32 | 0 | 0 |
| 33 | 0 | 0 |
| 34 | 0 | 0 |
| 35 | 0 | 0 |
| 36 | 0 | 0 |
| 37 | 0. | 0 |
| 38 | 0 | 0 |
| 39 | 0 | 0 |
| 40 | 0 | 0 |
| 41 | 0 | 0. |
| 42 | 0 | 0 |
| 43 | 0 | 0. |
| 44 | 0 | 0 |
| 45 | 0 | 0. |
| 46 | 0 | 0 |
| 47 | 0 | 0 |
| 48 | 0 | 0 |
| 49 | 0 | 0 |
| 50 | 0 | 0 |
| 51 | 0 | 0 |
| 52 | 0 | 0 |
| 53 | 0 | 0. |
| 54 | 0 | 0 |
| 55 | 0. | 0 |
| 56 | 0 | 0. |
| 57 | 0 | 0 |
| 58 | 0 | 0 |
| 59 | 0. | 0. |
| 60 | 0 | 0. |
| 61 | 0. | 0. |
| 62 | 0. | 0. |
| 63 | 0 | 0 |
| 64 | 0 | 0 |
| 65 | 0. | 0. |
| 66 | 0 | 0 |
| 67 | 0 | 0. |
| 68 | 0 | 0 |
| 69 | 0 | 0 |
| 70 | 0 | 0 |
| 71 | 0 | 0 |
| 72 | 0 | 0 |
| 73 | 0 | 0. |
| 74 | 0. | 0. |
| 75 | 0 | 0. |
| 76 | 0 | 0 |
| 77 | 0 | 0 |
| 78 | 0 | 0 |
| 79 | 0 | 0 |
| 80 | 0 | 0 |
| 81 | 0 | 0 |
| 82 | 0 | 0 |
| 83 | 0 | 0 |
| 84 | 0 | 0 |
| 85 | 0 | 0 |
| 86 | 0. | 0. |
| 87 | 0 | 0 |
| 88 | 0 | 0 |
| 89 | 0 | 0 |
| 90 | 0 | 0 |
| 91 | 0 | 0. |
| 92 | 0 | -4 50 |
| 93 | 0 | -4 50 |
| 94 | 0 | -2 00 |
| 95 | 0 | 0 |

```
SSTIPN: 1 LAYER OF GEOTEXTILE, P=2400 PPI, E=5%, T=1000

**************************************************************
**************************************************************
*                                                            *
*  LOAD CASE - ----------------------------      2          *
*                                                            *
**************************************************************
**************************************************************

LARGEST ELE  NO  IN THIS INCREMENT   78

LARGEST N P  NO  IN THIS INCREMENT   95

BAND WIDTH------------------------  40
TOTAL NUMBER OF EQUATIONS---------- 222
NUMBER OF EQUATIONS IN BLOCK------  84
NUMBER OF BLOCKS------------------   3

NUMBER OF N P  FORCE CARDS--------   3
NUMBER OF PRESSURE CARDS----------   0
```

LOAD CASE : 2 ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | 0000 | 0000 | .0000 | 0000 | .0000 | 0000 | 0000 | 1 |
| 2 | .0000 | 0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 2 |
| 3 | 0000 | 0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 3 |
| 4 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 4 |
| 5 | .0000 | .0000 | 0000 | .0000 | 0000 | 0000 | .0000 | 5 |
| 6 | .0000 | 0000 | .0000 | .0000 | .0000 | .0000 | 0000 | 6 |
| 7 | 0000 | 0000 | .0000 | .0000 | .0000 | 0000 | 0000 | 7 |
| 8 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 8 |
| 9 | .0000 | .0000 | 0000 | 0000 | .0000 | 0000 | .0000 | 9 |
| 10 | .0000 | .0000 | .0000 | .0000 | 0000 | 0000 | 0000 | 10 |
| 11 | .0000 | .0000 | .0000 | .0000 | 0000 | 0000 | 0000 | 11 |
| 12 | .0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 12 |
| 13 | .0000 | .0000 | 0000 | .0000 | 0000 | .0000 | 0000 | 13 |
| 14 | 0000 | .0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 14 |
| 15 | .0000 | 0000 | 0000 | - 0001 | .0000 | 0000 | 0001 | 15 |
| 16 | 0000 | 0000 | 0000 | - 0002 | - 0006 | 0000 | 0006 | 16 |
| 17 | - 0003 | .0001 | 0000 | - 0045 | 0023 | 0000 | .0051 | 17 |
| 18 | - 0152 | 0046 | 0000 | - 1893 | .0333 | .0000 | 1922 | 18 |
| 19 | - 0390 | 0054 | 0000 | - 2712 | -.0747 | 0000 | 2812 | 19 |
| 20 | - 0457 | - 0091 | 0000 | - 1850 | - 1193 | 0000 | 2037 | 20 |
| 21 | - 0297 | -.0233 | 0000 | - 0695 | - 1483 | 0000 | .1620 | 21 |
| 22 | - 0011 | - 0015 | .0000 | - 0005 | - 0058 | 0000 | 0058 | 22 |
| 23 | -.0007 | -.0014 | 0000 | - 0002 | - 0048 | 0000 | 0048 | 23 |
| 24 | 0007 | - 0053 | 0000 | 0008 | - 0103 | 0000 | 0103 | 24 |
| 25 | .0020 | - 0023 | 0000 | 0018 | - 0056 | 0000 | 0059 | 25 |
| 26 | 0000 | .0001 | 0000 | 0000 | - 0030 | 0000 | .0030 | 26 |
| 27 | .0000 | 0000 | 0000 | .0000 | 0001 | 0000 | .0001 | 27 |
| 28 | 0000 | 0000 | 0000 | 0000 | - 0001 | 0000 | 0001 | 28 |
| 29 | -.0001 | 0000 | .0000 | - 0010 | - 0003 | 0000 | .0010 | 29 |
| 30 | - 0116 | .0023 | .0000 | - 1660 | 0576 | 0000 | 1757 | 30 |
| 31 | - 0214 | 0184 | 0000 | -.2501 | .0579 | 0000 | 2567 | 31 |
| 32 | - 0441 | 0175 | 0000 | - 2848 | - 1296 | 0000 | 3129 | 32 |
| 33 | - 0883 | - 0100 | 0000 | - 2615 | -.2277 | 0000 | 3467 | 33 |
| 34 | - 1027 | - 0300 | 0000 | -.2378 | -.2406 | 0000 | 3383 | 34 |
| 35 | - 0882 | -.0512 | .0000 | -.1883 | - 1439 | 0000 | 2479 | 35 |
| 36 | .0002 | - 0034 | 0000 | 0018 | - 0123 | 0000 | 0124 | 36 |
| 37 | .0017 | -.0102 | .0000 | 0011 | - 0188 | 0000 | 0188 | 37 |
| 38 | .0026 | -.0046 | 0000 | 0014 | - 0111 | 0000 | 0112 | 38 |
| 39 | 0000 | 0012 | 0000 | 0000 | - 0061 | 0000 | 0061 | 39 |
| 40 | 0000 | 0000 | 0000 | 0000 | 0001 | 0000 | 0001 | 40 |
| 41 | 0000 | 0000 | .0000 | .0001 | - 0001 | 0000 | .0002 | 41 |
| 42 | -.0116 | .0038 | .0000 | -.0662 | 0238 | 0000 | 0704 | 42 |
| 43 | - 0240 | 0051 | .0000 | - 1619 | 0953 | 0000 | 1879 | 43 |
| 44 | -.0241 | .0211 | 0000 | - 1558 | 0422 | 0000 | 1614 | 44 |
| 45 | - 0238 | 0248 | 0000 | - 1460 | - 1789 | 0000 | 2309 | 45 |
| 46 | - 0222 | - 0095 | 0000 | -.1225 | - 3047 | 0000 | 3285 | 46 |
| 47 | - 0207 | - 0321 | .0000 | - 1065 | - 3195 | 0000 | .3368 | 47 |
| 48 | - 0189 | - 0787 | 0000 | - 0880 | - 2965 | 0000 | 3093 | 48 |
| 49 | - 0039 | - 0699 | 0000 | - 0404 | - 2045 | 0000 | .2084 | 49 |
| 50 | .0007 | -.0274 | .0000 | - 0124 | - 0448 | 0000 | 0464 | 50 |
| 51 | .0003 | - 0050 | 0000 | - 0051 | - 0150 | 0000 | 0158 | 51 |
| 52 | 0000 | 0019 | 0000 | 0000 | - 0098 | 0000 | 0098 | 52 |
| 53 | - 0842 | 0214 | 0000 | - 2419 | 0887 | 0000 | 2577 | 53 |
| 54 | -.1118 | .0292 | .0000 | -.1876 | -.0942 | 0000 | 2099 | 54 |
| 55 | -.0989 | - 0258 | .0000 | -.1808 | - 2581 | 0000 | 3041 | 55 |
| 56 | - 0787 | - 0547 | 0000 | - 1328 | - 3110 | 0000 | 3382 | 56 |
| 57 | - 0251 | -.0818 | 0000 | - 1234 | - 3202 | 0000 | .3432 | 57 |
| 58 | - 0091 | -.0714 | 0000 | -.0537 | -.2235 | 0000 | 2299 | 58 |
| 59 | - 0049 | -.0291 | 0000 | -.0203 | - 0863 | 0000 | 0887 | 59 |
| 60 | -.0027 | -.0056 | .0000 | -.0051 | -.0513 | 0000 | .0516 | 60 |
| 61 | 0000 | .0022 | .0000 | 0000 | - 0453 | 0000 | .0453 | 61 |
| 62 | - 1038 | .0286 | 0000 | -.1351 | - 0131 | 0000 | 1357 | 62 |
| 63 | -.1027 | - 0277 | .0000 | - 1375 | - 1525 | 0000 | .2053 | 63 |
| 64 | - 1043 | - 0815 | 0000 | - 1394 | -.2056 | 0000 | .2484 | 64 |
| 65 | -.1036 | -.0941 | 0000 | - 1392 | - 2342 | 0000 | 2725 | 65 |
| 66 | - 0177 | - 0727 | 0000 | - 0516 | - 1583 | 0000 | 1665 | 66 |
| 67 | -.0103 | - 0297 | 0000 | - 0265 | - 1231 | 0000 | 1259 | 67 |
| 68 | - 0061 | -.0080 | 0000 | -.0082 | - 0128 | 0000 | 0153 | 68 |
| 69 | .0000 | .0022 | .0000 | 0000 | - 0055 | 0000 | .0055 | 69 |
| 70 | - 0964 | 0004 | 0000 | - 1155 | - 0474 | 0000 | 1248 | 70 |
| 71 | - 0959 | -.0278 | 0000 | - 1176 | - 1072 | 0000 | 1590 | 71 |
| 72 | -.0954 | - 0813 | 0000 | - 1197 | - 1575 | 0000 | 1978 | 72 |
| 73 | - 0969 | -.0940 | 0000 | - 1260 | - 1909 | 0000 | 2287 | 73 |
| 74 | - 1112 | - 2384 | 0000 | - 1397 | - 30[illegible] | 0000 | 3342 | 74 |
| 75 | -.0133 | -.0304 | .0000 | - 0310 | - 1338 | 0000 | 1373 | 75 |
| 76 | -.0087 | -.0080 | 0000 | - 0109 | - 0120 | 0000 | 0162 | 76 |
| 77 | 0000 | 0020 | 0000 | 0000 | - 0043 | 0000 | 0043 | 77 |
| 78 | -.0887 | - 0279 | 0000 | - 0993 | - 0680 | 0000 | 1203 | 78 |
| 79 | - 0884 | - 0614 | 0000 | -.1013 | - 1[illegible]19 | 0000 | 1509 | 79 |
| 80 | -.0870 | - 0833 | 0000 | - 1018 | - 1454 | 0000 | 1775 | 80 |
| 81 | -.0904 | -.2396 | 0000 | -.1062 | - 2786 | 0000 | 2981 | 81 |
| 82 | 1889 | - 2926 | 0000 | 1775 | - 3536 | 0000 | 3958 | 82 |
| 83 | 7295 | -.0472 | 0000 | .6942 | - 0725 | 0000 | 6980 | 83 |
| 84 | .0000 | 0887 | 0000 | 0000 | 0872 | 0000 | 0872 | 84 |
| 85 | -.0799 | -.0815 | 0000 | - 0844 | - 0791 | .0000 | .1157 | 85 |
| 86 | - 0802 | - 0931 | 0000 | - 0861 | 1132 | 0000 | 1422 | 86 |
| 87 | -.0787 | - 3575 | .0000 | -.0631 | - 3753 | 0000 | 3644 | 87 |
| 88 | - 0890 | - 5440 | 0000 | - 0731 | - 6001 | 0000 | 6045 | 88 |
| 89 | .5303 | - 1087 | 0000 | 5291 | - 1114 | 0000 | .5407 | 89 |
| 90 | 0000 | 2367 | 0000 | 0000 | 2336 | 0000 | 2338 | 90 |
| 91 | -.0449 | - 0930 | .0000 | - 0449 | - 0930 | 0000 | 1032 | 91 |
| 92 | - 0482 | - 3579 | 0000 | - 0482 | - 3579 | 0000 | 3612 | 92 |
| 93 | - 0482 | - 5459 | 0000 | - 0482 | - 5459 | 0000 | 5480 | 93 |
| 94 | 2342 | - 2409 | 0000 | 2342 | - 2409 | 0000 | 3360 | 94 |
| 95 | 0000 | 3721 | 0000 | 0000 | 3721 | 0000 | 3721 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | - 0120 |
| 2 | .0227 |
| 3 | .0[illegible]9 |
| 4 | 1758 |
| 5 | 2207 |
| 6 | 8966 |
| 7 | .2757 |
| 8 | - 0206 |
| 9 | - 0190 |
| TOTAL VALUES | |
| 1 | 4884 |
| 2 | 7819 |
| 3 | 1 4106 |
| 4 | 1 9235 |
| 5 | 2 2138 |
| 6 | 2 8570 |
| 7 | 1 6836 |

| | |
|---|---|
| 8 | 4382 |
| 9 | .3051 |

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 524 8 | 329 2 | 227 1 | 195 | 001 | 000 | 001 | 001 | - 001 | 002 | 1 |
| 2 | 521 2 | 331 5 | 224 3 | .182 | 000 | .007 | 007 | 009 | - 001 | 010 | 2 |
| 3 | 542.0 | 338 2 | 235.2 | .152 | 022 | - 021 | .045 | .031 | - 030 | 062 | 3 |
| 4 | .6 | 17 1 | 2 | 464 | 1.540 | - 444 | 2 184 | 2.016 | -.920 | 2 936 | 4 |
| 5 | 7 | 17 3 | 2 | 484 | 682 | 517 | 6 855 | 3.928 | -2 729 | 6 657 | 5 |
| 6 | .7 | 18 0 | 2 | .494 | - 663 | 2.428 | 5 732 | 4 138 | -2 374 | 8.511 | 6 |
| 7 | 7 | 18.4 | 2 | 493 | -1 194 | 3 321 | 3 269 | 3 850 | -1 724 | 5.574 | 7 |
| 8 | .6 | 17 0 | .2 | 494 | - 683 | 1 901 | - 882 | 1 970 | - 932 | 2 901 | 8 |
| 9 | 487 2 | 355 0 | 198 9 | 218 | - 001 | 131 | 002 | 131 | -001 | 133 | 9 |
| 10 | 480 4 | 370 8 | 194 0 | 238 | - 007 | 188 | 027 | 189 | - 008 | 197 | 10 |
| 11 | 478 2 | 371 3 | 192.8 | 240 | - 006 | 198 | - 062 | 203 | -.010 | 213 | 11 |
| 12 | 498.1 | 352 0 | 205 2 | 208 | 011 | 107 | - 038 | 111 | 007 | 103 | 12 |
| 13 | 433 7 | 254 9 | 193 5 | 120 | 000 | 001 | - 002 | 002 | 000 | 002 | 13 |
| 14 | 456.2 | 287 6 | 203.8 | 119 | 008 | - 003 | 014 | 008 | -.007 | 017 | 14 |
| 15 | 1 9 | 13 6 | 6 | .478 | 847 | - 928 | 2.400 | 1.452 | -1.533 | 2 985 | 15 |
| 16 | 6 8 | 16 8 | 3 1 | 407 | 2 241 | -1 333 | 3 444 | 2.938 | -2.027 | 4 963 | 16 |
| 17 | 1 0 | 16 7 | 3 | 490 | 971 | 506 | 3 703 | 2 605 | -1 128 | 3 732 | 17 |
| 18 | 8 | 17 2 | 2 | 494 | - 809 | 2.722 | 2 728 | 3.188 | -1 275 | 4.462 | 18 |
| 19 | 8 | 17 1 | .2 | 494 | -1.490 | 3.378 | 4 909 | 4 401 | -2.513 | 6 914 | 19 |
| 20 | 7 | 18.2 | .2 | 494 | -1 756 | 4 540 | 3 102 | 4 902 | -2 117 | 7 019 | 20 |
| 21 | 8 | 17 2 | 2 | 494 | -1 052 | 3 095 | 1 651 | 3 253 | -1 210 | 4 463 | 21 |
| 22 | 464 6 | 370 2 | 186 0 | 249 | - 002 | 267 | 037 | .268 | - 004 | 272 | 22 |
| 23 | 400 3 | 289 9 | 162.9 | 228 | - 008 | 234 | - 075 | 240 | -.014 | 253 | 23 |
| 24 | 405 6 | 277 0 | 169.9 | 193 | .020 | 127 | - 048 | 132 | 015 | 118 | 24 |
| 25 | 409 0 | 229 7 | 187 2 | 093 | - 001 | 000 | 001 | 000 | - 001 | 001 | 25 |
| 26 | 0 | 1 | 0 | 495 | 337 | - 401 | 964 | 576 | - 641 | 1 217 | 26 |
| 27 | .4 | 13 4 | 1 | 495 | 1 303 | -1 029 | 373 | 1 318 | -1 044 | 2.362 | 27 |
| 28 | 2 3 | 13 8 | .8 | 472 | 650 | -.387 | -1 199 | 928 | - 645 | 1 573 | 28 |
| 29 | 7 8 | 15 4 | 2 8 | 410 | 208 | 1 083 | - 481 | 1 144 | 148 | 998 | 29 |
| 30 | 5 | 15 2 | 2 | 494 | - 293 | 2 105 | -3.230 | 2.918 | -1 105 | 4 023 | 30 |
| 31 | 6 | 16 8 | 2 | 494 | - 497 | 2 598 | -4.159 | 3 643 | -1 541 | 5 184 | 31 |
| 32 | .6 | 15 5 | 2 | .494 | -1 124 | 3.191 | -4 489 | 4 146 | -2 080 | 6 226 | 32 |
| 33 | 7 | 17 9 | 2 | 494 | -1 348 | 5 079 | -2 248 | 5 270 | -1 539 | 6 809 | 33 |
| 34 | 9 | 17 2 | 3 | 491 | - 171 | 3.636 | - 030 | 3 637 | - 171 | 3 807 | 34 |
| 35 | 239 4 | 219 4 | 92 9 | 288 | - 047 | 497 | 098 | 501 | - 052 | 553 | 35 |
| 36 | 343 1 | 216 7 | 148 1 | .158 | - 023 | 139 | 037 | 141 | - 025 | 166 | 36 |
| 37 | 1 | 4 0 | 0 | 495 | - 022 | 823 | 8 217 | 4 531 | -3 729 | 8 260 | 37 |
| 38 | 1 | 4 0 | 0 | 495 | - 467 | 467 | 10 154 | 5 092 | -5 111 | 10 203 | 38 |
| 39 | 1 | 4 0 | 0 | 495 | - 288 | 1 040 | 6 883 | 3 879 | -3 107 | 6 987 | 39 |
| 40 | 1 | 4 0 | 0 | 495 | - 504 | 2 838 | 5 103 | 4 217 | -1 883 | 6 100 | 40 |
| 41 | 1 | 4 0 | 0 | 495 | - 298 | 4 209 | 3 792 | 4 901 | - 990 | 5 391 | 41 |
| 42 | 200 6 | 422 7 | 70 8 | 416 | - 675 | 3.693 | 1 816 | 4 067 | - 849 | 4 915 | 42 |
| 43 | 586 9 | 504 8 | 230 8 | 271 | - 338 | 2 959 | - 293 | 2 966 | - 344 | 3 310 | 43 |
| 44 | 721.8 | 642 1 | 281 8 | .281 | - 118 | 2 742 | 173 | 2 745 | - 121 | 2 866 | 44 |
| 45 | 651 0 | 559 0 | 256 1 | 271 | - 044 | 2 595 | 038 | 2 596 | - 044 | 2 640 | 45 |
| 46 | 1 | 4 0 | 0 | .495 | 164 | 084 | - 227 | 256 | 010 | 246 | 46 |
| 47 | 11 3 | 398 6 | 4.0 | 495 | - 097 | 124 | 912 | 483 | - 456 | 938 | 47 |
| 48 | 11.9 | 398 6 | 4 0 | 495 | - 321 | 342 | 2 097 | 1 110 | -1 090 | 2 199 | 48 |
| 49 | 11 9 | 398 6 | 4 0 | 495 | - 720 | 704 | 4 378 | 2 294 | -2 310 | 4 604 | 49 |
| 50 | 1 | 4 0 | 0 | 495 | - 694 | 504 | 2 616 | 1 386 | -1 516 | 2 903 | 50 |
| 51 | 1231 7 | 733 0 | 546 2 | 127 | - 259 | 2 768 | 156 | 2 770 | - 261 | 3 031 | 51 |
| 52 | 1885 4 | 1018 8 | 884 3 | 066 | - 179 | 2 703 | - 373 | 2 715 | - 191 | 2 906 | 52 |
| 53 | 894.3 | 585 1 | 380 7 | 175 | - 078 | 075 | 044 | 078 | - 082 | 160 | 53 |
| 54 | 151 2 | 418 2 | 52 6 | 427 | 024 | - 001 | 064 | 046 | - 023 | 069 | 54 |
| 55 | 526.7 | 487 2 | 205.6 | 280 | 024 | 012 | 048 | 045 | - 006 | 051 | 55 |
| 56 | 517 2 | 465 5 | 201 4 | 284 | .054 | - 002 | 142 | 107 | - 050 | 153 | 56 |
| 57 | 1 | 4 0 | 0 | 495 | - 463 | 8 321 | 5 169 | 9 025 | -1 167 | 10 193 | 57 |
| 58 | 1 | 4 0 | .0 | 495 | 803 | 10 969 | 4 023 | 11 303 | 1 137 | 12 441 | 58 |
| 59 | 2080 3 | 1040 2 | 1040 2 | 000 | - 209 | 2 687 | - 550 | 2 713 | - 235 | 2 948 | 59 |
| 60 | 828 7 | 518 4 | 359 2 | 154 | - 117 | 071 | 081 | 076 | - 121 | 197 | 60 |
| 61 | 842.9 | 521 0 | 387.2 | 148 | 021 | - 009 | 174 | 094 | - 022 | 175 | 61 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | 114.9 | 411.8 | 39 5 | 452 | 026 | 002 | 183 | 112 | - 063 | 195 | 62 |
| 63 | 538 9 | 488.6 | 210 0 | .276 | .052 | - 027 | - 108 | 079 | - 055 | 133 | 63 |
| 64 | 310.7 | 436.4 | 113.4 | .370 | 102 | 045 | 158 | .158 | - 010 | 168 | 64 |
| 65 | 1 | 4.0 | .0 | 495 | -2 410 | 14.511 | -11.812 | 16.368 | -4 288 | 20 636 | 65 |
| 66 | 1 | 4 0 | 0 | 495 | -3.308 | 17 568 | -47 347 | 33 003 | -18 742 | 51 745 | 66 |
| 67 | 1 | 4 0 | 0 | 495 | 4 274 | - 286 | -36 151 | 20 209 | -16 230 | 36 439 | 67 |
| 68 | 114.8 | 411 8 | 39.5 | .452 | 019 | .006 | 033 | .030 | - 006 | 035 | 68 |
| 69 | 353.3 | 442.2 | 130 6 | .352 | 007 | -.007 | 048 | .025 | - 025 | 050 | 69 |
| 70 | .1 | 4.0 | .0 | .495 | 005 | 5.881 | 1 533 | 5 988 | - 083 | 6 082 | 70 |
| 71 | 1 | 4 0 | 0 | 495 | -1 809 | 19 756 | 13 283 | 21 816 | -3 889 | 25 685 | 71 |
| 72 | 1 | 4 0 | 0 | .495 | -7.173 | 18 952 | 18.018 | 18.945 | -10 166 | 30 111 | 72 |
| 73 | 1 | 4.0 | .0 | 495 | 7.850 | -4.241 | 6.966 | 8.791 | -5 172 | 13.983 | 73 |
| 74 | .1 | 4.0 | .0 | .495 | .009 | -.013 | -2.743 | 1 389 | -1 373 | 2.743 | 74 |
| 75 | 884 1 | 567 1 | 379 2 | 166 | - 002 | 016 | 120 | 068 | - 053 | 121 | 75 |
| 76 | 888.2 | 595.6 | 363.6 | .135 | -.048 | 115 | - 124 | 136 | - 069 | 205 | 76 |
| 77 | .1 | 4.0 | .0 | .495 | -5 510 | 6 701 | 9 135 | 8 220 | -7 029 | 15 250 | 77 |
| 78 | .1 | 4 0 | 0 | 495 | 4.778 | - 216 | 8.819 | 7.348 | -2 786 | 10.135 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .243 | .480 | .003 | 480 | .243 | 118 | .757 | 1 974 | .078 | 1 |
| 2 | 250 | 521 | 016 | 522 | 249 | 136 | 3 420 | 2 093 | 080 | 2 |
| 3 | .344 | 382 | 107 | 471 | .254 | 109 | 40 030 | 1 854 | 071 | 3 |
| 4 | 361 | 532 | .004 | 533 | 380 | 086 | 1 446 | 1 477 | 1.720 | 4 |
| 5 | .374 | .553 | 014 | 554 | 373 | 090 | 4 345 | 1 485 | 1.810 | 5 |
| 6 | 466 | 659 | 012 | 660 | 466 | 097 | 3 881 | 1 417 | 1 943 | 6 |
| 7 | 530 | .729 | 007 | 729 | .529 | 100 | 2 140 | 1 378 | 2.000 | 7 |
| 8 | - .340 | .532 | - 002 | .532 | .340 | 096 | -.507 | 1 562 | 1.914 | 8 |
| 9 | 335 | 1.057 | .003 | 1.057 | .335 | 361 | 264 | 3 160 | 216 | 9 |
| 10 | 409 | 1 370 | 053 | 1 373 | 406 | 483 | 3 163 | 3 381 | 268 | 10 |
| 11 | 433 | 1.421 | - 120 | 1 436 | .419 | 508 | -6.828 | 3.428 | .278 | 11 |
| 12 | 366 | 932 | -.078 | 943 | 355 | 294 | -7 744 | 2.656 | 172 | 12 |
| 13 | .137 | .275 | - 003 | .275 | 137 | 069 | -1.402 | 2 002 | .052 | 13 |
| 14 | 158 | 259 | 028 | 286 | 151 | 057 | 14 589 | 1 781 | 043 | 14 |
| 15 | 085 | 162 | .010 | 163 | .085 | 039 | 7 404 | 1 914 | 778 | 15 |
| 16 | .283 | .274 | 020 | .288 | .246 | 021 | 34 445 | 1 172 | 423 | 16 |
| 17 | 315 | 401 | 008 | .402 | .314 | 044 | 5 151 | 1 279 | 876 | 17 |
| 18 | 379 | 482 | 006 | 482 | 378 | 052 | 3 236 | 1 274 | 1 038 | 18 |
| 19 | 371 | 480 | 010 | 481 | .370 | .055 | 5.361 | 1 299 | 1.107 | 19 |
| 20 | 528 | .646 | .008 | 648 | .528 | 059 | 3.878 | 1 224 | 1.182 | 20 |
| 21 | 400 | .508 | .003 | .508 | 400 | 054 | 1.844 | 1.270 | 1.079 | 21 |
| 22 | 420 | 1 540 | 070 | 1 544 | 416 | 564 | 3 581 | 3 711 | 310 | 22 |
| 23 | .287 | 1.186 | -.122 | 1.205 | .280 | 462 | -7 681 | 4 297 | 293 | 23 |
| 24 | 274 | .708 | - 083 | 722 | 259 | 231 | -10.521 | 2 790 | 151 | 24 |
| 25 | 042 | .080 | 001 | 080 | .042 | 024 | 1.610 | 2.141 | 021 | 25 |
| 26 | 004 | - 001 | 003 | 006 | - 002 | 004 | 64 087 | -2 688 | -1 000 | 26 |
| 27 | 078 | .001 | 013 | .079 | - 001 | 040 | 80 288 | -54 181 | -1 000 | 27 |
| 28 | 057 | .051 | - 038 | .092 | .017 | 038 | -47 221 | 5 525 | .754 | 28 |
| 29 | .172 | .193 | - 023 | 208 | 157 | 025 | -33 103 | 1 322 | 506 | 29 |
| 30 | 209 | 314 | - 009 | 314 | 208 | 053 | -4 858 | 1 510 | 1 081 | 30 |
| 31 | 261 | 354 | - 014 | 356 | .259 | 049 | -8.439 | 1 376 | 973 | 31 |
| 32 | 262 | .353 | - 018 | 356 | .249 | 054 | -10.039 | 1 432 | 1 074 | 32 |
| 33 | .536 | 640 | - 012 | 641 | 535 | 053 | -6.569 | 1 199 | 1.083 | 33 |
| 34 | 496 | 585 | 016 | 588 | 496 | 048 | 9 881 | 1 186 | 921 | 34 |
| 35 | .419 | 1.656 | -.021 | 1.666 | .419 | 624 | -.971 | 3.979 | .342 | 35 |
| 36 | .091 | .371 | -.024 | .373 | .089 | 142 | -4.918 | 4 202 | 115 | 36 |
| 37 | 051 | .095 | - 064 | 140 | .005 | 068 | -35 538 | 29 332 | 10 531 | 37 |
| 38 | 006 | 062 | 033 | 089 | - 011 | 040 | 27 779 | -6 074 | -1 000 | 38 |
| 39 | .087 | .290 | .085 | .324 | .024 | 150 | 19.682 | 13.780 | 4.743 | 39 |
| 40 | 050 | .338 | 018 | 340 | 049 | 145 | 3 572 | 6.940 | 2.208 | 40 |
| 41 | .027 | .321 | 016 | 322 | 026 | 148 | 3.071 | 12 211 | 4 167 | 41 |
| 42 | - 419 | .362 | .141 | 387 | -.443 | 415 | 3.811 | - 873 | -1.000 | 42 |
| 43 | -.149 | 1.171 | - 557 | 1 374 | -.352 | 863 | -20.083 | -3.900 | -1.000 | 43 |
| 44 | .202 | 1 058 | .134 | 1 079 | 182 | 448 | 8.705 | 5 934 | 1 834 | 44 |
| 45 | - 024 | .453 | 057 | 460 | -.040 | 250 | 6.538 | -11 484 | -1.000 | 45 |
| 46 | - 080 | -.032 | 084 | 031 | -.143 | 087 | 38 949 | - 218 | -1.000 | 46 |
| 47 | 086 | .231 | 154 | .329 | - 012 | 170 | 32.426 | -27 582 | -1 000 | 47 |
| 48 | - 020 | 320 | 149 | 376 | - 076 | 226 | 20 599 | -4 963 | -1 000 | 48 |
| 49 | - 125 | 099 | 040 | 108 | - 132 | 119 | 9.936 | - 807 | -1.000 | 49 |
| 50 | .080 | .398 | -.076 | .414 | .044 | 185 | -12 185 | 9 425 | 3 132 | 50 |
| 51 | - 780 | .922 | - 446 | 1 032 | - 890 | 981 | -13.824 | -1 160 | -1.000 | 51 |
| 52 | - 731 | 849 | 047 | 850 | - 732 | 841 | 1 601 | -1 298 | -1 000 | 52 |
| 53 | - 446 | 353 | 109 | .367 | - 461 | 414 | 7.603 | - 797 | -1 000 | 53 |
| 54 | 171 | 089 | 098 | 236 | 024 | 106 | 56.325 | 9 709 | 3 237 | 54 |
| 55 | .384 | 144 | .134 | 419 | .079 | 170 | 64.127 | 5 321 | 1.806 | 55 |
| 56 | 550 | 089 | 319 | 713 | - 074 | 393 | 62 939 | -9 587 | -1 000 | 56 |
| 57 | 487 | 608 | -.118 | 674 | .401 | 136 | -29 280 | 1 678 | .252 | 57 |
| 58 | .342 | .478 | - 061 | 501 | 319 | 091 | -20.927 | 1 572 | 212 | 58 |
| 59 | -1 168 | 1 030 | -.233 | 1.054 | -1.192 | 1 123 | -5 978 | - 884 | -1.000 | 59 |
| 60 | - 730 | 240 | .117 | 254 | - 744 | 499 | 6 776 | - 341 | -1 000 | 60 |
| 61 | .027 | .083 | -.006 | 084 | .026 | 029 | -5.700 | 3.230 | 829 | 61 |
| 62 | .283 | .075 | .177 | 370 | -.032 | 201 | 59 014 | -11 625 | -1 000 | 62 |
| 63 | 4.8 | - 052 | -.207 | .496 | - 131 | 313 | -69 280 | -3 801 | -1.000 | 63 |
| 64 | 739 | 666 | 114 | 822 | 582 | 120 | 53 821 | 1 412 | 153 | 64 |
| 65 | 540 | 577 | 000 | 577 | .540 | 019 | 398 | 1.069 | 025 | 65 |
| 66 | 577 | 611 | - 019 | .619 | .569 | 025 | -24.145 | 1 089 | .033 | 66 |
| 67 | .200 | 275 | - 014 | 278 | 197 | 040 | -10 406 | 1 411 | 153 | 67 |
| 68 | 127 | 103 | 032 | 149 | 080 | 035 | 55 279 | 1 861 | 320 | 68 |
| 69 | .095 | - 022 | .105 | 159 | - 086 | 122 | 59 215 | -1 849 | -1 000 | 69 |
| 70 | .335 | 357 | - 040 | .388 | 305 | 041 | -37.137 | 1 270 | .100 | 70 |
| 71 | 724 | .758 | 006 | .759 | .723 | 018 | 9.011 | 1 050 | 018 | 71 |
| 72 | 397 | 433 | 007 | 435 | 396 | 019 | 10 813 | 1 098 | 037 | 72 |
| 73 | .233 | 258 | 004 | 258 | .232 | 013 | 9 108 | 1 112 | 042 | 73 |
| 74 | .008 | .017 | 001 | 017 | 008 | 004 | 6 430 | 2 055 | 392 | 74 |
| 75 | 030 | .184 | 463 | 587 | -.353 | 480 | 40.179 | -1 605 | -1 000 | 75 |
| 76 | - 177 | 1 027 | - 450 | 1 176 | - 327 | 752 | -18 375 | -3 600 | -1 000 | 76 |
| 77 | 060 | 086 | 004 | 087 | 059 | 014 | 7 619 | 1 465 | .174 | 77 |
| 78 | 201 | .214 | 004 | 215 | 200 | 007 | 14.186 | 1 074 | 028 | 78 |

```
SSTIPN   1 LAYER OF GEOTEXTILE, P=4000 PPI, E=5%, EXTENDED, T=1000

TOTAL NUMBER OF NODES------------------ 95
NUMBER OF BAR ELEMENTS---- ------------ 11
NUMBER OF DIFF  BAR MATERIALS----------  1
NUMBER OF BEAM ELEMENTS----------------  0
NUMBER OF DIFF  BEAM MATERIALS---------  0
NUMBER OF NODAL LINKS -----------------  0
NUMBER OF INTERFACE ELEMENTS-----------  0
NO  OF INTERFACE ELE  IN PREEXIST  PART  0
NUMBER OF INTERFACE ELE  IN FOUNDATION-  0
NUMBER OF INTERFACE MATERIALS-------- -  0
TOTAL NUMBER OF SOIL ELEMENTS---------- 78
NUMBER OF DIFF  SOIL MATERIALS---------  3
NUMBER OF ELEMENTS IN FOUNDATION------- 36
NUMBER OF NODES IN FOUNDATION---------- 52
NUMBER OF PREEXISTING ELEMENTS---------  0
NUMBER OF PREEXISTING NODES------------  0
NUMBER OF CONSTRUCTION LAYERS----------  6
NUMBER OF LOAD CASES-------------------  2

CALING FACTOR ----------       1 00000

ATMOSPHERIC PRESSURE ---       1 05300

UNIT WEIGHT OF WATER ---        03120


OMPUTATION SEQUENCE FOR A TOTAL OF     8  INCREMENTS
----------------------------------------------------

 INCREMENT NO   1       APPLY LOAD CASE   1

 INCREMENT NO   2       PUT ON LAYER NO   1

 INCREMENT NO   3       PUT ON LAYER NO   2

 INCREMENT NO   4       PUT ON LAYER NO   3

 INCREMENT NO   5       PUT ON LAYER NO   4

 INCREMENT NO   6       PUT ON LAYER NO   5

 INCREMENT NO   7       PUT ON LAYER NO   6

 INCREMENT NO   8       APPLY LOAD CASE   2
```

NODAL POINT INPUT DATA

| NODE NUMBER | NODAL POINT COORDINATES X-ORD | Y-ORD | B C CODE X | Y | ZZ |
|---|---|---|---|---|---|
| 1 | .000 | .000 | 1 | 1 | 1 |
| 2 | 10.000 | .000 | 1 | 1 | 1 |
| 3 | 20.000 | .000 | 1 | 1 | 1 |
| 4 | 30.000 | .000 | 1 | 1 | 1 |
| 5 | 38.000 | .000 | 1 | 1 | 1 |
| 6 | 42.000 | .000 | 1 | 1 | 1 |
| 7 | 50.000 | .000 | 1 | 1 | 1 |
| 8 | 54.000 | .000 | 1 | 1 | 1 |
| 9 | 58.000 | .000 | 1 | 1 | 1 |
| 10 | 66.000 | .000 | 1 | 1 | 1 |
| 11 | 74.000 | .000 | 1 | 1 | 1 |
| 12 | 82.000 | .000 | 1 | 1 | 1 |
| 13 | 90.000 | .000 | 1 | 1 | 1 |
| 14 | .000 | 4.000 | 1 | 0 | 1 |
| 15 | 10.000 | 4.000 | 0 | 0 | 0 |
| 16 | 20.000 | 4.000 | 0 | 0 | 0 |
| 17 | 30.000 | 4.000 | 0 | 0 | 0 |
| 18 | 38.000 | 4.000 | 0 | 0 | 0 |
| 19 | 42.000 | 4.000 | 0 | 0 | 0 |
| 20 | 50.000 | 4.000 | 0 | 0 | 0 |
| 21 | 54.000 | 4.000 | 0 | 0 | 0 |
| 22 | 58.000 | 4.000 | 0 | 0 | 0 |
| 23 | 66.000 | 4.000 | 0 | 0 | 0 |
| 24 | 74.000 | 4.000 | 0 | 0 | 0 |
| 25 | 82.000 | 4.000 | 0 | 0 | 0 |
| 26 | 90.000 | 4.000 | 1 | 0 | 1 |
| 27 | .000 | 7.000 | 1 | 0 | 1 |
| 28 | 10.000 | 7.000 | 0 | 0 | 0 |
| 29 | 20.000 | 7.000 | 0 | 0 | 0 |
| 30 | 30.000 | 7.000 | 0 | 0 | 0 |
| 31 | 38.000 | 7.000 | 0 | 0 | 0 |
| 32 | 42.000 | 7.000 | 0 | 0 | 0 |
| 33 | 50.000 | 7.000 | 0 | 0 | 0 |
| 34 | 54.000 | 7.000 | 0 | 0 | 0 |
| 35 | 58.000 | 7.000 | 0 | 0 | 0 |
| 36 | 66.000 | 7.000 | 0 | 0 | 0 |
| 37 | 74.000 | 7.000 | 0 | 0 | 0 |
| 38 | 82.000 | 7.000 | 0 | 0 | 0 |
| 39 | 90.000 | 7.000 | 1 | 0 | 1 |
| 40 | .000 | 10.000 | 1 | 0 | 1 |
| 41 | 10.000 | 10.000 | 0 | 0 | 0 |
| 42 | 20.000 | 10.000 | 0 | 0 | 0 |
| 43 | 30.000 | 10.000 | 0 | 0 | 0 |
| 44 | 38.000 | 10.000 | 0 | 0 | 0 |
| 45 | 42.000 | 10.000 | 0 | 0 | 0 |
| 46 | 50.000 | 10.000 | 0 | 0 | 0 |
| 47 | 54.000 | 10.000 | 0 | 0 | 0 |
| 48 | 58.000 | 10.000 | 0 | 0 | 0 |
| 49 | 66.000 | 10.000 | 0 | 0 | 0 |
| 50 | 74.000 | 10.000 | 0 | 0 | 0 |
| 51 | 82.000 | 10.000 | 0 | 0 | 0 |
| 52 | 90.000 | 10.000 | 1 | 0 | 1 |
| 53 | 38.000 | 11.500 | 0 | 0 | 0 |
| 54 | 42.000 | 11.500 | 0 | 0 | 0 |
| 55 | 50.000 | 11.500 | 0 | 0 | 0 |
| 56 | 54.000 | 11.500 | 0 | 0 | 0 |
| 57 | 58.000 | 11.500 | 0 | 0 | 0 |
| 58 | 66.000 | 11.500 | 0 | 0 | 0 |
| 59 | 74.000 | 11.500 | 0 | 0 | 0 |
| 60 | 82.000 | 11.500 | 0 | 0 | 0 |
| 61 | 90.000 | 11.500 | 1 | 0 | 1 |
| 62 | 42.000 | 13.000 | 0 | 0 | 0 |
| 63 | 50.000 | 13.000 | 0 | 0 | 0 |
| 64 | 54.000 | 13.000 | 0 | 0 | 0 |
| 65 | 58.000 | 13.000 | 0 | 0 | 0 |
| 66 | 66.000 | 13.000 | 0 | 0 | 0 |
| 67 | 74.000 | 13.000 | 0 | 0 | 0 |
| 68 | 82.000 | 13.000 | 0 | 0 | 0 |
| 69 | 90.000 | 13.000 | 1 | 0 | 1 |
| 70 | 46.000 | 14.000 | 0 | 0 | 0 |
| 71 | 50.000 | 14.000 | 0 | 0 | 0 |
| 72 | 54.000 | 14.000 | 0 | 0 | 0 |
| 73 | 58.000 | 14.000 | 0 | 0 | 0 |
| 74 | 66.000 | 14.000 | 0 | 0 | 0 |
| 75 | 74.000 | 14.000 | 0 | 0 | 0 |
| 76 | 82.000 | 14.000 | 0 | 0 | 0 |
| 77 | 90.000 | 14.000 | 1 | 0 | 1 |
| 78 | 50.000 | 15.000 | 0 | 0 | 0 |
| 79 | 54.000 | 15.000 | 0 | 0 | 0 |
| 80 | 58.000 | 15.000 | 0 | 0 | 0 |
| 81 | 66.000 | 15.000 | 0 | 0 | 0 |
| 82 | 74.000 | 15.000 | 0 | 0 | 0 |
| 83 | 82.000 | 15.000 | 0 | 0 | 0 |
| 84 | 90.000 | 15.000 | 1 | 0 | 1 |
| 85 | 54.000 | 16.000 | 0 | 0 | 0 |
| 86 | 58.000 | 16.000 | 0 | 0 | 0 |
| 87 | 66.000 | 16.000 | 0 | 0 | 0 |
| 88 | 74.000 | 16.000 | 0 | 0 | 0 |
| 89 | 82.000 | 16.000 | 0 | 0 | 0 |
| 90 | 90.000 | 16.000 | 1 | 0 | 1 |
| 91 | 58.000 | 17.000 | 0 | 0 | 0 |
| 92 | 66.000 | 17.000 | 0 | 0 | 0 |
| 93 | 74.000 | 17.000 | 0 | 0 | 0 |
| 94 | 82.000 | 17.000 | 0 | 0 | 0 |
| 95 | 90.000 | 17.000 | 1 | 0 | 1 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS-------

| MATERIAL NUMBER | E | AREA | WEIGHT/LENGTH |
|---|---|---|---|
| 1 | 480 | 1.00 | 0. |

| ELMT NO | CONNECTED NODES I | J | MATL NO. |
|---|---|---|---|
| 1 | 41 | 42 | 1 |
| 2 | 42 | 43 | 1 |
| 3 | 43 | 44 | 1 |
| 4 | 44 | 45 | 1 |
| 5 | 45 | 46 | 1 |
| 6 | 46 | 47 | 1 |
| 7 | 47 | 48 | 1 |
| 8 | 48 | 49 | 1 |
| 9 | 49 | 50 | 1 |
| 10 | 50 | 51 | 1 |
| 11 | 51 | 52 | 1 |

SOIL MATERIAL PROPERTY DATA

| MATL | UNIT WT | YOUNG'S MODULUS CONSTANT | YOUNG'S MODULUS EXPONENT | RATIO | BULK MODULUS CONSTANT | BULK MODULUS EXPONENT | STRENGTH PARAMETERS C | PHI | DPHI | KO |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0680 | 8000 00 | .500 | 500 | 1500 00 | 600 | 00 | 35.00 | 00 | .50 |
| 2 | .0530 | 40 00 | 300 | 900 | 20 00 | 200 | 05 | 00 | 00 | 50 |
| 3 | 0800 | 1000 00 | 400 | 700 | 500.00 | 500 | .50 | 40.00 | 00 | 50 |

FOUR NODES SOLID ELEMENT DATA

| ELET NO | CONNECTED NODES I | J | K | L | MATL NO | ELEMENT CENTER COORDINATES X-ORD | Y-ORD |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 15 | 14 | 3 | 5 000 | 2 000 |
| 2 | 2 | 3 | 16 | 15 | 3 | 15.000 | 2 000 |
| 3 | 3 | 4 | 17 | 16 | 3 | 25.000 | 2 000 |
| 4 | 4 | 5 | 18 | 17 | 2 | 33.000 | 2.000 |
| 5 | 5 | 6 | 19 | 18 | 2 | 39 000 | 2 000 |
| 6 | 6 | 7 | 20 | 19 | 2 | 46.000 | 2.000 |
| 7 | 7 | 8 | 21 | 20 | 2 | 52.000 | 2.000 |
| 8 | 8 | 9 | 22 | 21 | 2 | 56.000 | 2 000 |
| 9 | 9 | 10 | 23 | 22 | 3 | 62.000 | 2 000 |
| 10 | 10 | 11 | 24 | 23 | 3 | 70.000 | 2.000 |
| 11 | 11 | 12 | 25 | 24 | 3 | 78.000 | 2.000 |
| 12 | 12 | 13 | 26 | 25 | 3 | 86.000 | 2.000 |
| 13 | 14 | 15 | 28 | 27 | 3 | 5 000 | 5 500 |
| 14 | 15 | 16 | 29 | 28 | 3 | 15 000 | 5 500 |
| 15 | 16 | 17 | 30 | 29 | 2 | 25.000 | 5 500 |
| 16 | 17 | 18 | 31 | 30 | 2 | 33.000 | 5.500 |
| 17 | 18 | 19 | 32 | 31 | 2 | 39.000 | 5.500 |
| 18 | 19 | 20 | 33 | 32 | 2 | 46.000 | 5.500 |
| 19 | 20 | 21 | 34 | 33 | 2 | 52.000 | 5.500 |
| 20 | 21 | 22 | 35 | 34 | 2 | 56.000 | 5.500 |
| 21 | 22 | 23 | 36 | 35 | 2 | 62.000 | 5 500 |
| 22 | 23 | 24 | 37 | 36 | 3 | 70.000 | 5.500 |
| 23 | 24 | 25 | 38 | 37 | 3 | 78 000 | 5 500 |
| 24 | 25 | 26 | 39 | 38 | 3 | 86 000 | 5 500 |
| 25 | 27 | 28 | 41 | 40 | 3 | 5.000 | 8 500 |
| 26 | 28 | 29 | 42 | 41 | 2 | 15 000 | 8.500 |
| 27 | 29 | 30 | 43 | 42 | 2 | 25 000 | 8 500 |
| 28 | 30 | 31 | 44 | 43 | 2 | 33.000 | 8.500 |
| 29 | 31 | 32 | 45 | 44 | 2 | 39.000 | 8 500 |
| 30 | 32 | 33 | 46 | 45 | 2 | 46.000 | 8 500 |
| 31 | 33 | 34 | 47 | 46 | 2 | 52 000 | 8 500 |
| 32 | 34 | 35 | 48 | 47 | 2 | 56 000 | 8.500 |
| 33 | 35 | 36 | 49 | 48 | 2 | 62 000 | 8.500 |
| 34 | 36 | 37 | 50 | 49 | 2 | 70.000 | 8.500 |
| 35 | 37 | 38 | 51 | 50 | 3 | 78 000 | 8 500 |
| 36 | 38 | 39 | 52 | 51 | 3 | 86.000 | 8.500 |
| 37 | 43 | 44 | 53 | 53 | 1 | 34.500 | 10.750 |
| 38 | 44 | 45 | 54 | 53 | 1 | 39 000 | 10.750 |
| 39 | 45 | 46 | 55 | 54 | 1 | 46 000 | 10 750 |
| 40 | 46 | 47 | 56 | 55 | 1 | 52.000 | 10.750 |
| 41 | 47 | 48 | 57 | 56 | 1 | 56 000 | 10 750 |
| 42 | 48 | 49 | 58 | 57 | 1 | 62.000 | 10.750 |
| 43 | 49 | 50 | 59 | 58 | 1 | 70.000 | 10 750 |
| 44 | 50 | 51 | 60 | 59 | 1 | 78.000 | 10.750 |
| 45 | 51 | 52 | 61 | 60 | 1 | 86.000 | 10 750 |
| 46 | 53 | 54 | 62 | 62 | 1 | 40.500 | 12 250 |
| 47 | 54 | 55 | 63 | 62 | 1 | 46 000 | 12 250 |
| 48 | 55 | 56 | 64 | 63 | 1 | 52.000 | 12 250 |
| 49 | 56 | 57 | 65 | 64 | 1 | 56.000 | 12 250 |
| 50 | 57 | 58 | 66 | 65 | 1 | 62.000 | 12 250 |
| 51 | 58 | 59 | 67 | 66 | 1 | 70 000 | 12 250 |
| 52 | 59 | 60 | 68 | 67 | 1 | 78 000 | 12 250 |
| 53 | 60 | 61 | 69 | 68 | 1 | 86.000 | 12.250 |
| 54 | 62 | 63 | 71 | 70 | 1 | 47 000 | 13.500 |
| 55 | 63 | 64 | 72 | 71 | 1 | 52 000 | 13 500 |
| 56 | 64 | 65 | 73 | 72 | 1 | 56 000 | 13 500 |
| 57 | 65 | 66 | 74 | 73 | 1 | 62 000 | 13 500 |
| 58 | 66 | 67 | 75 | 74 | 1 | 70 000 | 13 500 |
| 59 | 67 | 68 | 76 | 75 | 1 | 78 000 | 13.500 |
| 60 | 68 | 69 | 77 | 76 | 1 | 86 000 | 13 500 |
| 61 | 70 | 71 | 78 | 78 | 1 | 49 000 | 14 500 |
| 62 | 71 | 72 | 79 | 78 | 1 | 52.000 | 14 500 |
| 63 | 72 | 73 | 80 | 79 | 1 | 56 000 | 14 500 |
| 64 | 73 | 74 | 81 | 80 | 1 | 62 000 | 14 500 |
| 65 | 74 | 75 | 82 | 81 | 1 | 70 000 | 14 500 |
| 66 | 75 | 76 | 83 | 82 | 1 | 78 000 | 14 500 |
| 67 | 76 | 77 | 84 | 83 | 1 | 86 000 | 14 500 |
| 68 | 78 | 79 | 85 | 85 | 1 | 53.000 | 15 500 |
| 69 | 79 | 80 | 86 | 85 | 1 | 56 000 | 15.500 |
| 70 | 80 | 81 | 87 | 86 | 1 | 62 000 | 15.500 |
| 71 | 81 | 82 | 88 | 87 | 1 | 70 000 | 15 500 |
| 72 | 82 | 83 | 89 | 88 | 1 | 78.000 | 15 500 |
| 73 | 83 | 84 | 90 | 89 | 1 | 86.000 | 15 500 |
| 74 | 85 | 86 | 91 | 91 | 1 | 57 000 | 16 500 |
| 75 | 86 | 87 | 92 | 91 | 1 | 62 000 | 16 500 |
| 76 | 87 | 88 | 93 | 92 | 1 | 70 000 | 16 500 |
| 77 | 88 | 89 | 94 | 93 | 1 | 78 000 | 16.500 |
| 78 | 89 | 90 | 95 | 94 | 1 | 86 000 | 16 500 |

SSTIPN 1 LAYER OF GEOTEXTILE, P=4000 PPI, E=5%, EXTENDED, T=1000

```
******************************************************
******************************************************
*                                                    *
*  LOAD CASE ----------------------------    2       *
*                                                    *
******************************************************
******************************************************
```

LARGEST ELE NO IN THIS INCREMENT 78

LARGEST N P NO IN THIS INCREMENT 95

BAND WIDTH---------------------- 40

TOTAL NUMBER OF EQUATIONS--------- 222

NUMBER OF EQUATIONS IN BLOCK------ 84

NUMBER OF BLOCKS---------------- 3

NUMBER OF N.P FORCE CARDS-------- 3

NUMBER OF PRESSURE CARDS---------- 0

NODAL POINT FORCES (WEIGHTS OF ADDED ELEMENTS)

| NP | X-FORCE | Y-FORCE |
|---|---|---|
| 1 | 0 | 0 |
| 2 | 0 | 0 |
| 3 | 0 | 0 |
| 4 | 0 | 0 |
| 5 | 0 | 0 |
| 6 | 0 | 0 |
| 7 | 0 | 0 |
| 8 | 0 | 0 |
| 9 | 0 | 0 |
| 10 | 0 | 0 |
| 11 | 0 | 0 |
| 12 | 0 | 0 |
| 13 | 0 | 0 |
| 14 | 0 | 0 |
| 15 | 0 | 0 |
| 16 | 0 | 0 |
| 17 | 0 | 0 |
| 18 | 0 | 0 |
| 19 | 0 | 0 |
| 20 | 0 | 0 |
| 21 | 0 | 0 |
| 22 | 0 | 0 |
| 23 | 0 | 0 |
| 24 | 0 | 0 |
| 25 | 0 | 0 |
| 26 | 0 | 0 |
| 27 | 0 | 0 |
| 28 | 0 | 0 |
| 29 | 0 | 0 |
| 30 | 0 | 0 |
| 31 | 0 | 0 |
| 32 | 0 | 0 |
| 33 | 0 | 0 |
| 34 | 0 | 0 |
| 35 | 0 | 0 |
| 36 | 0 | 0 |
| 37 | 0 | 0 |
| 38 | 0 | 0 |
| 39 | 0 | 0 |
| 40 | 0 | 0 |
| 41 | 0 | 0 |
| 42 | 0 | 0 |
| 43 | 0 | 0 |
| 44 | 0 | 0 |
| 45 | 0 | 0 |
| 46 | 0 | 0 |
| 47 | 0 | 0 |
| 48 | 0 | 0 |
| 49 | 0 | 0 |
| 50 | 0 | 0 |
| 51 | 0 | 0 |
| 52 | 0 | 0 |
| 53 | 0 | 0 |
| 54 | 0 | 0 |
| 55 | 0 | 0 |
| 56 | 0 | 0 |
| 57 | 0 | 0 |
| 58 | 0 | 0 |
| 59 | 0 | 0 |
| 60 | 0 | 0 |
| 61 | 0 | 0 |
| 62 | 0 | 0 |

| | | |
|---|---|---|
| 63 | 0 | 0 |
| 64 | 0 | 0 |
| 65 | 0 | 0 |
| 66 | 0 | 0 |
| 67 | 0 | 0 |
| 68 | 0 | 0 |
| 69 | 0 | 0 |
| 70 | 0 | 0 |
| 71 | 0 | 0 |
| 72 | 0 | 0 |
| 73 | 0 | 0 |
| 74 | 0. | 0 |
| 75 | 0 | 0. |
| 76 | 0 | 0 |
| 77 | 0 | 0 |
| 78 | 0. | 0. |
| 79 | 0. | 0. |
| 80 | 0 | 0 |
| 81 | 0 | 0 |
| 82 | 0 | 0 |
| 83 | 0 | 0 |
| 84 | 0 | 0 |
| 85 | 0 | 0 |
| 86 | 0 | 0 |
| 87 | 0 | 0 |
| 88 | 0 | 0 |
| 89 | 0 | 0 |
| 90 | 0 | 0. |
| 91 | 0 | 0 |
| 92 | 0 | -4 50 |
| 93 | 0 | -4 50 |
| 94 | 0. | -2.00 |
| 95 | 0 | 0 |

LOAD CASE : 2 ITERATION : 2

| NP | DELTA-X | DELTA-Y | DELTA-ZZ | X-DISP | Y-DISP | ZZ-ROTAT | TOTAL | NP |
|---|---|---|---|---|---|---|---|---|
| 1 | 0000 | .0000 | 0000 | 0000 | 0000 | 0000 | .0000 | 1 |
| 2 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 2 |
| 3 | 0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 0000 | 3 |
| 4 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 4 |
| 5 | .0000 | .0000 | .0000 | 0000 | .0000 | .0000 | .0000 | 5 |
| 6 | .0000 | 0000 | .0000 | 0000 | 0000 | .0000 | 0000 | 6 |
| 7 | 0000 | .0000 | 0000 | .0000 | .0000 | 0000 | 0000 | 7 |
| 8 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 8 |
| 9 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 9 |
| 10 | 0000 | 0000 | 0000 | 0000 | .0000 | 0000 | 0000 | 10 |
| 11 | 0000 | .0000 | .0000 | .0000 | 0000 | .0000 | 0000 | 11 |
| 12 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 12 |
| 13 | 0000 | 0000 | 0000 | 0000 | 0000 | .0000 | 0000 | 13 |
| 14 | 0000 | - 0001 | 0000 | 0000 | - 0013 | 0000 | 0013 | 14 |
| 15 | - 0001 | 0001 | .0000 | - 0007 | 0007 | 0000 | 0010 | 15 |
| 16 | 0000 | 0000 | 0000 | - 0003 | - 0005 | 0000 | 0006 | 16 |
| 17 | 0000 | .0000 | 0000 | -.0041 | .0020 | .0000 | 0046 | 17 |
| 18 | - 0003 | 0017 | 0000 | - 1553 | 0088 | 0000 | 1555 | 18 |
| 19 | - 0074 | 0053 | .0000 | -.2106 | - 0894 | 0000 | 2218 | 19 |
| 20 | - 0185 | 0027 | 0000 | - 1259 | - 1043 | 0000 | 1635 | 20 |
| 21 | - 0174 | - 0060 | 0000 | - 0504 | - 1281 | 0000 | 1380 | 21 |
| 22 | - 0004 | 0002 | 0000 | 0005 | - 0041 | 0000 | 0041 | 22 |
| 23 | - 0009 | - 0027 | 0000 | 0001 | - 0057 | 0000 | 0057 | 23 |
| 24 | 0013 | - 0057 | 0000 | 0020 | - 0108 | 0000 | 0110 | 24 |
| 25 | 0024 | - 0020 | 0000 | 0027 | - 0055 | 0000 | 0061 | 25 |
| 26 | 0000 | 0008 | 0000 | 0000 | - 0025 | 0000 | 0025 | 26 |
| 27 | 0000 | - 0003 | 0000 | 0000 | - 0023 | 0000 | 0023 | 27 |
| 28 | - 0003 | 0001 | 0000 | - 0025 | 0013 | 0000 | 0029 | 28 |
| 29 | 0000 | 0000 | 0000 | 0005 | - 0006 | 0000 | 0008 | 29 |
| 30 | - 0008 | - 0004 | 0000 | - 1048 | 0463 | 0000 | 1145 | 30 |
| 31 | - 0036 | 0045 | 0000 | - 1759 | 0183 | 0000 | 1768 | 31 |
| 32 | - 0196 | 0155 | 0000 | - 2221 | - 1188 | 0000 | 2519 | 32 |
| 33 | - 0582 | 0119 | 0000 | - 2043 | - 1396 | 0000 | 2457 | 33 |
| 34 | - 0832 | 0051 | 0000 | - 1888 | - 2020 | 0000 | 2765 | 34 |
| 35 | - 0968 | - 0277 | 0000 | - 1482 | - 1517 | 0000 | 2121 | 35 |
| 36 | - 0019 | - 0072 | 0000 | 0011 | - 0150 | 0000 | 0151 | 36 |
| 37 | 0030 | - 0108 | 0000 | 0037 | - 0196 | 0000 | 0192 | 37 |
| 38 | 0030 | - 0037 | 0000 | 0030 | - 0105 | 0000 | 0109 | 38 |
| 39 | 0000 | 0022 | 0000 | 0000 | - 0039 | 0000 | 0039 | 39 |
| 40 | 0000 | - 0003 | 0000 | 0000 | - 0030 | 0000 | 0030 | 40 |
| 41 | - 0013 | 0003 | 0000 | - 0108 | 0026 | 0000 | 0111 | 41 |
| 42 | - 0050 | 0009 | 0000 | - 0339 | 0090 | 0000 | 0350 | 42 |
| 43 | - 0088 | -.0007 | 0000 | - 0584 | 0775 | 0000 | 0958 | 43 |
| 44 | - 0101 | 0073 | 0000 | - 0818 | 0049 | 0000 | 0820 | 44 |
| 45 | - 0124 | 0239 | 0000 | - 0676 | - 1584 | 0000 | 1722 | 45 |
| 46 | - 0148 | 0210 | 0000 | - 0638 | - 2654 | 0000 | 2729 | 46 |
| 47 | - 0153 | 0133 | 0000 | - 0561 | - 2695 | 0000 | 2753 | 47 |
| 48 | - 0156 | - 0216 | 0000 | - 0468 | - 2239 | 0000 | 2287 | 48 |
| 49 | 0025 | - 1136 | 0000 | - 0108 | - 2326 | 0000 | 2329 | 49 |
| 50 | 0052 | - 0261 | 0000 | 0020 | - 0453 | 0000 | 0454 | 50 |
| 51 | - 0004 | - 0025 | 0000 | - 0018 | - 0114 | 0000 | 0115 | 51 |
| 52 | 0000 | 0030 | 0000 | 0000 | - 0072 | 0000 | 0072 | 52 |
| 53 | - 0121 | 0075 | 0000 | - 0467 | 0478 | 0000 | 0668 | 53 |
| 54 | - 0121 | 0242 | 0000 | - 0412 | - 0858 | 0000 | 0950 | 54 |
| 55 | - 0139 | 0212 | 0000 | - 0430 | - 1914 | 0000 | 1961 | 55 |
| 56 | - 0126 | 0131 | 0000 | - 0406 | - 2317 | 0000 | 2352 | 56 |
| 57 | 0066 | - 0211 | 0000 | - 0675 | - 2371 | 0000 | 2465 | 57 |
| 58 | - 0079 | - 1152 | 0000 | - 0301 | - 2590 | 0000 | 2608 | 58 |
| 59 | - 0053 | - 0278 | 0000 | 0484 | - 0924 | 0000 | 1034 | 59 |
| 60 | - 0029 | - 0029 | 0000 | - 0040 | - 0108 | 0000 | 0115 | 60 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 61 | 0000 | 0033 | 0000 | 0000 | - 0052 | 0000 | 0052 | 61 |
| 62 | - 0118 | 0241 | 0000 | - 0281 | - 0336 | 0000 | 0438 | 62 |
| 63 | -.0116 | .0219 | 0000 | - 0307 | -.0926 | 0000 | 0975 | 63 |
| 64 | -.0147 | .0119 | 0000 | - 0357 | - 1152 | 0000 | 1206 | 64 |
| 65 | -.0239 | - 0220 | 0000 | -.0468 | - 1429 | 0000 | 1504 | 65 |
| 66 | - 0281 | - 1192 | 0000 | - 0519 | - 1946 | 0000 | 2014 | 66 |
| 67 | -.0121 | -.0278 | .0000 | - 0246 | -.1203 | 0000 | 1228 | 67 |
| 68 | - 0064 | -.0034 | .0000 | -.0079 | - 0099 | 0000 | 0127 | 68 |
| 69 | .0000 | .0033 | 0000 | 0000 | - 0030 | 0000 | .0030 | 69 |
| 70 | -.0114 | 0229 | 0000 | - 0202 | - 0275 | 0000 | 0341 | 70 |
| 71 | - 0101 | 0222 | .0000 | - 0216 | -.0508 | 0000 | .0550 | 71 |
| 72 | - 0095 | 0118 | .0000 | - 0240 | - 0722 | 0000 | 0761 | 72 |
| 73 | - 0149 | - 0135 | 0000 | - 0324 | - 1022 | .0000 | 1072 | 73 |
| 74 | - 0173 | - 1253 | 0000 | - 0373 | - 1812 | 0000 | 1850 | 74 |
| 75 | - 0151 | - 0282 | 0000 | -.0271 | -.1307 | 0000 | 1335 | 75 |
| 76 | - 0080 | -.0035 | .0000 | - 0107 | -.0091 | 0000 | 0141 | 76 |
| 77 | 0000 | 0032 | 0000 | 0000 | - 0016 | 0000 | 0016 | 77 |
| 78 | - 0077 | 0221 | 0000 | - 0126 | - 0189 | 0000 | 0211 | 78 |
| 79 | - 0039 | 0115 | .0000 | -.0115 | -.0352 | 0000 | 0370 | 79 |
| 80 | - 0029 | -.0181 | 0000 | - 0133 | - 0855 | 0000 | 0868 | 80 |
| 81 | -.0038 | -.1282 | 0000 | - 0160 | - 1622 | 0000 | 1630 | 81 |
| 82 | 0279 | - 1890 | 0000 | 0189 | - 2498 | 0000 | 2505 | 82 |
| 83 | 5207 | - 0766 | 0000 | 5188 | -.0811 | .0000 | .5251 | 83 |
| 84 | .0000 | 0865 | 0000 | 0000 | 0832 | 0000 | 0832 | 84 |
| 85 | 0010 | 0104 | 0000 | - 0023 | -.0054 | 0000 | .0058 | 85 |
| 86 | 0097 | - 0163 | 0000 | 005' | - 0333 | 0000 | 0237 | 86 |
| 87 | 0081 | -.1327 | 0000 | 0037 | - 1468 | 0000 | 1466 | 87 |
| 88 | 0048 | - 3670 | .0000 | -.0009 | -.3727 | 0000 | .3727 | 88 |
| 89 | .4235 | - 1554 | 0000 | .3955 | -.1790 | 0000 | 4341 | 89 |
| 90 | 0000 | 2133 | 0000 | 0000 | 1937 | 0000 | 1937 | 90 |
| 91 | 0203 | - 0158 | .0000 | 0203 | - 0158 | 0000 | .0258 | 91 |
| 92 | .0325 | - 1335 | .0000 | 0325 | -.1335 | 0000 | .1374 | 92 |
| 93 | 0369 | -.3676 | 0000 | 0369 | - 3676 | .0000 | 3694 | 93 |
| 94 | 2424 | - 2771 | 0000 | 2424 | -.2771 | 0000 | 3682 | 94 |
| 95 | 0000 | .2359 | .0000 | 0000 | .3359 | 0000 | 3359 | 95 |

STRUCTURAL ELEMENTS - LINEAR ELASTIC

BAR ELEMENTS--INTERNAL MEMBER FORCES

| ELEMENT NO. | AXIAL FORCE |
|---|---|
| INCREMENTAL VALUES | |
| 1 | - 1779 |
| 2 | - 1779 |
| 3 | - 1072 |
| 4 | - 1813 |
| 5 | - 1356 |
| 6 | -.0802 |
| 7 | -.0359 |
| 8 | 1 0846 |
| 9 | 1600 |
| 10 | - 3344 |
| 11 | 0250 |
| TOTAL VALUES | |
| 1 | -1 1070 |
| 2 | -1 0808 |
| 3 | - 4370 |
| 4 | - 4568 |
| 5 | 2272 |
| 6 | 9180 |
| 7 | 1 1233 |
| 8 | 2.1718 |
| 9 | 7563 |
| 10 | -.2285 |
| 11 | 1079 |

FOUR NODE SOLID ELEMENTS - MODULI AND STRAINS (STRAINS IN PERCENT)

| ELE | ELAS MOD | BULK MOD | SHEAR MOD | POIS | EPS-X | EPS-Y | GAM-XY | EPS-1 | EPS-3 | GAMMAX | ELE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 541 7 | 343 8 | 233 4 | 161 | 004 | 007 | - 001 | 007 | 004 | 004 | 1 |
| 2 | 494 0 | 313 2 | 215 4 | 156 | - 002 | -.002 | 018 | 007 | - 011 | 018 | 2 |
| 3 | 536 5 | 335 0 | 232 7 | 153 | 019 | - 019 | 042 | 029 | - 029 | 057 | 3 |
| 4 | 7 | 17 3 | 2 | 494 | 1 280 | - 135 | 1 936 | 1 755 | - 631 | 2 386 | 4 |
| 5 | 7 | 17 4 | 2 | 494 | 461 | 758 | 5 225 | 3 226 | -2 007 | 5 233 | 5 |
| 6 | 7 | 18 0 | 2 | 494 | -.530 | 2 172 | 4 424 | 3.413 | -1 771 | 5 183 | 6 |
| 7 | 7 | 18 4 | 2 | 493 | - 939 | 2 881 | 2 481 | 3.248 | -1.306 | 4 554 | 7 |
| 8 | 6 | 17 1 | .2 | 494 | - 640 | 1 628 | - 898 | 1 713 | - 726 | 2 439 | 8 |
| 9 | 474 6 | 343 0 | 195 3 | 215 | 002 | 123 | 004 | 123 | 002 | 121 | 9 |
| 10 | 476.0 | 383 9 | 192.7 | 235 | - 012 | 207 | 006 | 207 | - 012 | 219 | 10 |
| 11 | 477 5 | 374 4 | 192 0 | 244 | - 005 | 203 | - 093 | 213 | - 014 | 227 | 11 |
| 12 | 512 3 | 385 8 | 211 5 | 211 | 017 | 100 | -.053 | 107 | 007 | 098 | 12 |
| 13 | 538 1 | 319 9 | 238 8 | 127 | 016 | 006 | 002 | 016 | 006 | 011 | 13 |
| 14 | 371 7 | 222 1 | 164 5 | 130 | - 017 | - 009 | 033 | 004 | - 030 | 034 | 14 |
| 15 | 1 8 | 13 5 | 5 | 480 | 545 | -.735 | 1 417 | 860 | -1 050 | 1 910 | 15 |
| 16 | 9 3 | 17 1 | 3.3 | 403 | 1 852 | - 897 | 2 198 | 2 238 | -1 282 | 3 520 | 16 |
| 17 | 1 2 | 16 9 | 4 | 488 | 847 | 663 | 2 330 | 1 923 | - 413 | 2 337 | 17 |
| 18 | 6 | 17 2 | .2 | 494 | - 641 | 2 411 | 2 223 | 2 773 | -1 003 | 3 776 | 18 |
| 19 | .6 | 17 1 | 2 | 494 | -1 133 | 2 854 | 3.910 | 3 652 | -1 932 | 5 584 | 19 |
| 20 | 7 | 18 2 | 2 | 494 | -1 147 | 3 725 | 2 624 | 4 055 | -1 478 | 5 534 | 20 |
| 21 | 6 | 17 2 | 2 | 494 | - 931 | 2 615 | 1 616 | 2 790 | -1 106 | 3 897 | 21 |
| 22 | 461.0 | 360 2 | 185 5 | 242 | - 026 | 301 | 013 | .301 | - 029 | 329 | 22 |
| 23 | 410.6 | 311 8 | 168 5 | 233 | 000 | .230 | - 123 | 245 | - 015 | 260 | 23 |
| 24 | 457 2 | 311 4 | 191 8 | 192 | 036 | 107 | - 063 | 119 | 024 | 095 | 24 |
| 25 | 329 7 | 214 2 | 140 7 | 172 | 067 | - 010 | 091 | 088 | - 031 | 119 | 25 |
| 26 | 0 | 1 | 0 | .495 | 100 | - 181 | 689 | 331 | - 413 | 744 | 26 |
| 27 | 0 | 1 | 0 | 195 | 639 | -.879 | - 811 | 754 | -.794 | 1 548 | 27 |
| 28 | 1 3 | 13 5 | 4 | 484 | 638 | - 287 | -1 870 | 1 218 | - 874 | 2.090 | 28 |
| 29 | 1 5 | 14 6 | 5 | 483 | 433 | 883 | -1 974 | 1 670 | - 355 | 2 025 | 29 |
| 30 | 8 | 15 2 | 2 | 494 | - 135 | 1 756 | -3 744 | 2.907 | -1 287 | 4 194 | 30 |
| 31 | 8 | 15 9 | 2 | 494 | - 290 | 2 220 | -4 472 | 3 529 | -1 599 | 5 128 | 31 |
| 32 | 8 | 16 6 | 2 | 494 | - 624 | 2.327 | -5 100 | 3 799 | -2 095 | 5 892 | 32 |
| 33 | 7 | 17 7 | 2 | 494 | -1 160 | 4 829 | -2 295 | 5 042 | -1 372 | 6 414 | 33 |
| 34 | 9 | 17 0 | 3 | 491 | - 085 | 4.057 | - 918 | 4 107 | - 145 | 4.252 | 34 |
| 35 | 309.2 | 271 3 | 121 1 | 277 | 029 | 445 | - 181 | 460 | .014 | 446 | 35 |
| 36 | 340 0 | 216 1 | 146 4 | 161 | .007 | 069 | 012 | 070 | 007 | 063 | 36 |
| 37 | 422 6 | 461 2 | 159 7 | 323 | 094 | - 031 | - 061 | 101 | - 038 | 139 | 37 |
| 38 | 11 9 | 398 6 | 4 0 | 495 | 003 | 000 | 1 345 | 674 | - 671 | 1 345 | 38 |
| 39 | 318.3 | 437 2 | 115 8 | 364 | - 008 | 053 | 235 | 144 | - 099 | 243 | 39 |
| 40 | 146 7 | 415 8 | 51 0 | 439 | - 120 | 863 | - 047 | 864 | - 120 | 984 | 40 |
| 41 | 1 | 4 0 | 0 | 495 | 228 | 2 776 | 297 | 2 785 | 220 | 2 565 | 41 |
| 42 | 180 5 | 419 6 | 63 4 | 425 | - 442 | 3 467 | 1 987 | 3 723 | - 679 | 4 402 | 42 |
| 43 | 677 9 | 557 1 | 265 2 | 278 | - 543 | 2 204 | -2 804 | 3.870 | -1 010 | 4 880 | 43 |
| 44 | 632 5 | 550 3 | 248 1 | 275 | .342 | 1 721 | -2 084 | 2 231 | - 218 | 2 499 | 44 |
| 45 | 939 5 | 647 1 | 392 5 | 197 | - 034 | 066 | 019 | 067 | - 035 | 102 | 45 |
| 46 | 1 | 4 0 | 0 | 495 | - 070 | 009 | 834 | 388 | - 450 | 837 | 46 |
| 47 | 181 1 | 413 8 | 63.6 | 424 | 028 | - 013 | 196 | 108 | - 093 | 200 | 47 |
| 48 | 259 4 | 429 7 | 93.2 | 392 | 028 | 042 | 274 | 172 | - 102 | 274 | 48 |
| 49 | 11 9 | 398 6 | 4 0 | 495 | - 178 | 110 | 1 907 | 930 | - 998 | 1 929 | 49 |
| 50 | 1 | 4 0 | 0 | 495 | 101 | 228 | 2.453 | 1.592 | -1 263 | 2 856 | 50 |
| 51 | 815.6 | 642 5 | 327 5 | 245 | -.223 | 2 783 | 013 | 2 783 | - 223 | 3 006 | 51 |
| 52 | 2080 4 | 1078 3 | 1006 4 | 033 | - 162 | 2 662 | - 386 | 2 675 | - 175 | 2 850 | 52 |
| 53 | 770 8 | 549 3 | 318 5 | 210 | - 074 | 070 | 055 | 075 | - 079 | 154 | 53 |
| 54 | 208 0 | 423 2 | 73 6 | 413 | 027 | - 013 | 033 | 033 | - 019 | 052 | 54 |
| 55 | 559.7 | 477 6 | 220 5 | .269 | .072 | - 001 | - 027 | 074 | - 004 | 078 | 55 |
| 56 | 634 1 | 552 4 | 248 7 | 275 | 221 | - 112 | 127 | 233 | - 124 | 357 | 56 |
| 57 | 82 6 | 408 0 | 28 2 | 485 | 058 | 205 | 245 | 274 | - 011 | 285 | 57 |
| 58 | 1 | 4 0 | 0 | 495 | - 210 | 2.945 | - 927 | 3.012 | -.276 | 3 288 | 58 |
| 59 | 2274.6 | 1137 3 | 1137.3 | 000 | - 183 | 2 659 | - 729 | 2.705 | - 229 | 2 934 | 59 |
| 60 | 946 3 | 559 6 | 421.0 | 124 | - 115 | 066 | .057 | 070 | - 119 | 189 | 60 |
| 61 | .1 | 4 0 | 0 | 495 | 007 | - 016 | - 104 | 048 | - 058 | 106 | 61 |
| 62 | 383 8 | 443 6 | 134 9 | 348 | -.008 | 007 | -.093 | 047 | - 047 | 094 | 62 |
| 63 | 523 9 | 486 8 | 204.5 | 281 | 101 | - 051 | - 081 | 111 | - 061 | 173 | 63 |
| 64 | 865 0 | 539 3 | 375.5 | 152 | 039 | 090 | 058 | 104 | 026 | 078 | 64 |
| 65 | 1 | 4 0 | 0 | 495 | - 255 | 9 507 | -2 684 | 9 626 | - 433 | 10 119 | 65 |
| 66 | 1 | 4 0 | 0 | 495 | -3.195 | 13.048 | -29 897 | 21 939 | -12 085 | 34 024 | 66 |
| 67 | 1 | 4 0 | 0 | 495 | 3 177 | - 452 | -27 539 | 15 251 | -12 526 | 27 777 | 67 |
| 68 | 245 1 | 427 9 | 87 7 | 394 | - 072 | 100 | - 199 | 146 | - 117 | 263 | 68 |
| 69 | 383 2 | 446 3 | 143 0 | 340 | - 096 | - 039 | - 151 | 013 | - 148 | 162 | 69 |
| 70 | 373 0 | 444 9 | 138.8 | 344 | 018 | 140 | 139 | .171 | - 013 | 185 | 70 |
| 71 | 1 | 4 0 | 0 | 495 | - 174 | 9 149 | 2 338 | 9 293 | - 318 | 9 611 | 71 |
| 72 | 1 | 4 0 | 0 | 495 | -5.577 | 13 919 | 5 466 | 14 297 | -5 956 | 20 253 | 72 |
| 73 | 1 | 4 0 | 0 | 495 | 5 718 | - 446 | 2 843 | 6 030 | - 758 | 6 788 | 73 |
| 74 | 1 | 4 0 | 0 | .495 | - 216 | - 045 | - 398 | 086 | - 347 | 433 | 74 |
| 75 | 1082 0 | 605 7 | 481 7 | 102 | - 073 | 018 | - 240 | 100 | - 157 | 256 | 75 |
| 76 | 1587 4 | 627 1 | 773 7 | 032 | 000 | 065 | 150 | 114 | - 049 | 164 | 76 |
| 77 | 1 | 4 0 | 0 | 495 | -3 939 | 6 112 | 5 858 | 5 904 | -4 730 | 11 634 | 77 |
| 78 | 1 | 4 0 | 0 | 495 | 4 199 | - 046 | 3 217 | 4 740 | - 587 | 5 327 | 78 |

FOUR NODE SOLID ELEMENTS - STRESSES

| ELE | SIG-X | SIG-Y | TAU-XY | SIG-1 | SIG-3 | TAU-MAX | THETA | SIG1/SIG3 | LEVEL | ELE |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 268 | 526 | - 001 | 526 | 268 | 129 | - 264 | 1 961 | 083 | 1 |
| 2 | 226 | 466 | 040 | 473 | 219 | 127 | 5 274 | 2 156 | 086 | 2 |
| 3 | 332 | 387 | 161 | 464 | 255 | 105 | 37 440 | 1 822 | 084 | 3 |
| 4 | 364 | 539 | 004 | 539 | 364 | 087 | 1 275 | 1 479 | 1 744 | 4 |
| 5 | 377 | 558 | 011 | 558 | 376 | 091 | 3 389 | 1 484 | 1 822 | 5 |
| 6 | 446 | 637 | 009 | 637 | 445 | 096 | 2 838 | 1 431 | 1 920 | 6 |
| 7 | 457 | 693 | 006 | 693 | 457 | 038 | 1 627 | 1 335 | 1 365 | 7 |
| 8 | 333 | 522 | - 002 | 522 | 333 | 095 | - 520 | 1 569 | 1 893 | 8 |
| 9 | 340 | 1 001 | 004 | 1 001 | 340 | 331 | 330 | 2 942 | 196 | 9 |
| 10 | 408 | 1 455 | 010 | 1 455 | 408 | 524 | 520 | 3 569 | 290 | 10 |
| 11 | 453 | 1 457 | - 161 | 1 488 | 421 | 533 | -9 891 | 3 533 | 291 | 11 |
| 12 | 392 | 909 | - 111 | 932 | 370 | 281 | -11 629 | 2 522 | 182 | 12 |
| 13 | 221 | 312 | 005 | 312 | 221 | 046 | 3 339 | 1 412 | 031 | 13 |
| 14 | 060 | 223 | 058 | 242 | 042 | 100 | 17 820 | 5 816 | 087 | 14 |
| 15 | 069 | 150 | 005 | 150 | 069 | 041 | 3 736 | 2 180 | 812 | 15 |
| 16 | 255 | 294 | 015 | 299 | 250 | 025 | 19 198 | 1 198 | 495 | 16 |
| 17 | 319 | 406 | 006 | 406 | 319 | 044 | 4 117 | 1 275 | 875 | 17 |
| 18 | 355 | 456 | 005 | 456 | 355 | 051 | 2 696 | 1 286 | 1 015 | 18 |
| 19 | 345 | 449 | 008 | 450 | 344 | 053 | 4 442 | 1 309 | 1 062 | 19 |
| 20 | 494 | 604 | 007 | 605 | 493 | 056 | 3 407 | 1 226 | 1 113 | 20 |
| 21 | 340 | 445 | 003 | 445 | 340 | 053 | 1 631 | 1 310 | 1 055 | 21 |
| 22 | 333 | 1 671 | 023 | 1 672 | 332 | 670 | 981 | 5 033 | 401 | 22 |
| 23 | 344 | 1 225 | - 207 | 1 271 | 298 | 486 | -12 565 | 4 264 | 302 | 23 |
| 24 | 342 | 657 | - 121 | 698 | 301 | 199 | -18 774 | 2 321 | 123 | 24 |
| 25 | 300 | 090 | 152 | 380 | 010 | 185 | 62 341 | 26 430 | 169 | 25 |
| 26 | 000 | 000 | 000 | 000 | 000 | 000 | 56 112 | 832 | -1 000 | 26 |
| 27 | 021 | - 004 | - 012 | 028 | - 009 | 018 | -67 947 | -2 774 | -1 000 | 27 |
| 28 | 063 | 047 | - 040 | 096 | 015 | 041 | -50 625 | 6 569 | 611 | 28 |
| 29 | 147 | 228 | - 007 | 228 | 147 | 041 | -5 211 | 1 557 | 617 | 29 |
| 30 | 184 | 276 | - 011 | 279 | 182 | 048 | -6 736 | 1 530 | 967 | 30 |
| 31 | 234 | 326 | - 015 | 328 | 231 | 048 | -8 950 | 1 419 | 969 | 31 |
| 32 | 198 | 292 | - 021 | 297 | 193 | 052 | -11 887 | 1 534 | 1 033 | 32 |
| 33 | 529 | 630 | - 015 | 632 | 527 | 052 | -8 201 | 1 199 | 1 048 | 33 |
| 34 | 578 | 676 | - 006 | 676 | 578 | 049 | -3 398 | 1 171 | 985 | 34 |
| 35 | 615 | 1 741 | - 196 | 1 774 | 581 | 597 | -9 687 | 3 053 | 202 | 35 |
| 36 | 062 | 278 | 016 | 280 | 060 | 110 | 4 754 | 4 653 | 093 | 36 |
| 37 | 541 | 108 | - 129 | 576 | 073 | 252 | -74 634 | 7 873 | 2 557 | 37 |
| 38 | 034 | 070 | 100 | 154 | - 050 | 102 | 39 814 | -3 087 | -1 000 | 38 |
| 39 | 167 | 297 | 120 | 368 | 096 | 136 | 30 767 | 3 844 | 1 057 | 39 |
| 40 | - 008 | 205 | 025 | 208 | - 011 | 109 | 6 654 | -19 257 | -1 000 | 40 |
| 41 | 026 | 254 | 040 | 261 | 019 | 121 | 9 608 | 13 574 | 4 674 | 41 |
| 42 | 041 | 443 | 419 | 707 | - 223 | 465 | 32 175 | -3 167 | -1 000 | 42 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 43 | 112 | 1 324 | -1 259 | 2 115 | - 679 | 1 397 | -32 151 | -3 113 | -1 000 | 43 |
| 44 | 434 | 936 | 456 | 1 208 | 165 | 521 | 30 550 | 7 331 | 2 353 | 44 |
| 45 | - 110 | .416 | 063 | 424 | - 117 | 270 | 6 767 | -3 611 | -1 000 | 45 |
| 46 | 010 | 023 | 003 | 024 | 009 | 007 | 14 064 | 2 546 | 575 | 46 |
| 47 | 125 | 105 | 117 | .232 | - 003 | 117 | 47 437 | -78 965 | -1 000 | 47 |
| 48 | 331 | 461 | 361 | 763 | 029 | 367 | 39 898 | 26 421 | 9 450 | 48 |
| 49 | -.255 | - 172 | - 053 | - 146 | - 281 | 066 | -25 353 | 518 | -1 000 | 49 |
| 50 | 112 | 402 | - 061 | 414 | 100 | 157 | -11 497 | 4 144 | 1 169 | 50 |
| 51 | - 631 | 1 277 | - 858 | 1 606 | - 960 | 1 283 | -20 979 | -1 673 | -1 000 | 51 |
| 52 | -1 036 | 775 | 424 | 869 | -1 131 | 1 000 | 12 550 | - 769 | -1 000 | 52 |
| 53 | - 396 | 339 | 161 | 372 | - 430 | 401 | 11 815 | - 667 | -1 000 | 53 |
| 54 | 157 | 033 | 078 | 195 | - 005 | 100 | 64 314 | -40 229 | -1 000 | 54 |
| 55 | 587 | 176 | - 048 | .593 | 170 | 212 | -83 402 | 3 489 | 925 | 55 |
| 56 | 1 537 | - 276 | 311 | 1 588 | - 328 | 958 | 80 542 | -4 846 | -1 000 | 56 |
| 57 | 1 071 | 1 211 | - 042 | 1 223 | 1 059 | 082 | -15 672 | 1 154 | 057 | 57 |
| 58 | 097 | 208 | - 057 | 232 | 072 | 080 | -22 861 | 3 212 | 822 | 58 |
| 59 | -1 676 | .887 | - 271 | .916 | -1 704 | 1 310 | -5 980 | - 537 | -1 000 | 59 |
| 60 | - 850 | 259 | 213 | 298 | - 889 | 594 | 10 486 | - 336 | -1 000 | 60 |
| 61 | 111 | 056 | 071 | 160 | 008 | 076 | 55 593 | 20 525 | 7 258 | 61 |
| 62 | 066 | 011 | - 078 | 122 | - 044 | 083 | -54 762 | -2 743 | -1 000 | 62 |
| 63 | 730 | - 116 | - 132 | 750 | - 136 | 443 | 81 356 | -5 528 | -1 000 | 63 |
| 64 | 559 | 929 | 186 | 1 007 | 482 | 283 | 22 585 | 2 091 | 405 | 64 |
| 65 | 436 | 510 | - 017 | 514 | 432 | .041 | -12 574 | 1 169 | 070 | 65 |
| 66 | 403 | 433 | - 012 | 437 | 399 | 019 | -19 258 | 1 096 | 036 | 66 |
| 67 | 215 | 326 | - 006 | 327 | 215 | 056 | -2 967 | 1 522 | 194 | 67 |
| 68 | 003 | 271 | - 156 | 343 | - 069 | 206 | -24 678 | -4 973 | -1 000 | 68 |
| 69 | - 611 | - 518 | - 186 | - 372 | - 757 | 192 | -38 011 | 492 | -1 000 | 69 |
| 70 | 829 | 921 | 175 | 1 002 | 547 | 227 | 25 050 | 1 832 | 309 | 70 |
| 71 | 427 | 476 | - 009 | 477 | 426 | 026 | -10 269 | 1 121 | 045 | 71 |
| 72 | 342 | 374 | 002 | 374 | 342 | 016 | 3 829 | 1 096 | 036 | 72 |
| 73 | 230 | 242 | 001 | .242 | 230 | 006 | 5 311 | 1 054 | 020 | 73 |
| 74 | - 002 | .007 | 002 | 007 | - 002 | 005 | 11 890 | -2 956 | -1 000 | 74 |
| 75 | - 759 | 119 | -1 158 | .918 | -1 559 | 1 238 | -34 623 | - 589 | -1 000 | 75 |
| 76 | 053 | 1 073 | 1 164 | 1 834 | - 708 | 1 271 | 33 178 | -2 591 | -1 000 | 76 |
| 77 | 100 | .125 | 002 | 125 | 099 | 013 | 5 286 | 1 256 | 095 | 77 |
| 78 | 184 | 198 | 001 | 198 | 184 | 007 | 5 334 | 1 075 | 028 | 78 |