UNIVERSIDAD AUTONOMA DE NUEVO LEON

FACULTAD DE INGENIERIA MECANICA
Y ELECTRICA
DIVISION DE ESTUDIOS DE POSTGRADO

ANALISIS Y REDISEÑO DE UNA PRENSA PARA LA FABRICACION DE TORTILLAS POR EL METODO DEL ELEMENTO FINITO

T E S I S

EN OPCION AL GRADO DE MAESTRO EN CIENCIAS DE LA INGENIERIA MECANICA CON ESPECIALIDAD EN DISEÑO

QUE PRESENTA:

ING. JUAN ANTONIO MARTINEZ MOYA

SAN NICOLAS DE LOS GARZA, N. L.
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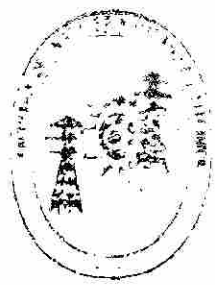

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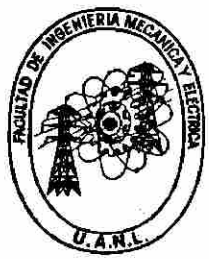

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DEDICATORIA

Dedico ésta tesis a mis padres, Hermenegildo y Guadalupe por guiarme por el camino de la verdad y la honradez, por respetar a los demás, por enseñarme que el estudio es muy importante para sobresalir en la vida.

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Hago un reconocimiento al Ing. Ezequiel Montemayor por motivarme a comenzar la maestría.

Al Ing. Alberto de la Vega ✝ *QEPD,* por impulsar todo lo referente a la capacitación del personal que labora en la empresa que presto mis servicios, y por haberme apoyado para seguir con mi maestría.

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Los miembros del comite de tesis, recomendamos que la presente tesis realizada por el **Ing. Juan Antonio Martínez Moya** sea aceptada como opción para obtener el grado de **Maestro en Ciencias de la Ingeniería Mecánica con Especialidad en Diseño.**

Comite de Tesis

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SAN NICOLAS DE LOS GARZA, N. L., NOVIEMBRE DE 1993

SINTESIS

El objetivo de esta tesis es rediseñar un equipo electromecánico que esta en funcionamiento actualmente y se desea modificar para aumentar su capacidad.

Para el análisis, solo tomaremos la parte estructural, y como cuenta con una numerosa cantidad de partes, evaluaremos solo las piezas mas importantes y, de las que son iguales o similares escogeremos solamente una.

Al rediseñar el equipo se procurará seguir con la misma forma y los mismos principios que el diseño original, de tal manera que solo se modificará en dimensiones, materiales y propiedades.

El análisis de las partes se hará básicamente para flexión de vigas y placas, y nos apoyaremos para esto en un software (paquete de computación) llamado "Libra", el cual usa el método de elemento finito y nos proporciona datos de desplazamiento, momento, deflexión y esfuerzo de los puntos nodales de la pieza a rediseñar.

Los datos que resulten del paquete "Libra" los analizaremos para evaluar las piezas y ver si resisten al esfuerzo generado por las cargas aplicadas, en caso contrario cambiaremos la forma de las piezas, del material, dimensiones y/o sus apoyos para que resistan estas cargas, y nuevamente corremos el paquete "Libra" para comprobar que los cambios que se hicieron fueron los correctos.

Por último recomendaremos algun paquete nuevo de computación que trabaje en una "PC" (computadora personal) que use el método de elemento finito y nos facilite, aun más, el análisis de deformación-esfuerzo de piezas estructurales.

PROLOGO

El desarrollo de máquinas en la industria alimenticia, a crecido rápidamente, para cumplir con los requerimientos de calidad y productividad. Existen corporaciones que dedican un alto presupuesto a la Investigación y Desarrollo de nuevos productos, y que para esta tesis tomaremos como base una empresa de la localidad que fabrica máquinas para producir tortillas de maíz y de trigo, de la cual estudiaremos una prensa.

Esta empresa se encuentra en el municipio de Guadalupe, su inicio en la fabricación de máquinas data de los años '70s; fabrica un gran número de máquinas para la elaboración de tortillas de maíz y trigo; la prensa TT1200 es solo una de estas máquinas, la cual produce 1200 docenas de tortillas de trigo por hora y de la cual partiremos para nuestro estudio.

El objetivo de la tesis es incrementar la capacidad de la prensa, y para lograr esto, es necesario resolver problemas de resistencia de materiales, tipo de material, potencia, peso, estética, funcionalidad, etc..

Para nuestro estudio tomaremos algunos miembros estructurales de la máquina, que por su forma es conveniente analizarlos por el método de "Elementos Finitos", aunque lo explicaremos con métodos convencionales para corroborar resultados.

Explicaremos la mecánica del método de análisis de elementos finitos en forma analítica y obtendremos resultados de un paquete

de computación (software) que maneja este método y que corre en una "PC".

Para manejar éste método, se requiere estar familiarizado con la teoría de la elasticidad y con al análisis estructural matricial, esto implica una exposición de ecuaciones diferenciales parciales, ecuaciones de alto orden, y la teoría de análisis estructurales.

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INTRODUCCION AL EQUIPO A REDISEÑAR

Se diseñó un máquina para la fabricación de tortillas de trigo, de proceso continuo, pensando en alta producción, eficiencia, segura, y en forma estética.

El principio del proceso se basa en extender el testal (bolita de masa de trigo) con presión, y mantener su forma redonda sin contracción por medio de calor para formar una tortilla cruda. La tortilla cruda deberá tener un peso constante, forma redonda, espesor uniforme, sin áreas con burbujas y sin pellejo (película delgada que se forma en el exterior).

Después de formada la tortilla se cocina en un horno continuo formado por tabletas (comal angosto) y cadenas, que forman un paso de cocimiento. El horno consta de tres pasos de cocimiento, en los cuales la tortilla cruda permanece por un tiempo determinado.

Luego de un estudio minucioso se creo una máquina que reúne las características mencionadas, cuya forma y capacidad se describen en la Fig. I.1.

El bastidor y la placa superior tienen un movimiento vertical por medio de un pistón, su función es dejar un claro (distancia entre las dos placas) para que pase una banda con los testales y luego baje y le de la presión suficiente para que se extienda y de la forma redonda y el tamaño requerido. La estructura superior soporta al bastidor y placa superior y éste a la vez es soportado por el bastidor inferior. La placa y bastidor

inferior reciben la presión de la placa y bastidor superior, y entre las dos placas se extienden los testales.

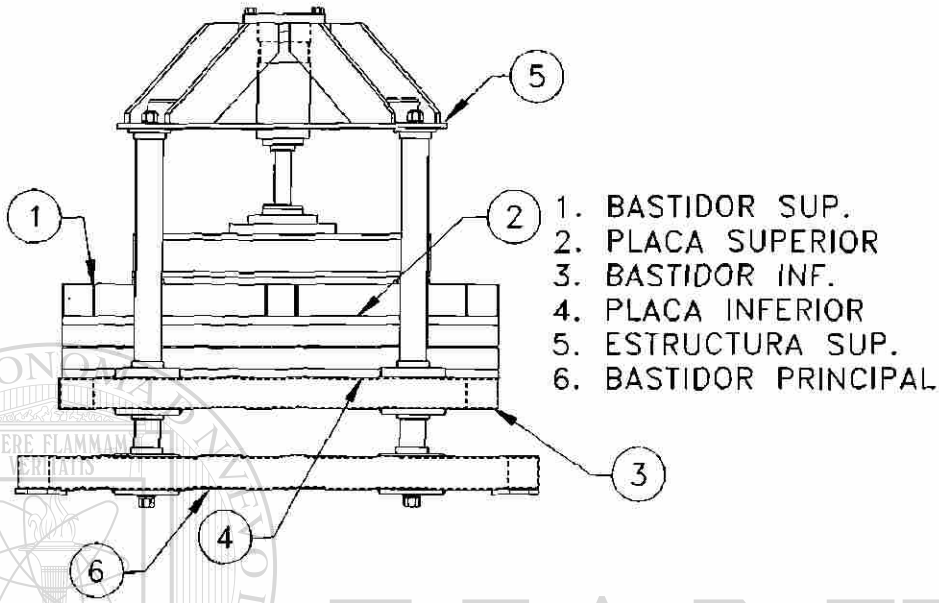


Fig. I.1 Prensa para tortillas de trigo

Debido a que es un proceso continuo, se cuenta con una banda que transporta los testales que después de ser presionados son extendidas para transformarse en tortillas crudas, además sirve para evitar meter la mano para sacar los testales, esto es, para hacerla segura en su operación.

La prensa cuenta con un pistón que sirve para presionar 12 testales a la vez, aplicando una presión suficiente para extenderlos.

La estructura superior está fabricada en placa y solera de acero al carbón AISI 1020, los bastidores de "PTR" comercial y las placas en material de aluminio. Se pretende rediseñar la prensa para aumentar su capacidad en un 66%, y se ha pensado en

diseñar una prensa con los mismos principios pero con dos conjuntos en lugar de uno y montados en un solo bastidor.

Para este rediseño se pretende colocar dos pistones, uno para cada sección para aplicar una presión sobre los testales, empleando los mismos tipos de material, a reserva de cambiarlos de ser necesario después de analizarlo.

Para nuestro estudio se analizarán solamente los bastidores y estructuras, y emplearemos los métodos convencionales para la flexión en vigas y por el método de análisis de elemento finito, con ayuda de una "P.C.". Además daremos una introducción al método de elementos finitos en forma analítica .

Tomando en cuenta las recomendaciones y políticas de la compañía, y pensando en cuidar y proteger el diseño de la prensa, daremos datos supuestos, cuidando siempre, estar lo más posible apegado a la realidad.

Capitulo 1

INTRODUCCION BASICA AL

METODO DE ANALISIS DE ELEMENTO FINITO

1.1 HISTORIA.-

El concepto de análisis de estructuras emergió durante los años de 1850 al 1875, debido a los esfuerzos de Maxwell, Castigliano y Mohr entre otros.

El concepto y metodologia de análisis estructural matricial, no tomó forma, si no hasta 80 años más tarde y la cual fué la base de análisis de elemento finito.

El progreso en el desarrollo de la téoria y la técnica analítica fué la base para el análisis de elemento finito, y avanzó muy lentamente de los años 1875 al 1920, debido en gran medida, a limitaciones practicas sobre soluciones de ecuaciones algebraicas.

En 1920 gracias a las aportaciones de Maney y Ostenfeld, de ideas básicas sobre análisis de estructuras y bastidores, se sentaron las bases sobre parametros de desplazamiento.

Hardy Cross introdujó el método de distribución de momentos en 1932, haciendo factible la solución de problemas de análisis estructruales mas complejos.

La computadora digital apareció a principios de los '50s, pero su significado real, téorico y práctico no vino inmediatamente. El procedimiento de análisis de estructuras, en un formato adecuado para la computadora, se debe a la aportación de numerosas personas, entre ellas Argyris y Patton con

publicaciones de análisis de estructuras y análisis continuo y alcanzando el procedimiento de forma matricial.

Anteriormente Courant McHenry y Hrenikoff habian dejado escritos en papel, de la introducción de todos los aspectos básicos del método de elementos finitos. El trabajo de Courant es particularmente significante porque concierne con otros problemas gobernados por ecuaciones aplicables a otros como situaciones mecánicas estructurales.

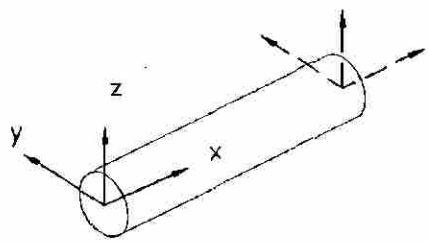
La teconología de análisis de elementos finitos tuvo un avance a traves de fases indistintas a mediados de los '50s. Un repaso de este progreso lo da Zienkiewicz. Motivado por la formulación específica de elementos para esfuerzos planares, investigaciones establecieron la relación entre elementos para sólidos, placas en flexión, carcazas delgadas y otras formas estructurales.

1.2 TIPOS DE ELEMENTOS.-

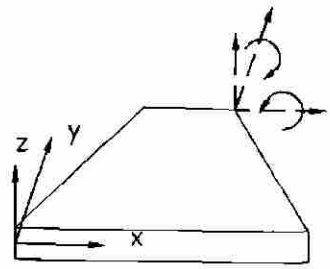
Los elementos en que se usa el método de elementos finitos se ilustran en la fig 1.1

Un elemento simple de una estructura puede ser analizádo como una pieza independiente o como un total de piezas, cuando esta en combinación con elementos de diferente tipo, especialmente un elemento placa, usualmente se intenta describir como una membrana rígida.

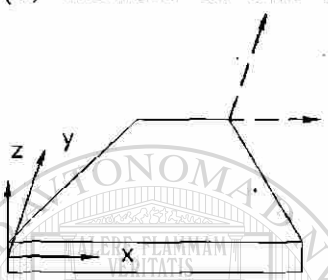
Aunque el método abarca numerosos tipos de elementos, usaremos solo el tipo de vigas y placas para analizar los miembros de las estrucura.



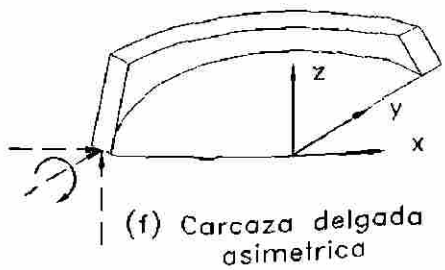
(a) Miembro de una estructura



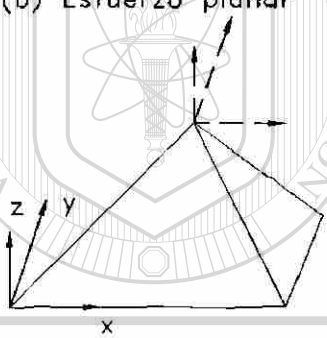
(e) Flexión de soleras



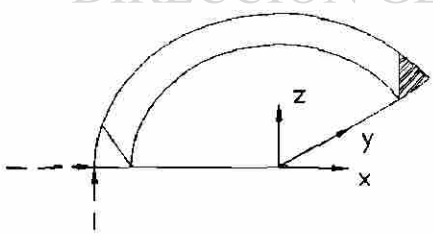
(b) Esfuerzo planar



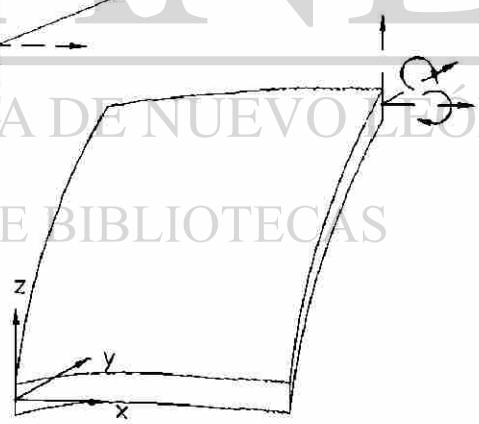
(f) Carcaza delgada asimetrica



(c) Elemento solido



(d) Solido asimetrico



(g) Carcaza delgada curva

Fig.1.1 Tipos de elementos finitos

En el capítulo siguiente trataremos de dar a conocer los principios básicos, definiciones y procedimientos para el uso del método de elementos finitos en forma analítica.

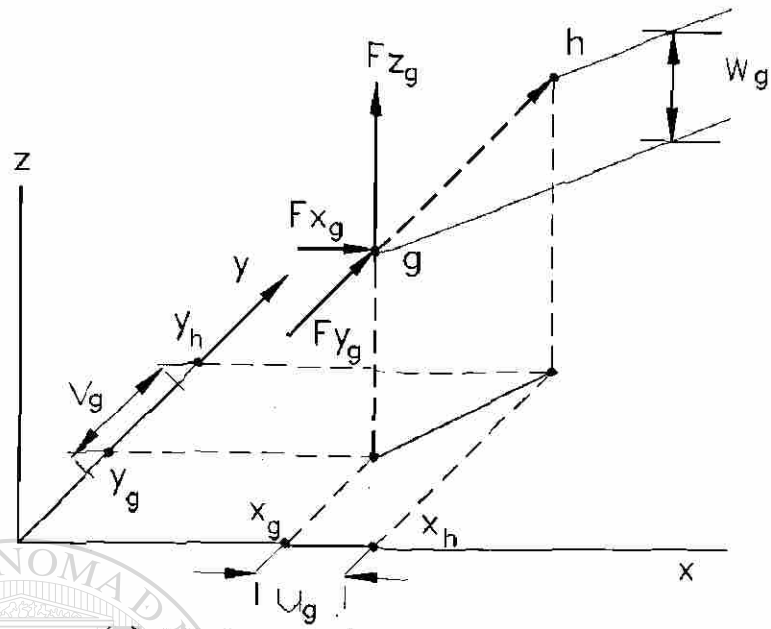
1.3 METODO DE ANALISIS DE ELEMENTO FINITO.-

En análisis de problemas de vigas, estructras, placas delgadas y carcazas delgadas, generalmente se asume que la línea de trabajo esta en la mitad de la viga (vigas y estructuras) o en la mitad de la superficie (placas y carcazas).

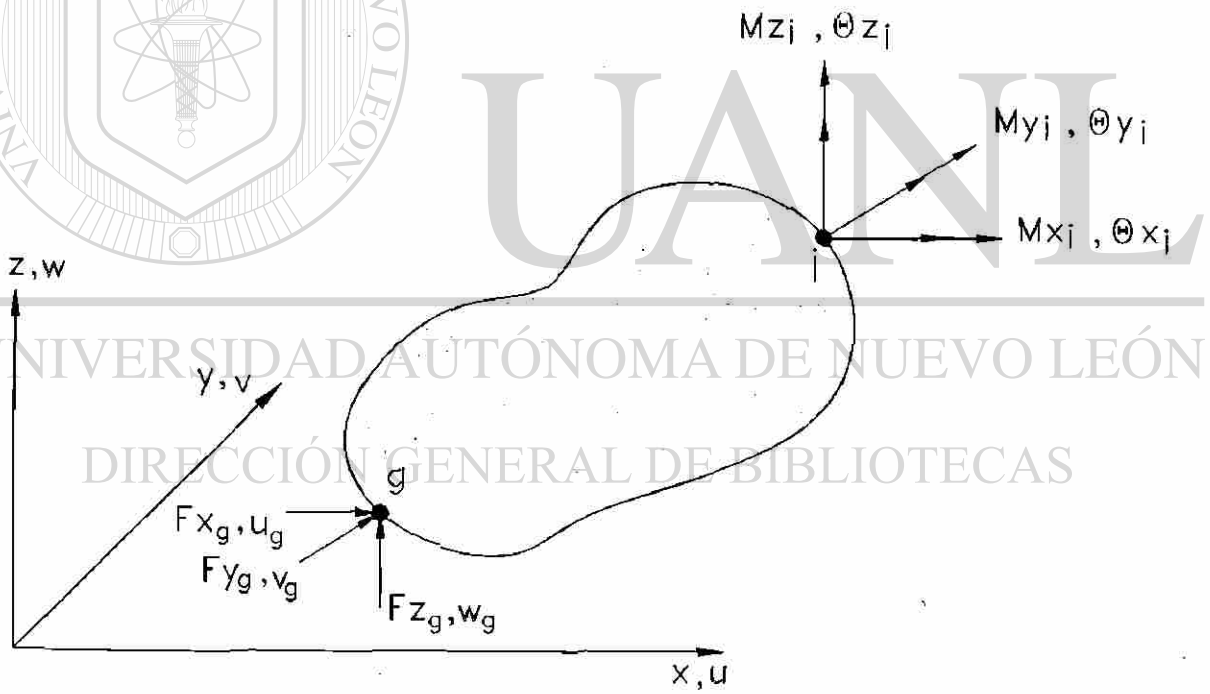
En un cuerpo estructural está acompañado de fuerza y desplazamiento en puntos del cuerpo, y estos puntos son llamados puntos *nodales*. Se conocen también como *uniones*, porque en muchos casos de aplicaciones practicas de análisis de elemento finito, representan puntos de conección de los elementos, formando un total, o global, de modelo analítico de la estructura completa.

Las fuerzas y desplazamientos son listadas en columnas matriciales {F} y {Δ} respectivamente. Los corchetes, { }, representan columnas de vectores. Para el elemento de la Fig.1.2 por ejemplo con las fuerzas de traslación en el punto *g* y momento en el punto *j*.

$$\{F\} \begin{Bmatrix} F_{xg} \\ F_{yg} \\ F_{zg} \\ M_{xj} \\ M_{yj} \\ M_{zj} \end{Bmatrix} \qquad \{\Delta\} \begin{Bmatrix} U_g \\ V_g \\ W_g \\ \Theta_{xj} \\ \Theta_{yj} \\ \Theta_{zj} \end{Bmatrix}$$



(a) Desplazamiento del punto g al punto h



(b) Fuerzas y momentos y su desplazamiento correspondiente

Fig.1.2 Fuerza y desplazamiento

Podemos también describir el contenido de un vector como [ ]

. La traspuesta de una matriz esta definida como la matriz

obtenida de intercambiar las filas y las columnas de la matriz antes traspuesta; de acuerdo a esta definición, cuando una matriz de forma de columna es traspuesta produce un vector tipo fila y viceversa. Entonces denotamos a la matriz traspuesta por una T de tipo Roman superindice y podemos alternativamente escribir el vector descrito en la forma

$$\{F\} = \lfloor\ Fx_g\ Fy_g\ Fz_g\ Mx_j\ My_j\ Mz_j\ \rfloor^T$$

$$\{\Delta\} = \lfloor\ u_g\ v_g\ w_g\ \theta_{xj}\ \theta_{yj}\ \theta_{zj}\ \rfloor^T$$

Un valor individual de un vector tipico de *n* nodos de desplazmiento $\{\Delta\} = \lfloor\ \Delta 1 \ldots \Delta i \ldots \Delta n\ \rfloor^T$, decimos Δi, es llamado el *i-esimo grado de libertad* (d.o.f *degree-of-freedom en ingles*).

En análisis de elemento finito, en los puntos *nodales* debemos de distiguir su localización con respecto a los ejes coordenados. Los ejes *globales* son establecidos por una estructura completa descrita por muchos elementos finitos. Los ejes *locales* (o del elemento) son fijos al respectivo elemento y entonces el elemento está en general diferencialmente orientado sin una estructura, esos ejes serán en general diferencialmente orientados de un elemento al siguiente. Los ejes de *unión* son definidos como los puntos de *unión* de los elementos y tienen una orientación diferente de alguno o todos los elementos reunidos a la *unión*.

En la Fig.1.3 se puede observar que los ejes de los elementos se identifican por las primas (x' y'), y las primas-dobles (x'' y'') para los ejes de unión.

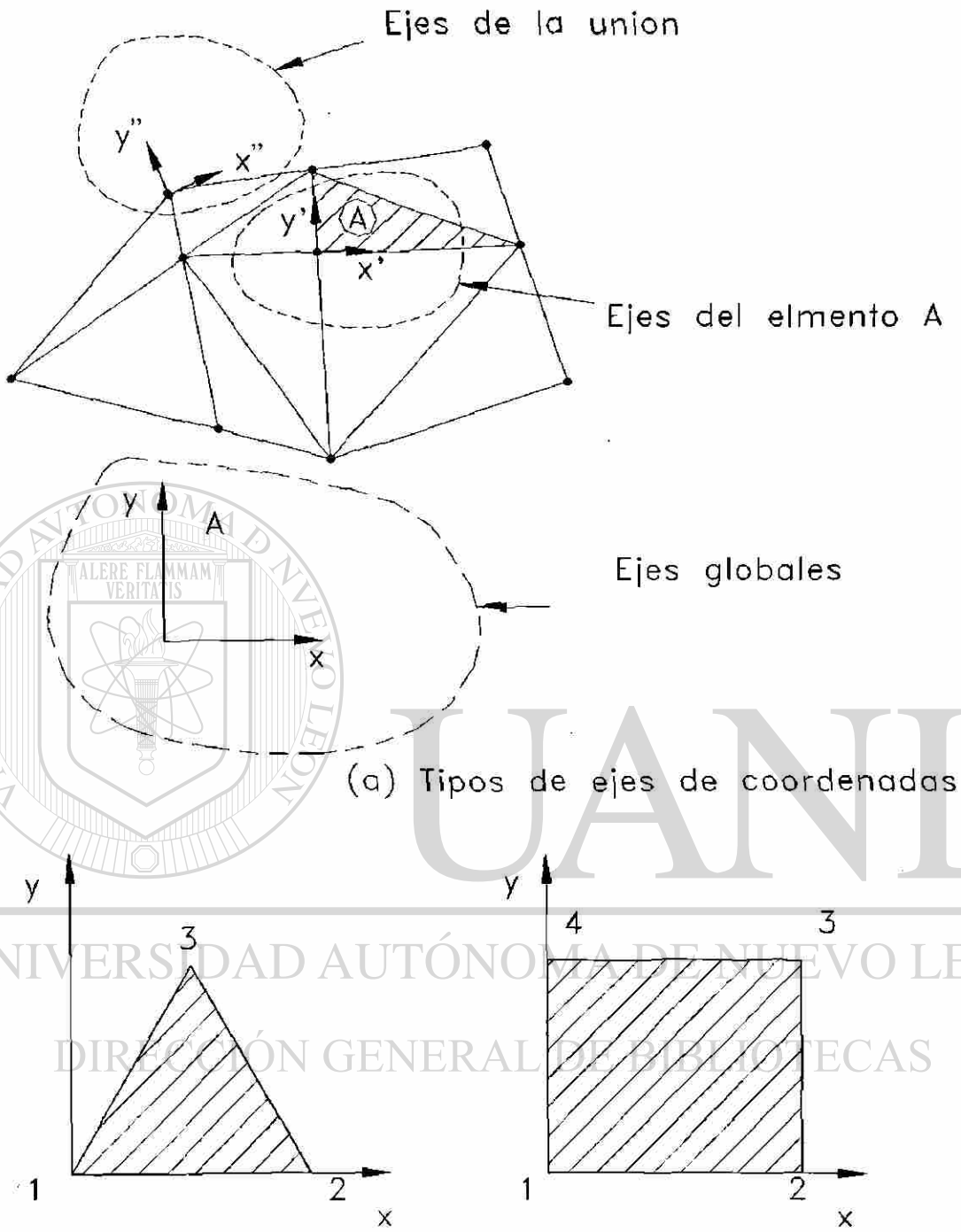


Fig.1.3 Ejes coordenados y esquema de numeración de uniones

Para la numeración de puntos de *unión* de elementos finitos planares se designa el numero 1 al nodo más cercano al origen, el

siguiente punto es designado como 2, es decir se numera en contra de las manecillas del reloj.

Podemos escribir las ecuaciones de fuerza-desplazamiento de los elementos como, 1) *ecuaciones de rigidez*, 2) *ecuaciones de flexibilidad*, 3) *ecuaciones de una mezcla de fuerza-desplazamiento*.

Las ecuaciones de *Elemento rigido* son ecuaciones algebraicas lineales en la forma de

$$\{\mathbf{F}\} = [\mathbf{k}]\ \{\Delta\}$$

La matriz [**k**] es la matriz de el *elemento rigido* y {**F**} y {Δ} son los vectores de fuerza y desplazamiento, respectivamente. Note que designamos una matriz rectangular con el simbolo [ ]. un termino individual de la matriz [**k**], *kij*, es un coeficiente de *elemento rigido*. Cuando el desplazamiento Δj es impuesto al valor unitario y todos los otros d.o.f. son mantenidos fijos contra el desplazamineto (Δ_k=0, k≠j), la fuerza F_t es igual en valor a k_{ij}.

La ecuación que expresa el *elemento flexible*, para elementos soportados en una manera estable, la unión de desplazamiento ($\{\Delta_f\}$) como una unión de fuerza($\{\mathbf{F}_f\}$); por ejemplo

$$\{\Delta\}=[\mathbf{f}]\{\mathbf{F}_f\}$$

donde [**f**] es la matriz del *elemento flexible*. Un coeficiente individual de flexibilidad f_{ij}, es el valor de desplazamiento Δ_i

causado por un valor unitario de la fuerza F_j. El subindice f sobre los vectores de fuerza y desplazamineto denotan que los vectores de fuerza y desplazamiento excluyen componentes relativos a las condicines de soporte. Por simplicidad no usamos los subindices $_{ff}$ sobre la matriz [f].

El formato de mezcla fuerza-desplazamiento define una relación de vectores conteniendo ambos, fuerza y desplazamiento. Si la fuerza y su correspondiente d.o.f. de un elemento están divididos dentro de dos grupos designados por subindices s y f, entonces la forma general de una representación de mezcla, fuerza-desplazamiento, puede escribirse como

$$\begin{Bmatrix} F_f \\ \Delta_f \end{Bmatrix} = [\,\Omega\,] \begin{Bmatrix} F_s \\ \Delta_s \end{Bmatrix}$$

Una forma de la relación de *mezcla fuerza-desplazamiento* es el formato de matriz de *transferencia*, en la cual la fuerza y desplazamiento al final de una membrana ($\lfloor F_f \quad \Delta_f \rfloor$) son *transferidos* al final opuesto ($\lfloor F_s \; \Delta_s \rfloor$) via la matriz [$\Omega$].

CAPITULO 2

ANALISIS DE LAS PIEZAS A REDISEÑAR

2.1 Modelación.-

De las partes que conforman la prensa, tomaremos como base para el análisis y rediseño, solo las partes más importantes, y cuando efectuen el mismo trabajo escogeremos solo una.

Para la modelación de las partes, haremos un croquis y mostraremos los puntos de apoyo y/o fijación, asi como las cargas.

Entre las partes importantes se encuentran la estructura superior, que consta de dos placas separadas por soleras que forman una cruz ver la Fig.2.1.

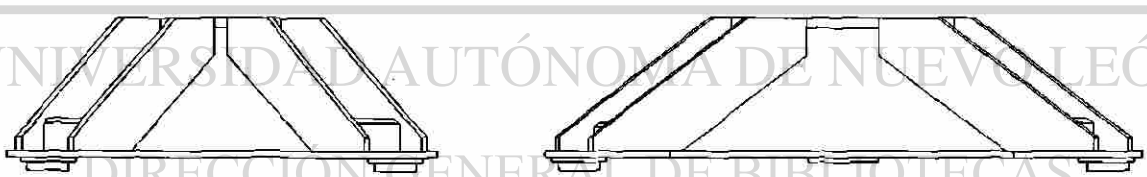


Fig. 2.1 Estructura superior

La presión del piston más el peso de las partes que prensan la placa inferior generan una fuerza vertical de 9375 lb. en el centro de la placa superior. La forma que presenta la estructura superior hace que se vea como dos porticos por lo que podemos dividir la carga en dos y la forma final sería como la Fig.2.2.

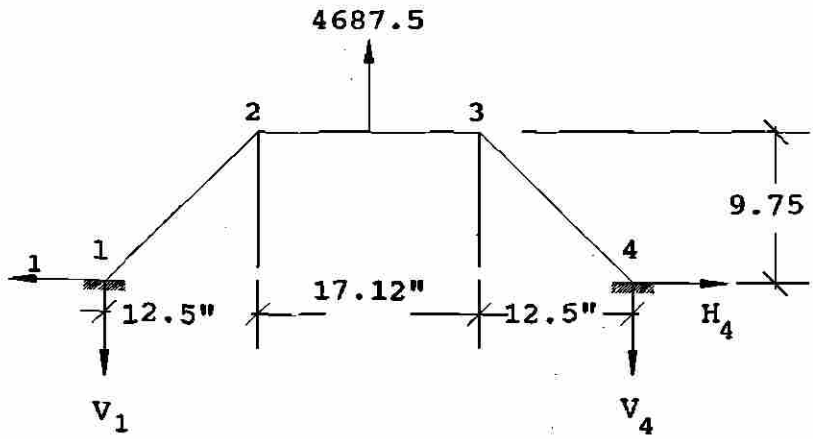


Fig. 2.2 Dimensiones y cargas

De la misma forma podemos modelar las siguientes partes y las iremos presentando una a una en los subcapitulos posteriores.

2.2.Procedimiento analítico.-

La estructura superior está fabricada de solera rolada en frio 1020 y de placa de acero A36, la solera es de 1/2" x 5" de ancho y la placa de 3/4" de espesor.

La fuerza total al presionar las tortillas es de 9375 lb dividida en dos secciones tenemos que la fuerza seria de 4687.5 lb.

Primero calcularemos el momento de inercia, con la fórmula siguiente[1].

$$I = \frac{bh^3}{12}$$

[1] *VER BIBLIOGRAFIA No.4*

$$I_{1-2} = I_{3-4} = \frac{0.5(5)^3}{12}(2) = 10.42 \ \ in^4$$

$$I_{1-2} = I_{3-4} = 433.71 \ \ cm^4$$

$$I_{2-3} = \frac{2(0.75)^3}{12} \approx 0.07 \ \ in^4 = 2.91 \ \ cm^4$$

Luego obtenemos las constantes de la estructura[1]

$$\phi = \frac{I_{1-2}}{I_{2-3}} \cdot \frac{b}{q}$$

$$\phi = \frac{10.42}{0.07} \times \frac{17.12}{15.857} = 160.7$$

$$C = 1 + \frac{1}{2\phi} = 1.00311$$

de la Fig.3.2 obtenemos que

b=17.12 a=12.5 h=9.75 q=15.857

ahora calcularemos las reacciones y los momentos de la siguiente manera

$$V_1 = V_2 = \frac{P}{2} = \frac{4687.5}{2} = 2343.75 \ \ lb$$

$$V_1 = V_2 = 1064.06 \ \ kg$$

[1] *VER BIBLIOGRAFIA No.4 PAG. 51*

$$M_2 = M_3 = -\frac{Pb}{8C} = -\frac{(4687.5).(17.12)}{8(1.00311)} = -10,000 \ \ lb-in = -11,531.6 \ \ kg-cm$$

$$M_1 = M_4 = \frac{Pb}{16C} = \frac{(4687.5).(17.12)}{16(1.00311)} = 5,000 \ \ lb-in = 5765.8 \ \ kg-cm$$

2.3 Cálculo por análisis de elementos finitos.-

Existen en la actualidad muchos paquetes (software) de computación utilizados para el análisis de elementos finitos de los cuales podemos mencionar el Cosmos, Libra, Pastran etc., que manejan una cantidad variable de nodos y elementos como el cosmos que maneja hasta 15,000.

Debido a que hemos tenido acceso al paquete Libra, basaremos nuestro calculo en este medio. Mostraremos la manera de como el paquete nos pide los datos y como analizar los resultados ya que solo nos lo muestra en forma de valores, aunque tiene un archivo que al correrlo nos muestra en forma gráfica como se ve la pieza, antes y después de aplicar la carga, pero no muestra los valores en forma gráfica.

La forma en que hay que dar los datos es la siguiente

1. Dibujar los nodos, elementos e identificarlos
2. Hacer la geometría de la pieza con los datos anteriores.
3. Especificar el tipo de elemento a analizar.
4. Dar los datos del material
5. Indicar las condiciones frontera

6. Especificar las cargas nodales

7. En caso necesario, correr el archivo de análisis de esfuerzo.

8. Analizar los valores, y dar los resultados.

2.4 Número de nodos para la precisión de la pieza.-

Primero haremos la figura mostrando los nodos y elementos necesarios para el análisis, ver Fig.2.3

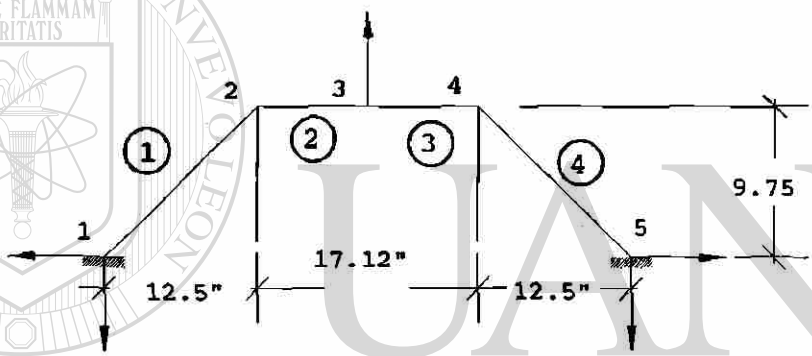


Fig. 2.3 localización de nodos y elemento

Para mostrar la forma en que el paquete nos pide los datos, lo mostraremos indicando el simbolo  .

El paquete Libra arranca con el archivo libras.exe, y la primera pantalla nos muestra lo sigiuente

LIBRA-STRUCTURAL MAIN MENU

1. CREATE A NEW MODEL FILE

2. EDIT AN EXISTING MODEL FILE

3. EDIT OR REVIEW THE MATERIAL LIBRARY

4. EXIT OPERATING SYSTEM

ENTER OPTION NUMBER:

Ya que vamos a empezar la figura geométrica tecleamos el numero 1 y luego enter (o return). Después nos pide el nombre del archivo y en que lugar va a guardar la información, para nuestro caso le pondremos el nombre de EST01.DAT y lo guardaremos en el drive C. Para el nombre de archivo tenemos 8 digitos o lugares y para la extensión 3.

En seguida nos aparece una pantalla donde pide el numero del elemento y el tipo de elemento. Para nuestro análisis daremos los nodos y elementos antes mencionados y el tipo de elemento sería el de viga en 3d (tipo 3). Los datos de entrada asi como los resultados se pueden consultar en el apendice numero 1.

GEOMETRY INPUT

ELEMENT NUMBER: ELEMENT TYPE:

ELEMENT TYPE

SPRING	PLANE/AXISYM	SHELL	SOLID
1. 3D SPRING	4. 3 NODE TRIANGLE	8. 2 NODE AXISYM	12. 3 NODE WEDGE

2. 2D SPRING 5. 6 NODE TRIANGLE 9. 3 NODE TRIANGLE 13. 8 NODE BRICK

BEAM 6. 4 NODE QUADRILAT 10. 6 NODE TRIANGLE

3. 3D BEAM 7. 8 NODE QUADRILAT 11. 8 NODE QUADRILAT

Después de meter datos en la pantalla anterior pregunta por el tipo de material (o ID) con la pantalla siguiente

MATERIAL DEFINITION

1.- SEARCH A MATERIAL LIBRARY 4.- LIST PROPERTIES FOR DEFINED MATERIAL.

2.- DEFINE A MATERIAL 5.- LIST MATERIAL IN LIBRARY

3.- CHANGE MATERIAL NAME AND/OR PROP. 6.- LIST PROPERTIES FOR MATERIAL

YOUR CHOICE: TYPE "X" TO EXIT

MATERIAL DEFINED MATERIAL NOT DEFINED

ENTER MATERIAL ID:

Las propiedades de los materiales son solicitados en el orden siguiente:

PROP(1) = Densidad de masa por unidad de volumen.

PROP(2) = Módulo de elasticidad.

PROP(3) = Relación de Poisson's.

PROP(4) = Coeficiente de expansión térmica.

PROP(5) = Módulo de rigidez (cortante).

PROP(6) = Conductividad térmica.

PROP(7) = Constante de calor específico.

Para nuestro diseño, el material es acero 1020 donde sus propiedades son

Densidad de masa	ρ=0.283 lb/in^3
Módulo de elasticidad	E=30E+6 lb/in^2
Relación de Poisson's	μ=0.287
Coeficiente de expansión térmica	α=8.4E-6 in/in-°F
Módulo de rigidez (cortante)	G=11.5E+6 lb/in^2
Conductividad térmica	T=27 Btu/(hr)(ft)(°F)
Constante de calor específico	cp=0.10 Btu/(lb)(°F)

Enseguida nos pregunta si queremos ponerle título al archivo, además de otras opciones, mostrando la siguiente pantalla

TITLES AND OPTIONS

1st:

2nd:

DATA	BANDWIDTH	PLOT	OUTPUT	STIFFNES	REMOVE
CHECK	OPTIMIZE	FILE	SUPPRESS	DATA	SINGULARITIES
OPT=0	OPT=1	NO	NO	OPT=0	NO

OPTIONS:

1. 1st TITLE	5. PLOT FILE
2. 2nd TITLE	6. *OUTPUT SUPPRESS*
3. DATA CHECK	7. STIFFNESS DATA FILES
4. BANDWIDTH OPTIMIZATION	8. REMOVE SINGULARITIES

ENTER OPTIONS NUMBER: TYPE "X" TO EXIT

Pondremos de título en la primera opción, análisis de elementos finitos y en la segunda opción como estructura superior.

Tenemos el nombre del archivo, la geometría de la pieza con sus nodos y elementos, hemos definido las propiedades de los materiales y hemos puesto el nombre al título del análisis, por último nos falta indicar las condiciones frontera y la aplicación de las cargas nodales.

La siguiente pantalla se refiere a las condiciones frontera, consideremos la pieza como una viga fija en su parte inferior, esto es en el nodo 1 y 5, como la pieza está en dos planos, la fijaremos en "x" y "y".

*** BOUNDARY AND CONSTRAINING CONDITIONS ***

BOUNDARY CONDITIONS OPTIONS: CONSTRAINING CONDITIONS OPTIONS

1. ADD BOUNDARY CONDITIONS (S)	4. ADD CONSTRAINING SET (S)
2. LIST BOUNDARY CONDITIONS (S)	5. LIST CONSTRAINING SET (S)
3. DELETE BOUNDARY CONDITIONS (S)	6. DELETE CONSTRAINING SET (S)

CHOOSE OPTION NUMBER: TYPE "X" TO EXIT

Por último nos aparece una pantalla que nos indica la opción de poner las cargas nodales, en nuestro caso seria de Y= -4687.5 aplicada en el nodo 3.

*** SOLUTION DATA ***

NODAL LOADS:	NODAL TEMPERATURES	OTHER OPTIONS .	SOLUTION SET No.=1
1. ADD	5. ADD	9. REACTION/NODAL LOAD	OPT=0
2. LIST	6. LIST	10. TEMPERATURE FILE:	
3. DELETE	7. DELETE	11 LIST ALL CREATED SOLUTION SET	
		12. CREATE O EDIT ANOTHER SOLUTION SET	
FORCES:		13 COPY ONE SOLUTION SET TO A NEW SET	
4. BODY FORCE	8.ROTATIONAL FORCE	14. DELETE A SOLUTION SET	

CHOOSE OPTION NUMBER: TYPE "X" TO EXIT

Cuando terminamos de dar todos los datos necesarios nos pide que guardemos el archivo o si terminamos la sesión sin salvarlo, entonces teclearemos 1

1. SAVE FILE:

2. EDIT FILE:

3. QUIT WHITOUT SAVING:

Ya que salimos del archivo (libras) arrancamos el que tiene por nombre **libsan**, para otener los datos de desplazamiento, reacciones y momentos.

Del apéndice 1 podemos obtener los datos de desplazamiento, momentos y reacciones para este análisis en dos dimensiones; pero hay que hacer una aclaración, sobre la consideración de que tomamos la placa de arriba como una solera, y de ancho, como la separación de las soleras verticales, por lo que los datos obtenidos son aproximados, pero nos sirven para comprobar que el método de análisis de elemento finito da como resultado datos muy cercanos a los obtenidos por métodos convencionales.

Algunos de los resultados obtenidos se presentan a continuación:

NODO	DESPLAZAMIENTO	MOMENTO	REACCIONES...	
			X	Y
1	-	-	-4.025E+03	-2.344E+03
2	-	-9.948E+03	-	-
3	6.230E-02	1.011E+04	-	-
4	-	9.948E+03	-	-
5	-	-	4.025E+03	-2.344E+03

Podemos obtener resultados mas reales si analizamos la pieza en tres dimensiones por el método de análisis de elementos finitos, tomando las soleras como vigas en 3D y la placa como carcaza (shell) de 3 y 4 nodos.

Para analizar la pieza es necesario dibujarla en 3D, ver la Fig.2.4, y localizar los nodos y elementos de los dos tipos de perfil (solera y placa). En la Fig.2.5 (a) podemos observar que en la pieza están localizados los nodos de la solera vista en planta, aunque daremos su localización en "x" "y" y "z".

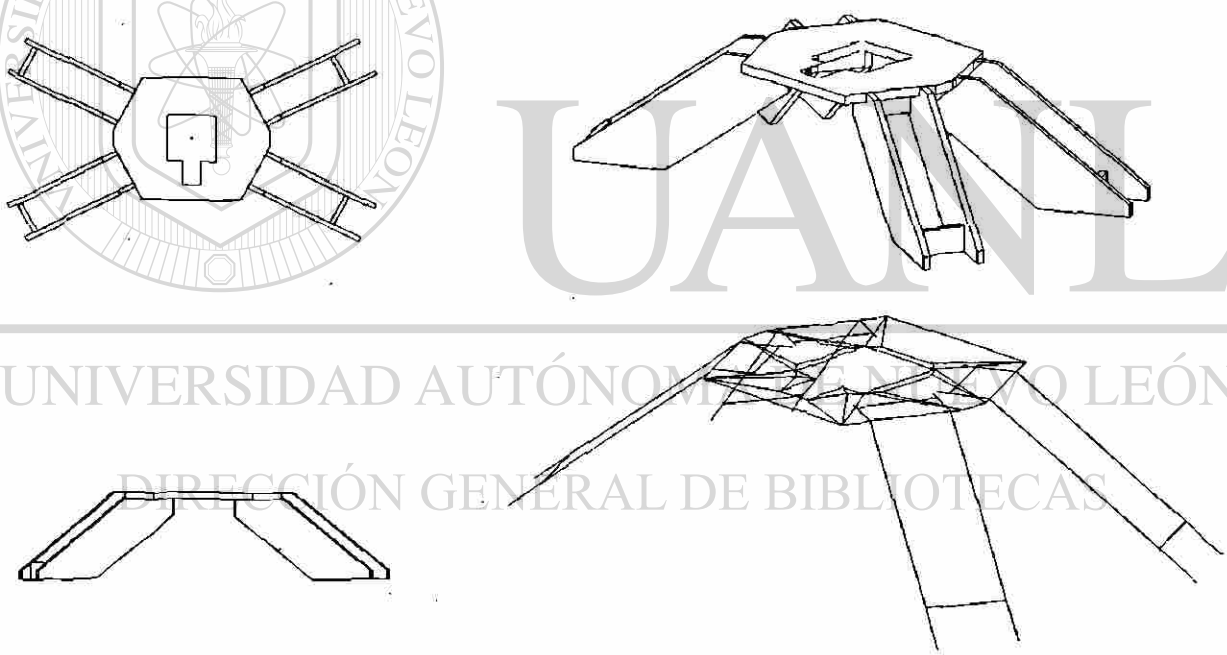
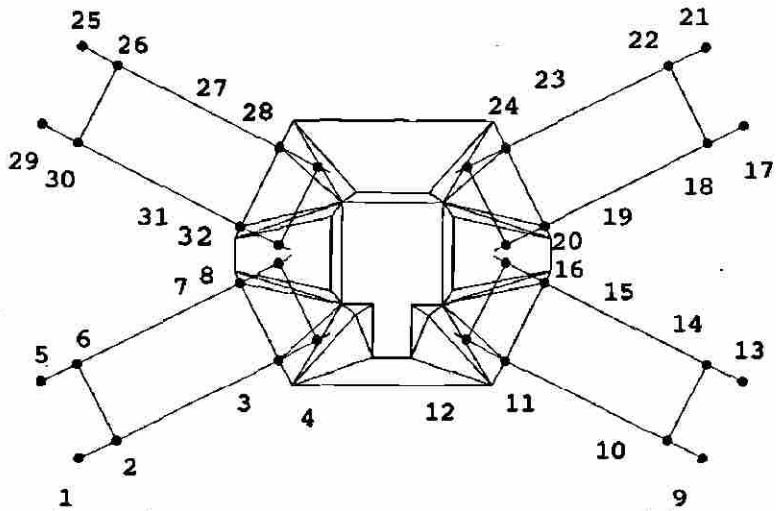
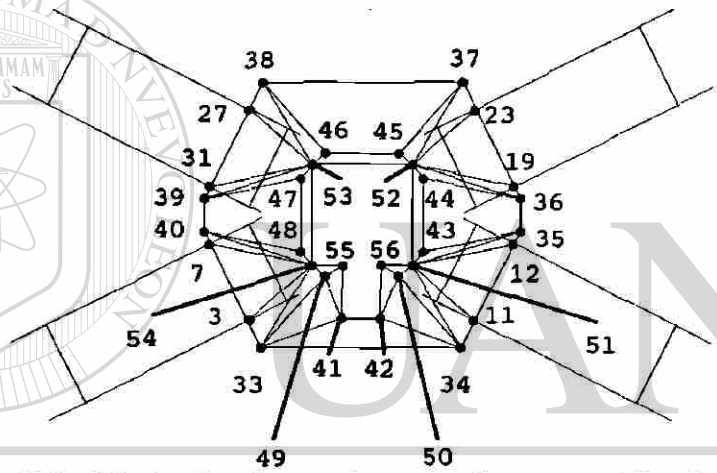


Fig.2.4 Estructura superior

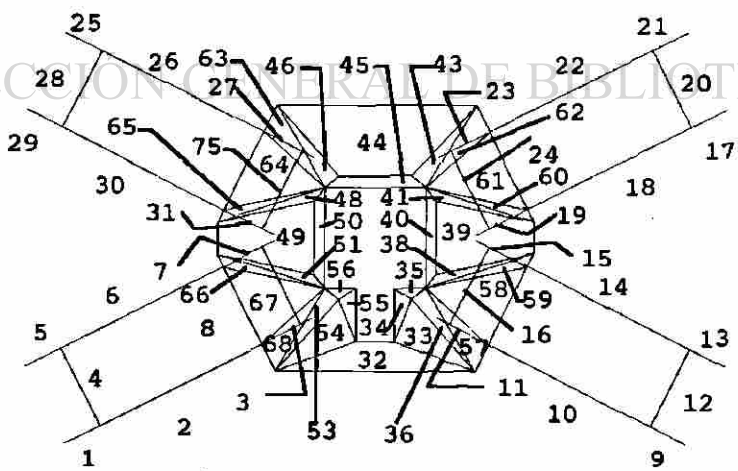
En la Fig.2.5 (b) se localizan los nodos de la placa en la cual tiene nodos comunes como son el 3,7,11,12,19,23,27 y 31, y que nos sirven para unir las piezas en una sola.



(a) Listado de nodos de la sección 1



(b) Listado de nodos de la sección 2



(c) Listado de los elementos

Fig.2.5 Ubicación de nodos y elementos.

La Fig.2.5 (c) muestra todos los elementos, donde podemos mensionar que existen tres tipos de elementos que son viga 3D, carcaza de 3 nodos y carcaza de 4 nodos.

En la forma como se explicó anteriormente se dan los datos que son como sigue:

Para la geometría de la pieza se dan las coordenadas de todos los nodos y se especifican a los elementos a que corresponden, el tipo de elemento y el material. Los datos de entrada se encuentran en el Apendice 1 Pag.A1-7

Los datos generales son:

Izz = 5.21 Iyy = .052 Area = 2.5

Espesor =.75

Los puntos de fijación de la pieza son en los tres ejes "x" "y" y "z", en los nodos

1 5 9 13

17 21 25 29

y los nodos de carga serán solo en el eje de las "z" como sigue:

43 44 45 46

47 48 49 50

Una vez que se dieron los datos para analizarlos en tres dimensiones, obtenemos los resultados en el Apendice A1-... de un archivo que se llama EST-3D4K.SOL, de los cuales podemos mencionar los más importantes:

LIBRA Finite Element Program
Version 3.0 Revision 2

ANALISIS DE ELEMENTOS FINITOS
ESTRUCTURA SUPERIOR 3D

DISPLACEMENTS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
46	-2.540E-03	2.025E-04	5.259E-03	-9.152E-04	5.632E-04	.000E+00
47	-2.617E-03	2.245E-04	5.987E-03	-1.403E-04	-2.980E-04	.000E+00
48	-2.735E-03	1.989E-04	6.496E-03	-1.560E-04	-8.535E-04	.000E+00
49	-2.734E-03	1.762E-04	6.948E-03	8.236E-04	1.632E-04	.000E+00
50	-2.372E-03	1.032E-04	4.984E-03	8.230E-04	6.909E-04	.000E+00
51	-2.340E-03	8.243E-05	4.448E-03	3.328E-04	1.716E-03	.000E+00
52	-2.345E-03	1.276E-04	3.502E-03	-5.302E-04	1.163E-03	.000E+00
53	-2.587E-03	2.154E-04	5.918E-03	-5.842E-04	-2.555E-04	.000E+00
54	-2.751E-03	1.801E-04	6.996E-03	2.914E-04	-9.405E-04	.000E+00
55	-2.745E-03	1.928E-04	7.139E-03	9.451E-04	3.883E-04	.000E+00
56	-2.344E-03	1.482E-04	5.965E-03	9.381E-04	4.855E-04	.000E+00

ELEMENT STRESSES

EL	NODE	P1	P2	P3	M1	M2	M3
2	2	-2.957E+03	-2.204E+01	1.771E+02	-4.950E+02	4.404E+02	-1.156E+02
	3	2.957E+03	2.204E+01	-1.771E+02	4.950E+02	-2.558E+03	-1.479E+02
EL	NODE	P1	P2	P3	M1	M2	M3
14	14	-3.280E+02	-7.456E+01	1.362E+02	8.247E+02	1.291E+03	-2.112E+02
	15	3.280E+02	7.456E+01	-1.362E+02	-8.247E+02	-2.921E+03	-6.805E+02
EL	NODE	P1	P2	P3	M1	M2	M3
16	11	-4.716E+02	-4.117E+02	-2.043E+02	1.570E+03	-1.653E+03	-7.056E+02
	15	4.716E+02	4.117E+02	2.043E+02	-1.570E+03	2.571E+03	-1.145E+03
EL	NODE	P1	P2	P3	M1	M2	M3
18	18	-7.793E+02	-8.142E+01	-5.435E+01	-7.756E+02	-1.544E+03	-2.374E+02
	19	7.793E+02	8.142E+01	5.435E+01	7.756E+02	2.194E+03	-7.364E+02
EL	NODE	P1	P2	P3	M1	M2	M3
24	19	-3.179E+02	3.080E+02	4.538E+02	-1.396E+02	-3.793E+03	9.407E+02
	23	3.179E+02	-3.080E+02	-4.538E+02	1.396E+02	1.749E+03	4.462E+02

REACTION LOADS FOR LOAD CASE 1

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
1	-2.121E+03	-1.077E+03	-1.805E+03	.000E+00	.000E+00	.000E+00
5	-6.820E+02	-4.121E+02	-4.087E+02	.000E+00	.000E+00	.000E+00
9	2.568E+03	-1.237E+03	-2.109E+03	.000E+00	.000E+00	.000E+00
13	3.714E+02	-3.554E+02	-2.431E+02	.000E+00	.000E+00	.000E+00
17	6.022E+02	6.254E+02	-4.832E+02	.000E+00	.000E+00	.000E+00
21	2.315E+03	9.017E+02	-1.885E+03	.000E+00	.000E+00	.000E+00
25	-1.908E+03	9.309E+02	-1.604E+03	.000E+00	.000E+00	.000E+00
29	-1.146E+03	6.238E+02	-8.374E+02	.000E+00	.000E+00	.000E+00

CAPITULO 3

REDISEÑO DEL BASTIDOR PRINCIPAL POR EL METODO DE ELEMENTOS FINITOS

El concepto de rediseño de la prensa para aumentar su capacidad, es mantener la misma forma de la máquina hasta donde sea posible, por lo que el bastidor principal se dejó con la misma forma aumentando solamente su largo total y el espesor de perfil estructural; su forma final se muestra en la Fig.3.1.

El diseño original está fabricado con perfil estructural de "PTR" y solera comercial; su función principal es soportar todas las partes que conforman el carro, como son el bastidor superior e inferior, las placas superior e inferior, la estructura superior y los pistones.

Tomando en cuenta que el diseño anterior está funcionado perfectamente, analizaremos solo el rediseño, por el método de elementos finitos y si los resultados muestran algún aumento en esfuerzo con respecto a los esfuerzos de trabajo, entonces cambiaremos de perfil estructural, de tamaño o forma; de lo contrario mostraremos los resultados admisibles de esfuerzo y deformación y pasaremos a evaluar la última pieza de este trabajo.

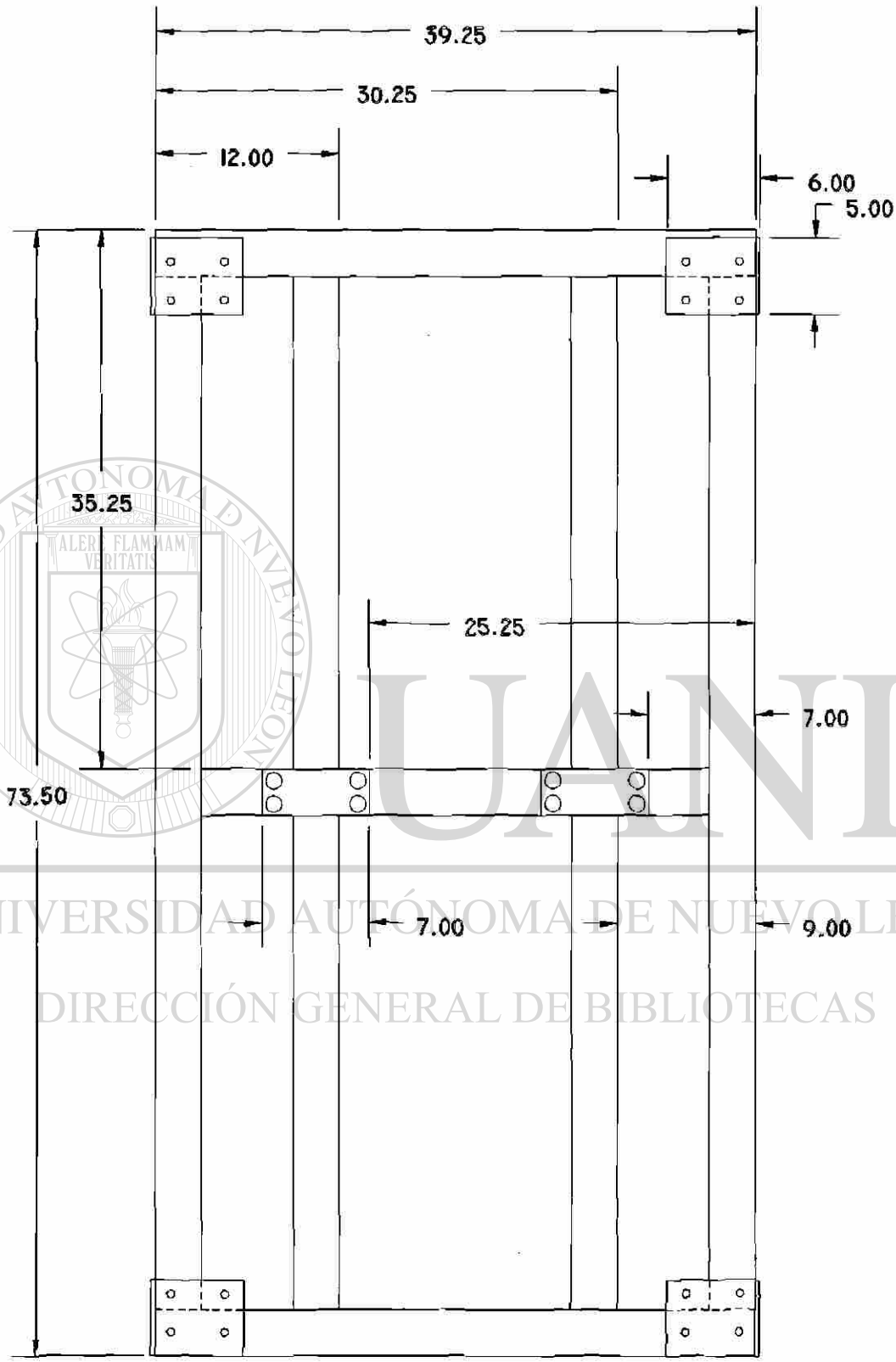
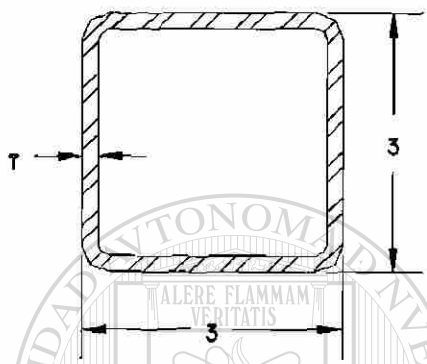


FIG. 3.1 ESTRUCTURA PRINCIPAL

- DATOS DE LOS PERFILES ESTRUCTURALES -

El material de la estructura es un perfil de "PTR" de 3X3 pulgadas con espesor de 0.125 Y 0.188" cuyos momentos[1] y areas son:



PERFIL	AREA	MOMENTO DE INERCIA
3 X 3 X.125	1.397 PULG.^{2}	1.896 PULG.^{4}
3 X 3 X.188	2.015 PULG.^{2}	2.595 PULG.^{4}

Calculamos el momento de inercia para la seccion compuesta de "PTR" y solera por el teorema de STEINER:[1]

Obtenemos el centroide de la figura por medio de la formula:

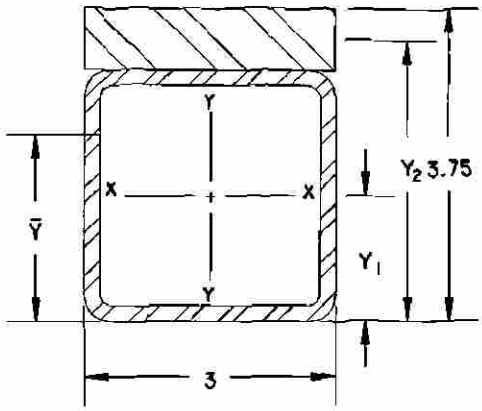
$$\bar{Y} = \frac{A \times LA \times B \times LB}{A + B}$$

$$\bar{Y} = \frac{1.397 \times 1.5 \times 1.125 \times 1.125}{1.397 + 1.125}$$

$$\bar{Y} = 2.25 \ \ pulg. = 5.72 \ \ cm$$

Entonces calculamos el momento de Inercia de cada seccion con respecto al centroide de la Fig. siguiente.

[1] *VER BIBLIOGRAFIA No.5*



PERFIL	AREA	MOMENTO DE INERCIA
3 x 3 x.125	1.397 PULG.^{2}	1.896 PULG.^{4}
3/8 x 3	1.125 PULG.^{2}	0.013 PULG.^{4}

$$I_1' = I_1 + A_1 d^2 = 0.013 + (1.125 \times .935^2) = 0.997$$

$$I_2' = I_2 + A_2 d^2 = 1.896 + (1.397 \times .750^2) = 2.688$$

$$I_T = I'_1 + I'_2 = 0.997 + 2.688$$

$$I_T = 3.685\ in^4 = 153.38\ cm^4$$

Tenemos los momentos de inercia de la pieza, las áreas, y las propiedades del material son las mismas que la pieza anterior, el espesor de la placa inferior es de 3/8".

Para nuestro diseño, el material es acero 1020 donde sus propiedades son

Densidad de masa	ρ=0.283 lb/in^3
Módulo de elasticidad	E=30E+6 lb/in^2
Relación de Poisson's	μ=0.287
Coeficiente de expansión térmica	α=8.4E-6 in/in-°F
Módulo de rigidez (cortante)	G=11.5E+6 lb/in^2
Conductividad térmica	T=27 Btu/(hr)(ft)(°F)
Constante de calor específico	cp=0.10 Btu/(lb)(°F)

Fig.3.2 Nodos de Estructura Principal

Partiendo de la Fig. 3.1 obtenemos los nodos de la pieza completa y la redibujamos, quedando de la forma que nos muestra la Fig. 3.2.

Al meter los datos al paquete Libra nos pide los nodos y elementos, por lo que dibujamos otra figura mostrando los elementos y cuya forma final se ve en la Fig. 3.3. los números italicos nos representan los elementos del perfil estructural de "PTR", y los numeros normales las placas inferiores. La localización de los nodos, elementos, materiales, apoyos y cargas las encontramos en el Apéndice 3, pagina. A2-49 al A2-53.

Los nodos donde será soportada la pieza y en la que tendremos las reacciones son:

1	26	29	30
45	3	50	49
10	65	66	70
85	86	12	89

Las cargas están aplicadas hacia abajo con un valor total de 3,300 libras aplicadas en 6 nodos, resultando 550 Lb. por cada nodo en la manera siguiente:

1	3	10	12
5	8		

Fig. 3.3 Elementos de Estructura Principal

Tenemos todos los datos suficientes por lo que corremos el paquete de libra y le ponemos los nombres a los archivos de la manera siguiente:

e-sup. archivo conteniendo los datos de entrada

e.sup.sol archivo con la solucion del problema

e.sup.pos archivo para mostrar graficamente la pieza

Después de correr el paquete (software) Libra analizamos los datos (ver Apendice 2) para encontrar los valores principales de momentos, y deflección de perfil estructural como sigue:

NODO	DEFLEXION	MOMENTO
5	-1.184E-02	-2.132E+03
8	-1.184E-02	2.132E+03
14	-1.245E-02	1.661E+03
15	-1.245E-02	1.661E+03

Para la sección del perfil estructural, calculamos el esfuerzo mediante la fórmula suguiente:

$$\sigma = \frac{MC}{I} = \frac{-2132}{3.685} \times 2.25 = 1301.76 \text{lb/pulg.}^2$$

$$\sigma = 91.52 \text{kg/cm}^2$$

El esfuerzo de trabajo lo calculamos con un factor de seguridad de 2.5 con la fórmula

$$\sigma_t = \frac{\sigma_y}{FS}$$

Donde

$\sigma_t \Rightarrow$ Esfuerzo de trabajo

$\sigma_y \Rightarrow$ Esfuerzo de cedencia

FS $\Rightarrow$ Factor de Seguridad

El esfuerzo de cedencia σ_y para un acero estructural 1020 es de 50,000 lb/in^2 .

$$\sigma = \frac{\sigma_y}{FS} = \frac{50{,}000}{2.5} = 20{,}000 lb/pulg.^2$$

$$\sigma = 1406.04 kg/cm^2$$

Como podemos ver el esfuerzo de trabajo es mayor que el esfuerzo realizado por la pieza estructural, podemos considerar que la pieza está dentro de los esfuerzos permisibles y tomando en cuenta que la prensa necesita una minima deflección, podemos decir que esta bien diseñada.

CAPITULO 4

ANALISIS DE LA PLACA SUPERIOR

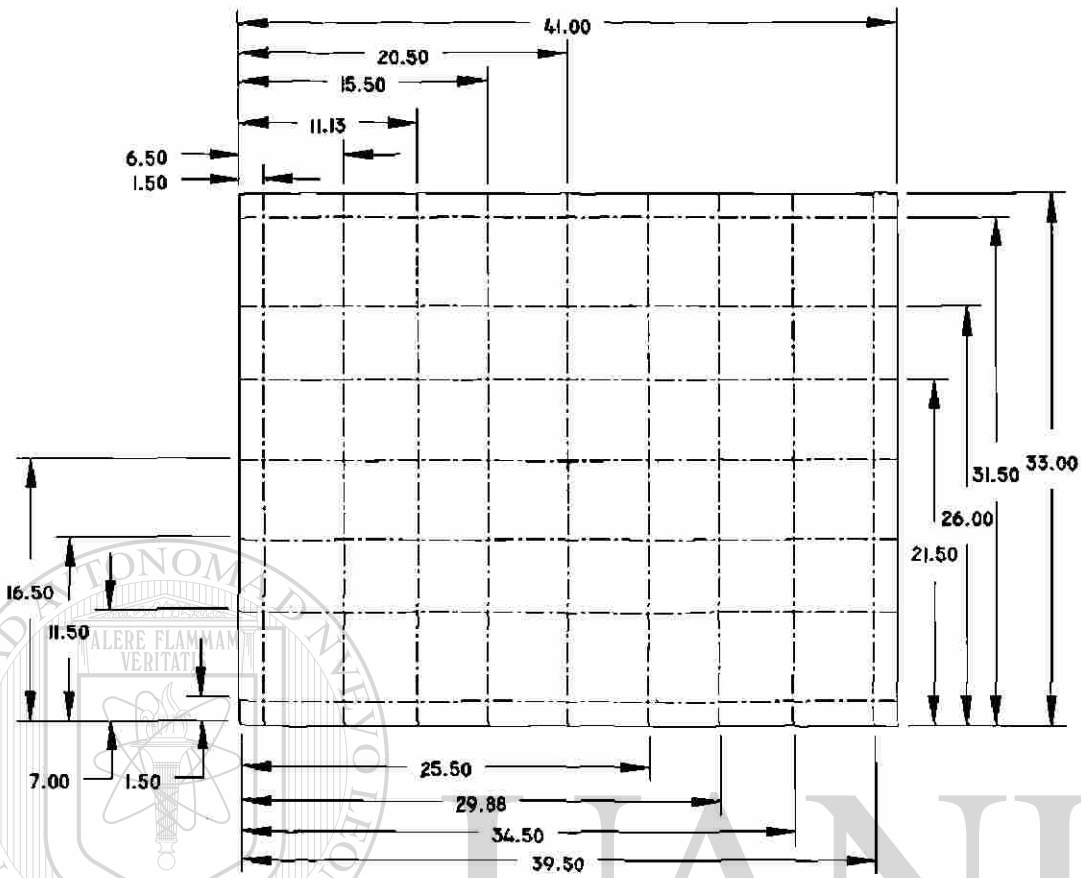
Analizaremos por último la placa superior para complementar la tesis como partes representativas del conjunto de partes que conforman la prensa para la fabricación de tortillas.

La placa es la pieza que presiona los testales (bolitas de masa) para que finalmente formen la tortillas crudas, la cual está sujetada por un bastidor con tacones que son los que le dan presión a la placa y ésta a su vez presiona a la placa fija inferior.

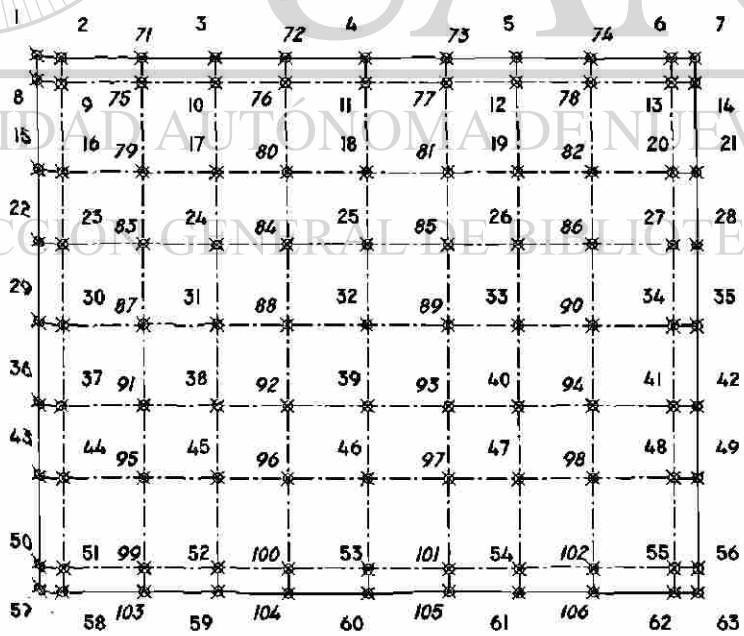
La forma de la placa se muestra en la Fig.4.1. Esta formada por una placa de aluminio de 33 de ancho x 41 pulgadas de largo y con un espesor de 2 pulgadas. Se ha dividido en partes de cuatro lados para considerarlos como elementos de cuatro nodos tipo 11 (ver pagina 18) y así obtener los nodos en la Fig. 4.1 (b)y los elementos en la Fig. 4.2.

Para nuestro análisis consideramos aluminio 6061 T6 cuyas propiedades son:

Densidad de masa	ρ=0.095 lb/in^3
Módulo de elasticidad	E=10E+6 lb/in^2
Relación de Poisson's	μ=0.330
Coeficiente de expansión térmica	α=13.5E-6 in/in-°F
Módulo de rigidez (cortante)	G=3.80E+6 lb/in^2
Conductividad térmica	T=90 Btu/(hr)(ft)(°F)
Constante de calor específico	cp=0.23 Btu/(lb)(°F)



(A) PLACA SUPERIOR



(B) NODOS

FIG.4.1 NODOS DE PLACA SUPERIOR

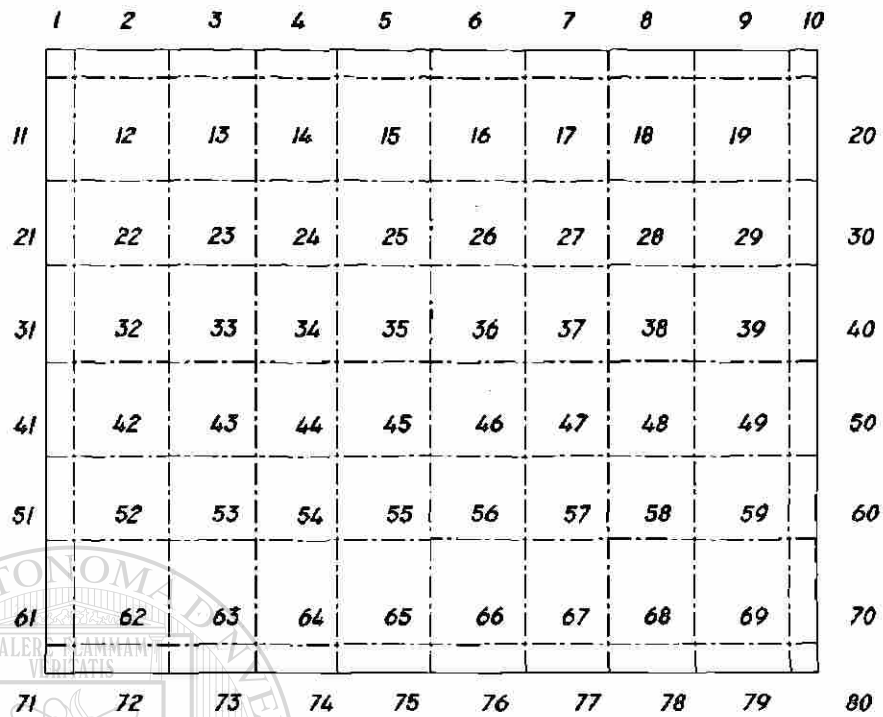
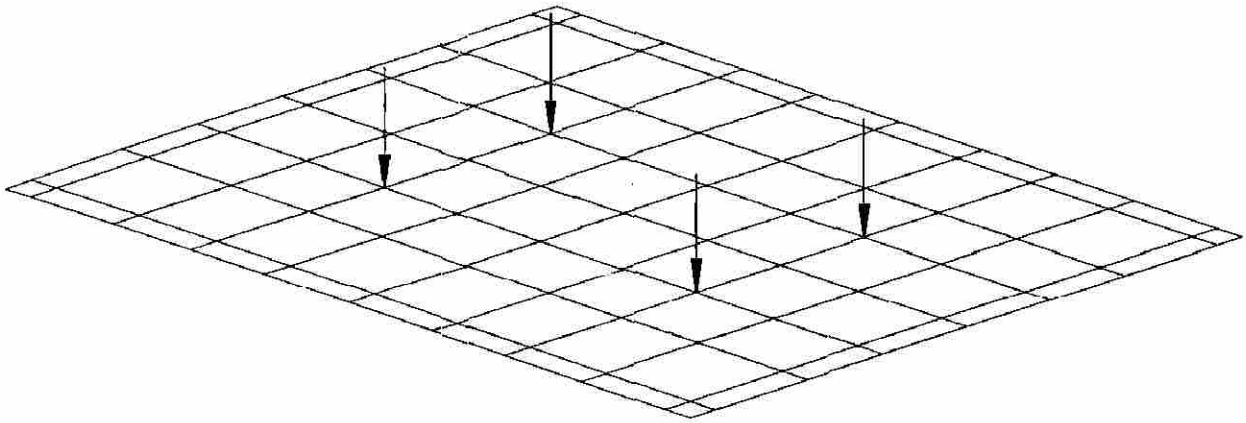


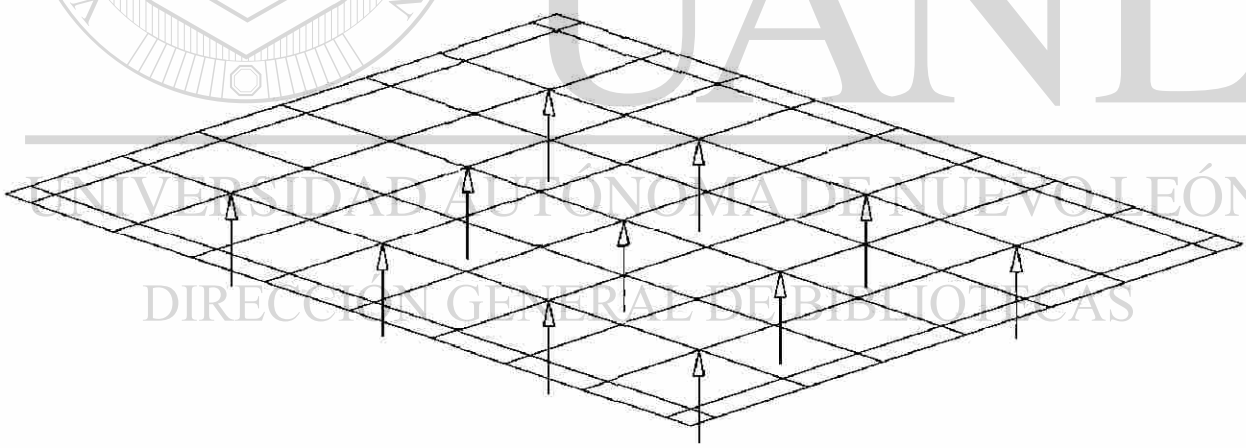
Fig. 4.2 Elementos de Placa Superior

La carga será de 8948.8 libras repartidas en cuatro nodos, resultando un valor de 2237.2, y son aplicadas a estos como sigue:

nodos	cargas	nodos	cargas
24	-2237.2	26	-2237.2
38	-2237.2	40	-2237.2



(A) CARGAS APLICADAS A LA PLACA



(B) REACCIONES DE LA PLACA

Fig. 4.3 Cargas y Reacciones

Los apoyos son en los nodos siguientes:

79 80 81 82

31 32 33

95 96 97 98

Con las dimensiones de la placa (ver fig.4.1a) formamos los nodos y elementos de los cuales se encuentran localizados en el Apéndice 3; tenemos el material y sus cargas así como sus apoyos por lo que corremos el paquete de libras y obtenemos datos de deflección y esfuerzo.

De los resultados del Apéndice 3, página A3-89 a la A3-196 podemos extraer los valores máximos de deflección y esfuerzo como sigue:

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: placa4-k.pos

NUMBER OF ELEMENTS = 80
NUMBER OF NODES = 99
NUMBER OF DOF'S = 6
NUMBER OF NDS/ELEM = 4

---- LOAD CASE NO. 1 ----

NODE	DEFL-1	DEFL-2	DEFL-3	DEFL-4	DEFL-5	DEFL-6
3	.000E+00	.000E+00	**8.063E-03**	6.124E-04	-1.346E-04	.000E+00
4	.000E+00	.000E+00	8.527E-03	6.742E-04	-3.446E-08	.000E+00
5	.000E+00	.000E+00	8.063E-03	6.124E-04	1.346E-04	.000E+00
59	.000E+00	.000E+00	8.063E-03	-6.124E-04	-1.346E-04	.000E+00
60	.000E+00	.000E+00	8.527E-03	-6.742E-04	-3.446E-08	.000E+00
61	.000E+00	.000E+00	8.063E-03	-6.124E-04	1.346E-04	.000E+00

PEAK PRINCIPAL STRESSES BY VALUE

ELEM	PEAK TENSILE STRESS(PSI)	ELEM	PEAK COMPRES STRESS(PSI)	ELEM	PEAK SHEAR STRESS(PSI)
--- MATERIAL SET NO. 1 ---					
36	**8.3408E+02**	**36**	**1.1458E+03**	**36**	**1.1458E+03**
46	8.3408E+02	46	1.1458E+03	46	1.1458E+03
45	8.3370E+02	45	1.1456E+03	45	1.1456E+03
35	8.3370E+02	35	1.1456E+03	35	1.1456E+03

AVERAGE PRINCIPAL STRESSES BY VALUE

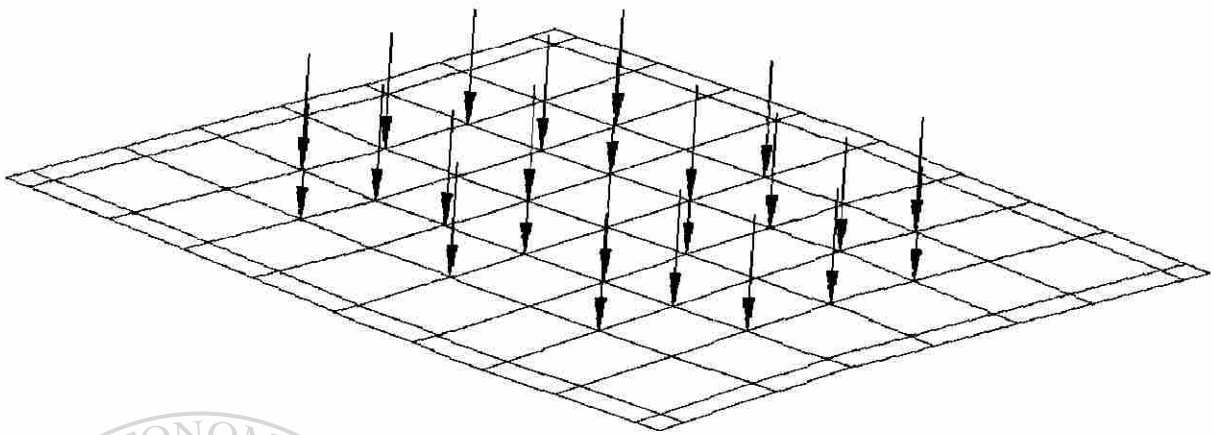
ELEM	AVG TENSILE STRESS(PSI)	ELEM	AVG COMPRES STRESS(PSI)	ELEM	AVG SHEAR STRESS(PSI)
--- MATERIAL SET NO. 1 ---					
36	8.2037E+02	36	1.1367E+03	36	1.1367E+03
46	8.2037E+02	46	1.1367E+03	46	1.1367E+03
45	8.1997E+02	45	1.1365E+03	45	1.1365E+03
35	8.1997E+02	35	1.1365E+03	35	1.1365E+03

Corrimos el programa "MAXSTR.EXE" para encontrar los máximos valores de esfuerzo, promedio, y picos en forma ordenada por valor o por elemento y nos dio como resultado los datos anteriores.

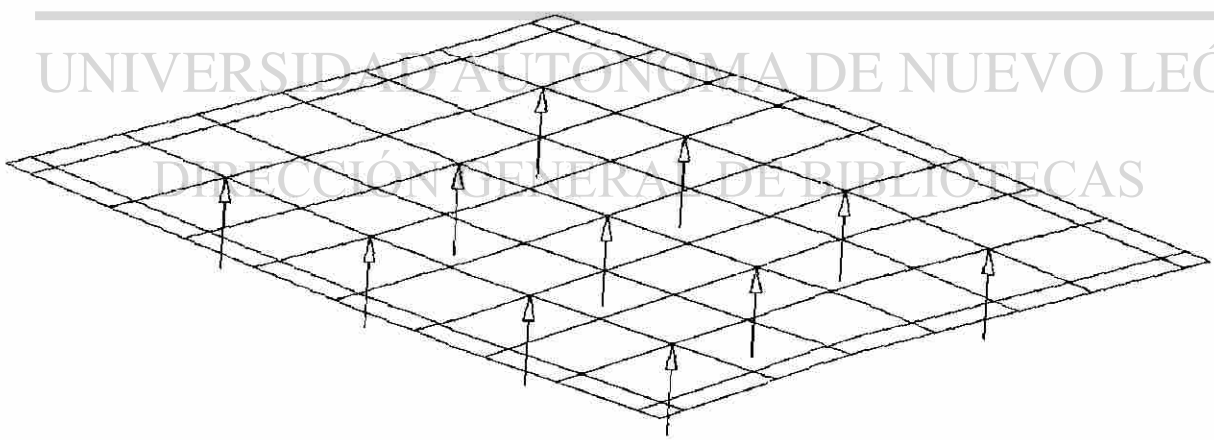
Como la prensa requiere un mínimo de deflección en sus placas para obtener un producto de calidad uniforme, es necesario rediseñar la prensa, aumentando el espesor de la placa, cambiar el material o aumentar el número de puntos de aplicación de la carga para mejorar su distribución. Optamos por esto último y ponemos mas puntos de contacto como lo describe la Fig. 4.4.

El valor de la carga disminuye por el aumento de puntos de contacto de carga pero su valor total se mantiene el mismo valor de 8948.8

lbs. repartidos ahora en 24 nodos nos da un valor de 372.87 lb./nodo como sigue

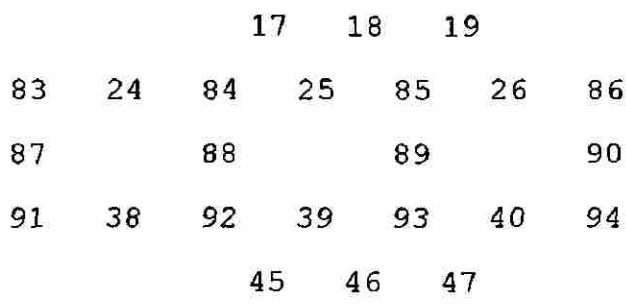


(A) CARGAS APLICADAS A LA PLACA



(B) REACCIONES DE LA PLACA

Fig. 4.4 Cargas y reacciones en placa rediseñada



Los datos del material así como los puntos de reacción se mantienen con el mismo valor y en el mismo lugar. Con estos datos los capturamos en el paquete "libra" y nos resultan valores de desplazamiento y esfuerzo como sigue:

Nodo	Desplazamiento
4	-1.160E-03
22	-1.164E-03
28	-1.162E-03
30	**-1.298E-03**
34	-1.295E-03
36	-1.164E-03
60	-1.160E-03

Podemos obtener los mismos datos corriendo el archivo maxstr.exe y compararlos con los del archivo libsan, como se muestran en seguida.

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: a:placa4k1.pos

```
NUMBER OF ELEMENTS =    80
NUMBER OF NODES    =    99
NUMBER OF DOF'S    =     6
NUMBER OF NDS/ELEM =     4


---- LOAD CASE NO.   1 ----
```

NODE	DEFL-1	DEFL-2	DEFL-3	DEFL-4	DEFL-5	DEFL-6
4	.000E+00	.000E+00	-1.160E-03	-8.226E-05	4.804E-08	.000E+00
22	.000E+00	.000E+00	-1.164E-03	9.588E-05	-6.376E-05	.000E+00
28	.000E+00	.000E+00	-1.162E-03	9.568E-05	6.368E-05	.000E+00
30	.000E+00	.000E+00	**-1.298E-03**	3.284E-19	-7.847E-05	.000E+00
34	.000E+00	.000E+00	-1.295E-03	-2.376E-20	7.846E-05	.000E+00
36	.000E+00	.000E+00	-1.164E-03	-9.588E-05	-6.376E-05	.000E+00
42	.000E+00	.000E+00	-1.162E-03	-9.568E-05	6.368E-05	.000E+00
60	.000E+00	.000E+00	-1.160E-03	8.226E-05	4.804E-08	.000E+00

Los datos de esfuerzo se obtienen de la misma manera en el Apéndice A3. Como podemos ver los valores de deflección disminuyeron al aumentar el número de puntos de contacto de las cargas ayudando a mejorar el diseño; por lo que la pieza se modificará, agregando un soporte con tacones que apoyen en los puntos indicados de carga.

Capitulo 5

Resultados

El rediseño de la prensa con la ayuda del método de Elementos Finitos ha facilitado la fabricación de la misma en menos tiempo de lo esperado ya que no hay necesidad de hacer prototipos, como cuando se analiza, desde el punto de vista de resistencia de materiales.

Cuando se estaba rediseñando la prensa para aumentar su capacidad se dejaron muchas piezas con el mismo diseño original ya que no era necesario su modificación, en el caso de las partes que era necesario modificarlas se busco mantener la misma forma y el mismo tipo de material hasta donde fuera posible, logrando con esto tener un inventario bajo de materiales en almacen.

El utilizar el paquete de programación "Libra" para analizar las partes más importantes de la prensa nos permitió hacer un análisis en 3D (3 dimensiones) logrando obtener mejores, y más confiables resultados de todo un conjunto de partes, ya que puede manejar dos tipos de material, con diferente propiedades mecánicas, con tipos y valores de cargas variables para cada caso en particular, haciendo con esto una ayuda adicional para manejar situaciones más complejas que con métodos convencionales de cálculo.

Al analizar las partes por los dos métodos, convencional y por el método de elementos finitos (en "PC") podemos decir que el

método de elementos finitos se acerca al método convencional pero en análisis de 3D mejora los resultados por elementos finitos.

Analizamos la estructura superior , la estructura principal y la placa superior encontrando que las dos primeras piezas se encuentran con un margen alto de seguridad en cuestión de esfuerzo de trabajo, pero la prensa necesita un mínimo de deflecccción para poder cumplir con los requerimientos de calidad de los productos (tortillas) en cuanto a espesor y forma por lo que podemos decir que las dos primeras piezas están bien diseñadas. La tercera pieza muestra una deflección mayor que la esperada, se rediseño con mas puntos de contacto de las cargas, para disminuir los deflecciones en puntos críticos. Como resultado de esto, mejoró notablemente el funcionamiento de la pieza en forma de operación de la prensa y en resistencia de la misma.

Al emplear el método de elementos finitos por medio de un software(paquete de programación) nos da resultados en cada nodo de cada sección o elemento, para ver que parte está más esforzada y de esta manera poder cambiar alguna propiedad del material, forma o posición de la pieza para mejorar su diseño, ahorrando tiempo de análisis ya que solo se modifica la parte que se va a rediseñar y se vuelve a correr el programa para obtener los resultados finales, y asegurarse que va a funcionar adecuadamente.

Asimismo nos ayuda a evitar en gran medida el uso de prototipo como en disminución de tiempo en la decisión de

fabricación de algún equipo con la seguridad de que está bien diseñado.

El paquete que manejamos (libra) maneja datos de entrada en forma manual, de manera que al hacer la geometría de la pieza tenemos que encontrar primero los puntos nodales y los elementos que conforman la pieza para después tener que alimentarlos y así poder ver la figura en pantalla. Los datos de material, cargas y condiciones frontera también los pide y se los damos uno por uno, esto tiene que ser para cada una de las partes que vamos a analizar. Los resultados obtenidos nos lo proporcionan con valores tabulados que hay que interpretar para encontrar los valores máximos y así saber donde es el punto (nodo) mas esforzado y así poder hacer los cambios pertinentes para mejorar el diseño.

En la actualidad existen muchos paquetes de programación que proporcionan con facilidad y rapidez, resultados de deformación, deflección y esfuerzo de una manera gráfica muy fácil de entender y con valores máximos encontrados en el análisis mostrados en pantalla con diversos colores que hacen que hagamos una conclusión de que esta pasando con la pieza a estudiar.

El paquete (software) "Cosmos" cuenta con una rutina que permite la importación de dibujos hechos en CAD facilitando y reduciendo la carga de trabajo para el estudio de una pieza, de esta manera podemos hacer el dibujo en otro paquete y luego pasarlo al "Cosmos". Ademas cuenta con librerías de diversos materiales que permiten seleccionar el adecuado, evitando así la captura de información

Cuenta además con menú de opciones que nos permiten agregar vibración a la pieza en caso de ser necesario y nos muestra en pantalla, el efecto del mismo. Podemos agregar ciclos de cargas para poder saber si nos va a fallar por fatiga mostrando una gráfica para este fin.

Podemos decir que el uso de la computadora para el análisis de elementos finitos es primordial pero no hay que olvidar que cada día que pasa se van mejorando los paquetes de programación por lo cual también nosotros debemos caminar a la par de los adelantos para elegir el mejor paquete de programación que nos facilite el análisis de lo que vamos a estudiar.

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GLOSARIO DE TERMINOS
Y
SIMBOLOGIA

GLOSARIO

A.I.S.I..- American Iron and Steel Institue.

C.A.D. Computer-aided-drafting, significa la asistencia por computadora para crear planos y puede estimar propiedades de la geometria de la pieza como volumen, peso, coordenadas del centroide y momentos de inercia.

d.o.f. Degree of freedom (grado de libertad)

P.T.R..- Perfil tubular rectangular

P.C..- Personal computer (computadora personal).

Software.- Programas de computación que efectuan operaciones logicas.

Unión LLamado tambien como nodo, representan puntos de conección de los elementos

SIMBOLOGIA

A	Area (parte de la pieza "A")
B	Area (parte de la pieza "B")
b	Base de una Fig.geométrica
d	Distancia del centroide de una parte de la pieza al centroide total
C	Centroide
C	constante 2 de la estructura
cp	Constante de calor especifico
E	Modulo de elasticidad
F	Fuerza
Fx	Fuerza en dirección x
Fy	Fuerza en dirección y
Fz	Fuerza en dirección z
FS	Factor de seguridad
G	Modulo de rigidez (cortante)
I	Momento de inercia
H	Reacción horizontal
h	Altura de una Fig. geometrica de una Fig. geométrica
K	Coeficiente
LA	Centroide de la pieza A
LB	Centoride de la pieza B
M	Momento
Mx	Momento en x
My	Momento en y
Mz	Momento en z
q	Distancia diagonal entre la base y la altura
P	Carga
T	Conductividad termica
t	Espesor
v	Reacción vertical
Ý	Centroide de una pieza compuesta
α	Coeficiente de expansión termica
Δ	Desplazamiento
Θ	Desplazamiento angular
μ	Relación de Poisson's
ρ	Densidad de masa
σ	Esfuerzo
σ_y	Esfuerzo de cedencia
ϕ	Constante 1 de la estructura
Ω	Matriz de forma fuerza desplazamiento

APENDICE 1

BASE DE DATOS DE PIEZA 01

LIBRA Finite Element Program
Version 3.0 Revision 2

ANALISIS DE ELEMENTOS FINITOS
ESTRUCTURA SUPERIOR

FILE SPECIFICATIONS

INPUT est1k
OUTPUT est1k.sol
BANDWIDTH ..... NONE
POST PROCESS .. est1k.pos

NSTYPE	NP	NE	NB	NELPR	NCNCN1	EL TYPES
1	5	4	4	4	0	3

IDATCK	IBNDOP	IPOST	ISING	IRSFLG	ISUPR
0	1	1	0	0	0

LIBRA Finite Element Program
Version 3.0 Revision 2

ANALISIS DE ELEMENTOS FINITOS
ESTRUCTURA SUPERIOR

NODAL COORDINATES

NODE POINT	X-COORDINATE	Y-COORDINATE	Z-COORDINATE
1	.0000E+00	.0000E+00	.0000E+00
2	1.2500E+01	9.7500E+00	.0000E+00
3	2.1060E+01	9.7500E+00	.0000E+00
4	2.9620E+01	9.7500E+00	.0000E+00
5	4.2120E+01	.0000E+00	.0000E+00

ELEMENT DATA

ELEMENT	EL TYPE	MATERIAL	.....NODES.....	
1	3	1	1	2
2	3	2	2	3
3	3	2	3	4
4	3	1	4	5

MATERIAL PROPERTIES

SET	TEMP	PROP(1)	PROP(2)	PROP(3)	PROP(4)	PROP(5)	PROP(6)
1	.000E+00	1.000E+01	1.000E+01	1.000E+01	1.042E+01	1.042E+01	2.500E+00
1	.000E+00	3.000E+07	1.150E+07	8.400E-06	2.830E-01	.000E+00	.000E+00
2	.000E+00	1.000E+01	1.000E+01	1.000E+01	7.000E-02	7.000E-02	1.500E+00
2	.000E+00	3.000E+07	1.150E+07	8.400E-06	2.830E-01	.000E+00	.000E+00

DISPLACEMENT BOUNDARY CONDITIONS

NODE	DOF FIXED	DISP
1	110000	.0000E+00
5	110000	.0000E+00

PROBLEM SIZE INFORMATION

TOTAL NUMBER OF NODES	5
TOTAL NUMBER OF ELEMENTS	4
TOTAL NUMBER OF BOUNDARY CONDITIONS	4
TOTAL NUMBER OF CONSTRAINING CONDITIONS	0

TOTAL NUMBER OF EQUATIONS	30
BAND WIDTH	12
NUMBER OF EQUATIONS PER BLOCK	30
NUMBER OF EQUATION BLOCKS	1

LIBRA Finite Element Program
Version 3.0 Revision 2

ANALISIS DE ELEMENTOS FINITOS
ESTRUCTURA SUPERIOR

SOLUTION CONTROL PARAMETERS, LOAD CASE NUMBER 1

NUMBER OF NODAL LOAD RECORDS 1
NUMBER OF NODAL TEMPERATURE RECORDS ... 0
REACTION LOAD CALCULATION OPTION 1
BODY FORCE OPTION 0
ROTATIONAL SPEED OPTION 0
SKIP STRESS CALCULATION OPTION 0
ZERO STRESS TEMPERATURE ..... .0000E+00

NODAL LOADS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
3	.0000E+00	4.6875E+03	.0000E+00	.0000E+00	.0000E+00	.0000E+00

DISPLACEMENTS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
1	.000E+00	.000E+00	-3.811E-03	1.873E-04	3.913E-04	7.333E-05
2	-7.657E-04	2.568E-03	-6.877E-03	1.873E-04	3.913E-04	3.257E-04
3	-1.812E-08	6.230E-02	-1.023E-02	1.873E-04	3.913E-04	-2.693E-09
4	7.657E-04	2.568E-03	-1.358E-02	1.873E-04	3.913E-04	-3.257E-04
5	.000E+00	.000E+00	-2.029E-02	1.873E-04	3.913E-04	-7.332E-05

ELEMENT STRESSES

EL	NODE	P1	P2	P3	M1	M2	M3
1	1	-4.616E+03	1.073E+02	-6.185E+02	-3.678E-12	1.906E-12	-6.170E-12
	2	4.616E+03	-1.073E+02	6.185E+02	3.678E-12	9.805E+03	1.701E+03

EL	NODE	P1	P2	P3	M1	M2	M3
2	2	-4.025E+03	-5.858E+01	2.343E+03	2.759E-13	**-9.948E+03**	-2.487E+02
	3	4.025E+03	5.858E+01	-2.343E+03	-2.759E-13	**-1.011E+04**	-2.527E+02

EL	NODE	P1	P2	P3	M1	M2	M3
3	3	-4.025E+03	5.858E+01	-2.343E+03	2.822E-13	**1.011E+04**	2.527E+02
	4	4.025E+03	-5.858E+01	2.343E+03	-2.822E-13	**9.948E+03**	2.487E+02

EL	NODE	P1	P2	P3	M1	M2	M3
4	4	-4.616E+03	4.801E+02	4.044E+02	-3.164E-13	-6.412E+03	7.611E+03
	5	4.616E+03	-4.801E+02	-4.044E+02	3.164E-13	1.845E-11	-3.913E-12

REACTION LOADS FOR LOAD CASE 1

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
1	**-4.025E+03**	**-2.344E+03**	.000E+00	.000E+00	.000E+00	.000E+00
5	**4.025E+03**	**-2.344E+03**	.000E+00	.000E+00	.000E+00	.000E+00

LIBRA Finite Element Program
Version 3.0 Revision 2

ANALISIS DE ELEMENTOS FINITOS
ESTRUCTURA SUPERIOR 3D

DATOS DE ENTRADA

```
 1   56   65   24    4    0   11    9    3
 0    1    1    0    0    0
 0   56   65
 1          2.03        0.0        0.0
 2           3.9         .94       1.64
 3         12.31        5.18        9.0
 4         14.32         6.2        9.0
 5           0.0        4.02        0.0
 6          1.87        4.96       1.64
 7         10.29         9.2        9.0
 8         12.29       10.21        9.0
 9         34.41         0.0        0.0
10         32.54         .94       1.64
11         24.14        5.18        9.0
13         36.44        4.02        0.0
14         34.57        4.96       1.64
15         26.15         9.2        9.0
16         24.14       10.21        9.0
17         36.44       17.35        0.0
18         34.57        16.4       1.64
19         26.15       12.16        9.0
20         24.14       11.15        9.0
21         34.41       21.36        0.0
22         32.54       20.42       1.64
23         24.12       16.18        9.0
24         22.12       15.17        9.0
25          2.03       21.36        0.0
26           3.9       20.42       1.64
27         12.31       16.18        9.0
28         14.32       15.17        9.0
29           0.0       17.35        0.0
30          1.87        16.4       1.64
31         10.29       12.16        9.0
32         12.29       11.15        9.0
12         22.12         6.2        9.0
33         13.01         3.8        9.0
34         23.43         3.8        9.0
41         17.22         5.3        9.0
42         19.22         5.3        9.0
50         20.13        7.49        9.0
56         19.22        8.05        9.0
51         20.85        8.05        9.0
35         26.47        9.83        9.0
43         21.41        8.76        9.0
36         26.47       11.53        9.0
44         21.41       12.58        9.0
52         20.85        13.3        9.0
37         23.43       17.55        9.0
45         20.13       13.86        9.0
38         13.01       17.55        9.0
```

46		16.31	13.86	9.0		
53		15.6	13.3	9.0		
39		9.97	11.53	9.0		
47		15.03	12.58	9.0		
40		9.97	9.83	9.0		
48		15.03	8.76	9.0		
54		15.6	8.05	9.0		
49		16.31	7.49	9.0		
55		17.22	8.05	9.0		
1	3	1	1	2		
2	3	1	2	3		
3	3	1	3	4		
5	3	1	5	6		
6	3	1	6	7		
7	3	1	7	8		
9	3	1	9	10		
10	3	1	10	11		
13	3	1	13	14		
14	3	1	14	15		
15	3	1	15	16		
17	3	1	17	18		
18	3	1	18	19		
19	3	1	19	20		
21	3	1	21	22		
22	3	1	22	23		
23	3	1	23	24		
25	3	1	25	26		
26	3	1	26	27		
27	3	1	27	28		
29	3	1	29	30		
30	3	1	30	31		
31	3	1	31	32		
11	3	1	11	12		
32	11	2	33	34	42	41
33	9	3	34	50	42	
34	9	3	42	50	56	
35	9	3	50	51	56	
36	9	3	34	51	50	
38	9	3	35	43	51	
39	11	2	35	36	44	43
40	11	2	43	44	52	51
41	9	3	36	52	44	
43	9	3	37	45	52	
44	11	2	37	38	46	45
45	11	2	45	46	53	52
46	9	3	38	53	46	
48	9	3	39	47	53	
49	11	2	39	40	48	47
50	11	2	47	48	54	53
51	9	3	40	54	48	
53	9	3	33	49	54	
54	9	3	33	41	49	
55	9	3	41	55	49	
56	9	3	49	55	54	
57	9	3	34	11	51	
58	9	3	11	15	51	
59	9	3	15	35	51	
60	9	3	36	19	52	
61	9	3	19	23	52	
62	9	3	23	37	52	

```
 63    9    3   27   53   38
 64    9    3   27   31   53
 65    9    3   31   39   53
 66    9    3    7   54   40
 67    9    3    7    3   54
 68    9    3    3   33   54
  4    3    1    2    6
  8    3    1    3    7
 12    3    1   10   14
 16    3    1   11   15
 20    3    1   18   22
 24    3    1   19   23
 28    3    1   26   30
 75    3    1   27   31
1  0.0     10.0      10.0      10.0      5.21      .052       2.5
1  0.0    3.0+07   1.15+07    8.4-06      .283      0.0       0.0VIGA-14
2  0.0    3.0+07      0.0       .75     8.4-06     .283   1.15+07VIGA-14
3  0.0    3.0+07      0.0       .75     8.4-06     .283   1.15+07VIGA-14
  1     111000            0.0    0     0     0
  5     111000            0.0    0     0     0
  9     111000            0.0    0     0     0
 13     111000            0.0    0     0     0
 17     111000            0.0    0     0     0
 21     111000            0.0    0     0     0
 25     111000            0.0    0     0     0
 29     111000            0.0    0     0     0
  0
  8    0    1    0    0    0       0.0
 50    1    0       0.0       0.0   1171.85      0.0       0.0       0.0
 43    1    0       0.0       0.0   1171.85      0.0       0.0       0.0
 44    1    0       0.0       0.0   1171.85      0.0       0.0       0.0
 45    1    0       0.0       0.0   1171.85      0.0       0.0       0.0
 46    1    0       0.0       0.0   1171.85      0.0       0.0       0.0
 47    1    0       0.0       0.0   1171.85      0.0       0.0       0.0
 48    1    0       0.0       0.0   1171.85      0.0       0.0       0.0
 49    1    0       0.0       0.0   1171.85      0.0       0.0       0.0
  0
```

```
                                          LIBRA Finite Element Program
                                           Version 3.0     Revision 2

    ANALISIS DE ELEMENTOS FINITOS
    ESTRUCTURA SUPERIOR 3D


 FILE SPECIFICATIONS

   INPUT ......... EST-3D4K
   OUTPUT ........ EST-3D4K.SOL
   BANDWIDTH ..... NONE
   POST PROCESS .. EST-3D4K.POS


   NSTYPE        NP        NE        NB     NELPR    NCNCN1       EL TYPES
        1        56        65        24         4         0    11  9  3
```

IDATCK	IBNDOP	IPOST	ISING	IRSFLG	ISUPR
0	1	1	0	0	0

LIBRA Finite Element Program
Version 3.0 Revision 2

ANALISIS DE ELEMENTOS FINITOS
ESTRUCTURA SUPERIOR 3D

NODAL COORDINATES

NODE POINT	X-COORDINATE	Y-COORDINATE	Z-COORDINATE
1	2.0300E+00	.0000E+00	.0000E+00
2	3.9000E+00	9.4000E-01	1.6400E+00
3	1.2310E+01	5.1800E+00	9.0000E+00
4	1.4320E+01	6.2000E+00	9.0000E+00
5	.0000E+00	4.0200E+00	.0000E+00
6	1.8700E+00	4.9600E+00	1.6400E+00
7	1.0290E+01	9.2000E+00	9.0000E+00
8	1.2290E+01	1.0210E+01	9.0000E+00
9	3.4410E+01	.0000E+00	.0000E+00
10	3.2540E+01	9.4000E-01	1.6400E+00
11	2.4140E+01	5.1800E+00	9.0000E+00
12	2.2120E+01	6.2000E+00	9.0000E+00
13	3.6440E+01	4.0200E+00	.0000E+00
14	3.4570E+01	4.9600E+00	1.6400E+00
15	2.6150E+01	9.2000E+00	9.0000E+00
16	2.4140E+01	1.0210E+01	9.0000E+00
17	3.6440E+01	1.7350E+01	.0000E+00
18	3.4570E+01	1.6400E+01	1.6400E+00
19	2.6150E+01	1.2160E+01	9.0000E+00
20	2.4140E+01	1.1150E+01	9.0000E+00
21	3.4410E+01	2.1360E+01	.0000E+00
22	3.2540E+01	2.0420E+01	1.6400E+00
23	2.4120E+01	1.6180E+01	9.0000E+00
24	2.2120E+01	1.5170E+01	9.0000E+00
25	2.0300E+00	2.1360E+01	.0000E+00
26	3.9000E+00	2.0420E+01	1.6400E+00
27	1.2310E+01	1.6180E+01	9.0000E+00
28	1.4320E+01	1.5170E+01	9.0000E+00
29	.0000E+00	1.7350E+01	.0000E+00
30	1.8700E+00	1.6400E+01	1.6400E+00
31	1.0290E+01	1.2160E+01	9.0000E+00
32	1.2290E+01	1.1150E+01	9.0000E+00
33	1.3010E+01	3.8000E+00	9.0000E+00
34	2.3430E+01	3.8000E+00	9.0000E+00
35	2.6470E+01	9.8300E+00	9.0000E+00
36	2.6470E+01	1.1530E+01	9.0000E+00
37	2.3430E+01	1.7550E+01	9.0000E+00
38	1.3010E+01	1.7550E+01	9.0000E+00
39	9.9700E+00	1.1530E+01	9.0000E+00
40	9.9700E+00	9.8300E+00	9.0000E+00
41	1.7220E+01	5.3000E+00	9.0000E+00
42	1.9220E+01	5.3000E+00	9.0000E+00
43	2.1410E+01	8.7600E+00	9.0000E+00
44	2.1410E+01	1.2580E+01	9.0000E+00
45	2.0130E+01	1.3860E+01	9.0000E+00

46	1.6310E+01	1.3860E+01	9.0000E+00
47	1.5030E+01	1.2580E+01	9.0000E+00
48	1.5030E+01	8.7600E+00	9.0000E+00
49	1.6310E+01	7.4900E+00	9.0000E+00
50	2.0130E+01	7.4900E+00	9.0000E+00
51	2.0850E+01	8.0500E+00	9.0000E+00
52	2.0850E+01	1.3300E+01	9.0000E+00
53	1.5600E+01	1.3300E+01	9.0000E+00
54	1.5600E+01	8.0500E+00	9.0000E+00
55	1.7220E+01	8.0500E+00	9.0000E+00
56	1.9220E+01	8.0500E+00	9.0000E+00

ELEMENT DATA

ELEMENT	EL TYPE	MATERIAL	.....NODES.....			
1	3	1	1	2		
2	3	1	2	3		
3	3	1	3	4		
4	3	1	2	6		
5	3	1	5	6		
6	3	1	6	7		
7	3	1	7	8		
8	3	1	3	7		
9	3	1	9	10		
10	3	1	10	11		
11	3	1	11	12		
12	3	1	10	14		
13	3	1	13	14		
14	3	1	14	15		
15	3	1	15	16		
16	3	1	11	15		
17	3	1	17	18		
18	3	1	18	19		
19	3	1	19	20		
20	3	1	18	22		
21	3	1	21	22		
22	3	1	22	23		
23	3	1	23	24		
24	3	1	19	23		
25	3	1	25	26		
26	3	1	26	27		
27	3	1	27	28		
28	3	1	26	30		
29	3	1	29	30		
30	3	1	30	31		
31	3	1	31	32		
32	11	2	33	34	42	41
33	9	3	34	50	42	
34	9	3	42	50	56	
35	9	3	50	51	56	
36	9	3	34	51	50	
38	9	3	35	43	51	
39	11	2	35	36	44	43
40	11	2	43	44	52	51

41	9	3	36	52	44	
43	9	3	37	45	52	
44	11	2	37	38	46	45
45	11	2	45	46	53	52
46	9	3	38	53	46	
48	9	3	39	47	53	
49	11	2	39	40	48	47
50	11	2	47	48	54	53
51	9	3	40	54	48	
53	9	3	33	49	54	
54	9	3	33	41	49	
55	9	3	41	55	49	
56	9	3	49	55	54	
57	9	3	34	11	51	
58	9	3	11	15	51	
59	9	3	15	35	51	
60	9	3	36	19	52	
61	9	3	19	23	52	
62	9	3	23	37	52	
63	9	3	27	53	38	
64	9	3	27	31	53	
65	9	3	31	39	53	
66	9	3	7	54	40	
67	9	3	7	3	54	
68	9	3	3	33	54	
75	3	1	27	31		

MATERIAL PROPERTIES

SET	TEMP	PROP(1)	PROP(2)	PROP(3)	PROP(4)	PROP(5)	PROP(6)
1	.000E+00	1.000E+01	1.000E+01	1.000E+01	5.210E+00	5.200E-02	2.500E+00
1	.000E+00	3.000E+07	1.150E+07	8.400E-06	2.830E-01	.000E+00	.000E+00
2	.000E+00	3.000E+07	.000E+00	7.500E-01	8.400E-06	2.830E-01	1.150E+07
3	.000E+00	3.000E+07	.000E+00	7.500E-01	8.400E-06	2.830E-01	1.150E+07

DISPLACEMENT BOUNDARY CONDITIONS

NODE	DOF FIXED	DISP
1	111000	.0000E+00
5	111000	.0000E+00
9	111000	.0000E+00
13	111000	.0000E+00
17	111000	.0000E+00
21	111000	.0000E+00
25	111000	.0000E+00
29	111000	.0000E+00

PROBLEM SIZE INFORMATION

TOTAL NUMBER OF NODES	56
TOTAL NUMBER OF ELEMENTS	65

TOTAL NUMBER OF BOUNDARY CONDITIONS	24
TOTAL NUMBER OF CONSTRAINING CONDITIONS	0
TOTAL NUMBER OF EQUATIONS	336
BAND WIDTH	90
NUMBER OF EQUATIONS PER BLOCK	84
NUMBER OF EQUATION BLOCKS	4

LIBRA Finite Element Program
Version 3.0 Revision 2

ANALISIS DE ELEMENTOS FINITOS
ESTRUCTURA SUPERIOR 3D

SOLUTION CONTROL PARAMETERS, LOAD CASE NUMBER 1

NUMBER OF NODAL LOAD RECORDS	8
NUMBER OF NODAL TEMPERATURE RECORDS ...	0
REACTION LOAD CALCULATION OPTION	1
BODY FORCE OPTION	0
ROTATIONAL SPEED OPTION	0
SKIP STRESS CALCULATION OPTION	0
ZERO STRESS TEMPERATURE	.0000E+00

NODAL LOADS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
50	.0000E+00	.0000E+00	1.1719E+03	.0000E+00	.0000E+00	.0000E+00
43	.0000E+00	.0000E+00	1.1719E+03	.0000E+00	.0000E+00	.0000E+00
44	.0000E+00	.0000E+00	1.1719E+03	.0000E+00	.0000E+00	.0000E+00
45	.0000E+00	.0000E+00	1.1719E+03	.0000E+00	.0000E+00	.0000E+00
46	.0000E+00	.0000E+00	1.1719E+03	.0000E+00	.0000E+00	.0000E+00
47	.0000E+00	.0000E+00	1.1719E+03	.0000E+00	.0000E+00	.0000E+00
48	.0000E+00	.0000E+00	1.1719E+03	.0000E+00	.0000E+00	.0000E+00
49	.0000E+00	.0000E+00	1.1719E+03	.0000E+00	.0000E+00	.0000E+00

DISPLACEMENTS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
1	.000E+00	.000E+00	.000E+00	8.110E-05	-2.673E-04	-2.660E-06
2	-3.578E-04	-1.076E-04	6.413E-04	8.600E-05	-2.647E-04	-9.731E-06
3	-2.849E-03	2.173E-04	4.066E-03	2.742E-04	-2.785E-04	-5.807E-05

4	-2.789E-03	1.006E-04	4.905E-03	2.742E-04	-2.785E-04	-5.807E-05
5	.000E+00	.000E+00	.000E+00	3.211E-05	-1.652E-04	-4.881E-05
6	-2.869E-04	-7.440E-05	4.202E-04	1.610E-05	-2.727E-04	3.106E-05
7	-2.763E-03	2.946E-04	3.275E-03	-1.361E-04	-5.226E-04	2.134E-06
8	-2.765E-03	2.989E-04	4.182E-03	-1.361E-04	-5.226E-04	2.134E-06
9	.000E+00	.000E+00	.000E+00	-1.899E-04	-7.243E-04	1.347E-04
10	-1.265E-03	9.200E-05	-1.292E-03	-1.163E-04	-4.988E-04	8.938E-05
11	-2.321E-03	1.198E-05	-1.481E-03	3.239E-04	1.132E-03	-1.299E-04
12	-2.189E-03	2.744E-04	1.137E-03	3.239E-04	1.132E-03	-1.299E-04
13	.000E+00	.000E+00	.000E+00	-7.609E-05	-4.843E-04	1.137E-04
14	-9.215E-04	-8.763E-05	-9.697E-04	-7.323E-05	-4.924E-04	1.216E-04
15	-2.308E-03	3.672E-05	-2.542E-03	1.794E-04	1.074E-03	-7.567E-04
16	-1.543E-03	1.558E-03	-2.019E-04	1.794E-04	1.074E-03	-7.567E-04
17	.000E+00	.000E+00	.000E+00	8.138E-05	-4.037E-04	-6.569E-05
18	-8.127E-04	4.390E-06	-8.697E-04	8.605E-05	-4.946E-04	-1.131E-04
19	-2.283E-03	8.290E-05	-2.305E-03	-3.055E-04	1.217E-03	6.743E-04
20	-1.602E-03	-1.273E-03	4.506E-04	-3.055E-04	1.217E-03	6.743E-04
21	.000E+00	.000E+00	.000E+00	1.859E-04	-6.267E-04	-8.525E-05
22	-1.109E-03	-1.641E-04	-1.179E-03	1.322E-04	-4.944E-04	-7.071E-05
23	-2.244E-03	1.239E-04	-1.465E-03	-4.226E-04	1.170E-03	-3.264E-05
24	-2.277E-03	1.891E-04	1.302E-03	-4.226E-04	1.170E-03	-3.264E-05
25	.000E+00	.000E+00	.000E+00	-1.436E-04	-2.503E-04	1.135E-05
26	-3.603E-04	1.752E-04	6.642E-04	-1.112E-04	-2.713E-04	-3.757E-05
27	-2.585E-03	3.180E-04	3.976E-03	-4.048E-04	-1.927E-04	2.006E-04
28	-2.382E-03	7.211E-04	4.773E-03	-4.048E-04	-1.927E-04	2.006E-04
29	.000E+00	.000E+00	.000E+00	-1.141E-04	-2.622E-04	-9.534E-07
30	-3.796E-04	1.892E-04	6.313E-04	-1.299E-04	-2.524E-04	2.275E-05
31	-2.700E-03	3.515E-04	3.779E-03	2.677E-04	-6.192E-04	-3.641E-04
32	-3.068E-03	-3.768E-04	4.747E-03	2.677E-04	-6.192E-04	-3.641E-04
33	-2.813E-03	2.265E-04	3.312E-03	1.053E-03	2.782E-04	.000E+00
34	-2.406E-03	4.610E-05	-1.633E-03	1.072E-03	6.989E-04	.000E+00
35	-2.305E-03	4.256E-05	-2.740E-03	2.256E-04	9.414E-04	.000E+00
36	-2.285E-03	7.352E-05	-2.541E-03	-1.745E-04	1.192E-03	.000E+00
37	-2.277E-03	1.042E-04	-1.778E-03	-1.044E-03	3.870E-04	.000E+00
38	-2.508E-03	2.768E-04	3.045E-03	-9.965E-04	5.624E-04	.000E+00
39	-2.718E-03	3.517E-04	3.448E-03	1.032E-04	-6.998E-04	.000E+00
40	-2.748E-03	3.109E-04	3.094E-03	7.846E-05	-4.653E-04	.000E+00
41	-2.671E-03	1.668E-04	3.501E-03	1.675E-03	6.683E-04	.000E+00
42	-2.501E-03	1.291E-04	2.416E-03	1.641E-03	2.884E-04	.000E+00
43	-2.336E-03	8.430E-05	3.573E-03	-1.155E-04	1.552E-03	.000E+00
44	-2.339E-03	1.171E-04	3.094E-03	-1.537E-04	1.060E-03	.000E+00
45	-2.372E-03	1.387E-04	3.512E-03	-8.844E-04	3.356E-04	.000E+00
46	-2.540E-03	2.025E-04	5.259E-03	-9.152E-04	5.632E-04	.000E+00
47	-2.617E-03	2.245E-04	5.987E-03	-1.403E-04	-2.980E-04	.000E+00
48	-2.735E-03	1.989E-04	6.496E-03	-1.560E-04	-8.535E-04	.000E+00
49	-2.734E-03	1.762E-04	6.948E-03	8.236E-04	1.632E-04	.000E+00
50	-2.372E-03	1.032E-04	4.984E-03	8.230E-04	6.909E-04	.000E+00
51	-2.340E-03	8.243E-05	4.448E-03	3.328E-04	1.716E-03	.000E+00
52	-2.345E-03	1.276E-04	3.502E-03	-5.302E-04	1.163E-03	.000E+00
53	-2.587E-03	2.154E-04	5.918E-03	-5.842E-04	-2.555E-04	.000E+00
54	-2.751E-03	1.801E-04	6.996E-03	2.914E-04	-9.405E-04	.000E+00
55	-2.745E-03	1.928E-04	7.139E-03	9.451E-04	3.883E-04	.000E+00
56	-2.344E-03	1.482E-04	5.965E-03	9.381E-04	4.855E-04	.000E+00

ELEMENT STRESSES

EL	NODE	P1	P2	P3	M1	M2	M3
1	1	-2.985E+03	-3.936E+00	4.751E+01	9.447E-12	5.626E-12	-5.904E-12
	2	2.985E+03	3.936E+00	-4.751E+01	-9.447E-12	-1.263E+02	-1.047E+01
EL	NODE	P1	P2	P3	M1	M2	M3
2	2	-2.957E+03	-2.204E+01	1.771E+02	-4.950E+02	4.404E+02	-1.156E+02
	3	2.957E+03	2.204E+01	-1.771E+02	4.950E+02	-2.558E+03	-1.479E+02
EL	NODE	P1	P2	P3	M1	M2	M3
3	3	-4.788E-11	-2.833E-11	1.015E-10	9.449E-11	2.017E-10	-9.779E-11
	4	4.788E-11	2.833E-11	-1.015E-10	-9.449E-11	-2.514E-10	3.422E-11
EL	NODE	P1	P2	P3	M1	M2	M3
4	2	3.821E+01	-3.557E+01	1.281E+02	-3.282E+02	4.988E+02	-5.439E+01
	6	-3.821E+01	3.557E+01	-1.281E+02	3.282E+02	-1.076E+03	-1.058E+02
EL	NODE	P1	P2	P3	M1	M2	M3
5	5	-8.775E+02	5.949E+01	1.692E+02	1.502E-12	-1.084E-11	-3.123E-12
	6	8.775E+02	-5.949E+01	-1.692E+02	-1.502E-12	-4.498E+02	1.582E+02
EL	NODE	P1	P2	P3	M1	M2	M3
6	6	-9.060E+02	6.486E+00	4.296E+01	1.080E+03	1.696E+02	1.277E+01
	7	9.060E+02	-6.486E+00	-4.296E+01	-1.080E+03	-6.834E+02	6.480E+01
EL	NODE	P1	P2	P3	M1	M2	M3
7	7	2.875E-11	8.783E-11	-8.332E-11	1.118E-10	1.750E-10	5.157E-11
	8	-2.875E-11	-8.783E-11	8.332E-11	-1.118E-10	2.988E-11	1.434E-10
EL	NODE	P1	P2	P3	M1	M2	M3
8	3	-5.073E+02	5.340E+01	-2.416E+02	4.551E+02	1.095E+02	2.865E+02
	7	5.073E+02	-5.340E+01	2.416E+02	-4.551E+02	9.775E+02	-4.626E+01
EL	NODE	P1	P2	P3	M1	M2	M3
9	9	-3.544E+03	-1.065E+02	-2.381E+01	3.209E-12	-9.584E-12	1.654E-12
	10	3.544E+03	1.065E+02	2.381E+01	-3.209E-12	6.330E+01	-2.833E+02
EL	NODE	P1	P2	P3	M1	M2	M3
10	10	-3.754E+03	-5.242E+01	5.049E+01	-6.806E+02	4.778E+01	-9.136E+01
	11	3.754E+03	5.242E+01	-5.049E+01	6.806E+02	-6.510E+02	-5.349E+02
EL	NODE	P1	P2	P3	M1	M2	M3
11	11	2.878E-12	1.138E-11	-7.623E-11	-1.809E-11	-3.334E-11	-5.943E-12
	12	-2.878E-12	-1.138E-11	7.623E-11	1.809E-11	4.974E-11	3.154E-11
EL	NODE	P1	P2	P3	M1	M2	M3
12	10	8.937E+01	1.875E+02	9.806E+01	-3.374E+02	5.791E+02	4.076E+02
	14	-8.937E+01	-1.875E+02	-9.806E+01	3.374E+02	-1.021E+03	4.367E+02
EL	NODE	P1	P2	P3	M1	M2	M3
13	13	-5.367E+02	4.787E+00	1.876E+02	-2.679E-12	1.563E-13	1.964E-12
	14	5.367E+02	-4.787E+00	-1.876E+02	2.679E-12	-4.988E+02	1.273E+01
EL	NODE	P1	P2	P3	M1	M2	M3
14	14	-3.280E+02	-7.456E+01	1.362E+02	8.247E+02	1.291E+03	-2.112E+02
	15	3.280E+02	7.456E+01	-1.362E+02	-8.247E+02	-2.921E+03	-6.805E+02

EL	NODE	P1	P2	P3	M1	M2	M3
15	15	-7.020E-12	-1.686E-11	-3.456E-11	-1.965E-11	3.723E-12	-4.217E-11
	16	7.020E-12	1.686E-11	3.456E-11	1.965E-11	6.565E-11	4.341E-12

EL	NODE	P1	P2	P3	M1	M2	M3
16	11	-4.716E+02	-4.117E+02	-2.043E+02	1.570E+03	-1.653E+03	-7.056E+02
	15	4.716E+02	4.117E+02	2.043E+02	-1.570E+03	2.571E+03	-1.145E+03

EL	NODE	P1	P2	P3	M1	M2	M3
17	17	-9.437E+02	4.507E+01	-3.075E+02	5.980E-12	1.809E-11	-5.974E-13
	18	9.437E+02	-4.507E+01	3.075E+02	-5.980E-12	8.188E+02	1.200E+02

EL	NODE	P1	P2	P3	M1	M2	M3
18	18	-7.793E+02	-8.142E+01	-5.435E+01	-7.756E+02	-1.544E+03	-2.374E+02
	19	7.793E+02	8.142E+01	5.435E+01	7.756E+02	2.194E+03	-7.364E+02

EL	NODE	P1	P2	P3	M1	M2	M3
19	19	1.606E-12	-5.887E-12	2.935E-11	-2.810E-11	-1.028E-10	-3.364E-11
	20	-1.606E-12	5.887E-12	-2.935E-11	2.810E-11	2.726E-11	2.093E-11

EL	NODE	P1	P2	P3	M1	M2	M3
20	18	2.838E+02	-1.632E+02	-3.023E+01	2.771E+02	9.559E+02	-3.858E+02
	22	-2.838E+02	1.632E+02	3.023E+01	-2.771E+02	-8.197E+02	-3.489E+02

EL	NODE	P1	P2	P3	M1	M2	M3
21	21	-3.109E+03	-6.330E+01	2.290E+02	-5.819E-12	2.107E-11	7.133E-13
	22	3.109E+03	6.330E+01	-2.290E+02	5.819E-12	-6.089E+02	-1.683E+02

EL	NODE	P1	P2	P3	M1	M2	M3
22	22	-3.273E+03	-5.663E+01	-5.400E+01	8.905E+02	5.779E+02	-1.110E+02
	23	3.273E+03	5.663E+01	5.400E+01	-8.905E+02	6.791E+01	-5.664E+02

EL	NODE	P1	P2	P3	M1	M2	M3
23	23	3.799E-11	-2.025E-10	4.843E-11	-1.522E-11	-7.098E-11	-3.928E-10
	24	-3.799E-11	2.025E-10	-4.843E-11	1.522E-11	6.177E-11	-6.116E-11

EL	NODE	P1	P2	P3	M1	M2	M3
24	19	-3.179E+02	3.080E+02	4.538E+02	-1.396E+02	-3.793E+03	9.407E+02
	23	3.179E+02	-3.080E+02	-4.538E+02	1.396E+02	1.749E+03	4.462E+02

EL	NODE	P1	P2	P3	M1	M2	M3
25	25	-2.660E+03	2.749E+01	-4.538E+01	3.831E-12	-2.505E-12	6.302E-13
	26	2.660E+03	-2.749E+01	4.538E+01	-3.831E-12	1.207E+02	7.308E+01

EL	NODE	P1	P2	P3	M1	M2	M3
26	26	-2.659E+03	-2.812E+01	-1.394E+02	4.441E+02	-2.312E+02	-1.201E+02
	27	2.659E+03	2.812E+01	1.394E+02	-4.441E+02	1.898E+03	-2.160E+02

EL	NODE	P1	P2	P3	M1	M2	M3
27	27	-4.655E-11	5.069E-11	-5.895E-11	-2.795E-11	-6.585E-11	1.084E-10
	28	4.655E-11	-5.069E-11	5.895E-11	2.795E-11	3.049E-10	5.932E-12

EL	NODE	P1	P2	P3	M1	M2	M3
28	26	6.304E+01	-3.396E+00	-9.457E+01	1.133E+02	-4.452E+02	-2.931E+01
	30	-6.304E+01	3.396E+00	9.457E+01	-1.133E+02	8.710E+02	1.402E+01

EL	NODE	P1	P2	P3	M1	M2	M3
29	29	-1.543E+03	-1.318E+01	-1.477E+02	5.718E-14	-1.857E-11	9.423E-14
	30	1.543E+03	1.318E+01	1.477E+02	-5.718E-14	3.934E+02	-3.510E+01

EL	NODE	P1	P2	P3	M1	M2	M3
30	30	-1.544E+03	2.900E+01	-4.356E+01	-8.693E+02	-2.887E+02	8.979E+01
	31	1.544E+03	-2.900E+01	4.356E+01	8.693E+02	8.097E+02	2.570E+02

EL	NODE	P1	P2	P3	M1	M2	M3
31	31	-5.527E-11	1.037E-10	-4.891E-10	-7.410E-11	7.001E-10	2.033E-10
	32	5.527E-11	-1.037E-10	4.891E-10	7.410E-11	3.306E-10	2.783E-11

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
32	1	1.573E+01	4.117E+00	9.000E+00	1.574E+03	-4.322E+03	2.948E+03
					5.027E+03	7.072E+02	2.160E+03
32	2	1.713E+01	4.983E+00	9.000E+00	1.174E+03	-4.466E+03	2.820E+03
					6.126E+03	1.232E+03	2.447E+03
32	3	2.071E+01	4.117E+00	9.000E+00	1.585E+03	-4.175E+03	2.880E+03
					4.804E+03	6.866E+02	2.059E+03
32	4	1.931E+01	4.983E+00	9.000E+00	1.228E+03	-4.158E+03	2.693E+03
					5.785E+03	1.016E+03	2.384E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
33	1	2.178E+01	5.645E+00	9.000E+00	6.378E+03	4.036E+02	2.987E+03
					-3.027E+02	-4.410E+03	2.054E+03
33	2	1.967E+01	6.395E+00	9.000E+00	5.537E+03	8.051E+02	2.366E+03
					-1.118E+03	-3.155E+03	1.019E+03
33	3	2.132E+01	4.550E+00	9.000E+00	3.017E+03	-7.796E+02	1.899E+03
					1.688E+03	-1.856E+03	1.772E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
34	1	1.967E+01	6.395E+00	9.000E+00	4.641E+03	-5.586E+02	2.600E+03
					6.030E+02	-4.024E+03	2.313E+03
34	2	1.967E+01	7.770E+00	9.000E+00	7.846E+03	6.296E+02	3.608E+03
					-3.212E+02	-7.493E+03	3.586E+03
34	3	1.922E+01	6.675E+00	9.000E+00	3.305E+03	-4.833E+03	4.069E+03
					4.801E+03	-2.612E+03	3.707E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
35	1	2.049E+01	7.770E+00	9.000E+00	1.493E+04	1.314E+03	6.810E+03
					-1.291E+03	-1.391E+04	6.309E+03

35	2	2.003E+01	8.050E+00	9.000E+00	1.081E+04	-1.216E+03	6.013E+03
					1.231E+03	-9.776E+03	5.503E+03
35	3	1.967E+01	7.770E+00	9.000E+00	9.486E+03	7.445E+02	4.371E+03
					-4.635E+02	-8.717E+03	4.127E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
36	1	2.214E+01	5.925E+00	9.000E+00	5.018E+03	-1.892E+03	3.455E+03
					1.550E+03	-3.692E+03	2.621E+03
36	2	2.049E+01	7.770E+00	9.000E+00	1.482E+04	4.710E+02	7.174E+03
					-3.563E+02	-1.395E+04	6.796E+03
36	3	2.178E+01	5.645E+00	9.000E+00	3.281E+03	1.894E+02	1.546E+03
					-5.475E+02	-1.939E+03	6.956E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
38	1	2.394E+01	9.295E+00	9.000E+00	-1.175E+03	-2.130E+03	4.774E+02
					2.960E+03	1.357E+03	8.014E+02
38	2	2.113E+01	8.405E+00	9.000E+00	9.342E+03	-1.149E+03	5.245E+03
					1.393E+03	-8.572E+03	4.982E+03
38	3	2.366E+01	8.940E+00	9.000E+00	3.995E+03	-1.313E+03	2.654E+03
					1.553E+03	-3.222E+03	2.387E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
39	1	2.540E+01	1.006E+01	9.000E+00	2.283E+03	-1.032E+03	1.658E+03
					1.391E+03	-1.392E+03	1.391E+03
39	2	2.248E+01	9.699E+00	9.000E+00	6.799E+02	-6.686E+02	6.742E+02
					1.193E+03	-2.042E+02	6.984E+02
39	3	2.540E+01	1.130E+01	9.000E+00	2.155E+03	2.987E+02	9.284E+02
					3.436E+02	-1.285E+03	8.142E+02
39	4	2.248E+01	1.165E+01	9.000E+00	8.921E+02	-1.144E+02	5.032E+02
					8.820E+02	-4.923E+02	6.871E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
40	1	2.129E+01	9.481E+00	9.000E+00	2.896E+03	-3.840E+03	3.368E+03
					4.594E+03	-2.615E+03	3.604E+03
40	2	2.097E+01	9.246E+00	9.000E+00	3.217E+03	-3.281E+03	3.249E+03

					4.019E+03	-2.914E+03	3.467E+03
40	3	2.129E+01	1.186E+01	9.000E+00	1.205E+03	-3.440E+03	2.323E+03
					3.890E+03	-5.580E+02	2.224E+03
40	4	2.097E+01	1.210E+01	9.000E+00	2.010E+03	-3.150E+03	2.580E+03
					3.639E+03	-1.407E+03	2.523E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
41	1	2.366E+01	1.241E+01	9.000E+00	4.230E+03	5.475E+02	1.841E+03
					2.485E+02	-3.826E+03	2.037E+03
41	2	2.113E+01	1.294E+01	9.000E+00	8.926E+03	6.999E+02	4.113E+03
					4.900E+01	-8.476E+03	4.262E+03
41	3	2.394E+01	1.205E+01	9.000E+00	6.757E+02	-1.361E+03	1.018E+03
					1.767E+03	1.183E+02	8.243E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
43	1	2.178E+01	1.570E+01	9.000E+00	8.952E+02	-5.326E+02	7.139E+02
					1.995E+03	-1.582E+02	1.077E+03
43	2	2.049E+01	1.358E+01	9.000E+00	1.204E+04	4.872E+02	5.778E+03
					6.301E+02	-1.096E+04	5.796E+03
43	3	2.214E+01	1.542E+01	9.000E+00	1.075E+04	-1.837E+02	5.466E+03
					5.940E+02	-8.958E+03	4.776E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
44	1	2.083E+01	1.677E+01	9.000E+00	5.801E+02	4.898E+02	4.514E+01
					9.880E+02	-2.872E+02	6.376E+02
44	2	1.973E+01	1.464E+01	9.000E+00	6.201E+02	5.721E+02	2.402E+01
					1.588E+03	-3.668E+02	9.772E+02
44	3	1.561E+01	1.677E+01	9.000E+00	5.447E+02	4.238E+02	6.044E+01
					9.854E+02	-1.892E+02	5.873E+02
44	4	1.671E+01	1.464E+01	9.000E+00	6.421E+02	3.746E+02	1.338E+02
					1.561E+03	-1.753E+02	8.682E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
45	1	1.941E+01	1.374E+01	9.000E+00	9.668E+03	-1.111E+03	5.389E+03
					3.089E+03	-9.079E+03	6.084E+03

45	2	1.965E+01	1.342E+01	9.000E+00	9.543E+03	1.144E+03	4.199E+03
					7.933E+02	-8.845E+03	4.819E+03
45	3	1.703E+01	1.374E+01	9.000E+00	9.602E+03	-1.171E+03	5.386E+03
					3.103E+03	-8.968E+03	6.035E+03
45	4	1.680E+01	1.342E+01	9.000E+00	9.532E+03	1.051E+03	4.240E+03
					8.308E+02	-8.779E+03	4.805E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
46	1	1.431E+01	1.542E+01	9.000E+00	1.082E+04	-6.048E+02	5.710E+03
					5.906E+02	-8.618E+03	4.604E+03
46	2	1.595E+01	1.358E+01	9.000E+00	1.234E+04	-2.093E+02	6.274E+03
					5.695E+02	-1.052E+04	5.543E+03
46	3	1.466E+01	1.570E+01	9.000E+00	2.971E+02	-1.711E+02	2.341E+02
					2.199E+03	-1.421E+02	1.171E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
48	1	1.250E+01	1.205E+01	9.000E+00	1.418E+03	-2.032E+03	1.725E+03
					2.527E+03	-5.838E+02	1.555E+03
48	2	1.532E+01	1.294E+01	9.000E+00	7.189E+03	1.294E+03	2.947E+03
					-4.370E+02	-6.718E+03	3.140E+03
48	3	1.279E+01	1.241E+01	9.000E+00	3.897E+03	1.223E+03	1.337E+03
					-3.713E+02	-3.420E+03	1.524E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
49	1	1.104E+01	1.130E+01	9.000E+00	1.173E+03	2.042E+02	4.842E+02
					8.941E+02	-4.065E+02	6.503E+02
49	2	1.396E+01	1.165E+01	9.000E+00	8.927E+02	5.538E+01	4.186E+02
					6.279E+02	-2.980E+02	4.629E+02
49	3	1.104E+01	1.006E+01	9.000E+00	6.396E+02	-5.032E+02	5.714E+02
					1.134E+03	3.127E+02	4.105E+02
49	4	1.396E+01	9.699E+00	9.000E+00	3.744E+02	-2.165E+02	2.955E+02
					1.001E+03	-6.032E+01	5.307E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B

50	1	1.515E+01	1.186E+01	9.000E+00	1.849E+03	-1.651E+03	1.750E+03
					2.139E+03	-1.148E+03	1.644E+03
50	2	1.548E+01	1.210E+01	9.000E+00	2.374E+03	-1.018E+03	1.696E+03
					1.597E+03	-1.771E+03	1.684E+03
50	3	1.515E+01	9.481E+00	9.000E+00	3.586E+03	-2.592E+03	3.089E+03
					3.364E+03	-3.236E+03	3.300E+03
50	4	1.548E+01	9.246E+00	9.000E+00	3.759E+03	-1.740E+03	2.749E+03
					2.544E+03	-3.436E+03	2.990E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
51	1	1.279E+01	8.940E+00	9.000E+00	3.712E+03	-6.887E+02	2.200E+03
					1.010E+03	-2.903E+03	1.956E+03
51	2	1.532E+01	8.405E+00	9.000E+00	8.112E+03	-7.560E+02	4.434E+03
					1.065E+03	-7.291E+03	4.178E+03
51	3	1.250E+01	9.295E+00	9.000E+00	-7.172E+02	-2.175E+03	7.287E+02
					3.003E+03	1.019E+03	9.922E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
53	1	1.466E+01	5.645E+00	9.000E+00	3.264E+03	-3.466E+00	1.634E+03
					-1.147E+02	-2.035E+03	9.604E+02
53	2	1.595E+01	7.770E+00	9.000E+00	1.585E+04	5.713E+02	7.641E+03
					1.122E+02	-1.543E+04	7.770E+03
53	3	1.431E+01	5.925E+00	9.000E+00	5.507E+03	-2.336E+03	3.922E+03
					2.030E+03	-4.090E+03	3.060E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
54	1	1.511E+01	4.550E+00	9.000E+00	2.089E+03	-1.960E+02	1.142E+03
					2.656E+03	-2.340E+03	2.498E+03
54	2	1.676E+01	6.395E+00	9.000E+00	4.925E+03	2.077E+03	1.424E+03
					-1.702E+01	-4.776E+03	2.380E+03
54	3	1.466E+01	5.645E+00	9.000E+00	5.069E+03	1.303E+03	1.883E+03
					1.045E+03	-5.208E+03	3.127E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
55	1	1.722E+01	6.675E+00	9.000E+00	3.375E+03	-5.016E+03	4.195E+03

					5.428E+03	-2.932E+03	4.180E+03
55	2	1.676E+01	7.770E+00	9.000E+00	8.261E+03	1.001E+03	3.630E+03
					-1.249E+02	-8.282E+03	4.079E+03
55	3	1.676E+01	6.395E+00	9.000E+00	4.802E+03	-3.346E+02	2.568E+03
					1.061E+03	-4.674E+03	2.867E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
56	1	1.676E+01	7.770E+00	9.000E+00	1.017E+04	6.914E+02	4.739E+03
					-6.777E+02	-8.947E+03	4.135E+03
56	2	1.641E+01	8.050E+00	9.000E+00	1.169E+04	-1.044E+03	6.366E+03
					1.330E+03	-1.074E+04	6.035E+03
56	3	1.595E+01	7.770E+00	9.000E+00	1.619E+04	1.741E+03	7.225E+03
					-1.469E+03	-1.523E+04	6.880E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
57	1	2.378E+01	4.490E+00	9.000E+00	6.444E+03	-1.139E+03	3.791E+03
					2.794E+03	-6.209E+03	4.502E+03
57	2	2.249E+01	6.615E+00	9.000E+00	5.490E+03	-4.571E+02	2.973E+03
					2.255E+03	-5.397E+03	3.826E+03
57	3	2.214E+01	5.925E+00	9.000E+00	1.055E+04	5.617E+02	4.995E+03
					1.663E+03	-1.089E+04	6.275E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
58	1	2.514E+01	7.190E+00	9.000E+00	4.553E+02	-1.467E+03	9.613E+02
					2.234E+03	-1.608E+02	1.197E+03
58	2	2.350E+01	8.625E+00	9.000E+00	1.090E+03	-9.541E+02	1.022E+03
					1.833E+03	-9.083E+02	1.371E+03
58	3	2.249E+01	6.615E+00	9.000E+00	4.465E+02	-1.362E+03	9.042E+02
					2.214E+03	-2.381E+02	1.226E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
59	1	2.631E+01	9.515E+00	9.000E+00	2.445E+03	-1.813E+03	2.129E+03
					2.675E+03	-2.048E+03	2.362E+03
59	2	2.366E+01	8.940E+00	9.000E+00	1.363E+03	-9.951E+02	1.179E+03
					2.022E+03	-1.132E+03	1.577E+03

59	3	2.350E+01	8.625E+00	9.000E+00	1.757E+03	-8.554E+02	1.306E+03
					1.865E+03	-1.508E+03	1.687E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
60	1	2.631E+01	1.184E+01	9.000E+00	3.209E+03	6.127E+02	1.298E+03
					1.942E+02	-2.471E+03	1.332E+03
60	2	2.350E+01	1.273E+01	9.000E+00	3.561E+03	5.692E+02	1.496E+03
					2.806E+02	-2.866E+03	1.573E+03
60	3	2.366E+01	1.241E+01	9.000E+00	3.044E+03	5.181E+02	1.263E+03
					3.350E+02	-2.352E+03	1.343E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
61	1	2.514E+01	1.417E+01	9.000E+00	8.323E+02	4.377E+02	1.973E+02
					2.481E+02	-1.878E+02	2.180E+02
61	2	2.249E+01	1.474E+01	9.000E+00	6.103E+02	-1.187E+01	3.111E+02
					7.156E+02	1.634E+01	3.496E+02
61	3	2.350E+01	1.273E+01	9.000E+00	6.616E+02	1.469E+00	3.301E+02
					9.944E+02	-3.271E+02	6.607E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
62	1	2.378E+01	1.686E+01	9.000E+00	7.784E+03	1.171E+03	3.307E+03
					1.000E+03	-8.406E+03	4.703E+03
62	2	2.214E+01	1.542E+01	9.000E+00	8.033E+03	5.990E+02	3.717E+03
					1.519E+03	-8.601E+03	5.060E+03
62	3	2.249E+01	1.474E+01	9.000E+00	3.161E+03	8.640E+02	1.148E+03
					1.253E+03	-3.729E+03	2.491E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
63	1	1.396E+01	1.474E+01	9.000E+00	3.289E+03	-2.116E+01	1.655E+03
					1.085E+03	-2.924E+03	2.004E+03
63	2	1.431E+01	1.542E+01	9.000E+00	8.143E+03	-2.187E+02	4.181E+03
					1.261E+03	-7.756E+03	4.508E+03
63	3	1.266E+01	1.686E+01	9.000E+00	7.788E+03	4.863E+02	3.651E+03
					8.523E+02	-7.698E+03	4.275E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
64	1	1.130E+01	1.417E+01	9.000E+00	2.135E+03	6.581E+02	7.384E+02
					4.049E+02	-1.872E+03	1.138E+03
64	2	1.295E+01	1.273E+01	9.000E+00	2.646E+03	-9.893E+01	1.372E+03
					1.169E+03	-2.390E+03	1.780E+03
64	3	1.396E+01	1.474E+01	9.000E+00	1.687E+03	6.767E+01	8.098E+02
					9.822E+02	-1.411E+03	1.197E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
65	1	1.013E+01	1.184E+01	9.000E+00	1.568E+03	-3.303E+03	2.436E+03
					4.111E+03	-4.999E+02	2.305E+03
65	2	1.279E+01	1.241E+01	9.000E+00	3.012E+03	1.136E+03	9.378E+02
					7.592E+01	-2.348E+03	1.212E+03
65	3	1.295E+01	1.273E+01	9.000E+00	3.423E+03	4.648E+02	1.479E+03
					7.353E+02	-2.748E+03	1.742E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
66	1	1.295E+01	8.625E+00	9.000E+00	2.053E+03	-9.735E+02	1.513E+03
					1.370E+03	-9.434E+02	1.157E+03
66	2	1.279E+01	8.940E+00	9.000E+00	1.659E+03	-8.020E+02	1.231E+03
					1.157E+03	-5.083E+02	8.327E+02
66	3	1.013E+01	9.515E+00	9.000E+00	3.226E+02	-3.062E+03	1.692E+03
					4.162E+03	8.375E+01	2.039E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
67	1	1.130E+01	7.190E+00	9.000E+00	1.402E+03	-1.465E+03	1.434E+03
					2.077E+03	-9.879E+02	1.532E+03
67	2	1.396E+01	6.615E+00	9.000E+00	1.868E+03	-1.388E+03	1.628E+03
					2.034E+03	-1.488E+03	1.761E+03
67	3	1.295E+01	8.625E+00	9.000E+00	9.832E+02	-1.105E+03	1.044E+03
					1.739E+03	-5.913E+02	1.165E+03

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B

68	1	1.266E+01	4.490E+00	9.000E+00	7.056E+03	-7.461E+02	3.901E+03
					2.392E+03	-7.038E+03	4.715E+03
68	2	1.431E+01	5.925E+00	9.000E+00	1.010E+04	-7.282E+01	5.088E+03
					1.966E+03	-1.033E+04	6.150E+03
68	3	1.396E+01	6.615E+00	9.000E+00	5.154E+03	-7.880E+02	2.971E+03
					2.323E+03	-5.025E+03	3.674E+03

EL	NODE	P1	P2	P3	M1	M2	M3
75	27	-3.622E+02	-8.799E+01	5.121E+01	-1.064E+03	-6.846E+01	1.394E+02
	31	3.622E+02	8.799E+01	-5.121E+01	1.064E+03	-1.619E+02	-5.353E+02

REACTION LOADS FOR LOAD CASE 1

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
1	-2.121E+03	-1.077E+03	-1.805E+03	.000E+00	.000E+00	.000E+00
5	-6.820E+02	-4.121E+02	-4.087E+02	.000E+00	.000E+00	.000E+00
9	2.568E+03	-1.237E+03	-2.109E+03	.000E+00	.000E+00	.000E+00
13	3.714E+02	-3.554E+02	-2.431E+02	.000E+00	.000E+00	.000E+00
17	6.022E+02	6.254E+02	-4.832E+02	.000E+00	.000E+00	.000E+00
21	2.315E+03	9.017E+02	-1.885E+03	.000E+00	.000E+00	.000E+00
25	-1.908E+03	9.309E+02	-1.604E+03	.000E+00	.000E+00	.000E+00
29	-1.146E+03	6.238E+02	-8.374E+02	.000E+00	.000E+00	.000E+00

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: EST-3D4K.POS

NUMBER OF ELEMENTS = 65
NUMBER OF NODES = 56
NUMBER OF DOF'S = 6
NUMBER OF NDS/ELEM = 4

---- LOAD CASE NO. 1 ----

NODE	DEFL-1	DEFL-2	DEFL-3	DEFL-4	DEFL-5	DEFL-6
1	.000E+00	.000E+00	.000E+00	8.110E-05	-2.673E-04	-2.660E-06
2	-3.578E-04	-1.076E-04	6.413E-04	8.600E-05	-2.647E-04	-9.731E-06
3	-2.849E-03	2.173E-04	4.066E-03	2.742E-04	-2.785E-04	-5.807E-05
4	-2.789E-03	1.006E-04	4.905E-03	2.742E-04	-2.785E-04	-5.807E-05
5	.000E+00	.000E+00	.000E+00	3.211E-05	-1.652E-04	-4.881E-05
6	-2.869E-04	-7.440E-05	4.202E-04	1.610E-05	-2.727E-04	3.106E-05
7	-2.763E-03	2.946E-04	3.275E-03	-1.361E-04	-5.226E-04	2.134E-06
8	-2.765E-03	2.989E-04	4.182E-03	-1.361E-04	-5.226E-04	2.134E-06
9	.000E+00	.000E+00	.000E+00	-1.899E-04	-7.243E-04	1.347E-04
10	-1.265E-03	9.200E-05	-1.292E-03	-1.163E-04	-4.988E-04	8.938E-05
11	-2.321E-03	1.198E-05	-1.481E-03	3.239E-04	1.132E-03	-1.299E-04
12	-2.189E-03	2.744E-04	1.137E-03	3.239E-04	1.132E-03	-1.299E-04
13	.000E+00	.000E+00	.000E+00	-7.609E-05	-4.843E-04	1.137E-04
14	-9.215E-04	-8.763E-05	-9.697E-04	-7.323E-05	-4.924E-04	1.216E-04
15	-2.308E-03	3.672E-05	-2.542E-03	1.794E-04	1.074E-03	-7.567E-04
16	-1.543E-03	1.558E-03	-2.019E-04	1.794E-04	1.074E-03	-7.567E-04
17	.000E+00	.000E+00	.000E+00	8.138E-05	-4.037E-04	-6.569E-05
18	-8.127E-04	4.390E-06	-8.697E-04	8.605E-05	-4.946E-04	-1.131E-04
19	-2.283E-03	8.290E-05	-2.305E-03	-3.055E-04	1.217E-03	6.743E-04
20	-1.602E-03	-1.273E-03	4.506E-04	-3.055E-04	1.217E-03	6.743E-04
21	.000E+00	.000E+00	.000E+00	1.859E-04	-6.267E-04	-8.525E-05
22	-1.109E-03	-1.641E-04	-1.179E-03	1.322E-04	-4.944E-04	-7.071E-05
23	-2.244E-03	1.239E-04	-1.465E-03	-4.226E-04	1.170E-03	-3.264E-05
24	-2.277E-03	1.891E-04	1.302E-03	-4.226E-04	1.170E-03	-3.264E-05
25	.000E+00	.000E+00	.000E+00	-1.436E-04	-2.503E-04	1.135E-05
26	-3.603E-04	1.752E-04	6.642E-04	-1.112E-04	-2.713E-04	-3.757E-05
27	-2.585E-03	3.180E-04	3.976E-03	-4.048E-04	-1.927E-04	2.006E-04
28	-2.382E-03	7.211E-04	4.773E-03	-4.048E-04	-1.927E-04	2.006E-04
29	.000E+00	.000E+00	.000E+00	-1.141E-04	-2.622E-04	-9.534E-07
30	-3.796E-04	1.892E-04	6.313E-04	-1.299E-04	-2.524E-04	2.275E-05
31	-2.700E-03	3.515E-04	3.779E-03	2.677E-04	-6.192E-04	-3.641E-04
32	-3.068E-03	-3.768E-04	4.747E-03	2.677E-04	-6.192E-04	-3.641E-04
33	-2.813E-03	2.265E-04	3.312E-03	1.053E-03	2.782E-04	.000E+00
34	-2.406E-03	4.610E-05	-1.633E-03	1.072E-03	6.989E-04	.000E+00
35	-2.305E-03	4.256E-05	-2.740E-03	2.256E-04	9.414E-04	.000E+00

36	-2.285E-03	7.352E-05	-2.541E-03	-1.745E-04	1.192E-03	.000E+00
37	-2.277E-03	1.042E-04	-1.778E-03	-1.044E-03	3.870E-04	.000E+00
38	-2.508E-03	2.768E-04	3.045E-03	-9.965E-04	5.624E-04	.000E+00
39	-2.718E-03	3.517E-04	3.448E-03	1.032E-04	-6.998E-04	.000E+00
40	-2.748E-03	3.109E-04	3.094E-03	7.846E-05	-4.653E-04	.000E+00
41	-2.671E-03	1.668E-04	3.501E-03	1.675E-03	6.683E-04	.000E+00
42	-2.501E-03	1.291E-04	2.416E-03	1.641E-03	2.884E-04	.000E+00
43	-2.336E-03	8.430E-05	3.573E-03	-1.155E-04	1.552E-03	.000E+00
44	-2.339E-03	1.171E-04	3.094E-03	-1.537E-04	1.060E-03	.000E+00
45	-2.372E-03	1.387E-04	3.512E-03	-8.844E-04	3.356E-04	.000E+00
46	-2.540E-03	2.025E-04	5.259E-03	-9.152E-04	5.632E-04	.000E+00
47	-2.617E-03	2.245E-04	5.987E-03	-1.403E-04	-2.980E-04	.000E+00
48	-2.735E-03	1.989E-04	6.496E-03	-1.560E-04	-8.535E-04	.000E+00
49	-2.734E-03	1.762E-04	6.948E-03	8.236E-04	1.632E-04	.000E+00
50	-2.372E-03	1.032E-04	4.984E-03	8.230E-04	6.909E-04	.000E+00
51	-2.340E-03	8.243E-05	4.448E-03	3.328E-04	1.716E-03	.000E+00
52	-2.345E-03	1.276E-04	3.502E-03	-5.302E-04	1.163E-03	.000E+00
53	-2.587E-03	2.154E-04	5.918E-03	-5.842E-04	-2.555E-04	.000E+00
54	-2.751E-03	1.801E-04	6.996E-03	2.914E-04	-9.405E-04	.000E+00
55	-2.745E-03	1.928E-04	**7.139E-03**	9.451E-04	3.883E-04	.000E+00
56	-2.344E-03	1.482E-04	5.965E-03	9.381E-04	4.855E-04	.000E+00

NUMBER OF STRESS RECORDS = 65
NUMBER OF REACTION LOADS = 8

LIBRA Finite Element Program
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PRINCIPAL STRESSES FROM POST PROCESSING FILE: EST-3D4K.POS

PEAK PRINCIPAL STRESSES BY ELEMENT

ELEM	PEAK TENSILE STRESS(PSI)	PEAK COMPRES STRESS(PSI)	PEAK SHEAR STRESS(PSI)
1	.0000E+00	5.9041E-12	.0000E+00
2	.0000E+00	1.1563E+02	.0000E+00
3	.0000E+00	9.7793E-11	.0000E+00
4	.0000E+00	5.4392E+01	.0000E+00
5	.0000E+00	3.1227E-12	.0000E+00
6	1.2766E+01	.0000E+00	1.2766E+01
7	5.1574E-11	.0000E+00	5.1574E-11
8	2.8651E+02	.0000E+00	2.8651E+02
9	1.6544E-12	.0000E+00	1.6544E-12
10	.0000E+00	9.1359E+01	.0000E+00
11	.0000E+00	5.9433E-12	.0000E+00
12	4.0755E+02	.0000E+00	4.0755E+02
13	1.9642E-12	.0000E+00	1.9642E-12
14	.0000E+00	2.1119E+02	.0000E+00
15	.0000E+00	4.2167E-11	.0000E+00
16	.0000E+00	7.0561E+02	.0000E+00
17	.0000E+00	5.9736E-13	.0000E+00
18	.0000E+00	2.3739E+02	.0000E+00
19	.0000E+00	3.3643E-11	.0000E+00
20	.0000E+00	3.8585E+02	.0000E+00
21	7.1332E-13	.0000E+00	7.1332E-13
22	.0000E+00	1.1099E+02	.0000E+00
23	.0000E+00	3.9279E-10	.0000E+00
24	9.4066E+02	.0000E+00	9.4066E+02
25	6.3018E-13	.0000E+00	6.3018E-13
26	.0000E+00	1.2015E+02	.0000E+00
27	1.0835E-10	.0000E+00	1.0835E-10
28	.0000E+00	2.9314E+01	.0000E+00
29	9.4234E-14	.0000E+00	9.4234E-14
30	8.9795E+01	.0000E+00	8.9795E+01
31	2.0332E-10	.0000E+00	2.0332E-10
32	2.9478E+03	4.4655E+03	6.1259E+03
33	6.3780E+03	7.7961E+02	1.6878E+03
34	7.8455E+03	4.8330E+03	4.8015E+03
35	1.4934E+04	1.2155E+03	1.2305E+03
36	1.4818E+04	1.8921E+03	1.5502E+03
38	9.3416E+03	2.1297E+03	2.9603E+03
39	2.2832E+03	1.0320E+03	1.3906E+03
40	3.3676E+03	3.8396E+03	4.5936E+03
41	8.9264E+03	1.3610E+03	1.7668E+03
43	1.2044E+04	5.3255E+02	1.9955E+03
44	6.4213E+02	.0000E+00	1.5876E+03
45	9.6681E+03	1.1705E+03	3.1026E+03
46	1.2339E+04	6.0481E+02	2.1989E+03
48	7.1892E+03	2.0316E+03	2.5267E+03

49	1.1725E+03	5.0322E+02	1.1337E+03
50	3.7589E+03	2.5923E+03	3.3637E+03
51	8.1117E+03	2.1746E+03	3.0030E+03
53	1.5854E+04	2.3364E+03	2.0296E+03
54	5.0689E+03	1.9598E+02	2.6560E+03
55	8.2605E+03	5.0156E+03	5.4276E+03
56	1.6192E+04	1.0441E+03	1.3300E+03
57	1.0553E+04	1.1387E+03	2.7938E+03
58	1.0899E+03	1.4674E+03	2.2337E+03
59	2.4448E+03	1.8135E+03	2.6755E+03
60	3.5615E+03	.0000E+00	3.3501E+02
61	8.3231E+02	1.1874E+01	9.9441E+02
62	8.0327E+03	.0000E+00	1.5187E+03
63	8.1430E+03	2.1874E+02	1.2606E+03
64	2.6458E+03	9.8930E+01	1.1692E+03
65	3.4232E+03	3.3032E+03	4.1107E+03
66	2.0530E+03	3.0619E+03	4.1615E+03
67	1.8683E+03	1.4654E+03	2.0767E+03
68	1.0104E+04	7.8799E+02	2.3917E+03
75	1.3944E+02	.0000E+00	1.3944E+02

LIBRA Finite Element Program
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PRINCIPAL STRESSES FROM POST PROCESSING FILE: EST-3D4K.POS

AVERAGE PRINCIPAL STRESSES BY ELEMENT

ELEM	AVG TENSILE STRESS(PSI)	AVG COMPRES STRESS(PSI)	AVG SHEAR STRESS(PSI)
1	.0000E+00	2.9520E-12	-2.9520E-12
2	.0000E+00	5.7815E+01	-5.7815E+01
3	.0000E+00	4.8896E-11	-4.8896E-11
4	.0000E+00	2.7196E+01	-2.7196E+01
5	.0000E+00	1.5613E-12	-1.5613E-12
6	6.3832E+00	.0000E+00	6.3832E+00
7	2.5787E-11	.0000E+00	2.5787E-11
8	1.4326E+02	.0000E+00	1.4326E+02
9	8.2720E-13	.0000E+00	8.2720E-13
10	.0000E+00	4.5680E+01	-4.5680E+01
11	.0000E+00	2.9717E-12	-2.9717E-12
12	2.0378E+02	.0000E+00	2.0378E+02
13	9.8210E-13	.0000E+00	9.8210E-13
14	.0000E+00	1.0559E+02	-1.0559E+02
15	.0000E+00	2.1084E-11	-2.1084E-11
16	.0000E+00	3.5280E+02	-3.5280E+02
17	.0000E+00	2.9868E-13	-2.9868E-13
18	.0000E+00	1.1869E+02	-1.1869E+02
19	.0000E+00	1.6822E-11	-1.6822E-11
20	.0000E+00	1.9292E+02	-1.9292E+02
21	3.5666E-13	.0000E+00	3.5666E-13
22	.0000E+00	5.5493E+01	-5.5493E+01
23	.0000E+00	1.9639E-10	-1.9639E-10
24	4.7033E+02	.0000E+00	4.7033E+02
25	3.1509E-13	.0000E+00	3.1509E-13
26	.0000E+00	6.0075E+01	-6.0075E+01
27	5.4177E-11	.0000E+00	5.4177E-11
28	.0000E+00	1.4657E+01	-1.4657E+01
29	4.7117E-14	.0000E+00	4.7117E-14
30	4.4897E+01	.0000E+00	4.4897E+01
31	1.0166E-10	.0000E+00	1.0166E-10
32	2.8351E+03	4.2801E+03	5.4357E+03
33	4.9775E+03	.0000E+00	8.9136E+01
34	5.2636E+03	1.5873E+03	1.6944E+03
35	1.1744E+04	.0000E+00	-1.7451E+02
36	7.7060E+03	4.1057E+02	2.1545E+02
38	4.0539E+03	1.5306E+03	1.9686E+03
39	1.5027E+03	3.7906E+02	9.5220E+02
40	2.8799E+03	3.4280E+03	4.0353E+03
41	4.6106E+03	3.7845E+01	6.8810E+02
43	7.8956E+03	7.6347E+01	1.0732E+03
44	5.9676E+02	.0000E+00	1.2805E+03
45	9.5862E+03	2.1451E+01	1.9540E+03
46	7.8173E+03	3.2840E+02	1.1197E+03
48	4.1680E+03	.0000E+00	5.7283E+02

49	7.6981E+02	1.1504E+02	9.1419E+02
50	2.8920E+03	1.7501E+03	2.4108E+03
51	3.7020E+03	1.2064E+03	1.6926E+03
53	8.2082E+03	5.8950E+02	6.7568E+02
54	4.0276E+03	.0000E+00	1.2279E+03
55	5.4793E+03	1.4497E+03	2.1212E+03
56	1.2683E+04	.0000E+00	-2.7230E+02
57	7.4955E+03	3.4471E+02	2.2372E+03
58	9.6251E+02	1.2612E+03	2.0938E+03
59	1.8550E+03	1.2213E+03	2.1876E+03
60	3.2713E+03	.0000E+00	2.6994E+02
61	7.0140E+02	.0000E+00	6.5270E+02
62	6.3259E+03	.0000E+00	1.2575E+03
63	6.4066E+03	.0000E+00	1.0659E+03
64	2.1560E+03	.0000E+00	8.5211E+02
65	2.6676E+03	5.6747E+02	1.6406E+03
66	1.4787E+03	1.6124E+03	2.2295E+03
67	1.4180E+03	1.3195E+03	1.9498E+03
68	7.4378E+03	5.3565E+02	2.2269E+03
75	6.9720E+01	.0000E+00	6.9720E+01

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: EST-3D4K.POS

PEAK PRINCIPAL STRESSES BY VALUE

ELEM	PEAK TENSILE STRESS(PSI)	ELEM	PEAK COMPRES STRESS(PSI)	ELEM	PEAK SHEAR STRESS(PSI)
--- MATERIAL SET NO. 1 ---					
24	**9.4066E+02**	16	7.0561E+02	24	9.4066E+02
12	4.0755E+02	20	3.8585E+02	12	4.0755E+02
8	2.8651E+02	18	2.3739E+02	8	2.8651E+02
75	1.3944E+02	14	2.1119E+02	75	1.3944E+02
30	8.9795E+01	26	1.2015E+02	30	8.9795E+01
6	1.2766E+01	2	1.1563E+02	6	1.2766E+01
31	2.0332E-10	22	1.1099E+02	31	2.0332E-10
27	1.0835E-10	10	9.1359E+01	27	1.0835E-10
7	5.1574E-11	4	5.4392E+01	7	5.1574E-11
13	1.9642E-12	28	2.9314E+01	13	1.9642E-12
9	1.6544E-12	23	3.9279E-10	9	1.6544E-12
21	7.1332E-13	3	9.7793E-11	21	7.1332E-13
25	6.3018E-13	15	4.2167E-11	25	6.3018E-13
29	9.4234E-14	19	3.3643E-11	29	9.4234E-14
15	.0000E+00	11	5.9433E-12	15	.0000E+00
16	.0000E+00	1	5.9041E-12	16	.0000E+00
17	.0000E+00	5	3.1227E-12	17	.0000E+00
18	.0000E+00	17	5.9736E-13	18	.0000E+00
19	.0000E+00	13	.0000E+00	19	.0000E+00
20	.0000E+00	8	.0000E+00	20	.0000E+00
2	.0000E+00	21	.0000E+00	2	.0000E+00
22	.0000E+00	9	.0000E+00	22	.0000E+00
23	.0000E+00	6	.0000E+00	23	.0000E+00
3	.0000E+00	24	.0000E+00	3	.0000E+00
4	.0000E+00	25	.0000E+00	4	.0000E+00
26	.0000E+00	7	.0000E+00	26	.0000E+00
10	.0000E+00	27	.0000E+00	10	.0000E+00
28	.0000E+00	12	.0000E+00	28	.0000E+00
11	.0000E+00	29	.0000E+00	11	.0000E+00
5	.0000E+00	30	.0000E+00	5	.0000E+00
1	.0000E+00	31	.0000E+00	1	.0000E+00
14	.0000E+00	75	.0000E+00	14	.0000E+00
--- MATERIAL SET NO. 2 ---					
45	**9.6681E+03**	**32**	**4.4655E+03**	**32**	**6.1259E+03**
50	3.7589E+03	40	3.8396E+03	40	4.5936E+03
40	3.3676E+03	50	2.5923E+03	50	3.3637E+03
32	2.9478E+03	45	1.1705E+03	45	3.1026E+03
39	2.2832E+03	39	1.0320E+03	44	1.5876E+03
49	1.1725E+03	49	5.0322E+02	39	1.3906E+03

44	6.4213E+02	44	.0000E+00	49	1.1337E+03

--- MATERIAL SET NO. 3 ---

56	**1.6192E+04**	**55**	**5.0156E+03**	**55**	**5.4276E+03**
53	1.5854E+04	34	4.8330E+03	34	4.8015E+03
35	1.4934E+04	65	3.3032E+03	66	4.1615E+03
36	1.4818E+04	66	3.0619E+03	65	4.1107E+03
46	1.2339E+04	53	2.3364E+03	51	3.0030E+03
43	1.2044E+04	51	2.1746E+03	38	2.9603E+03
57	1.0553E+04	38	2.1297E+03	57	2.7938E+03
68	1.0104E+04	48	2.0316E+03	59	2.6755E+03
38	9.3416E+03	36	1.8921E+03	54	2.6560E+03
41	8.9264E+03	59	1.8135E+03	48	2.5267E+03
55	8.2605E+03	58	1.4674E+03	68	2.3917E+03
63	8.1430E+03	67	1.4654E+03	58	2.2337E+03
51	8.1117E+03	41	1.3610E+03	46	2.1989E+03
62	8.0327E+03	35	1.2155E+03	67	2.0767E+03
34	7.8455E+03	57	1.1387E+03	53	2.0296E+03
48	7.1892E+03	56	1.0441E+03	43	1.9955E+03
33	6.3780E+03	68	7.8799E+02	41	1.7668E+03
54	5.0689E+03	33	7.7961E+02	33	1.6878E+03
60	3.5615E+03	46	6.0481E+02	36	1.5502E+03
65	3.4232E+03	43	5.3255E+02	62	1.5187E+03
64	2.6458E+03	63	2.1874E+02	56	1.3300E+03
59	2.4448E+03	54	1.9598E+02	63	1.2606E+03
66	2.0530E+03	64	9.8930E+01	35	1.2305E+03
67	1.8683E+03	61	1.1874E+01	64	1.1692E+03
58	1.0899E+03	60	.0000E+00	61	9.9441E+02
61	8.3231E+02	62	.0000E+00	60	3.3501E+02

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: EST-3D4K.POS

AVERAGE PRINCIPAL STRESSES BY VALUE

ELEM	AVG TENSILE STRESS(PSI)	ELEM	AVG COMPRES STRESS(PSI)	ELEM	AVG SHEAR STRESS(PSI)
--- MATERIAL SET NO. 1 ---					
24	**4.7033E+02**	**16**	**3.5280E+02**	**24**	**4.7033E+02**
12	2.0378E+02	20	1.9292E+02	12	2.0378E+02
8	1.4326E+02	18	1.1869E+02	8	1.4326E+02
75	6.9720E+01	14	1.0559E+02	75	6.9720E+01
30	4.4897E+01	26	6.0075E+01	30	4.4897E+01
6	6.3832E+00	2	5.7815E+01	6	6.3832E+00
31	1.0166E-10	22	5.5493E+01	31	1.0166E-10
27	5.4177E-11	10	4.5680E+01	27	5.4177E-11
7	2.5787E-11	4	2.7196E+01	7	2.5787E-11
13	9.8210E-13	28	1.4657E+01	13	9.8210E-13
9	8.2720E-13	23	1.9639E-10	9	8.2720E-13
21	3.5666E-13	3	4.8896E-11	21	3.5666E-13
25	3.1509E-13	15	2.1084E-11	25	3.1509E-13
29	4.7117E-14	19	1.6822E-11	29	4.7117E-14
15	.0000E+00	11	2.9717E-12	17	-2.9868E-13
16	.0000E+00	1	2.9520E-12	5	-1.5613E-12
17	.0000E+00	5	1.5613E-12	1	-2.9520E-12
18	.0000E+00	17	2.9868E-13	11	-2.9717E-12
19	.0000E+00	13	.0000E+00	19	-1.6822E-11
20	.0000E+00	8	.0000E+00	15	-2.1084E-11
2	.0000E+00	21	.0000E+00	3	-4.8896E-11
22	.0000E+00	9	.0000E+00	23	-1.9639E-10
23	.0000E+00	6	.0000E+00	28	-1.4657E+01
3	.0000E+00	24	.0000E+00	4	-2.7196E+01
4	.0000E+00	25	.0000E+00	10	-4.5680E+01
26	.0000E+00	7	.0000E+00	22	-5.5493E+01
10	.0000E+00	27	.0000E+00	2	-5.7815E+01
28	.0000E+00	12	.0000E+00	26	-6.0075E+01
11	.0000E+00	29	.0000E+00	14	-1.0559E+02
5	.0000E+00	30	.0000E+00	18	-1.1869E+02
1	.0000E+00	31	.0000E+00	20	-1.9292E+02
14	.0000E+00	75	.0000E+00	16	-3.5280E+02
--- MATERIAL SET NO. 2 ---					
45	**9.5862E+03**	**32**	**4.2801E+03**	**32**	**5.4357E+03**
50	2.8920E+03	40	3.4280E+03	40	4.0353E+03
40	2.8799E+03	50	1.7501E+03	50	2.4108E+03
32	2.8351E+03	39	3.7906E+02	45	1.9540E+03
39	1.5027E+03	49	1.1504E+02	44	1.2805E+03
49	7.6981E+02	45	2.1451E+01	39	9.5220E+02

44	5.9676E+02	44	.0000E+00	49	9.1419E+02

--- MATERIAL SET NO. 3 ---

56	**1.2683E+04**	**66**	**1.6124E+03**	**57**	**2.2372E+03**
35	1.1744E+04	34	1.5873E+03	66	2.2295E+03
53	8.2082E+03	38	1.5306E+03	68	2.2269E+03
43	7.8956E+03	55	1.4497E+03	59	2.1876E+03
46	7.8173E+03	67	1.3195E+03	55	2.1212E+03
36	7.7060E+03	58	1.2612E+03	58	2.0938E+03
57	7.4955E+03	59	1.2213E+03	38	1.9686E+03
68	7.4378E+03	51	1.2064E+03	67	1.9498E+03
63	6.4066E+03	53	5.8950E+02	34	1.6944E+03
62	6.3259E+03	65	5.6747E+02	51	1.6926E+03
55	5.4793E+03	68	5.3565E+02	65	1.6406E+03
34	5.2636E+03	36	4.1057E+02	62	1.2575E+03
33	4.9775E+03	57	3.4471E+02	54	1.2279E+03
41	4.6106E+03	46	3.2840E+02	46	1.1197E+03
48	4.1680E+03	43	7.6347E+01	43	1.0732E+03
38	4.0539E+03	41	3.7845E+01	63	1.0659E+03
54	4.0276E+03	54	.0000E+00	64	8.5211E+02
51	3.7020E+03	60	.0000E+00	41	6.8810E+02
60	3.2713E+03	61	.0000E+00	53	6.7568E+02
65	2.6676E+03	62	.0000E+00	61	6.5270E+02
64	2.1560E+03	63	.0000E+00	48	5.7283E+02
59	1.8550E+03	64	.0000E+00	60	2.6994E+02
66	1.4787E+03	48	.0000E+00	36	2.1545E+02
67	1.4180E+03	56	.0000E+00	33	8.9136E+01
58	9.6251E+02	35	.0000E+00	35	-1.7451E+02
61	7.0140E+02	33	.0000E+00	56	-2.7230E+02

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: EST-3D4K.POS

PEAK EFFECTIVE AND LOCAL SHEAR STRESSES BY ELEMENT

ELEM	PEAK EFF STRESS(PSI)	PEAK TAU-XY STRESS(PSI)	PEAK TAU-XZ STRESS(PSI)	PEAK TAU-YZ STRESS(PSI)
1	.0000E+00	-5.9041E-12	-5.9041E-12	-5.9041E-12
2	.0000E+00	-1.1563E+02	-1.1563E+02	-1.1563E+02
3	.0000E+00	-9.7793E-11	-9.7793E-11	-9.7793E-11
4	.0000E+00	-5.4392E+01	-5.4392E+01	-5.4392E+01
5	.0000E+00	-3.1227E-12	-3.1227E-12	-3.1227E-12
6	.0000E+00	1.2766E+01	1.2766E+01	1.2766E+01
7	.0000E+00	5.1574E-11	5.1574E-11	5.1574E-11
8	.0000E+00	2.8651E+02	2.8651E+02	2.8651E+02
9	.0000E+00	1.6544E-12	1.6544E-12	1.6544E-12
10	.0000E+00	-9.1359E+01	-9.1359E+01	-9.1359E+01
11	.0000E+00	-5.9433E-12	-5.9433E-12	-5.9433E-12
12	.0000E+00	4.0755E+02	4.0755E+02	4.0755E+02
13	.0000E+00	1.9642E-12	1.9642E-12	1.9642E-12
14	.0000E+00	-2.1119E+02	-2.1119E+02	-2.1119E+02
15	.0000E+00	-4.2167E-11	-4.2167E-11	-4.2167E-11
16	.0000E+00	-7.0561E+02	-7.0561E+02	-7.0561E+02
17	.0000E+00	-5.9736E-13	-5.9736E-13	-5.9736E-13
18	.0000E+00	-2.3739E+02	-2.3739E+02	-2.3739E+02
19	.0000E+00	-3.3643E-11	-3.3643E-11	-3.3643E-11
20	.0000E+00	-3.8585E+02	-3.8585E+02	-3.8585E+02
21	.0000E+00	7.1332E-13	7.1332E-13	7.1332E-13
22	.0000E+00	-1.1099E+02	-1.1099E+02	-1.1099E+02
23	.0000E+00	-3.9279E-10	-3.9279E-10	-3.9279E-10
24	.0000E+00	9.4066E+02	9.4066E+02	9.4066E+02
25	.0000E+00	6.3018E-13	6.3018E-13	6.3018E-13
26	.0000E+00	-1.2015E+02	-1.2015E+02	-1.2015E+02
27	.0000E+00	1.0835E-10	1.0835E-10	1.0835E-10
28	.0000E+00	-2.9314E+01	-2.9314E+01	-2.9314E+01
29	.0000E+00	9.4234E-14	9.4234E-14	9.4234E-14
30	.0000E+00	8.9795E+01	8.9795E+01	8.9795E+01
31	.0000E+00	2.0332E-10	2.0332E-10	2.0332E-10
32	6.6892E+03	2.4469E+03	2.4469E+03	2.4469E+03
33	5.1897E+03	2.0535E+03	2.0535E+03	2.0535E+03
34	8.5455E+03	3.5858E+03	3.5858E+03	3.5858E+03
35	1.1868E+04	6.3087E+03	6.3087E+03	6.3087E+03
36	1.2434E+04	6.7960E+03	6.7960E+03	6.7960E+03
38	9.1572E+03	4.9825E+03	4.9825E+03	4.9825E+03
39	3.0508E+03	1.3913E+03	1.3913E+03	1.3913E+03
40	6.9832E+03	3.6044E+03	3.6044E+03	3.6044E+03
41	7.1587E+03	4.2623E+03	4.2623E+03	4.2623E+03
43	1.0020E+04	5.7957E+03	5.7957E+03	5.7957E+03
44	5.7359E+02	9.7717E+02	9.7717E+02	9.7717E+02
45	9.4026E+03	6.0841E+03	6.0841E+03	6.0841E+03
46	1.0869E+04	5.5430E+03	5.5430E+03	5.5430E+03
48	5.2666E+03	3.1404E+03	3.1404E+03	3.1404E+03

49	1.1103E+03	6.5030E+02	6.5030E+02	6.5030E+02
50	5.9451E+03	3.2996E+03	3.2996E+03	3.2996E+03
51	7.7167E+03	4.1780E+03	4.1780E+03	4.1780E+03
53	1.3248E+04	7.7699E+03	7.7699E+03	7.7699E+03
54	3.5120E+03	2.4980E+03	2.4980E+03	2.4980E+03
55	8.8294E+03	4.1799E+03	4.1799E+03	4.1799E+03
56	1.2635E+04	6.0346E+03	6.0346E+03	6.0346E+03
57	8.6705E+03	4.5016E+03	4.5016E+03	4.5016E+03
58	2.2194E+03	1.3708E+03	1.3708E+03	1.3708E+03
59	4.1095E+03	2.3620E+03	2.3620E+03	2.3620E+03
60	2.6532E+03	1.5734E+03	1.5734E+03	1.5734E+03
61	5.7167E+02	3.4962E+02	3.4962E+02	3.4962E+02
62	6.4655E+03	5.0597E+03	5.0597E+03	5.0597E+03
63	7.2448E+03	4.5084E+03	4.5084E+03	4.5084E+03
64	2.3790E+03	1.7796E+03	1.7796E+03	1.7796E+03
65	5.3580E+03	2.3053E+03	2.3053E+03	2.3053E+03
66	4.2387E+03	1.1566E+03	1.1566E+03	1.1566E+03
67	3.1435E+03	1.7612E+03	1.7612E+03	1.7612E+03
68	8.8136E+03	6.1501E+03	6.1501E+03	6.1501E+03
75	.0000E+00	1.3944E+02	1.3944E+02	1.3944E+02

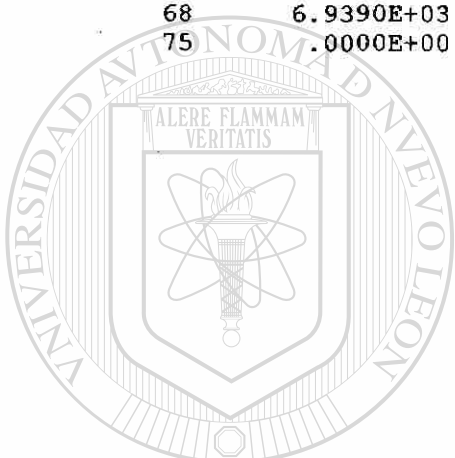
LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: EST-3D4K.POS

AVG EFFECTIVE AND LOCAL SHEAR STRESSES BY ELEMENT

ELEM	AVG EFF STRESS(PSI)	AVG TAU-XY STRESS(PSI)	AVG TAU-XZ STRESS(PSI)	AVG TAU-YZ STRESS(PSI)
1	.0000E+00	-2.9520E-12	-2.9520E-12	-2.9520E-12
2	.0000E+00	-5.7815E+01	-5.7815E+01	-5.7815E+01
3	.0000E+00	-4.8896E-11	-4.8896E-11	-4.8896E-11
4	.0000E+00	-2.7196E+01	-2.7196E+01	-2.7196E+01
5	.0000E+00	-1.5613E-12	-1.5613E-12	-1.5613E-12
6	.0000E+00	6.3832E+00	6.3832E+00	6.3832E+00
7	.0000E+00	2.5787E-11	2.5787E-11	2.5787E-11
8	.0000E+00	1.4326E+02	1.4326E+02	1.4326E+02
9	.0000E+00	8.2720E-13	8.2720E-13	8.2720E-13
10	.0000E+00	-4.5680E+01	-4.5680E+01	-4.5680E+01
11	.0000E+00	-2.9717E-12	-2.9717E-12	-2.9717E-12
12	.0000E+00	2.0378E+02	2.0378E+02	2.0378E+02
13	.0000E+00	9.8210E-13	9.8210E-13	9.8210E-13
14	.0000E+00	-1.0559E+02	-1.0559E+02	-1.0559E+02
15	.0000E+00	-2.1084E-11	-2.1084E-11	-2.1084E-11
16	.0000E+00	-3.5280E+02	-3.5280E+02	-3.5280E+02
17	.0000E+00	-2.9868E-13	-2.9868E-13	-2.9868E-13
18	.0000E+00	-1.1869E+02	-1.1869E+02	-1.1869E+02
19	.0000E+00	-1.6822E-11	-1.6822E-11	-1.6822E-11
20	.0000E+00	-1.9292E+02	-1.9292E+02	-1.9292E+02
21	.0000E+00	3.5666E-13	3.5666E-13	3.5666E-13
22	.0000E+00	-5.5493E+01	-5.5493E+01	-5.5493E+01
23	.0000E+00	-1.9639E-10	-1.9639E-10	-1.9639E-10
24	.0000E+00	4.7033E+02	4.7033E+02	4.7033E+02
25	.0000E+00	3.1509E-13	3.1509E-13	3.1509E-13
26	.0000E+00	-6.0075E+01	-6.0075E+01	-6.0075E+01
27	.0000E+00	5.4177E-11	5.4177E-11	5.4177E-11
28	.0000E+00	-1.4657E+01	-1.4657E+01	-1.4657E+01
29	.0000E+00	4.7117E-14	4.7117E-14	4.7117E-14
30	.0000E+00	4.4897E+01	4.4897E+01	4.4897E+01
31	.0000E+00	1.0166E-10	1.0166E-10	1.0166E-10
32	6.5151E+03	1.6664E+03	1.6664E+03	1.6664E+03
33	4.2485E+03	1.0241E+03	1.0241E+03	1.0241E+03
34	6.4545E+03	1.9664E+03	1.9664E+03	1.9664E+03
35	9.9869E+03	3.9373E+03	3.9373E+03	3.9373E+03
36	7.1317E+03	3.1390E+03	3.1390E+03	3.1390E+03
38	5.4076E+03	1.9280E+03	1.9280E+03	1.9280E+03
39	1.7278E+03	7.2598E+02	7.2598E+02	7.2598E+02
40	6.0648E+03	2.3237E+03	2.3237E+03	2.3237E+03
41	4.2073E+03	2.0998E+03	2.0998E+03	2.0998E+03
43	6.9450E+03	2.2908E+03	2.2908E+03	2.2908E+03
44	4.8665E+02	5.5053E+02	5.5053E+02	5.5053E+02
45	8.3963E+03	4.2346E+03	4.2346E+03	4.2346E+03
46	7.0727E+03	3.3825E+03	3.3825E+03	3.3825E+03
48	3.8328E+03	1.5652E+03	1.5652E+03	1.5652E+03

49	8.1408E+02	3.8093E+02	3.8093E+02	3.8093E+02
50	4.3938E+03	1.6567E+03	1.6567E+03	1.6567E+03
51	4.7012E+03	2.0447E+03	2.0447E+03	2.0447E+03
53	7.7533E+03	2.9101E+03	2.9101E+03	2.9101E+03
54	2.9083E+03	1.6258E+03	1.6258E+03	1.6258E+03
55	6.5522E+03	2.7528E+03	2.7528E+03	2.7528E+03
56	1.0649E+04	3.3898E+03	3.3898E+03	3.3898E+03
57	6.8353E+03	2.7759E+03	2.7759E+03	2.7759E+03
58	2.1019E+03	8.5602E+02	8.5602E+02	8.5602E+02
59	2.9334E+03	1.3130E+03	1.3130E+03	1.3130E+03
60	2.4104E+03	9.6859E+02	9.6859E+02	9.6859E+02
61	5.5532E+02	1.8919E+02	1.8919E+02	1.8919E+02
62	4.8268E+03	3.2542E+03	3.2542E+03	3.2542E+03
63	5.4845E+03	2.1709E+03	2.1709E+03	2.1709E+03
64	1.7405E+03	9.7264E+02	9.7264E+02	9.7264E+02
65	3.3147E+03	1.1724E+03	1.1724E+03	1.1724E+03
66	3.1039E+03	6.6311E+02	6.6311E+02	6.6311E+02
67	2.7154E+03	1.0979E+03	1.0979E+03	1.0979E+03
68	6.9390E+03	3.6216E+03	3.6216E+03	3.6216E+03
75	.0000E+00	6.9720E+01	6.9720E+01	6.9720E+01



LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: EST-3D4K.POS

PEAK EFFECTIVE AND SHEAR STRESSES BY VALUE

PEAK EFF ELEM	STRESS(PSI)	PEAK TAU-XY ELEM	STRESS(PSI)	PEAK TAU-XZ ELEM	STRESS(PSI)	PEAK TAU-YZ ELEM	STRESS(PSI)
--- MATERIAL SET NO. 1 ---							
1	.0000E+00	**24**	**9.4066E+02**	**24**	**9.4066E+02**	**24**	**9.4066E+02**
2	.0000E+00	16	-7.0561E+02	16	-7.0561E+02	16	-7.0561E+02
3	.0000E+00	12	4.0755E+02	12	4.0755E+02	12	4.0755E+02
4	.0000E+00	20	-3.8585E+02	20	-3.8585E+02	20	-3.8585E+02
5	.0000E+00	8	2.8651E+02	8	2.8651E+02	8	2.8651E+02
6	.0000E+00	18	-2.3739E+02	18	-2.3739E+02	18	-2.3739E+02
7	.0000E+00	14	-2.1119E+02	14	-2.1119E+02	14	-2.1119E+02
8	.0000E+00	75	1.3944E+02	75	1.3944E+02	75	1.3944E+02
9	.0000E+00	26	-1.2015E+02	26	-1.2015E+02	26	-1.2015E+02
10	.0000E+00	2	-1.1563E+02	2	-1.1563E+02	2	-1.1563E+02
11	.0000E+00	22	-1.1099E+02	22	-1.1099E+02	22	-1.1099E+02
12	.0000E+00	10	-9.1359E+01	10	-9.1359E+01	10	-9.1359E+01
13	.0000E+00	30	8.9795E+01	30	8.9795E+01	30	8.9795E+01
14	.0000E+00	4	-5.4392E+01	4	-5.4392E+01	4	-5.4392E+01
15	.0000E+00	28	-2.9314E+01	28	-2.9314E+01	28	-2.9314E+01
16	.0000E+00	6	1.2766E+01	6	1.2766E+01	6	1.2766E+01
17	.0000E+00	23	-3.9279E-10	23	-3.9279E-10	23	-3.9279E-10
18	.0000E+00	31	2.0332E-10	31	2.0332E-10	31	2.0332E-10
19	.0000E+00	27	1.0835E-10	27	1.0835E-10	27	1.0835E-10
20	.0000E+00	3	-9.7793E-11	3	-9.7793E-11	3	-9.7793E-11
21	.0000E+00	7	5.1574E-11	7	5.1574E-11	7	5.1574E-11
22	.0000E+00	15	-4.2167E-11	15	-4.2167E-11	15	-4.2167E-11
23	.0000E+00	19	-3.3643E-11	19	-3.3643E-11	19	-3.3643E-11
24	.0000E+00	11	-5.9433E-12	11	-5.9433E-12	11	-5.9433E-12
25	.0000E+00	1	-5.9041E-12	1	-5.9041E-12	1	-5.9041E-12
26	.0000E+00	5	-3.1227E-12	5	-3.1227E-12	5	-3.1227E-12
27	.0000E+00	13	1.9642E-12	13	1.9642E-12	13	1.9642E-12
28	.0000E+00	9	1.6544E-12	9	1.6544E-12	9	1.6544E-12
29	.0000E+00	21	7.1332E-13	21	7.1332E-13	21	7.1332E-13
30	.0000E+00	25	6.3018E-13	25	6.3018E-13	25	6.3018E-13
31	.0000E+00	17	-5.9736E-13	17	-5.9736E-13	17	-5.9736E-13
75	.0000E+00	29	9.4234E-14	29	9.4234E-14	29	9.4234E-14
--- MATERIAL SET NO. 2 ---							
45	**9.4026E+03**	**45**	**6.0841E+03**	**45**	**6.0841E+03**	**45**	**6.0841E+03**
40	6.9832E+03	40	3.6044E+03	40	3.6044E+03	40	3.6044E+03
32	6.6892E+03	50	3.2996E+03	50	3.2996E+03	50	3.2996E+03
50	5.9451E+03	32	2.4469E+03	32	2.4469E+03	32	2.4469E+03
39	3.0508E+03	39	1.3913E+03	39	1.3913E+03	39	1.3913E+03
49	1.1103E+03	44	9.7717E+02	44	9.7717E+02	44	9.7717E+02

44	5.7359E+02	49	6.5030E+02	49	6.5030E+02	49	6.5030E+02

--- MATERIAL SET NO. 3 ---

53	**1.3248E+04**	**53**	**7.7699E+03**	**53**	**7.7699E+03**	**53**	**7.7699E+03**
56	1.2635E+04	36	6.7960E+03	36	6.7960E+03	36	6.7960E+03
36	1.2434E+04	35	6.3087E+03	35	6.3087E+03	35	6.3087E+03
35	1.1868E+04	68	6.1501E+03	68	6.1501E+03	68	6.1501E+03
46	1.0869E+04	56	6.0346E+03	56	6.0346E+03	56	6.0346E+03
43	1.0020E+04	43	5.7957E+03	43	5.7957E+03	43	5.7957E+03
38	9.1572E+03	46	5.5430E+03	46	5.5430E+03	46	5.5430E+03
55	8.8294E+03	62	5.0597E+03	62	5.0597E+03	62	5.0597E+03
68	8.8136E+03	38	4.9825E+03	38	4.9825E+03	38	4.9825E+03
57	8.6705E+03	63	4.5084E+03	63	4.5084E+03	63	4.5084E+03
34	8.5455E+03	57	4.5016E+03	57	4.5016E+03	57	4.5016E+03
51	7.7167E+03	41	4.2623E+03	41	4.2623E+03	41	4.2623E+03
63	7.2448E+03	55	4.1799E+03	55	4.1799E+03	55	4.1799E+03
41	7.1587E+03	51	4.1780E+03	51	4.1780E+03	51	4.1780E+03
62	6.4655E+03	34	3.5858E+03	34	3.5858E+03	34	3.5858E+03
65	5.3580E+03	48	3.1404E+03	48	3.1404E+03	48	3.1404E+03
48	5.2666E+03	54	2.4980E+03	54	2.4980E+03	54	2.4980E+03
33	5.1897E+03	59	2.3620E+03	59	2.3620E+03	59	2.3620E+03
66	4.2387E+03	65	2.3053E+03	65	2.3053E+03	65	2.3053E+03
59	4.1095E+03	33	2.0535E+03	33	2.0535E+03	33	2.0535E+03
54	3.5120E+03	64	1.7796E+03	64	1.7796E+03	64	1.7796E+03
67	3.1435E+03	67	1.7612E+03	67	1.7612E+03	67	1.7612E+03
60	2.6532E+03	60	1.5734E+03	60	1.5734E+03	60	1.5734E+03
64	2.3790E+03	58	1.3708E+03	58	1.3708E+03	58	1.3708E+03
58	2.2194E+03	66	1.1566E+03	66	1.1566E+03	66	1.1566E+03
61	5.7167E+02	61	3.4962E+02	61	3.4962E+02	61	3.4962E+02

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: EST-3D4K.POS

AVG EFFECTIVE AND SHEAR STRESSES BY VALUE

AVG EFF ELEM	STRESS(PSI)	AVG TAU-XY ELEM	STRESS(PSI)	AVG TAU-XZ ELEM	STRESS(PSI)	AVG TAU-YZ ELEM	STRESS(PSI)
--- MATERIAL SET NO. 1 ---							
1	.0000E+00	24	4.7033E+02	24	4.7033E+02	24	4.7033E+02
2	.0000E+00	16	-3.5280E+02	16	-3.5280E+02	16	-3.5280E+02
3	.0000E+00	12	2.0378E+02	12	2.0378E+02	12	2.0378E+02
4	.0000E+00	20	-1.9292E+02	20	-1.9292E+02	20	-1.9292E+02
5	.0000E+00	8	1.4326E+02	8	1.4326E+02	8	1.4326E+02
6	.0000E+00	18	-1.1869E+02	18	-1.1869E+02	18	-1.1869E+02
7	.0000E+00	14	-1.0559E+02	14	-1.0559E+02	14	-1.0559E+02
8	.0000E+00	75	6.9720E+01	75	6.9720E+01	75	6.9720E+01
9	.0000E+00	26	-6.0075E+01	26	-6.0075E+01	26	-6.0075E+01
10	.0000E+00	2	-5.7815E+01	2	-5.7815E+01	2	-5.7815E+01
11	.0000E+00	22	-5.5493E+01	22	-5.5493E+01	22	-5.5493E+01
12	.0000E+00	10	-4.5680E+01	10	-4.5680E+01	10	-4.5680E+01
13	.0000E+00	30	4.4897E+01	30	4.4897E+01	30	4.4897E+01
14	.0000E+00	4	-2.7196E+01	4	-2.7196E+01	4	-2.7196E+01
15	.0000E+00	28	-1.4657E+01	28	-1.4657E+01	28	-1.4657E+01
16	.0000E+00	6	6.3832E+00	6	6.3832E+00	6	6.3832E+00
17	.0000E+00	23	-1.9639E-10	23	-1.9639E-10	23	-1.9639E-10
18	.0000E+00	31	1.0166E-10	31	1.0166E-10	31	1.0166E-10
19	.0000E+00	27	5.4177E-11	27	5.4177E-11	27	5.4177E-11
20	.0000E+00	3	-4.8896E-11	3	-4.8896E-11	3	-4.8896E-11
21	.0000E+00	7	2.5787E-11	7	2.5787E-11	7	2.5787E-11
22	.0000E+00	15	-2.1084E-11	15	-2.1084E-11	15	-2.1084E-11
23	.0000E+00	19	-1.6822E-11	19	-1.6822E-11	19	-1.6822E-11
24	.0000E+00	11	-2.9717E-12	11	-2.9717E-12	11	-2.9717E-12
25	.0000E+00	1	-2.9520E-12	1	-2.9520E-12	1	-2.9520E-12
26	.0000E+00	5	-1.5613E-12	5	-1.5613E-12	5	-1.5613E-12
27	.0000E+00	13	9.8210E-13	13	9.8210E-13	13	9.8210E-13
28	.0000E+00	9	8.2720E-13	9	8.2720E-13	9	8.2720E-13
29	.0000E+00	21	3.5666E-13	21	3.5666E-13	21	3.5666E-13
30	.0000E+00	25	3.1509E-13	25	3.1509E-13	25	3.1509E-13
31	.0000E+00	17	-2.9868E-13	17	-2.9868E-13	17	-2.9868E-13
75	.0000E+00	29	4.7117E-14	29	4.7117E-14	29	4.7117E-14
--- MATERIAL SET NO. 2 ---							
45	8.3963E+03	45	4.2346E+03	45	4.2346E+03	45	4.2346E+03
32	6.5151E+03	40	2.3237E+03	40	2.3237E+03	40	2.3237E+03
40	6.0648E+03	32	1.6664E+03	32	1.6664E+03	32	1.6664E+03
50	4.3938E+03	50	1.6567E+03	50	1.6567E+03	50	1.6567E+03
39	1.7278E+03	39	7.2598E+02	39	7.2598E+02	39	7.2598E+02
49	8.1408E+02	44	5.5053E+02	44	5.5053E+02	44	5.5053E+02

44	4.8665E+02	49	3.8093E+02	49	3.8093E+02	49	3.8093E+02

--- MATERIAL SET NO. 3 ---

56	**1.0649E+04**	**35**	**3.9373E+03**	**35**	**3.9373E+03**	**35**	**3.9373E+03**
35	9.9869E+03	68	3.6216E+03	68	3.6216E+03	68	3.6216E+03
53	7.7533E+03	56	3.3898E+03	56	3.3898E+03	56	3.3898E+03
36	7.1317E+03	46	3.3825E+03	46	3.3825E+03	46	3.3825E+03
46	7.0727E+03	62	3.2542E+03	62	3.2542E+03	62	3.2542E+03
43	6.9450E+03	36	3.1390E+03	36	3.1390E+03	36	3.1390E+03
68	6.9390E+03	53	2.9101E+03	53	2.9101E+03	53	2.9101E+03
57	6.8353E+03	57	2.7759E+03	57	2.7759E+03	57	2.7759E+03
55	6.5522E+03	55	2.7528E+03	55	2.7528E+03	55	2.7528E+03
34	6.4545E+03	43	2.2908E+03	43	2.2908E+03	43	2.2908E+03
63	5.4845E+03	63	2.1709E+03	63	2.1709E+03	63	2.1709E+03
38	5.4076E+03	41	2.0998E+03	41	2.0998E+03	41	2.0998E+03
62	4.8268E+03	51	2.0447E+03	51	2.0447E+03	51	2.0447E+03
51	4.7012E+03	34	1.9664E+03	34	1.9664E+03	34	1.9664E+03
33	4.2485E+03	38	1.9280E+03	38	1.9280E+03	38	1.9280E+03
41	4.2073E+03	54	1.6258E+03	54	1.6258E+03	54	1.6258E+03
48	3.8328E+03	48	1.5652E+03	48	1.5652E+03	48	1.5652E+03
65	3.3147E+03	59	1.3130E+03	59	1.3130E+03	59	1.3130E+03
66	3.1039E+03	65	1.1724E+03	65	1.1724E+03	65	1.1724E+03
59	2.9334E+03	67	1.0979E+03	67	1.0979E+03	67	1.0979E+03
54	2.9083E+03	33	1.0241E+03	33	1.0241E+03	33	1.0241E+03
67	2.7154E+03	64	9.7264E+02	64	9.7264E+02	64	9.7264E+02
60	2.4104E+03	60	9.6859E+02	60	9.6859E+02	60	9.6859E+02
58	2.1019E+03	58	8.5602E+02	58	8.5602E+02	58	8.5602E+02
64	1.7405E+03	66	6.6311E+02	66	6.6311E+02	66	6.6311E+02
61	5.5532E+02	61	1.8919E+02	61	1.8919E+02	61	1.8919E+02

LIBRA Finite Element Program
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PRINCIPAL STRESSES FROM POST PROCESSING FILE: EST-3D4K.POS

REACTION LOADS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
1	-2.121E+03	-1.077E+03	-1.805E+03	.000E+00	.000E+00	.000E+00
5	-6.820E+02	-4.121E+02	-4.087E+02	.000E+00	.000E+00	.000E+00
9	2.568E+03	-1.237E+03	-2.109E+03	.000E+00	.000E+00	.000E+00
13	3.714E+02	-3.554E+02	-2.431E+02	.000E+00	.000E+00	.000E+00
17	6.022E+02	6.254E+02	-4.832E+02	.000E+00	.000E+00	.000E+00
21	2.315E+03	9.017E+02	-1.885E+03	.000E+00	.000E+00	.000E+00
25	-1.908E+03	9.309E+02	-1.604E+03	.000E+00	.000E+00	.000E+00
29	-1.146E+03	6.238E+02	-8.374E+02	.000E+00	.000E+00	.000E+00

APENDICE 2

BASE DE DATOS DE PIEZA 02

LIBRA Finite Element Program
Version 3.0 Revision 2

ESTRUCTURA INFERIOR

DATOS DE ENTRADA

1	76	73	16	5	0	3	11
0	1	1	0	0	0		
0	76	73					
1			0.0		0.0		0.0
26			2.5625		0.0		0.0
27			3.5		0.0		0.0
2			35.25		0.0		0.0
44			66.5		0.0		0.0
45			67.4375		0.0		0.0
3			70.5		0.0		0.0
50			70.5		3.0		0.0
54			70.5		4.25		0.0
6			70.5		9.0		0.0
9			70.5		27.25		0.0
82			70.5		32.0		0.0
86			70.5		33.25		0.0
12			70.5		36.25		0.0
89			67.4375		36.25		0.0
88			66.5		36.25		0.0
11			35.25		36.25		0.0
71			3.5		36.25		0.0
70			2.5625		36.25		0.0
10			0.0		36.25		0.0
65			0.0		33.25		0.0
61			0.0		32.0		0.0
7			0.0		27.25		0.0
4			0.0		9.0		0.0
33			0.0		4.25		0.0
29			0.0		3.0		0.0
5			35.25		9.0		0.0
8			35.25		27.25		0.0
13			35.25		6.25		0.0
14			35.25		11.75		0.0
15			35.25		24.5		0.0
16			35.25		30.0		0.0
20			-1.5		-1.75		0.0
21			0.0		-1.75		0.0
24			-1.5		0.0		0.0
22			2.5625		-1.75		0.0
23			3.5		-1.75		0.0
28			-1.5		3.0		0.0
30			2.5625		3.0		0.0
31			3.5		3.0		0.0
32			-1.5		4.25		0.0
34			2.5625		4.25		0.0
35			3.5		4.25		0.0
40			66.5		-1.75		0.0
41			67.4375		-1.75		0.0
42			70.5		-1.75		0.0
43			71.5		-1.75		0.0
47			71.5		0.0		0.0
48			66.5		3.0		0.0

49		67.4375	3.0	0.0
51		71.5	3.0	0.0
52		66.5	4.25	0.0
53		67.4375	4.25	0.0
55		71.5	4.25	0.0
60		-1.5	32.0	0.0
64		-1.5	33.25	0.0
62		2.5625	32.0	0.0
66		2.5625	33.25	0.0
63		3.5	32.0	0.0
67		3.5	33.25	0.0
68		-1.5	36.25	0.0
72		-1.5	38.0	0.0
73		0.0	38.0	0.0
74		2.5625	38.0	0.0
75		3.5	38.0	0.0
80		66.5	32.0	0.0
81		67.4375	32.0	0.0
84		66.5	33.25	0.0
85		67.4375	33.25	0.0
83		71.5	32.0	0.0
87		71.5	33.25	0.0
91		71.5	36.25	0.0
92		66.5	38.0	0.0
93		67.4375	38.0	0.0
94		70.5	38.0	0.0
95		71.5	38.0	0.0
1	3	1	1	26
2	3	1	26	27
3	3	1	27	2
4	3	1	2	44
5	3	1	44	45
6	3	1	45	3
7	3	1	3	50
8	3	1	50	54
9	3	1	54	6
10	3	1	6	9
11	3	1	9	82
12	3	1	82	86
13	3	1	86	12
14	3	1	12	89
15	3	1	88	89
16	3	1	88	11
17	3	1	11	71
18	3	1	71	70
19	3	1	70	10
20	3	1	10	65
21	3	1	65	61
22	3	1	61	7
23	3	1	7	4
24	3	1	4	33
25	3	1	33	29
26	3	1	29	1
27	3	1	4	5
28	3	1	5	6
29	3	1	7	8
30	3	1	8	9
31	3	1	2	13
32	3	2	13	5
33	3	2	5	14

34	3	1	14	15		
36	3	2	15	8		
37	3	2	8	16		
38	3	1	16	11		
39	11	3	20	21	1	24
40	11	3	21	22	26	1
41	11	3	22	23	27	26
42	11	3	24	1	29	28
43	11	3	1	26	30	29
44	11	3	26	27	31	30
45	11	3	28	29	33	32
46	11	3	29	30	34	33
47	11	3	30	31	35	34
48	11	3	40	41	45	44
49	11	3	41	42	3	45
50	11	3	42	43	47	3
51	11	3	44	45	49	48
52	11	3	45	3	50	49
53	11	3	3	47	51	50
54	11	3	48	49	53	52
55	11	3	49	50	54	53
56	11	3	50	51	55	54
57	11	3	60	61	65	64
58	11	3	61	62	66	65
59	11	3	62	63	67	66
60	11	3	64	65	10	68
61	11	3	65	66	70	10
62	11	3	66	67	71	70
63	11	3	68	10	73	72
64	11	3	10	70	74	73
65	11	3	70	71	75	74
66	11	3	80	81	85	84
67	11	3	81	82	86	85
68	11	3	82	83	87	86
69	11	3	84	85	89	88
70	11	3	85	86	12	89
71	11	3	86	87	91	12
72	11	3	88	89	93	92
74	11	3	89	12	94	93
75	11	3	12	91	95	94

1	0.0	10.0	10.0	10.0	1.896	1.896	1.397
1	0.0	3.0+07	1.15+07	8.4-06	.283	0.0	0.0A
2	0.0	10.0	10.0	10.0	3.685	2.74	2.522
2	0.0	3.0+07	1.15+07	8.4-06	.283	0.0	0.0A
3	0.0	3.0+07	.287	.375	8.4-06	.283	1.15+07A

1	001000	0.0	0	0	0
26	001000	0.0	0	0	0
29	001000	0.0	0	0	0
30	001000	0.0	0	0	0
45	001000	0.0	0	0	0
3	001000	0.0	0	0	0
50	001000	0.0	0	0	0
49	001000	0.0	0	0	0
10	001000	0.0	0	0	0
65	001000	0.0	0	0	0
66	001000	0.0	0	0	0
70	001000	0.0	0	0	0
85	001000	0.0	0	0	0
86	001000	0.0	0	0	0
12	001000	0.0	0	0	0

```
89     001000              0.0     0     0     0
 0
 6     0     1     0     0     0        0.0
 1     1     0     0.0         0.0     -550.0          0.0         0.0         0.0
 3     1     0     0.0         0.0     -550.0          0.0         0.0         0.0
10     1     0     0.0         0.0     -550.0          0.0         0.0         0.0
12     1     0     0.0         0.0     -550.0          0.0         0.0         0.0
 5     1     0     0.0         0.0     -550.0          0.0         0.0         0.0
 8     1     0     0.0         0.0     -550.0          0.0         0.0         0.0
 0
```

LIBRA Finite Element Program
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ESTRUCTURA INFERIOR

FILE SPECIFICATIONS

```
 INPUT ......... E-SUPK
 OUTPUT ........ E-SUPK.SOL
 BANDWIDTH ..... NONE
 POST PROCESS .. E-SUPK.POS
```

NSTYPE	NP	NE	NB	NELPR	NCNCN1	EL TYPES
1	76	73	16	5	0	3 11

IDATCK	IBNDOP	IPOST	ISING	IRSFLG	ISUPR
0	1	1	0	0	0

LIBRA Finite Element Program
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ESTRUCTURA INFERIOR

NODAL COORDINATES

NODE POINT	X-COORDINATE	Y-COORDINATE	Z-COORDINATE
1	.0000E+00	.0000E+00	.0000E+00
2	3.5250E+01	.0000E+00	.0000E+00
3	7.0500E+01	.0000E+00	.0000E+00
4	.0000E+00	9.0000E+00	.0000E+00
5	3.5250E+01	9.0000E+00	.0000E+00
6	7.0500E+01	9.0000E+00	.0000E+00
7	.0000E+00	2.7250E+01	.0000E+00
8	3.5250E+01	2.7250E+01	.0000E+00
9	7.0500E+01	2.7250E+01	.0000E+00
10	.0000E+00	3.6250E+01	.0000E+00
11	3.5250E+01	3.6250E+01	.0000E+00
12	7.0500E+01	3.6250E+01	.0000E+00
13	3.5250E+01	6.2500E+00	.0000E+00
14	3.5250E+01	1.1750E+01	.0000E+00
15	3.5250E+01	2.4500E+01	.0000E+00
16	3.5250E+01	3.0000E+01	.0000E+00
20	-1.5000E+00	-1.7500E+00	.0000E+00
21	.0000E+00	-1.7500E+00	.0000E+00
22	2.5625E+00	-1.7500E+00	.0000E+00
23	3.5000E+00	-1.7500E+00	.0000E+00
24	-1.5000E+00	.0000E+00	.0000E+00
26	2.5625E+00	.0000E+00	.0000E+00
27	3.5000E+00	.0000E+00	.0000E+00
28	-1.5000E+00	3.0000E+00	.0000E+00
29	.0000E+00	3.0000E+00	.0000E+00
30	2.5625E+00	3.0000E+00	.0000E+00
31	3.5000E+00	3.0000E+00	.0000E+00
32	-1.5000E+00	4.2500E+00	.0000E+00
33	.0000E+00	4.2500E+00	.0000E+00
34	2.5625E+00	4.2500E+00	.0000E+00
35	3.5000E+00	4.2500E+00	.0000E+00
40	6.6500E+01	-1.7500E+00	.0000E+00
41	6.7438E+01	-1.7500E+00	.0000E+00
42	7.0500E+01	-1.7500E+00	.0000E+00
43	7.1500E+01	-1.7500E+00	.0000E+00
44	6.6500E+01	.0000E+00	.0000E+00
45	6.7438E+01	.0000E+00	.0000E+00
47	7.1500E+01	.0000E+00	.0000E+00
48	6.6500E+01	3.0000E+00	.0000E+00
49	6.7438E+01	3.0000E+00	.0000E+00
50	7.0500E+01	3.0000E+00	.0000E+00
51	7.1500E+01	3.0000E+00	.0000E+00
52	6.6500E+01	4.2500E+00	.0000E+00
53	6.7438E+01	4.2500E+00	.0000E+00
54	7.0500E+01	4.2500E+00	.0000E+00
55	7.1500E+01	4.2500E+00	.0000E+00
60	-1.5000E+00	3.2000E+01	.0000E+00
61	.0000E+00	3.2000E+01	.0000E+00

62	2.5625E+00	3.2000E+01	.0000E+00
63	3.5000E+00	3.2000E+01	.0000E+00
64	-1.5000E+00	3.3250E+01	.0000E+00
65	.0000E+00	3.3250E+01	.0000E+00
66	2.5625E+00	3.3250E+01	.0000E+00
67	3.5000E+00	3.3250E+01	.0000E+00
68	-1.5000E+00	3.6250E+01	.0000E+00
70	2.5625E+00	3.6250E+01	.0000E+00
71	3.5000E+00	3.6250E+01	.0000E+00
72	-1.5000E+00	3.8000E+01	.0000E+00
73	.0000E+00	3.8000E+01	.0000E+00
74	2.5625E+00	3.8000E+01	.0000E+00
75	3.5000E+00	3.8000E+01	.0000E+00
80	6.6500E+01	3.2000E+01	.0000E+00
81	6.7438E+01	3.2000E+01	.0000E+00
82	7.0500E+01	3.2000E+01	.0000E+00
83	7.1500E+01	3.2000E+01	.0000E+00
84	6.6500E+01	3.3250E+01	.0000E+00
85	6.7438E+01	3.3250E+01	.0000E+00
86	7.0500E+01	3.3250E+01	.0000E+00
87	7.1500E+01	3.3250E+01	.0000E+00
88	6.6500E+01	3.6250E+01	.0000E+00
89	6.7438E+01	3.6250E+01	.0000E+00
91	7.1500E+01	3.6250E+01	.0000E+00
92	6.6500E+01	3.8000E+01	.0000E+00
93	6.7438E+01	3.8000E+01	.0000E+00
94	7.0500E+01	3.8000E+01	.0000E+00
95	7.1500E+01	3.8000E+01	.0000E+00

ELEMENT DATA

ELEMENT	EL TYPE	MATERIAL	.....NODES.....	
1	3	1	1	26
2	3	1	26	27
3	3	1	27	2
4	3	1	2	44
5	3	1	44	45
6	3	1	45	3
7	3	1	3	50
8	3	1	50	54
9	3	1	54	6
10	3	1	6	9
11	3	1	9	82
12	3	1	82	86
13	3	1	86	12
14	3	1	12	89
15	3	1	88	89
16	3	1	88	11
17	3	1	11	71
18	3	1	71	70
19	3	1	70	10
20	3	1	10	65
21	3	1	65	61
22	3	1	61	7

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

MATERIAL PROPERTIES

SET	TEMP	PROP(1)	PROP(2)	PROP(3)	PROP(4)	PROP(5)	PROP(6)
1	.000E+00	1.000E+01	1.000E+01	1.000E+01	1.896E+00	1.896E+00	1.397E+00
1	.000E+00	3.000E+07	1.150E+07	8.400E-06	2.830E-01	.000E+00	.000E+00

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 2 .000E+00 1.000E+01 1.000E+01 1.000E+01 3.685E+00  2.740E+00  2.522E+00
 2 .000E+00 3.000E+07 1.150E+07 8.400E-06 2.830E-01   .000E+00   .000E+00

 3 .000E+00 3.000E+07 2.870E-01 3.750E-01 8.400E-06  2.830E-01  1.150E+07
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DISPLACEMENT BOUNDARY CONDITIONS

NODE	DOF FIXED	DISP
1	001000	.0000E+00
26	001000	.0000E+00
29	001000	.0000E+00
30	001000	.0000E+00
45	001000	.0000E+00
3	001000	.0000E+00
50	001000	.0000E+00
49	001000	.0000E+00
10	001000	.0000E+00
65	001000	.0000E+00
66	001000	.0000E+00
70	001000	.0000E+00
85	001000	.0000E+00
86	001000	.0000E+00
12	001000	.0000E+00
89	001000	.0000E+00

PROBLEM SIZE INFORMATION

TOTAL NUMBER OF NODES	76
TOTAL NUMBER OF ELEMENTS	73
TOTAL NUMBER OF BOUNDARY CONDITIONS	16
TOTAL NUMBER OF CONSTRAINING CONDITIONS	0
TOTAL NUMBER OF EQUATIONS	456
BAND WIDTH	90
NUMBER OF EQUATIONS PER BLOCK	84
NUMBER OF EQUATION BLOCKS	6

LIBRA Finite Element Program
Version 3.0 Revision 2

ESTRUCTURA INFERIOR

SOLUTION CONTROL PARAMETERS, LOAD CASE NUMBER 1

NUMBER OF NODAL LOAD RECORDS 6
NUMBER OF NODAL TEMPERATURE RECORDS ... 0
REACTION LOAD CALCULATION OPTION 1
BODY FORCE OPTION 0
ROTATIONAL SPEED OPTION 0
SKIP STRESS CALCULATION OPTION 0
ZERO STRESS TEMPERATURE ..... .0000E+00

NODAL LOADS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
1	.0000E+00	.0000E+00	-5.5000E+02	.0000E+00	.0000E+00	.0000E+00
3	.0000E+00	.0000E+00	-5.5000E+02	.0000E+00	.0000E+00	.0000E+00
10	.0000E+00	.0000E+00	-5.5000E+02	.0000E+00	.0000E+00	.0000E+00
12	.0000E+00	.0000E+00	-5.5000E+02	.0000E+00	.0000E+00	.0000E+00
5	.0000E+00	.0000E+00	-5.5000E+02	.0000E+00	.0000E+00	.0000E+00
8	.0000E+00	.0000E+00	-5.5000E+02	.0000E+00	.0000E+00	.0000E+00

DISPLACEMENTS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
1	-9.652E-04	7.229E-05	.000E+00	-1.206E-06	-4.474E-07	-6.812E-07
2	-9.667E-04	8.453E-05	-9.063E-03	-3.210E-04	-3.789E-06	-5.722E-09
3	-9.652E-04	9.677E-05	.000E+00	-1.229E-06	6.232E-07	-6.799E-07
4	-9.585E-04	7.227E-05	-1.768E-04	-4.049E-05	2.817E-04	-5.137E-07
5	-9.569E-04	8.453E-05	**-1.184E-02**	-2.444E-04	-1.224E-06	1.212E-06
6	-9.586E-04	9.678E-05	-1.767E-04	-4.044E-05	-2.812E-04	-5.146E-07
7	-9.649E-04	7.209E-05	-1.768E-04	4.049E-05	2.817E-04	1.214E-06
8	-9.633E-04	8.453E-05	**-1.184E-02**	2.444E-04	-1.224E-06	-5.114E-07
9	-9.650E-04	9.698E-05	-1.767E-04	4.044E-05	-2.812E-04	1.215E-06
10	-9.779E-04	7.207E-05	.000E+00	1.206E-06	-4.474E-07	1.382E-06

11	-9.794E-04	8.452E-05	-9.063E-03	3.210E-04	-3.789E-06	7.064E-07
12	-9.779E-04	9.699E-05	.000E+00	1.229E-06	6.232E-07	1.381E-06
13	-9.596E-04	8.453E-05	-1.110E-02	-2.913E-04	-1.753E-06	-2.727E-06
14	-9.655E-04	8.453E-05	**-1.245E-02**	-1.984E-04	-1.224E-06	5.055E-06
15	-9.700E-04	8.453E-05	**-1.245E-02**	1.984E-04	-1.224E-06	-4.355E-06
16	-9.679E-04	8.453E-05	-1.110E-02	2.913E-04	-1.753E-06	3.428E-06
20	-9.664E-04	7.331E-05	-4.324E-05	2.144E-05	-3.129E-05	.000E+00
21	-9.663E-04	7.231E-05	1.117E-05	4.077E-06	-2.397E-05	.000E+00
22	-9.662E-04	7.077E-05	1.613E-05	-1.095E-05	-9.180E-06	.000E+00
23	-9.662E-04	7.025E-05	3.249E-05	-4.535E-05	-2.523E-05	.000E+00
24	-9.652E-04	7.335E-05	1.632E-05	3.159E-05	5.441E-06	.000E+00
26	-9.652E-04	7.074E-05	.000E+00	-2.342E-05	3.032E-05	-4.981E-07
27	-9.653E-04	7.032E-05	-4.875E-05	-3.173E-05	7.327E-05	-3.864E-07
28	-9.630E-04	7.344E-05	1.230E-04	4.802E-05	8.906E-05	.000E+00
29	-9.630E-04	7.233E-05	.000E+00	-7.565E-06	9.098E-05	-7.843E-07
30	-9.631E-04	7.066E-05	.000E+00	3.207E-05	-1.110E-04	.000E+00
31	-9.631E-04	6.997E-05	1.046E-04	1.170E-04	-1.170E-04	.000E+00
32	-9.620E-04	7.346E-05	1.872E-04	5.340E-05	1.275E-04	.000E+00
33	-9.620E-04	7.232E-05	-1.735E-05	-1.973E-05	1.303E-04	-8.141E-07
34	-9.622E-04	7.065E-05	5.922E-05	6.262E-05	-1.628E-04	.000E+00
35	-9.622E-04	6.998E-05	2.218E-04	7.485E-05	-1.761E-04	.000E+00
40	-9.662E-04	9.907E-05	3.825E-05	-5.135E-05	2.691E-05	.000E+00
41	-9.662E-04	9.856E-05	2.020E-05	-1.439E-05	1.098E-05	.000E+00
42	-9.663E-04	9.676E-05	1.585E-05	1.906E-06	2.682E-05	.000E+00
43	-9.663E-04	9.613E-05	-2.507E-05	7.218E-06	2.980E-05	.000E+00
44	-9.653E-04	9.899E-05	-5.462E-05	-3.607E-05	-7.965E-05	-3.595E-07
45	-9.652E-04	9.859E-05	.000E+00	-2.777E-05	-3.646E-05	-4.723E-07
47	-9.652E-04	9.608E-05	1.322E-05	1.895E-05	-2.514E-06	.000E+00
48	-9.631E-04	9.934E-05	1.103E-04	1.268E-04	1.227E-04	.000E+00
49	-9.631E-04	9.867E-05	.000E+00	3.769E-05	1.181E-04	.000E+00
50	-9.630E-04	9.673E-05	.000E+00	-7.597E-06	-9.104E-05	-7.742E-07
51	-9.630E-04	9.598E-05	7.854E-05	3.293E-05	-8.962E-05	.000E+00
52	-9.623E-04	9.932E-05	2.333E-04	7.661E-05	1.752E-04	.000E+00
53	-9.623E-04	9.868E-05	7.262E-05	7.658E-05	1.585E-04	.000E+00
54	-9.620E-04	9.673E-05	-1.740E-05	-1.976E-05	-1.303E-04	-8.074E-07
55	-9.620E-04	9.596E-05	1.235E-04	3.682E-05	-1.292E-04	.000E+00
60	-9.718E-04	6.985E-05	1.872E-04	-5.340E-05	1.275E-04	.000E+00
61	-9.717E-04	7.204E-05	-1.735E-05	1.973E-05	1.303E-04	1.515E-06
62	-9.719E-04	7.551E-05	5.922E-05	-6.262E-05	-1.628E-04	.000E+00
63	-9.719E-04	7.683E-05	2.218E-04	-7.485E-05	-1.761E-04	.000E+00
64	-9.736E-04	6.987E-05	1.230E-04	-4.802E-05	8.906E-05	.000E+00
65	-9.736E-04	7.204E-05	.000E+00	7.565E-06	9.098E-05	1.485E-06
66	-9.737E-04	7.550E-05	.000E+00	-3.207E-05	-1.110E-04	.000E+00
67	-9.736E-04	7.685E-05	1.046E-04	-1.170E-04	-1.170E-04	.000E+00
68	-9.779E-04	6.996E-05	1.632E-05	-3.159E-05	5.441E-06	.000E+00
70	-9.779E-04	7.541E-05	.000E+00	2.342E-05	3.032E-05	1.199E-06
71	-9.780E-04	7.649E-05	-4.875E-05	3.173E-05	7.327E-05	1.087E-06
72	-9.803E-04	7.000E-05	-4.324E-05	-2.144E-05	-3.129E-05	.000E+00
73	-9.802E-04	7.205E-05	1.117E-05	-4.077E-06	-2.397E-05	.000E+00
74	-9.802E-04	7.539E-05	1.613E-05	1.095E-05	-9.180E-06	.000E+00
75	-9.801E-04	7.657E-05	3.249E-05	4.535E-05	-2.523E-05	.000E+00
80	-9.720E-04	9.163E-05	2.333E-04	-7.661E-05	1.752E-04	.000E+00
81	-9.720E-04	9.293E-05	7.262E-05	-7.658E-05	1.585E-04	.000E+00
82	-9.717E-04	9.703E-05	-1.740E-05	1.976E-05	-1.303E-04	1.508E-06
83	-9.718E-04	9.849E-05	1.235E-04	-3.682E-05	-1.292E-04	.000E+00
84	-9.737E-04	9.161E-05	1.103E-04	-1.268E-04	1.227E-04	.000E+00
85	-9.737E-04	9.294E-05	.000E+00	-3.769E-05	1.181E-04	.000E+00
86	-9.736E-04	9.703E-05	.000E+00	7.597E-06	-9.104E-05	1.475E-06
87	-9.736E-04	9.847E-05	7.854E-05	-3.293E-05	-8.962E-05	.000E+00

88	-9.780E-04	9.197E-05	-5.462E-05	3.607E-05	-7.965E-05	1.060E-06
89	-9.779E-04	9.302E-05	.000E+00	2.777E-05	-3.646E-05	1.173E-06
91	-9.779E-04	9.837E-05	1.322E-05	-1.895E-05	-2.514E-06	.000E+00
92	-9.801E-04	9.188E-05	3.825E-05	5.135E-05	2.691E-05	.000E+00
93	-9.801E-04	9.305E-05	2.020E-05	1.439E-05	1.098E-05	.000E+00
94	-9.802E-04	9.699E-05	1.585E-05	-1.906E-06	2.682E-05	.000E+00
95	-9.802E-04	9.833E-05	-2.507E-05	-7.218E-06	2.980E-05	.000E+00

ELEMENT STRESSES

EL	NODE	P1	P2	P3	M1	M2	M3
1	1	5.723E-01	-1.097E+03	-1.099E+03	3.780E+02	9.223E+02	-9.254E+02
	26	-5.723E-01	1.097E+03	1.099E+03	-3.780E+02	1.894E+03	-1.886E+03
EL	NODE	P1	P2	P3	M1	M2	M3
2	26	1.050E+00	1.117E+02	1.092E+02	3.869E+02	-1.898E+03	1.890E+03
	27	-1.050E+00	-1.117E+02	-1.092E+02	-3.869E+02	1.796E+03	-1.785E+03
EL	NODE	P1	P2	P3	M1	M2	M3
3	27	1.920E+00	1.190E+02	1.196E+02	3.973E+02	-1.802E+03	1.791E+03
	2	-1.920E+00	-1.190E+02	-1.196E+02	-3.973E+02	-1.996E+03	1.987E+03
EL	NODE	P1	P2	P3	M1	M2	M3
4	2	-1.962E+00	-1.222E+02	-1.215E+02	-3.976E+02	1.997E+03	-2.006E+03
	44	1.962E+00	1.222E+02	1.215E+02	3.976E+02	1.801E+03	-1.812E+03
EL	NODE	P1	P2	P3	M1	M2	M3
5	44	-1.078E+00	-1.108E+02	-1.133E+02	-3.861E+02	-1.795E+03	1.806E+03
	45	1.078E+00	1.108E+02	1.133E+02	3.861E+02	1.901E+03	-1.910E+03
EL	NODE	P1	P2	P3	M1	M2	M3
6	45	-4.598E-01	9.231E+02	9.212E+02	-3.780E+02	-1.895E+03	1.903E+03
	3	4.598E-01	-9.231E+02	-9.212E+02	3.780E+02	-9.262E+02	9.238E+02
EL	NODE	P1	P2	P3	M1	M2	M3
7	3	5.767E-01	-5.463E+01	-3.302E+02	1.332E+03	3.764E+02	-6.048E+01
	50	-5.767E-01	5.463E+01	3.302E+02	-1.332E+03	6.141E+02	-1.034E+02
EL	NODE	P1	P2	P3	M1	M2	M3
8	50	2.581E-02	1.784E+01	1.045E+02	1.371E+03	-6.109E+02	1.029E+02
	54	-2.581E-02	-1.784E+01	-1.045E+02	-1.371E+03	4.803E+02	-8.056E+01
EL	NODE	P1	P2	P3	M1	M2	M3
9	54	-4.508E-01	1.893E+01	1.025E+02	1.385E+03	-4.883E+02	8.189E+01
	6	4.508E-01	-1.893E+01	-1.025E+02	-1.385E+03	1.528E+00	8.024E+00
EL	NODE	P1	P2	P3	M1	M2	M3
10	6	-4.502E-01	-2.449E-11	1.524E-11	-2.450E-10	2.478E+02	-4.643E+01
	9	4.502E-01	2.449E-11	-1.524E-11	2.450E-10	-2.478E+02	4.643E+01
EL	NODE	P1	P2	P3	M1	M2	M3
11	9	-4.508E-01	-1.893E+01	-1.025E+02	-1.385E+03	-1.528E+00	-8.024E+00
	82	4.508E-01	1.893E+01	1.025E+02	1.385E+03	4.883E+02	-8.189E+01

EL	NODE	P1	P2	P3	M1	M2	M3
12	82	2.581E-02	-1.784E+01	-1.045E+02	-1.371E+03	-4.803E+02	8.056E+01
	86	-2.581E-02	1.784E+01	1.045E+02	1.371E+03	6.109E+02	-1.029E+02

EL	NODE	P1	P2	P3	M1	M2	M3
13	86	5.767E-01	5.463E+01	3.302E+02	-1.332E+03	-6.141E+02	1.034E+02
	12	-5.767E-01	-5.463E+01	-3.302E+02	1.332E+03	-3.764E+02	6.048E+01

EL	NODE	P1	P2	P3	M1	M2	M3
14	12	-4.598E-01	-4.656E+02	-1.218E+03	3.780E+02	1.223E+03	-4.641E+02
	89	4.598E-01	4.656E+02	1.218E+03	-3.780E+02	2.508E+03	-9.617E+02

EL	NODE	P1	P2	P3	M1	M2	M3
15	88	-1.078E+00	-5.474E+01	1.487E+02	3.861E+02	2.377E+03	9.136E+02
	89	1.078E+00	5.474E+01	-1.487E+02	-3.861E+02	-2.516E+03	-9.649E+02

EL	NODE	P1	P2	P3	M1	M2	M3
16	88	-1.962E+00	6.177E+01	1.609E+02	3.976E+02	-2.385E+03	9.166E+02
	11	1.962E+00	-6.177E+01	-1.609E+02	-3.976E+02	-2.643E+03	1.014E+03

EL	NODE	P1	P2	P3	M1	M2	M3
17	11	1.920E+00	-5.966E+01	-1.578E+02	-3.973E+02	2.634E+03	-9.969E+02
	71	-1.920E+00	5.966E+01	1.578E+02	3.973E+02	2.377E+03	-8.973E+02

EL	NODE	P1	P2	P3	M1	M2	M3
18	71	1.050E+00	-5.723E+01	-1.453E+02	-3.869E+02	-2.369E+03	8.943E+02
	70	-1.050E+00	5.723E+01	1.453E+02	3.869E+02	2.505E+03	-9.480E+02

EL	NODE	P1	P2	P3	M1	M2	M3
19	70	5.723E-01	5.514E+02	1.452E+03	-3.780E+02	-2.500E+03	9.459E+02
	10	-5.723E-01	-5.514E+02	-1.452E+03	3.780E+02	-1.220E+03	4.671E+02

EL	NODE	P1	P2	P3	M1	M2	M3
20	10	-5.173E-01	-2.353E+02	-2.351E+02	1.329E+03	2.660E+02	-2.691E+02
	65	5.173E-01	2.353E+02	2.351E+02	-1.329E+03	4.393E+02	-4.368E+02

EL	NODE	P1	P2	P3	M1	M2	M3
21	65	3.002E-02	7.080E+01	7.168E+01	1.372E+03	-4.373E+02	4.349E+02
	61	-3.002E-02	-7.080E+01	-7.168E+01	-1.372E+03	3.477E+02	-3.464E+02

EL	NODE	P1	P2	P3	M1	M2	M3
22	61	4.358E-01	7.270E+01	7.542E+01	1.390E+03	-3.523E+02	3.510E+02
	7	-4.358E-01	-7.270E+01	-7.542E+01	-1.390E+03	-5.907E+00	-5.629E+00

EL	NODE	P1	P2	P3	M1	M2	M3
23	7	4.350E-01	-3.166E-11	1.627E-11	2.478E-10	1.823E+02	-1.747E+02
	4	-4.350E-01	3.166E-11	-1.627E-11	-2.478E-10	-1.823E+02	1.747E+02

EL	NODE	P1	P2	P3	M1	M2	M3
24	4	4.358E-01	-7.270E+01	-7.542E+01	-1.390E+03	5.907E+00	5.629E+00
	33	-4.358E-01	7.270E+01	7.542E+01	1.390E+03	3.523E+02	-3.510E+02

EL	NODE	P1	P2	P3	M1	M2	M3
25	33	3.002E-02	-7.080E+01	-7.168E+01	-1.372E+03	-3.477E+02	3.464E+02
	29	-3.002E-02	7.080E+01	7.168E+01	1.372E+03	4.373E+02	-4.349E+02

EL	NODE	P1	P2	P3	M1	M2	M3
26	29	-5.173E-01	2.353E+02	2.351E+02	-1.329E+03	-4.393E+02	4.368E+02
	1	5.173E-01	-2.353E+02	-2.351E+02	1.329E+03	-2.660E+02	2.691E+02

EL	NODE	P1	P2	P3	M1	M2	M3
27	4	-1.920E+00	1.042E+02	1.042E+01	2.522E+02	-1.410E+02	1.382E+03
	5	1.920E+00	-1.042E+02	-1.042E+01	-2.522E+02	-2.263E+02	2.291E+03

EL	NODE	P1	P2	P3	M1	M2	M3
28	5	1.962E+00	-1.037E+02	-1.037E+01	-2.523E+02	2.305E+02	-2.277E+03
	6	-1.962E+00	1.037E+02	1.037E+01	2.523E+02	1.350E+02	-1.378E+03

EL	NODE	P1	P2	P3	M1	M2	M3
29	7	-1.920E+00	5.253E+01	-9.061E+01	-2.522E+02	1.204E+03	6.945E+02
	8	1.920E+00	-5.253E+01	9.061E+01	2.522E+02	1.991E+03	1.157E+03

EL	NODE	P1	P2	P3	M1	M2	M3
30	8	1.962E+00	-5.226E+01	9.015E+01	2.523E+02	-1.981E+03	-1.145E+03
	9	-1.962E+00	5.226E+01	-9.015E+01	-2.523E+02	-1.197E+03	-6.969E+02

EL	NODE	P1	P2	P3	M1	M2	M3
31	2	1.505E-02	1.220E+02	3.185E+02	-1.421E+01	-7.344E+02	3.045E+02
	13	-1.505E-02	-1.220E+02	-3.185E+02	1.421E+01	-1.256E+03	4.579E+02

EL	NODE	P1	P2	P3	M1	M2	M3
32	13	1.505E-02	1.220E+02	3.185E+02	-1.421E+01	1.256E+03	-4.579E+02
	5	-1.505E-02	-1.220E+02	-3.185E+02	1.421E+01	-2.132E+03	7.933E+02

EL	NODE	P1	P2	P3	M1	M2	M3
33	5	1.515E-02	-2.207E-11	1.201E-10	-2.508E-12	1.661E+03	-6.127E+02
	14	-1.515E-02	2.207E-11	-1.201E-10	2.508E-12	-1.661E+03	6.127E+02

EL	NODE	P1	P2	P3	M1	M2	M3
34	14	1.515E-02	-1.314E-10	-2.152E-10	-2.928E-12	1.661E+03	-6.127E+02
	15	-1.515E-02	1.314E-10	2.152E-10	2.928E-12	-1.661E+03	6.127E+02

EL	NODE	P1	P2	P3	M1	M2	M3
36	15	1.515E-02	-6.988E-11	-1.779E-11	-3.029E-12	1.661E+03	-6.127E+02
	8	-1.515E-02	6.988E-11	1.779E-11	3.029E-12	-1.661E+03	6.127E+02

EL	NODE	P1	P2	P3	M1	M2	M3
37	8	1.505E-02	-1.220E+02	-3.185E+02	1.421E+01	2.132E+03	-7.933E+02
	16	-1.505E-02	1.220E+02	3.185E+02	-1.421E+01	-1.256E+03	4.579E+02

EL	NODE	P1	P2	P3	M1	M2	M3
38	16	1.505E-02	-1.220E+02	-3.185E+02	1.421E+01	1.256E+03	-4.579E+02
	11	-1.505E-02	1.220E+02	3.185E+02	-1.421E+01	7.344E+02	-3.045E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
39	1	-1.183E+00	-1.380E+00	.000E+00	2.853E+01	-3.140E+01	2.997E+01
					3.281E+01	-2.762E+01	3.021E+01
39	2	-1.183E+00	-3.698E-01	.000E+00	-5.722E+00	-2.015E+01	7.213E+00
					2.097E+01	5.647E+00	7.659E+00
39	3	-3.170E-01	-1.380E+00	.000E+00	1.721E+01	1.392E+00	7.909E+00
					-1.077E+00	-1.680E+01	7.859E+00
39	4	-3.170E-01	-3.698E-01	.000E+00	1.451E+01	-1.892E+01	1.671E+01
					1.762E+01	-1.406E+01	1.584E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
40	1	5.415E-01	-1.380E+00	.000E+00	4.796E+01	6.010E-01	2.368E+01
					-9.202E-01	-4.648E+01	2.278E+01
40	2	5.415E-01	-3.698E-01	.000E+00	6.298E+01	1.290E-01	3.142E+01
					-1.140E+00	-6.318E+01	3.102E+01
40	3	2.021E+00	-1.380E+00	.000E+00	6.042E+01	-1.612E+00	3.102E+01
					2.418E+00	-6.029E+01	3.135E+01
40	4	2.021E+00	-3.698E-01	.000E+00	6.911E+01	4.249E+00	3.243E+01
					-4.698E+00	-7.010E+01	3.270E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
41	1	2.761E+00	-1.380E+00	.000E+00	3.120E+01	-3.017E+01	3.069E+01
					3.091E+01	-3.119E+01	3.105E+01
41	2	2.761E+00	-3.698E-01	.000E+00	1.967E+02	-3.799E+01	1.173E+02
					3.694E+01	-1.971E+02	1.170E+02
41	3	3.302E+00	-1.380E+00	.000E+00	2.282E+01	-5.795E+01	4.038E+01
					5.944E+01	-2.067E+01	4.005E+01
41	4	3.302E+00	-3.698E-01	.000E+00	2.259E+02	-1.033E+02	1.646E+02
					1.042E+02	-2.253E+02	1.647E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
42	1	-1.183E+00	6.340E-01	.000E+00	-5.990E+00	-2.270E+01	8.356E+00
					2.338E+01	6.452E+00	8.463E+00
42	2	-1.183E+00	2.366E+00	.000E+00	1.184E+01	-2.729E+01	1.957E+01
					2.861E+01	-1.180E+01	2.020E+01
42	3	-3.170E-01	6.340E-01	.000E+00	1.233E+01	-2.229E+01	1.731E+01
					2.164E+01	-1.140E+01	1.652E+01
42	4	-3.170E-01	2.366E+00	.000E+00	1.039E+01	-7.103E+00	8.744E+00
					7.203E+00	-9.987E+00	8.595E+00

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
43	1	5.415E-01	6.340E-01	.000E+00	1.051E+01	-5.222E+01	3.137E+01
					4.931E+01	-8.611E+00	2.896E+01

43	2	5.415E-01	2.366E+00	.000E+00	9.759E+01	-3.688E+02	2.332E+02
					3.670E+02	-9.728E+01	2.321E+02
43	3	2.021E+00	6.340E-01	.000E+00	3.121E+01	-1.259E+02	7.857E+01
					1.269E+02	-3.516E+01	8.103E+01
43	4	2.021E+00	2.366E+00	.000E+00	2.260E+01	-3.468E+02	1.847E+02
					3.455E+02	-2.477E+01	1.851E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
44	1	2.761E+00	6.340E-01	.000E+00	2.699E+02	-2.301E+02	2.500E+02
					2.285E+02	-2.737E+02	2.511E+02
44	2	2.761E+00	2.366E+00	.000E+00	7.955E+01	-1.706E+02	1.251E+02
					1.672E+02	-7.981E+01	1.235E+02
44	3	3.302E+00	6.340E-01	.000E+00	3.038E+02	-3.446E+02	3.242E+02
					3.396E+02	-3.086E+02	3.241E+02
44	4	3.302E+00	2.366E+00	.000E+00	1.045E+02	-2.762E+02	1.904E+02
					2.696E+02	-1.060E+02	1.878E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
45	1	-1.183E+00	3.264E+00	.000E+00	2.166E+01	-2.109E+01	2.138E+01
					2.205E+01	-2.207E+01	2.206E+01
45	2	-1.183E+00	3.986E+00	.000E+00	3.690E+01	-3.414E+01	3.552E+01
					3.554E+01	-3.634E+01	3.594E+01
45	3	-3.170E-01	3.264E+00	.000E+00	4.528E+01	-9.606E+00	2.744E+01
					1.018E+01	-4.594E+01	2.806E+01
45	4	-3.170E-01	3.986E+00	.000E+00	5.670E+01	-1.883E+01	3.777E+01
					2.045E+01	-5.699E+01	3.872E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
46	1	5.415E-01	3.264E+00	.000E+00	1.755E+02	-5.435E+02	3.595E+02
					5.406E+02	-1.757E+02	3.581E+02
46	2	5.415E-01	3.986E+00	.000E+00	2.140E+02	-6.727E+02	4.434E+02
					6.682E+02	-2.147E+02	4.414E+02
46	3	2.021E+00	3.264E+00	.000E+00	4.619E+01	-5.006E+02	2.734E+02
					4.984E+02	-4.740E+01	2.729E+02
46	4	2.021E+00	3.986E+00	.000E+00	8.174E+01	-6.269E+02	3.543E+02
					6.229E+02	-8.329E+01	3.531E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
47	1	2.761E+00	3.264E+00	.000E+00	2.658E+01	-1.146E+02	7.060E+01
					1.152E+02	-2.680E+01	7.101E+01
47	2	2.761E+00	3.986E+00	.000E+00	-2.497E+01	-8.299E+01	2.901E+01
					8.278E+01	2.505E+01	2.887E+01
47	3	3.302E+00	3.264E+00	.000E+00	1.608E+02	-1.017E+02	1.313E+02
					1.027E+02	-1.605E+02	1.316E+02
47	4	3.302E+00	3.986E+00	.000E+00	1.584E+02	-1.192E+02	1.388E+02
					1.194E+02	-1.579E+02	1.387E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
48	1	6.670E+01	-1.380E+00	.000E+00	2.522E+01	-6.622E+01	4.572E+01
					6.459E+01	-2.749E+01	4.604E+01
48	2	6.670E+01	-3.698E-01	.000E+00	2.315E+02	-1.122E+02	1.719E+02
					1.114E+02	-2.323E+02	1.719E+02
48	3	6.724E+01	-1.380E+00	.000E+00	3.219E+01	-3.028E+01	3.124E+01
					2.964E+01	-3.227E+01	3.095E+01
48	4	6.724E+01	-3.698E-01	.000E+00	2.008E+02	-3.865E+01	1.197E+02
					3.999E+01	-2.006E+02	1.203E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
49	1	6.808E+01	-1.380E+00	.000E+00	6.915E+01	-1.233E+01	4.074E+01
					1.158E+01	-6.882E+01	4.020E+01
49	2	6.808E+01	-3.698E-01	.000E+00	7.777E+01	-2.527E+00	4.015E+01
					2.764E+00	-7.657E+01	3.967E+01
49	3	6.985E+01	-1.380E+00	.000E+00	4.947E+01	-7.735E+00	2.860E+01
					7.815E+00	-5.059E+01	2.920E+01
49	4	6.985E+01	-3.698E-01	.000E+00	6.659E+01	-6.420E+00	3.650E+01
					7.048E+00	-6.639E+01	3.672E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
50	1	7.071E+01	-1.380E+00	.000E+00	2.092E+01	-1.394E+01	1.743E+01
					1.311E+01	-2.082E+01	1.697E+01
50	2	7.071E+01	-3.698E-01	.000E+00	3.566E+00	-1.143E+01	7.500E+00

					1.233E+01	-4.032E+00	8.181E+00
50	3	7.129E+01	-1.380E+00	.000E+00	2.560E+01	-4.081E+01	3.320E+01
					3.921E+01	-2.624E+01	3.273E+01
50	4	7.129E+01	-3.698E-01	.000E+00	-2.456E+00	-2.760E+01	1.257E+01
					2.629E+01	2.694E+00	1.180E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
51	1	6.670E+01	6.340E-01	.000E+00	3.207E+02	-3.689E+02	3.448E+02
					3.738E+02	-3.158E+02	3.448E+02
51	2	6.670E+01	2.366E+00	.000E+00	1.208E+02	-2.986E+02	2.097E+02
					3.051E+02	-1.192E+02	2.122E+02
51	3	6.724E+01	6.340E-01	.000E+00	2.847E+02	-2.532E+02	2.690E+02
					2.546E+02	-2.808E+02	2.677E+02
51	4	6.724E+01	2.366E+00	.000E+00	9.197E+01	-1.901E+02	1.411E+02
					1.934E+02	-9.160E+01	1.425E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
52	1	6.808E+01	6.340E-01	.000E+00	4.959E+01	-1.428E+02	9.622E+01
					1.420E+02	-4.608E+01	9.405E+01
52	2	6.808E+01	2.366E+00	.000E+00	-1.314E+00	-2.944E+02	1.465E+02
					2.956E+02	3.648E+00	1.460E+02
52	3	6.985E+01	6.340E-01	.000E+00	3.865E+00	-3.764E+01	2.075E+01
					4.080E+01	-6.239E+00	2.352E+01
52	4	6.985E+01	2.366E+00	.000E+00	7.856E+01	-3.148E+02	1.967E+02
					3.169E+02	-7.900E+01	1.979E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
53	1	7.071E+01	6.340E-01	.000E+00	1.307E+01	-1.983E+01	1.645E+01
					2.047E+01	-1.425E+01	1.736E+01
53	2	7.071E+01	2.366E+00	.000E+00	1.533E+01	-1.071E+01	1.302E+01
					1.055E+01	-1.595E+01	1.325E+01
53	3	7.129E+01	6.340E-01	.000E+00	-8.218E-01	-2.354E+01	1.136E+01
					2.299E+01	-1.303E-01	1.156E+01
53	4	7.129E+01	2.366E+00	.000E+00	1.465E+01	-2.762E+01	2.113E+01
					2.629E+01	-1.505E+01	2.067E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
54	1	6.670E+01	3.264E+00	.000E+00	1.881E+02	-1.128E+02	1.505E+02
					1.118E+02	-1.885E+02	1.501E+02
54	2	6.670E+01	3.986E+00	.000E+00	1.859E+02	-1.430E+02	1.644E+02
					1.426E+02	-1.867E+02	1.647E+02
54	3	6.724E+01	3.264E+00	.000E+00	4.287E+01	-1.470E+02	9.493E+01
					1.461E+02	-4.260E+01	9.437E+01
54	4	6.724E+01	3.986E+00	.000E+00	-3.706E+01	-9.943E+01	3.118E+01
					9.965E+01	3.658E+01	3.154E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
55	1	6.808E+01	3.264E+00	.000E+00	-7.496E+00	-4.114E+02	2.020E+02
					4.141E+02	8.507E+00	2.028E+02
55	2	6.808E+01	3.986E+00	.000E+00	1.987E+01	-5.034E+02	2.616E+02
					5.078E+02	-1.849E+01	2.632E+02
55	3	6.985E+01	3.264E+00	.000E+00	1.470E+02	-4.630E+02	3.050E+02
					4.664E+02	-1.470E+02	3.067E+02
55	4	6.985E+01	3.986E+00	.000E+00	1.771E+02	-5.577E+02	3.674E+02
					5.628E+02	-1.766E+02	3.697E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
56	1	7.071E+01	3.264E+00	.000E+00	5.373E+01	-1.717E+01	3.545E+01
					1.658E+01	-5.315E+01	3.487E+01
56	2	7.071E+01	3.986E+00	.000E+00	7.067E+01	-3.537E+01	5.302E+01
					3.429E+01	-7.053E+01	5.241E+01
56	3	7.129E+01	3.264E+00	.000E+00	2.999E+01	-2.620E+01	2.809E+01
					2.506E+01	-2.961E+01	2.733E+01
56	4	7.129E+01	3.986E+00	.000E+00	4.898E+01	-4.645E+01	4.772E+01
					4.517E+01	-4.937E+01	4.727E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
57	1	-1.183E+00	3.226E+01	.000E+00	3.690E+01	-3.414E+01	3.552E+01
					3.554E+01	-3.634E+01	3.594E+01
57	2	-1.183E+00	3.299E+01	.000E+00	2.166E+01	-2.109E+01	2.138E+01
					2.205E+01	-2.207E+01	2.206E+01

57	3	-3.170E-01	3.226E+01	.000E+00	5.670E+01	-1.883E+01	3.777E+01
					2.045E+01	-5.699E+01	3.872E+01
57	4	-3.170E-01	3.299E+01	.000E+00	4.528E+01	-9.606E+00	2.744E+01
					1.018E+01	-4.594E+01	2.806E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
58	1	5.415E-01	3.226E+01	.000E+00	2.140E+02	-6.727E+02	4.434E+02
					6.682E+02	-2.147E+02	4.414E+02
58	2	5.415E-01	3.299E+01	.000E+00	1.755E+02	-5.435E+02	3.595E+02
					5.406E+02	-1.757E+02	3.581E+02
58	3	2.021E+00	3.226E+01	.000E+00	8.174E+01	-6.269E+02	3.543E+02
					6.229E+02	-8.329E+01	3.531E+02
58	4	2.021E+00	3.299E+01	.000E+00	4.619E+01	-5.006E+02	2.734E+02
					4.984E+02	-4.740E+01	2.729E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
59	1	2.761E+00	3.226E+01	.000E+00	-2.497E+01	-8.299E+01	2.901E+01
					8.278E+01	2.505E+01	2.887E+01
59	2	2.761E+00	3.299E+01	.000E+00	2.658E+01	-1.146E+02	7.060E+01
					1.152E+02	-2.680E+01	7.101E+01
59	3	3.302E+00	3.226E+01	.000E+00	1.584E+02	-1.192E+02	1.388E+02
					1.194E+02	-1.579E+02	1.387E+02
59	4	3.302E+00	3.299E+01	.000E+00	1.608E+02	-1.017E+02	1.313E+02
					1.027E+02	-1.605E+02	1.316E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
60	1	-1.183E+00	3.388E+01	.000E+00	1.184E+01	-2.729E+01	1.957E+01
					2.861E+01	-1.180E+01	2.020E+01
60	2	-1.183E+00	3.562E+01	.000E+00	-5.990E+00	-2.270E+01	8.356E+00
					2.338E+01	6.452E+00	8.463E+00
60	3	-3.170E-01	3.388E+01	.000E+00	1.039E+01	-7.103E+00	8.744E+00
					7.203E+00	-9.987E+00	8.595E+00
60	4	-3.170E-01	3.562E+01	.000E+00	1.233E+01	-2.229E+01	1.731E+01
					2.164E+01	-1.140E+01	1.652E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
61	1	5.415E-01	3.388E+01	.000E+00	9.759E+01	-3.688E+02	2.332E+02
					3.670E+02	-9.728E+01	2.321E+02
61	2	5.415E-01	3.562E+01	.000E+00	1.051E+01	-5.222E+01	3.137E+01
					4.931E+01	-8.611E+00	2.896E+01
61	3	2.021E+00	3.388E+01	.000E+00	2.260E+01	-3.468E+02	1.847E+02
					3.455E+02	-2.477E+01	1.851E+02
61	4	2.021E+00	3.562E+01	.000E+00	3.121E+01	-1.259E+02	7.857E+01
					1.269E+02	-3.516E+01	8.103E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
62	1	2.761E+00	3.388E+01	.000E+00	7.955E+01	-1.706E+02	1.251E+02
					1.672E+02	-7.981E+01	1.235E+02
62	2	2.761E+00	3.562E+01	.000E+00	2.699E+02	-2.301E+02	2.500E+02
					2.285E+02	-2.737E+02	2.511E+02
62	3	3.302E+00	3.388E+01	.000E+00	1.045E+02	-2.762E+02	1.904E+02
					2.696E+02	-1.060E+02	1.878E+02
62	4	3.302E+00	3.562E+01	.000E+00	3.038E+02	-3.446E+02	3.242E+02
					3.396E+02	-3.086E+02	3.241E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
63	1	-1.183E+00	3.662E+01	.000E+00	-5.722E+00	-2.015E+01	7.213E+00
					2.097E+01	5.647E+00	7.659E+00
63	2	-1.183E+00	3.763E+01	.000E+00	2.853E+01	-3.140E+01	2.997E+01
					3.281E+01	-2.762E+01	3.021E+01
63	3	-3.170E-01	3.662E+01	.000E+00	1.451E+01	-1.892E+01	1.671E+01
					1.762E+01	-1.406E+01	1.584E+01
63	4	-3.170E-01	3.763E+01	.000E+00	1.721E+01	1.392E+00	7.909E+00
					-1.077E+00	-1.680E+01	7.859E+00

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
64	1	5.415E-01	3.662E+01	.000E+00	6.298E+01	1.290E-01	3.142E+01
					-1.140E+00	-6.318E+01	3.102E+01
64	2	5.415E-01	3.763E+01	.000E+00	4.796E+01	6.010E-01	2.368E+01
					-9.202E-01	-4.648E+01	2.278E+01

64	3	2.021E+00	3.662E+01	.000E+00	6.911E+01	4.249E+00	3.243E+01
					-4.698E+00	-7.010E+01	3.270E+01
64	4	2.021E+00	3.763E+01	.000E+00	6.042E+01	-1.612E+00	3.102E+01
					2.418E+00	-6.029E+01	3.135E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
65	1	2.761E+00	3.662E+01	.000E+00	1.967E+02	-3.799E+01	1.173E+02
					3.694E+01	-1.971E+02	1.170E+02
65	2	2.761E+00	3.763E+01	.000E+00	3.120E+01	-3.017E+01	3.069E+01
					3.091E+01	-3.119E+01	3.105E+01
65	3	3.302E+00	3.662E+01	.000E+00	2.259E+02	-1.033E+02	1.646E+02
					1.042E+02	-2.253E+02	1.647E+02
65	4	3.302E+00	3.763E+01	.000E+00	2.282E+01	-5.795E+01	4.038E+01
					5.944E+01	-2.067E+01	4.005E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
66	1	6.670E+01	3.226E+01	.000E+00	1.859E+02	-1.430E+02	1.644E+02
					1.426E+02	-1.867E+02	1.647E+02
66	2	6.670E+01	3.299E+01	.000E+00	1.881E+02	-1.128E+02	1.505E+02
					1.118E+02	-1.885E+02	1.501E+02
66	3	6.724E+01	3.226E+01	.000E+00	-3.706E+01	-9.943E+01	3.118E+01
					9.965E+01	3.658E+01	3.154E+01
66	4	6.724E+01	3.299E+01	.000E+00	4.287E+01	-1.470E+02	9.493E+01
					1.461E+02	-4.260E+01	9.437E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
67	1	6.808E+01	3.226E+01	.000E+00	1.987E+01	-5.034E+02	2.616E+02
					5.078E+02	-1.849E+01	2.632E+02
67	2	6.808E+01	3.299E+01	.000E+00	-7.496E+00	-4.114E+02	2.020E+02
					4.141E+02	8.507E+00	2.028E+02
67	3	6.985E+01	3.226E+01	.000E+00	1.771E+02	-5.577E+02	3.674E+02
					5.628E+02	-1.766E+02	3.697E+02
67	4	6.985E+01	3.299E+01	.000E+00	1.470E+02	-4.630E+02	3.050E+02
					4.664E+02	-1.470E+02	3.067E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
68	1	7.071E+01	3.226E+01	.000E+00	7.067E+01	-3.537E+01	5.302E+01
					3.429E+01	-7.053E+01	5.241E+01
68	2	7.071E+01	3.299E+01	.000E+00	5.373E+01	-1.717E+01	3.545E+01
					1.658E+01	-5.315E+01	3.487E+01
68	3	7.129E+01	3.226E+01	.000E+00	4.898E+01	-4.645E+01	4.772E+01
					4.517E+01	-4.937E+01	4.727E+01
68	4	7.129E+01	3.299E+01	.000E+00	2.999E+01	-2.620E+01	2.809E+01
					2.506E+01	-2.961E+01	2.733E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
69	1	6.670E+01	3.388E+01	.000E+00	1.208E+02	-2.986E+02	2.097E+02
					3.051E+02	-1.192E+02	2.122E+02
69	2	6.670E+01	3.562E+01	.000E+00	3.207E+02	-3.689E+02	3.448E+02
					3.738E+02	-3.158E+02	3.448E+02
69	3	6.724E+01	3.388E+01	.000E+00	9.197E+01	-1.901E+02	1.411E+02
					1.934E+02	-9.160E+01	1.425E+02
69	4	6.724E+01	3.562E+01	.000E+00	2.847E+02	-2.532E+02	2.690E+02
					2.546E+02	-2.808E+02	2.677E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
70	1	6.808E+01	3.388E+01	.000E+00	-1.314E+00	-2.944E+02	1.465E+02
					2.956E+02	3.648E+00	1.460E+02
70	2	6.808E+01	3.562E+01	.000E+00	4.959E+01	-1.428E+02	9.622E+01
					1.420E+02	-4.608E+01	9.405E+01
70	3	6.985E+01	3.388E+01	.000E+00	7.856E+01	-3.148E+02	1.967E+02
					3.169E+02	-7.900E+01	1.979E+02
70	4	6.985E+01	3.562E+01	.000E+00	3.865E+00	-3.764E+01	2.075E+01
					4.080E+01	-6.239E+00	2.352E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
71	1	7.071E+01	3.388E+01	.000E+00	1.533E+01	-1.071E+01	1.302E+01
					1.055E+01	-1.595E+01	1.325E+01
71	2	7.071E+01	3.562E+01	.000E+00	1.307E+01	-1.983E+01	1.645E+01
					2.047E+01	-1.425E+01	1.736E+01
71	3	7.129E+01	3.388E+01	.000E+00	1.465E+01	-2.762E+01	2.113E+01

					2.629E+01	-1.505E+01	2.067E+01
71	4	7.129E+01	3.562E+01	.000E+00	-8.218E-01	-2.354E+01	1.136E+01
					2.299E+01	-1.303E-01	1.156E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
72	1	6.670E+01	3.662E+01	.000E+00	2.315E+02	-1.122E+02	1.719E+02
					1.114E+02	-2.323E+02	1.719E+02
72	2	6.670E+01	3.763E+01	.000E+00	2.522E+01	-6.622E+01	4.572E+01
					6.459E+01	-2.749E+01	4.604E+01
72	3	6.724E+01	3.662E+01	.000E+00	2.008E+02	-3.865E+01	1.197E+02
					3.999E+01	-2.006E+02	1.203E+02
72	4	6.724E+01	3.763E+01	.000E+00	3.219E+01	-3.028E+01	3.124E+01
					2.964E+01	-3.227E+01	3.095E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
74	1	6.808E+01	3.662E+01	.000E+00	7.777E+01	-2.527E+00	4.015E+01
					2.764E+00	-7.657E+01	3.967E+01
74	2	6.808E+01	3.763E+01	.000E+00	6.915E+01	-1.233E+01	4.074E+01
					1.158E+01	-6.882E+01	4.020E+01
74	3	6.985E+01	3.662E+01	.000E+00	6.659E+01	-6.420E+00	3.650E+01
					7.048E+00	-6.639E+01	3.672E+01
74	4	6.985E+01	3.763E+01	.000E+00	4.947E+01	-7.735E+00	2.860E+01
					7.815E+00	-5.059E+01	2.920E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
75	1	7.071E+01	3.662E+01	.000E+00	3.566E+00	-1.143E+01	7.500E+00
					1.233E+01	-4.032E+00	8.181E+00
75	2	7.071E+01	3.763E+01	.000E+00	2.092E+01	-1.394E+01	1.743E+01
					1.311E+01	-2.082E+01	1.697E+01
75	3	7.129E+01	3.662E+01	.000E+00	-2.456E+00	-2.760E+01	1.257E+01
					2.629E+01	2.694E+00	1.180E+01
75	4	7.129E+01	3.763E+01	.000E+00	2.560E+01	-4.081E+01	3.320E+01
					3.921E+01	-2.624E+01	3.273E+01

REACTION LOADS FOR LOAD CASE 1

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
1	.000E+00	.000E+00	-1.353E+03	.000E+00	.000E+00	.000E+00
3	.000E+00	.000E+00	-1.103E+03	.000E+00	.000E+00	.000E+00
10	.000E+00	.000E+00	-1.353E+03	.000E+00	.000E+00	.000E+00
12	.000E+00	.000E+00	-1.103E+03	.000E+00	.000E+00	.000E+00
26	.000E+00	.000E+00	1.730E+03	.000E+00	.000E+00	.000E+00
29	.000E+00	.000E+00	4.124E+02	.000E+00	.000E+00	.000E+00
30	.000E+00	.000E+00	3.418E+01	.000E+00	.000E+00	.000E+00
45	.000E+00	.000E+00	1.485E+03	.000E+00	.000E+00	.000E+00
49	.000E+00	.000E+00	2.670E+01	.000E+00	.000E+00	.000E+00
50	.000E+00	.000E+00	4.185E+02	.000E+00	.000E+00	.000E+00
65	.000E+00	.000E+00	4.124E+02	.000E+00	.000E+00	.000E+00
66	.000E+00	.000E+00	3.418E+01	.000E+00	.000E+00	.000E+00
70	.000E+00	.000E+00	1.730E+03	.000E+00	.000E+00	.000E+00
85	.000E+00	.000E+00	2.670E+01	.000E+00	.000E+00	.000E+00
86	.000E+00	.000E+00	4.185E+02	.000E+00	.000E+00	.000E+00
89	.000E+00	.000E+00	1.485E+03	.000E+00	.000E+00	.000E+00

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: E-SUPK.POS

NUMBER OF ELEMENTS = 73
NUMBER OF NODES = 76
NUMBER OF DOF'S = 6
NUMBER OF NDS/ELEM = 4

---- LOAD CASE NO. 1 ----

NODE	DEFL-1	DEFL-2	DEFL-3	DEFL-4	DEFL-5	DEFL-6
1	-9.652E-04	7.229E-05	.000E+00	-1.206E-06	-4.474E-07	-6.812E-07
2	-9.667E-04	8.453E-05	-9.063E-03	-3.210E-04	-3.789E-06	-5.722E-09
3	-9.652E-04	9.677E-05	.000E+00	-1.229E-06	6.232E-07	-6.799E-07
4	-9.585E-04	7.227E-05	-1.768E-04	-4.049E-05	2.817E-04	-5.137E-07
5	-9.569E-04	8.453E-05	**-1.184E-02**	-2.444E-04	-1.224E-06	1.212E-06
6	-9.586E-04	9.678E-05	-1.767E-04	-4.044E-05	-2.812E-04	-5.146E-07
7	-9.649E-04	7.209E-05	-1.768E-04	4.049E-05	2.817E-04	1.214E-06
8	-9.633E-04	8.453E-05	**-1.184E-02**	2.444E-04	-1.224E-06	-5.114E-07
9	-9.650E-04	9.698E-05	-1.767E-04	4.044E-05	-2.812E-04	1.215E-06
10	-9.779E-04	7.207E-05	.000E+00	1.206E-06	-4.474E-07	1.382E-06
11	-9.794E-04	8.452E-05	-9.063E-03	3.210E-04	-3.789E-06	7.064E-07
12	-9.779E-04	9.699E-05	.000E+00	1.229E-06	6.232E-07	1.381E-06
13	-9.596E-04	8.453E-05	-1.110E-02	-2.913E-04	-1.753E-06	-2.727E-06
14	-9.655E-04	8.453E-05	**-1.245E-02**	-1.984E-04	-1.224E-06	5.055E-06
15	-9.700E-04	8.453E-05	**-1.245E-02**	1.984E-04	-1.224E-06	-4.355E-06
16	-9.679E-04	8.453E-05	-1.110E-02	2.913E-04	-1.753E-06	3.428E-06
20	-9.664E-04	7.331E-05	-4.324E-05	2.144E-05	-3.129E-05	.000E+00
21	-9.663E-04	7.231E-05	1.117E-05	4.077E-06	-2.397E-05	.000E+00
22	-9.662E-04	7.077E-05	1.613E-05	-1.095E-05	-9.180E-06	.000E+00
23	-9.662E-04	7.025E-05	3.249E-05	-4.535E-05	-2.523E-05	.000E+00
24	-9.652E-04	7.335E-05	1.632E-05	3.159E-05	5.441E-06	.000E+00
26	-9.652E-04	7.074E-05	.000E+00	-2.342E-05	3.032E-05	-4.981E-07
27	-9.653E-04	7.032E-05	-4.875E-05	-3.173E-05	7.327E-05	-3.864E-07
28	-9.630E-04	7.344E-05	1.230E-04	4.802E-05	8.906E-05	.000E+00
29	-9.630E-04	7.233E-05	.000E+00	-7.565E-06	9.098E-05	-7.843E-07
30	-9.631E-04	7.066E-05	.000E+00	3.207E-05	-1.110E-04	.000E+00
31	-9.631E-04	6.997E-05	1.046E-04	1.170E-04	-1.170E-04	.000E+00
32	-9.620E-04	7.346E-05	1.872E-04	5.340E-05	1.275E-04	.000E+00
33	-9.620E-04	7.232E-05	-1.735E-05	-1.973E-05	1.303E-04	-8.141E-07
34	-9.622E-04	7.065E-05	5.922E-05	6.262E-05	-1.628E-04	.000E+00
35	-9.622E-04	6.998E-05	2.218E-04	7.485E-05	-1.761E-04	.000E+00
40	-9.662E-04	9.907E-05	3.825E-05	-5.135E-05	2.691E-05	.000E+00
41	-9.662E-04	9.856E-05	2.020E-05	-1.439E-05	1.098E-05	.000E+00
42	-9.663E-04	9.676E-05	1.585E-05	1.906E-06	2.682E-05	.000E+00

43	-9.663E-04	9.613E-05	-2.507E-05	7.218E-06	2.980E-05	.000E+00
44	-9.653E-04	9.899E-05	-5.462E-05	-3.607E-05	-7.965E-05	-3.595E-07
45	-9.652E-04	9.859E-05	.000E+00	-2.777E-05	-3.646E-05	-4.723E-07
47	-9.652E-04	9.608E-05	1.322E-05	1.895E-05	-2.514E-06	.000E+00
48	-9.631E-04	9.934E-05	1.103E-04	1.268E-04	1.227E-04	.000E+00
49	-9.631E-04	9.867E-05	.000E+00	3.769E-05	1.181E-04	.000E+00
50	-9.630E-04	9.673E-05	.000E+00	-7.597E-06	-9.104E-05	-7.742E-07
51	-9.630E-04	9.598E-05	7.854E-05	3.293E-05	-8.962E-05	.000E+00
52	-9.623E-04	9.932E-05	2.333E-04	7.661E-05	1.752E-04	.000E+00
53	-9.623E-04	9.868E-05	7.262E-05	7.658E-05	1.585E-04	.000E+00
54	-9.620E-04	9.673E-05	-1.740E-05	-1.976E-05	-1.303E-04	-8.074E-07
55	-9.620E-04	9.596E-05	1.235E-04	3.682E-05	-1.292E-04	.000E+00
60	-9.718E-04	6.985E-05	1.872E-04	-5.340E-05	1.275E-04	.000E+00
61	-9.717E-04	7.204E-05	-1.735E-05	1.973E-05	1.303E-04	1.515E-06
62	-9.719E-04	7.551E-05	5.922E-05	-6.262E-05	-1.628E-04	.000E+00
63	-9.719E-04	7.683E-05	2.218E-04	-7.485E-05	-1.761E-04	.000E+00
64	-9.736E-04	6.987E-05	1.230E-04	-4.802E-05	8.906E-05	.000E+00
65	-9.736E-04	7.204E-05	.000E+00	7.565E-06	9.098E-05	1.485E-06
66	-9.737E-04	7.550E-05	.000E+00	-3.207E-05	-1.110E-04	.000E+00
67	-9.736E-04	7.685E-05	1.046E-04	-1.170E-04	-1.170E-04	.000E+00
68	-9.779E-04	6.996E-05	1.632E-05	-3.159E-05	5.441E-06	.000E+00
70	-9.779E-04	7.541E-05	.000E+00	2.342E-05	3.032E-05	1.199E-06
71	-9.780E-04	7.649E-05	-4.875E-05	3.173E-05	7.327E-05	1.087E-06
72	-9.803E-04	7.000E-05	-4.324E-05	-2.144E-05	-3.129E-05	.000E+00
73	-9.802E-04	7.205E-05	1.117E-05	-4.077E-06	-2.397E-05	.000E+00
74	-9.802E-04	7.539E-05	1.613E-05	1.095E-05	-9.180E-06	.000E+00
75	-9.801E-04	7.657E-05	3.249E-05	4.535E-05	-2.523E-05	.000E+00
80	-9.720E-04	9.163E-05	2.333E-04	-7.661E-05	1.752E-04	.000E+00
81	-9.720E-04	9.293E-05	7.262E-05	-7.658E-05	1.585E-04	.000E+00
82	-9.717E-04	9.703E-05	-1.740E-05	1.976E-05	-1.303E-04	1.508E-06
83	-9.718E-04	9.849E-05	1.235E-04	-3.682E-05	-1.292E-04	.000E+00
84	-9.737E-04	9.161E-05	1.103E-04	-1.268E-04	1.227E-04	.000E+00
85	-9.737E-04	9.294E-05	.000E+00	-3.769E-05	1.181E-04	.000E+00
86	-9.736E-04	9.703E-05	.000E+00	7.597E-06	-9.104E-05	1.475E-06
87	-9.736E-04	9.847E-05	7.854E-05	-3.293E-05	-8.962E-05	.000E+00
88	-9.780E-04	9.197E-05	-5.462E-05	3.607E-05	-7.965E-05	1.060E-06
89	-9.779E-04	9.302E-05	.000E+00	2.777E-05	-3.646E-05	1.173E-06
91	-9.779E-04	9.837E-05	1.322E-05	-1.895E-05	-2.514E-06	.000E+00
92	-9.801E-04	9.188E-05	3.825E-05	5.135E-05	2.691E-05	.000E+00
93	-9.801E-04	9.305E-05	2.020E-05	1.439E-05	1.098E-05	.000E+00
94	-9.802E-04	9.699E-05	1.585E-05	-1.906E-06	2.682E-05	.000E+00
95	-9.802E-04	9.833E-05	-2.507E-05	-7.218E-06	2.980E-05	.000E+00

NUMBER OF STRESS RECORDS = 73
NUMBER OF REACTION LOADS = 16

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PRINCIPAL STRESSES FROM POST PROCESSING FILE: E-SUPK.POS

PEAK PRINCIPAL STRESSES BY ELEMENT

ELEM	PEAK TENSILE STRESS(PSI)	PEAK COMPRES STRESS(PSI)	PEAK SHEAR STRESS(PSI)
1	.0000E+00	9.2539E+02	.0000E+00
2	1.8898E+03	.0000E+00	1.8898E+03
3	1.7910E+03	.0000E+00	1.7910E+03
4	.0000E+00	2.0062E+03	.0000E+00
5	1.8058E+03	.0000E+00	1.8058E+03
6	1.9033E+03	.0000E+00	1.9033E+03
7	.0000E+00	6.0484E+01	.0000E+00
8	1.0286E+02	.0000E+00	1.0286E+02
9	8.1887E+01	.0000E+00	8.1887E+01
10	.0000E+00	4.6426E+01	.0000E+00
11	.0000E+00	8.0240E+00	.0000E+00
12	8.0559E+01	.0000E+00	8.0559E+01
13	1.0340E+02	.0000E+00	1.0340E+02
14	.0000E+00	4.6409E+02	.0000E+00
15	9.1360E+02	.0000E+00	9.1360E+02
16	9.1662E+02	.0000E+00	9.1662E+02
17	.0000E+00	9.9686E+02	.0000E+00
18	8.9432E+02	.0000E+00	8.9432E+02
19	9.4588E+02	.0000E+00	9.4588E+02
20	.0000E+00	2.6907E+02	.0000E+00
21	4.3487E+02	.0000E+00	4.3487E+02
22	3.5097E+02	.0000E+00	3.5097E+02
23	.0000E+00	1.7467E+02	.0000E+00
24	5.6287E+00	.0000E+00	5.6287E+00
25	3.4636E+02	.0000E+00	3.4636E+02
26	4.3681E+02	.0000E+00	4.3681E+02
27	1.3824E+03	.0000E+00	1.3824E+03
28	.0000E+00	2.2767E+03	.0000E+00
29	6.9450E+02	.0000E+00	6.9450E+02
30	.0000E+00	1.1452E+03	.0000E+00
31	3.0446E+02	.0000E+00	3.0446E+02
32	.0000E+00	4.5788E+02	.0000E+00
33	.0000E+00	6.1275E+02	.0000E+00
34	.0000E+00	6.1275E+02	.0000E+00
36	.0000E+00	6.1275E+02	.0000E+00
37	.0000E+00	7.9330E+02	.0000E+00
38	.0000E+00	4.5788E+02	.0000E+00
39	2.9965E+01	3.1397E+01	3.2806E+01
40	6.9106E+01	1.6122E+00	2.4179E+00
41	2.2587E+02	1.0332E+02	1.0416E+02
42	1.9569E+01	2.7293E+01	2.8605E+01
43	2.3319E+02	3.6880E+02	3.6697E+02
44	3.2419E+02	3.4463E+02	3.3961E+02
45	5.6703E+01	3.4142E+01	3.5536E+01
46	4.4338E+02	6.7273E+02	6.6822E+02

47	1.6085E+02	1.1918E+02	1.1945E+02
48	2.3153E+02	1.1224E+02	1.1142E+02
49	7.7774E+01	1.2334E+01	1.1584E+01
50	3.3203E+01	4.0808E+01	3.9214E+01
51	3.4479E+02	3.6888E+02	3.7377E+02
52	1.9666E+02	3.1475E+02	3.1687E+02
53	2.1134E+01	2.7622E+01	2.6288E+01
54	1.8811E+02	1.4698E+02	1.4614E+02
55	3.6742E+02	5.5772E+02	5.6278E+02
56	7.0666E+01	4.6451E+01	4.5167E+01
57	5.6703E+01	3.4142E+01	3.5536E+01
58	4.4338E+02	6.7273E+02	6.6822E+02
59	1.6085E+02	1.1918E+02	1.1945E+02
60	1.9569E+01	2.7293E+01	2.8605E+01
61	2.3319E+02	3.6880E+02	3.6697E+02
62	3.2419E+02	3.4463E+02	3.3961E+02
63	2.9965E+01	3.1397E+01	3.2806E+01
64	6.9106E+01	1.6122E+00	2.4179E+00
65	2.2587E+02	1.0332E+02	1.0416E+02
66	1.8811E+02	1.4698E+02	1.4614E+02
67	3.6742E+02	5.5772E+02	5.6278E+02
68	7.0666E+01	4.6451E+01	4.5167E+01
69	3.4479E+02	3.6888E+02	3.7377E+02
70	1.9666E+02	3.1475E+02	3.1687E+02
71	2.1134E+01	2.7622E+01	2.6288E+01
72	2.3153E+02	1.1224E+02	1.1142E+02
74	7.7774E+01	1.2334E+01	1.1584E+01
75	3.3203E+01	4.0808E+01	3.9214E+01

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PRINCIPAL STRESSES FROM POST PROCESSING FILE: E-SUPK.POS

AVERAGE PRINCIPAL STRESSES BY ELEMENT

ELEM	AVG TENSILE STRESS(PSI)	AVG COMPRES STRESS(PSI)	AVG SHEAR STRESS(PSI)
1	.0000E+00	4.6269E+02	-4.6269E+02
2	9.4490E+02	.0000E+00	9.4490E+02
3	8.9551E+02	.0000E+00	8.9551E+02
4	.0000E+00	1.0031E+03	-1.0031E+03
5	9.0291E+02	.0000E+00	9.0291E+02
6	9.5166E+02	.0000E+00	9.5166E+02
7	.0000E+00	3.0242E+01	-3.0242E+01
8	5.1432E+01	.0000E+00	5.1432E+01
9	4.0943E+01	.0000E+00	4.0943E+01
10	.0000E+00	2.3213E+01	-2.3213E+01
11	.0000E+00	4.0120E+00	-4.0120E+00
12	4.0280E+01	.0000E+00	4.0280E+01
13	5.1699E+01	.0000E+00	5.1699E+01
14	.0000E+00	2.3204E+02	-2.3204E+02
15	4.5680E+02	.0000E+00	4.5680E+02
16	4.5831E+02	.0000E+00	4.5831E+02
17	.0000E+00	4.9843E+02	-4.9843E+02
18	4.4716E+02	.0000E+00	4.4716E+02
19	4.7294E+02	.0000E+00	4.7294E+02
20	.0000E+00	1.3453E+02	-1.3453E+02
21	2.1743E+02	.0000E+00	2.1743E+02
22	1.7549E+02	.0000E+00	1.7549E+02
23	.0000E+00	8.7333E+01	-8.7333E+01
24	2.8144E+00	.0000E+00	2.8144E+00
25	1.7318E+02	.0000E+00	1.7318E+02
26	2.1840E+02	.0000E+00	2.1840E+02
27	6.9119E+02	.0000E+00	6.9119E+02
28	.0000E+00	1.1383E+03	-1.1383E+03
29	3.4725E+02	.0000E+00	3.4725E+02
30	.0000E+00	5.7262E+02	-5.7262E+02
31	1.5223E+02	.0000E+00	1.5223E+02
32	.0000E+00	2.2894E+02	-2.2894E+02
33	.0000E+00	3.0637E+02	-3.0637E+02
34	.0000E+00	3.0637E+02	-3.0637E+02
36	.0000E+00	3.0637E+02	-3.0637E+02
37	.0000E+00	3.9665E+02	-3.9665E+02
38	.0000E+00	2.2894E+02	-2.2894E+02
39	1.5450E+01	1.7268E+01	1.7578E+01
40	6.0115E+01	.0000E+00	-1.0851E+00
41	1.1915E+02	5.7359E+01	5.7861E+01
42	1.3494E+01	1.9846E+01	2.0205E+01
43	1.3196E+02	2.2344E+02	2.2217E+02
44	2.2241E+02	2.5540E+02	2.5125E+02
45	4.0136E+01	2.0918E+01	2.2054E+01
46	3.5764E+02	5.8592E+02	5.8252E+02

47	9.2418E+01	1.0462E+02	1.0504E+02
48	1.2244E+02	6.1848E+01	6.1407E+01
49	6.5746E+01	7.2537E+00	7.3029E+00
50	1.7676E+01	2.3445E+01	2.2736E+01
51	2.4112E+02	2.7771E+02	2.8173E+02
52	1.1504E+02	1.9739E+02	1.9882E+02
53	1.5490E+01	2.0424E+01	2.0075E+01
54	1.1026E+02	1.2556E+02	1.2504E+02
55	2.8400E+02	4.8389E+02	4.8776E+02
56	5.0841E+01	3.1297E+01	3.0275E+01
57	4.0136E+01	2.0918E+01	2.2054E+01
58	3.5764E+02	5.8592E+02	5.8252E+02
59	9.2418E+01	1.0462E+02	1.0504E+02
60	1.3494E+01	1.9846E+01	2.0205E+01
61	1.3196E+02	2.2344E+02	2.2217E+02
62	2.2241E+02	2.5540E+02	2.5125E+02
63	1.5450E+01	1.7268E+01	1.7578E+01
64	6.0115E+01	.0000E+00	-1.0851E+00
65	1.1915E+02	5.7359E+01	5.7861E+01
66	1.1026E+02	1.2556E+02	1.2504E+02
67	2.8400E+02	4.8389E+02	4.8776E+02
68	5.0841E+01	3.1297E+01	3.0275E+01
69	2.4112E+02	2.7771E+02	2.8173E+02
70	1.1504E+02	1.9739E+02	1.9882E+02
71	1.5490E+01	2.0424E+01	2.0075E+01
72	1.2244E+02	6.1848E+01	6.1407E+01
74	6.5746E+01	7.2537E+00	7.3029E+00
75	1.7676E+01	2.3445E+01	2.2736E+01

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PRINCIPAL STRESSES FROM POST PROCESSING FILE: E-SUPK.POS

PEAK PRINCIPAL STRESSES BY VALUE

ELEM	PEAK TENSILE STRESS(PSI)	ELEM	PEAK COMPRES STRESS(PSI)	ELEM	PEAK SHEAR STRESS(PSI)
--- MATERIAL SET NO. 1 ---					
6	**1.9033E+03**	**28**	**2.2767E+03**	**6**	**1.9033E+03**
2	1.8898E+03	4	2.0062E+03	2	1.8898E+03
5	1.8058E+03	30	1.1452E+03	5	1.8058E+03
3	1.7910E+03	17	9.9686E+02	3	1.7910E+03
27	1.3824E+03	1	9.2539E+02	27	1.3824E+03
19	9.4588E+02	34	6.1275E+02	19	9.4588E+02
16	9.1662E+02	14	4.6409E+02	16	9.1662E+02
15	9.1360E+02	38	4.5788E+02	15	9.1360E+02
18	8.9432E+02	20	2.6907E+02	18	8.9432E+02
29	6.9450E+02	23	1.7467E+02	29	6.9450E+02
26	4.3681E+02	7	6.0484E+01	26	4.3681E+02
21	4.3487E+02	10	4.6426E+01	21	4.3487E+02
22	3.5097E+02	11	8.0240E+00	22	3.5097E+02
25	3.4636E+02	6	.0000E+00	25	3.4636E+02
31	3.0446E+02	15	.0000E+00	31	3.0446E+02
13	1.0340E+02	16	.0000E+00	13	1.0340E+02
8	1.0286E+02	3	.0000E+00	8	1.0286E+02
9	8.1887E+01	18	.0000E+00	9	8.1887E+01
12	8.0559E+01	19	.0000E+00	12	8.0559E+01
24	5.6287E+00	8	.0000E+00	24	5.6287E+00
1	.0000E+00	21	.0000E+00	1	.0000E+00
14	.0000E+00	22	.0000E+00	14	.0000E+00
23	.0000E+00	9	.0000E+00	23	.0000E+00
4	.0000E+00	24	.0000E+00	4	.0000E+00
10	.0000E+00	25	.0000E+00	10	.0000E+00
17	.0000E+00	26	.0000E+00	17	.0000E+00
11	.0000E+00	27	.0000E+00	11	.0000E+00
28	.0000E+00	2	.0000E+00	28	.0000E+00
7	.0000E+00	29	.0000E+00	7	.0000E+00
30	.0000E+00	5	.0000E+00	30	.0000E+00
20	.0000E+00	31	.0000E+00	20	.0000E+00
34	.0000E+00	12	.0000E+00	34	.0000E+00
38	.0000E+00	13	.0000E+00	38	.0000E+00
--- MATERIAL SET NO. 2 ---					
32	.0000E+00	**37**	**7.9330E+02**	32	.0000E+00
33	.0000E+00	36	6.1275E+02	33	.0000E+00
36	.0000E+00	33	6.1275E+02	36	.0000E+00
37	.0000E+00	32	4.5788E+02	37	.0000E+00

--- MATERIAL SET NO. 3 ---

46	**4.4338E+02**	**46**	**6.7273E+02**	**46**	**6.6822E+02**
58	4.4338E+02	58	6.7273E+02	58	6.6822E+02
55	3.6742E+02	55	5.5772E+02	55	5.6278E+02
67	3.6742E+02	67	5.5772E+02	67	5.6278E+02
51	3.4479E+02	51	3.6888E+02	51	3.7377E+02
69	3.4479E+02	69	3.6888E+02	69	3.7377E+02
44	3.2419E+02	43	3.6880E+02	43	3.6697E+02
62	3.2419E+02	61	3.6880E+02	61	3.6697E+02
61	2.3319E+02	44	3.4463E+02	44	3.3961E+02
43	2.3319E+02	62	3.4463E+02	62	3.3961E+02
48	2.3153E+02	52	3.1475E+02	52	3.1687E+02
72	2.3153E+02	70	3.1475E+02	70	3.1687E+02
65	2.2587E+02	66	1.4698E+02	66	1.4614E+02
41	2.2587E+02	54	1.4698E+02	54	1.4614E+02
70	1.9666E+02	47	1.1918E+02	47	1.1945E+02
52	1.9666E+02	59	1.1918E+02	59	1.1945E+02
54	1.8811E+02	48	1.1224E+02	48	1.1142E+02
66	1.8811E+02	72	1.1224E+02	72	1.1142E+02
47	1.6085E+02	65	1.0332E+02	65	1.0416E+02
59	1.6085E+02	41	1.0332E+02	41	1.0416E+02
49	7.7774E+01	68	4.6451E+01	68	4.5167E+01
74	7.7774E+01	56	4.6451E+01	56	4.5167E+01
56	7.0666E+01	50	4.0808E+01	50	3.9214E+01
68	7.0666E+01	75	4.0808E+01	75	3.9214E+01
40	6.9106E+01	45	3.4142E+01	45	3.5536E+01
64	6.9106E+01	57	3.4142E+01	57	3.5536E+01
57	5.6703E+01	39	3.1397E+01	39	3.2806E+01
45	5.6703E+01	63	3.1397E+01	63	3.2806E+01
50	3.3203E+01	53	2.7622E+01	60	2.8605E+01
75	3.3203E+01	71	2.7622E+01	42	2.8605E+01
39	2.9965E+01	42	2.7293E+01	53	2.6288E+01
63	2.9965E+01	60	2.7293E+01	71	2.6288E+01
71	2.1134E+01	74	1.2334E+01	74	1.1584E+01
53	2.1134E+01	49	1.2334E+01	49	1.1584E+01
42	1.9569E+01	40	1.6122E+00	40	2.4179E+00
60	1.9569E+01	64	1.6122E+00	64	2.4179E+00

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PRINCIPAL STRESSES FROM POST PROCESSING FILE: E-SUPK.POS

AVERAGE PRINCIPAL STRESSES BY VALUE

ELEM	AVG TENSILE STRESS(PSI)	ELEM	AVG COMPRES STRESS(PSI)	ELEM	AVG SHEAR STRESS(PSI)
--- MATERIAL SET NO. 1 ---					
6	**9.5166E+02**	**28**	**1.1383E+03**	**6**	**9.5166E+02**
2	9.4490E+02	4	1.0031E+03	2	9.4490E+02
5	9.0291E+02	30	5.7262E+02	5	9.0291E+02
3	8.9551E+02	17	4.9843E+02	3	8.9551E+02
27	6.9119E+02	1	4.6269E+02	27	6.9119E+02
19	4.7294E+02	34	3.0637E+02	19	4.7294E+02
16	4.5831E+02	14	2.3204E+02	16	4.5831E+02
15	4.5680E+02	38	2.2894E+02	15	4.5680E+02
18	4.4716E+02	20	1.3453E+02	18	4.4716E+02
29	3.4725E+02	23	8.7333E+01	29	3.4725E+02
26	2.1840E+02	7	3.0242E+01	26	2.1840E+02
21	2.1743E+02	10	2.3213E+01	21	2.1743E+02
22	1.7549E+02	11	4.0120E+00	22	1.7549E+02
25	1.7318E+02	6	.0000E+00	25	1.7318E+02
31	1.5223E+02	15	.0000E+00	31	1.5223E+02
13	5.1699E+01	16	.0000E+00	13	5.1699E+01
8	5.1432E+01	3	.0000E+00	8	5.1432E+01
9	4.0943E+01	18	.0000E+00	9	4.0943E+01
12	4.0280E+01	19	.0000E+00	12	4.0280E+01
24	2.8144E+00	8	.0000E+00	24	2.8144E+00
1	.0000E+00	21	.0000E+00	11	-4.0120E+00
14	.0000E+00	22	.0000E+00	10	-2.3213E+01
23	.0000E+00	9	.0000E+00	7	-3.0242E+01
4	.0000E+00	24	.0000E+00	23	-8.7333E+01
10	.0000E+00	25	.0000E+00	20	-1.3453E+02
17	.0000E+00	26	.0000E+00	38	-2.2894E+02
11	.0000E+00	27	.0000E+00	14	-2.3204E+02
28	.0000E+00	2	.0000E+00	34	-3.0637E+02
7	.0000E+00	29	.0000E+00	1	-4.6269E+02
30	.0000E+00	5	.0000E+00	17	-4.9843E+02
20	.0000E+00	31	.0000E+00	30	-5.7262E+02
34	.0000E+00	12	.0000E+00	4	-1.0031E+03
38	.0000E+00	13	.0000E+00	28	-1.1383E+03
--- MATERIAL SET NO. 2 ---					
32	.0000E+00	**37**	**3.9665E+02**	32	-2.2894E+02
33	.0000E+00	36	3.0637E+02	33	-3.0637E+02
36	.0000E+00	33	3.0637E+02	36	-3.0637E+02
37	.0000E+00	32	2.2894E+02	37	-3.9665E+02

--- MATERIAL SET NO. 3 ---

46	**3.5764E+02**	**46**	**5.8592E+02**	**58**	**5.8252E+02**
58	3.5764E+02	58	5.8592E+02	46	5.8252E+02
55	2.8400E+02	55	4.8389E+02	55	4.8776E+02
67	2.8400E+02	67	4.8389E+02	67	4.8776E+02
51	2.4112E+02	51	2.7771E+02	69	2.8173E+02
69	2.4112E+02	69	2.7771E+02	51	2.8173E+02
44	2.2241E+02	44	2.5540E+02	44	2.5125E+02
62	2.2241E+02	62	2.5540E+02	62	2.5125E+02
61	1.3196E+02	61	2.2344E+02	61	2.2217E+02
43	1.3196E+02	43	2.2344E+02	43	2.2217E+02
48	1.2244E+02	52	1.9739E+02	70	1.9882E+02
72	1.2244E+02	70	1.9739E+02	52	1.9882E+02
65	1.1915E+02	66	1.2556E+02	66	1.2504E+02
41	1.1915E+02	54	1.2556E+02	54	1.2504E+02
70	1.1504E+02	47	1.0462E+02	47	1.0504E+02
52	1.1504E+02	59	1.0462E+02	59	1.0504E+02
54	1.1026E+02	48	6.1848E+01	48	6.1407E+01
66	1.1026E+02	72	6.1848E+01	72	6.1407E+01
47	9.2418E+01	65	5.7359E+01	65	5.7861E+01
59	9.2418E+01	41	5.7359E+01	41	5.7861E+01
49	6.5746E+01	68	3.1297E+01	68	3.0275E+01
74	6.5746E+01	56	3.1297E+01	56	3.0275E+01
64	6.0115E+01	75	2.3445E+01	75	2.2736E+01
40	6.0115E+01	50	2.3445E+01	50	2.2736E+01
56	5.0841E+01	45	2.0918E+01	57	2.2054E+01
68	5.0841E+01	57	2.0918E+01	45	2.2054E+01
57	4.0136E+01	53	2.0424E+01	42	2.0205E+01
45	4.0136E+01	71	2.0424E+01	60	2.0205E+01
50	1.7676E+01	60	1.9846E+01	53	2.0075E+01
75	1.7676E+01	42	1.9846E+01	71	2.0075E+01
71	1.5490E+01	63	1.7268E+01	63	1.7578E+01
53	1.5490E+01	39	1.7268E+01	39	1.7578E+01
39	1.5450E+01	74	7.2537E+00	74	7.3029E+00
63	1.5450E+01	49	7.2537E+00	49	7.3029E+00
42	1.3494E+01	40	.0000E+00	40	-1.0851E+00
60	1.3494E+01	64	.0000E+00	64	-1.0851E+00

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PEAK EFFECTIVE AND LOCAL SHEAR STRESSES BY ELEMENT

ELEM	PEAK EFF STRESS(PSI)	PEAK TAU-XY STRESS(PSI)	PEAK TAU-XZ STRESS(PSI)	PEAK TAU-YZ STRESS(PSI)
1	.0000E+00	-9.2539E+02	-9.2539E+02	-9.2539E+02
2	.0000E+00	1.8898E+03	1.8898E+03	1.8898E+03
3	.0000E+00	1.7910E+03	1.7910E+03	1.7910E+03
4	.0000E+00	-2.0062E+03	-2.0062E+03	-2.0062E+03
5	.0000E+00	1.8058E+03	1.8058E+03	1.8058E+03
6	.0000E+00	1.9033E+03	1.9033E+03	1.9033E+03
7	.0000E+00	-6.0484E+01	-6.0484E+01	-6.0484E+01
8	.0000E+00	1.0286E+02	1.0286E+02	1.0286E+02
9	.0000E+00	8.1887E+01	8.1887E+01	8.1887E+01
10	.0000E+00	-4.6426E+01	-4.6426E+01	-4.6426E+01
11	.0000E+00	-8.0240E+00	-8.0240E+00	-8.0240E+00
12	.0000E+00	8.0559E+01	8.0559E+01	8.0559E+01
13	.0000E+00	1.0340E+02	1.0340E+02	1.0340E+02
14	.0000E+00	-4.6409E+02	-4.6409E+02	-4.6409E+02
15	.0000E+00	9.1360E+02	9.1360E+02	9.1360E+02
16	.0000E+00	9.1662E+02	9.1662E+02	9.1662E+02
17	.0000E+00	-9.9686E+02	-9.9686E+02	-9.9686E+02
18	.0000E+00	8.9432E+02	8.9432E+02	8.9432E+02
19	.0000E+00	9.4588E+02	9.4588E+02	9.4588E+02
20	.0000E+00	-2.6907E+02	-2.6907E+02	-2.6907E+02
21	.0000E+00	4.3487E+02	4.3487E+02	4.3487E+02
22	.0000E+00	3.5097E+02	3.5097E+02	3.5097E+02
23	.0000E+00	-1.7467E+02	-1.7467E+02	-1.7467E+02
24	.0000E+00	5.6287E+00	5.6287E+00	5.6287E+00
25	.0000E+00	3.4636E+02	3.4636E+02	3.4636E+02
26	.0000E+00	4.3681E+02	4.3681E+02	4.3681E+02
27	.0000E+00	1.3824E+03	1.3824E+03	1.3824E+03
28	.0000E+00	-2.2767E+03	-2.2767E+03	-2.2767E+03
29	.0000E+00	6.9450E+02	6.9450E+02	6.9450E+02
30	.0000E+00	-1.1452E+03	-1.1452E+03	-1.1452E+03
31	.0000E+00	3.0446E+02	3.0446E+02	3.0446E+02
32	.0000E+00	-4.5788E+02	-4.5788E+02	-4.5788E+02
33	.0000E+00	-6.1275E+02	-6.1275E+02	-6.1275E+02
34	.0000E+00	-6.1275E+02	-6.1275E+02	-6.1275E+02
36	.0000E+00	-6.1275E+02	-6.1275E+02	-6.1275E+02
37	.0000E+00	-7.9330E+02	-7.9330E+02	-7.9330E+02
38	.0000E+00	-4.5788E+02	-4.5788E+02	-4.5788E+02
39	6.0659E+01	3.0213E+01	3.0213E+01	3.0213E+01
40	5.6328E+01	3.1354E+01	3.1354E+01	3.1354E+01
41	3.0323E+02	1.1703E+02	1.1703E+02	1.1703E+02
42	4.3517E+01	2.0200E+01	2.0200E+01	2.0200E+01
43	5.4694E+02	2.3212E+02	2.3212E+02	2.3212E+02
44	6.5884E+02	3.2409E+02	3.2409E+02	3.2409E+02
45	7.0364E+01	3.5936E+01	3.5936E+01	3.5936E+01
46	1.0209E+03	4.4144E+02	4.4144E+02	4.4144E+02

47	2.6832E+02	1.3162E+02	1.3162E+02	1.3162E+02
48	3.1817E+02	1.7186E+02	1.7186E+02	1.7186E+02
49	7.1637E+01	4.0201E+01	4.0201E+01	4.0201E+01
50	7.0517E+01	3.2727E+01	3.2727E+01	3.2727E+01
51	7.0193E+02	3.4478E+02	3.4478E+02	3.4478E+02
52	4.6378E+02	1.4597E+02	1.4597E+02	1.4597E+02
53	4.5857E+01	1.7364E+01	1.7364E+01	1.7364E+01
54	3.1870E+02	1.6466E+02	1.6466E+02	1.6466E+02
55	8.4619E+02	3.0667E+02	3.0667E+02	3.0667E+02
56	9.8405E+01	5.2407E+01	5.2407E+01	5.2407E+01
57	7.0364E+01	3.8719E+01	3.8719E+01	3.8719E+01
58	1.0209E+03	4.4144E+02	4.4144E+02	4.4144E+02
59	2.6832E+02	1.3866E+02	1.3866E+02	1.3866E+02
60	4.3517E+01	2.0200E+01	2.0200E+01	2.0200E+01
61	5.4694E+02	2.3212E+02	2.3212E+02	2.3212E+02
62	6.5884E+02	2.5108E+02	2.5108E+02	2.5108E+02
63	6.0659E+01	3.0213E+01	3.0213E+01	3.0213E+01
64	5.6328E+01	3.2700E+01	3.2700E+01	3.2700E+01
65	3.0323E+02	1.6473E+02	1.6473E+02	1.6473E+02
66	3.1870E+02	1.6466E+02	1.6466E+02	1.6466E+02
67	8.4619E+02	3.6971E+02	3.6971E+02	3.6971E+02
68	9.8405E+01	5.2407E+01	5.2407E+01	5.2407E+01
69	7.0193E+02	3.4478E+02	3.4478E+02	3.4478E+02
70	4.6378E+02	1.9793E+02	1.9793E+02	1.9793E+02
71	4.5857E+01	2.0667E+01	2.0667E+01	2.0667E+01
72	3.1817E+02	1.7186E+02	1.7186E+02	1.7186E+02
74	7.1637E+01	4.0201E+01	4.0201E+01	4.0201E+01
75	7.0517E+01	1.6966E+01	1.6966E+01	1.6966E+01

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PRINCIPAL STRESSES FROM POST PROCESSING FILE: E-SUPK.POS

AVG EFFECTIVE AND LOCAL SHEAR STRESSES BY ELEMENT

ELEM	AVG EFF STRESS(PSI)	AVG TAU-XY STRESS(PSI)	AVG TAU-XZ STRESS(PSI)	AVG TAU-YZ STRESS(PSI)
1	.0000E+00	-4.6269E+02	-4.6269E+02	-4.6269E+02
2	.0000E+00	9.4490E+02	9.4490E+02	9.4490E+02
3	.0000E+00	8.9551E+02	8.9551E+02	8.9551E+02
4	.0000E+00	-1.0031E+03	-1.0031E+03	-1.0031E+03
5	.0000E+00	9.0291E+02	9.0291E+02	9.0291E+02
6	.0000E+00	9.5166E+02	9.5166E+02	9.5166E+02
7	.0000E+00	-3.0242E+01	-3.0242E+01	-3.0242E+01
8	.0000E+00	5.1432E+01	5.1432E+01	5.1432E+01
9	.0000E+00	4.0943E+01	4.0943E+01	4.0943E+01
10	.0000E+00	-2.3213E+01	-2.3213E+01	-2.3213E+01
11	.0000E+00	-4.0120E+00	-4.0120E+00	-4.0120E+00
12	.0000E+00	4.0280E+01	4.0280E+01	4.0280E+01
13	.0000E+00	5.1699E+01	5.1699E+01	5.1699E+01
14	.0000E+00	-2.3204E+02	-2.3204E+02	-2.3204E+02
15	.0000E+00	4.5680E+02	4.5680E+02	4.5680E+02
16	.0000E+00	4.5831E+02	4.5831E+02	4.5831E+02
17	.0000E+00	-4.9843E+02	-4.9843E+02	-4.9843E+02
18	.0000E+00	4.4716E+02	4.4716E+02	4.4716E+02
19	.0000E+00	4.7294E+02	4.7294E+02	4.7294E+02
20	.0000E+00	-1.3453E+02	-1.3453E+02	-1.3453E+02
21	.0000E+00	2.1743E+02	2.1743E+02	2.1743E+02
22	.0000E+00	1.7549E+02	1.7549E+02	1.7549E+02
23	.0000E+00	-8.7333E+01	-8.7333E+01	-8.7333E+01
24	.0000E+00	2.8144E+00	2.8144E+00	2.8144E+00
25	.0000E+00	1.7318E+02	1.7318E+02	1.7318E+02
26	.0000E+00	2.1840E+02	2.1840E+02	2.1840E+02
27	.0000E+00	6.9119E+02	6.9119E+02	6.9119E+02
28	.0000E+00	-1.1383E+03	-1.1383E+03	-1.1383E+03
29	.0000E+00	3.4725E+02	3.4725E+02	3.4725E+02
30	.0000E+00	-5.7262E+02	-5.7262E+02	-5.7262E+02
31	.0000E+00	1.5223E+02	1.5223E+02	1.5223E+02
32	.0000E+00	-2.2894E+02	-2.2894E+02	-2.2894E+02
33	.0000E+00	-3.0637E+02	-3.0637E+02	-3.0637E+02
34	.0000E+00	-3.0637E+02	-3.0637E+02	-3.0637E+02
36	.0000E+00	-3.0637E+02	-3.0637E+02	-3.0637E+02
37	.0000E+00	-3.9665E+02	-3.9665E+02	-3.9665E+02
38	.0000E+00	-2.2894E+02	-2.2894E+02	-2.2894E+02
39	3.3179E+01	1.1433E+01	1.1433E+01	1.1433E+01
40	5.1380E+01	2.1288E+01	2.1288E+01	2.1288E+01
41	1.6549E+02	4.7033E+01	4.7033E+01	4.7033E+01
42	3.1130E+01	1.1295E+01	1.1295E+01	1.1295E+01
43	3.1988E+02	8.5527E+01	8.5527E+01	8.5527E+01
44	4.6378E+02	1.7468E+02	1.7468E+02	1.7468E+02
45	5.7385E+01	2.1514E+01	2.1514E+01	2.1514E+01
46	8.5344E+02	2.6812E+02	2.6812E+02	2.6812E+02

47	1.9550E+02	5.7876E+01	5.7876E+01	5.7876E+01
48	1.7359E+02	6.2212E+01	6.2212E+01	6.2212E+01
49	6.3730E+01	2.7267E+01	2.7267E+01	2.7267E+01
50	3.9058E+01	1.4469E+01	1.4469E+01	1.4469E+01
51	5.0299E+02	2.0617E+02	2.0617E+02	2.0617E+02
52	2.8099E+02	6.5885E+01	6.5885E+01	6.5885E+01
53	3.4053E+01	1.0543E+01	1.0543E+01	1.0543E+01
54	2.3410E+02	1.0229E+02	1.0229E+02	1.0229E+02
55	6.9150E+02	1.9315E+02	1.9315E+02	1.9315E+02
56	7.8057E+01	2.8652E+01	2.8652E+01	2.8652E+01
57	5.7385E+01	2.4179E+01	2.4179E+01	2.4179E+01
58	8.5344E+02	2.8817E+02	2.8817E+02	2.8817E+02
59	1.9550E+02	5.9634E+01	5.9634E+01	5.9634E+01
60	3.1130E+01	9.3146E+00	9.3146E+00	9.3146E+00
61	3.1988E+02	1.1155E+02	1.1155E+02	1.1155E+02
62	4.6378E+02	1.4061E+02	1.4061E+02	1.4061E+02
63	3.3179E+01	1.3428E+01	1.3428E+01	1.3428E+01
64	5.1380E+01	2.1624E+01	2.1624E+01	2.1624E+01
65	1.6549E+02	7.8202E+01	7.8202E+01	7.8202E+01
66	2.3410E+02	8.6580E+01	8.6580E+01	8.6580E+01
67	6.9150E+02	2.0891E+02	2.0891E+02	2.0891E+02
68	7.8057E+01	3.3636E+01	3.3636E+01	3.3636E+01
69	5.0299E+02	1.7486E+02	1.7486E+02	1.7486E+02
70	2.8099E+02	1.0949E+02	1.0949E+02	1.0949E+02
71	3.4053E+01	1.2819E+01	1.2819E+01	1.2819E+01
72	1.7359E+02	8.4547E+01	8.4547E+01	8.4547E+01
74	6.3730E+01	2.9147E+01	2.9147E+01	2.9147E+01
75	3.9058E+01	9.2359E+00	9.2359E+00	9.2359E+00

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: E-SUPK.POS

PEAK EFFECTIVE AND SHEAR STRESSES BY VALUE

PEAK EFF ELEM	STRESS(PSI)	PEAK TAU-XY ELEM	STRESS(PSI)	PEAK TAU-XZ ELEM	STRESS(PSI)	PEAK TAU-YZ ELEM	STRESS(PSI)
--- MATERIAL SET NO. 1 ---							
1	.0000E+00	28	-2.2767E+03	28	-2.2767E+03	28	-2.2767E+03
2	.0000E+00	4	-2.0062E+03	4	-2.0062E+03	4	-2.0062E+03
3	.0000E+00	6	1.9033E+03	6	1.9033E+03	6	1.9033E+03
4	.0000E+00	2	1.8898E+03	2	1.8898E+03	2	1.8898E+03
5	.0000E+00	5	1.8058E+03	5	1.8058E+03	5	1.8058E+03
6	.0000E+00	3	1.7910E+03	3	1.7910E+03	3	1.7910E+03
7	.0000E+00	27	1.3824E+03	27	1.3824E+03	27	1.3824E+03
8	.0000E+00	30	-1.1452E+03	30	-1.1452E+03	30	-1.1452E+03
9	.0000E+00	17	-9.9686E+02	17	-9.9686E+02	17	-9.9686E+02
10	.0000E+00	19	9.4588E+02	19	9.4588E+02	19	9.4588E+02
11	.0000E+00	1	-9.2539E+02	1	-9.2539E+02	1	-9.2539E+02
12	.0000E+00	16	9.1662E+02	16	9.1662E+02	16	9.1662E+02
13	.0000E+00	15	9.1360E+02	15	9.1360E+02	15	9.1360E+02
14	.0000E+00	18	8.9432E+02	18	8.9432E+02	18	8.9432E+02
15	.0000E+00	29	6.9450E+02	29	6.9450E+02	29	6.9450E+02
16	.0000E+00	34	-6.1275E+02	34	-6.1275E+02	34	-6.1275E+02
17	.0000E+00	14	-4.6409E+02	14	-4.6409E+02	14	-4.6409E+02
18	.0000E+00	38	-4.5788E+02	38	-4.5788E+02	38	-4.5788E+02
19	.0000E+00	26	4.3681E+02	26	4.3681E+02	26	4.3681E+02
20	.0000E+00	21	4.3487E+02	21	4.3487E+02	21	4.3487E+02
21	.0000E+00	22	3.5097E+02	22	3.5097E+02	22	3.5097E+02
22	.0000E+00	25	3.4636E+02	25	3.4636E+02	25	3.4636E+02
23	.0000E+00	31	3.0446E+02	31	3.0446E+02	31	3.0446E+02
24	.0000E+00	20	-2.6907E+02	20	-2.6907E+02	20	-2.6907E+02
25	.0000E+00	23	-1.7467E+02	23	-1.7467E+02	23	-1.7467E+02
26	.0000E+00	13	1.0340E+02	13	1.0340E+02	13	1.0340E+02
27	.0000E+00	8	1.0286E+02	8	1.0286E+02	8	1.0286E+02
28	.0000E+00	9	8.1887E+01	9	8.1887E+01	9	8.1887E+01
29	.0000E+00	12	8.0559E+01	12	8.0559E+01	12	8.0559E+01
30	.0000E+00	7	-6.0484E+01	7	-6.0484E+01	7	-6.0484E+01
31	.0000E+00	10	-4.6426E+01	10	-4.6426E+01	10	-4.6426E+01
34	.0000E+00	11	-8.0240E+00	11	-8.0240E+00	11	-8.0240E+00
38	.0000E+00	24	5.6287E+00	24	5.6287E+00	24	5.6287E+00
--- MATERIAL SET NO. 2 ---							
32	.0000E+00	37	-7.9330E+02	37	-7.9330E+02	37	-7.9330E+02
33	.0000E+00	36	-6.1275E+02	36	-6.1275E+02	36	-6.1275E+02
36	.0000E+00	33	-6.1275E+02	33	-6.1275E+02	33	-6.1275E+02
37	.0000E+00	32	-4.5788E+02	32	-4.5788E+02	32	-4.5788E+02

--- MATERIAL SET NO. 3 ---

46	**1.0209E+03**	**46**	**4.4144E+02**	**46**	**4.4144E+02**	**46**	**4.4144E+02**
58	1.0209E+03	58	4.4144E+02	58	4.4144E+02	58	4.4144E+02
55	8.4619E+02	67	3.6971E+02	67	3.6971E+02	67	3.6971E+02
67	8.4619E+02	51	3.4478E+02	51	3.4478E+02	51	3.4478E+02
51	7.0193E+02	69	3.4478E+02	69	3.4478E+02	69	3.4478E+02
69	7.0193E+02	44	3.2409E+02	44	3.2409E+02	44	3.2409E+02
44	6.5884E+02	55	3.0667E+02	55	3.0667E+02	55	3.0667E+02
62	6.5884E+02	62	2.5108E+02	62	2.5108E+02	62	2.5108E+02
61	5.4694E+02	61	2.3212E+02	61	2.3212E+02	61	2.3212E+02
43	5.4694E+02	43	2.3212E+02	43	2.3212E+02	43	2.3212E+02
52	4.6378E+02	70	1.9793E+02	70	1.9793E+02	70	1.9793E+02
70	4.6378E+02	48	1.7186E+02	48	1.7186E+02	48	1.7186E+02
66	3.1870E+02	72	1.7186E+02	72	1.7186E+02	72	1.7186E+02
54	3.1870E+02	65	1.6473E+02	65	1.6473E+02	65	1.6473E+02
48	3.1817E+02	54	1.6466E+02	54	1.6466E+02	54	1.6466E+02
72	3.1817E+02	66	1.6466E+02	66	1.6466E+02	66	1.6466E+02
65	3.0323E+02	52	1.4597E+02	52	1.4597E+02	52	1.4597E+02
41	3.0323E+02	59	1.3866E+02	59	1.3866E+02	59	1.3866E+02
47	2.6832E+02	47	1.3162E+02	47	1.3162E+02	47	1.3162E+02
59	2.6832E+02	41	1.1703E+02	41	1.1703E+02	41	1.1703E+02
68	9.8405E+01	68	5.2407E+01	68	5.2407E+01	68	5.2407E+01
56	9.8405E+01	56	5.2407E+01	56	5.2407E+01	56	5.2407E+01
49	7.1637E+01	49	4.0201E+01	49	4.0201E+01	49	4.0201E+01
74	7.1637E+01	74	4.0201E+01	74	4.0201E+01	74	4.0201E+01
50	7.0517E+01	57	3.8719E+01	57	3.8719E+01	57	3.8719E+01
75	7.0517E+01	45	3.5936E+01	45	3.5936E+01	45	3.5936E+01
57	7.0364E+01	50	3.2727E+01	50	3.2727E+01	50	3.2727E+01
45	7.0364E+01	64	3.2700E+01	64	3.2700E+01	64	3.2700E+01
63	6.0659E+01	40	3.1354E+01	40	3.1354E+01	40	3.1354E+01
39	6.0659E+01	63	3.0213E+01	63	3.0213E+01	63	3.0213E+01
64	5.6328E+01	39	3.0213E+01	39	3.0213E+01	39	3.0213E+01
40	5.6328E+01	71	2.0667E+01	71	2.0667E+01	71	2.0667E+01
71	4.5857E+01	60	2.0200E+01	60	2.0200E+01	60	2.0200E+01
53	4.5857E+01	42	2.0200E+01	42	2.0200E+01	42	2.0200E+01
42	4.3517E+01	53	1.7364E+01	53	1.7364E+01	53	1.7364E+01
60	4.3517E+01	75	1.6966E+01	75	1.6966E+01	75	1.6966E+01

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: E-SUPK.POS

AVG EFFECTIVE AND SHEAR STRESSES BY VALUE

ELEM	AVG EFF STRESS(PSI)	ELEM	AVG TAU-XY STRESS(PSI)	ELEM	AVG TAU-XZ STRESS(PSI)	ELEM	AVG TAU-YZ STRESS(PSI)
--- MATERIAL SET NO. 1 ---							
1	.0000E+00	28	-1.1383E+03	28	-1.1383E+03	28	-1.1383E+03
2	.0000E+00	4	-1.0031E+03	4	-1.0031E+03	4	-1.0031E+03
3	.0000E+00	6	9.5166E+02	6	9.5166E+02	6	9.5166E+02
4	.0000E+00	2	9.4490E+02	2	9.4490E+02	2	9.4490E+02
5	.0000E+00	5	9.0291E+02	5	9.0291E+02	5	9.0291E+02
6	.0000E+00	3	8.9551E+02	3	8.9551E+02	3	8.9551E+02
7	.0000E+00	27	6.9119E+02	27	6.9119E+02	27	6.9119E+02
8	.0000E+00	30	-5.7262E+02	30	-5.7262E+02	30	-5.7262E+02
9	.0000E+00	17	-4.9843E+02	17	-4.9843E+02	17	-4.9843E+02
10	.0000E+00	19	4.7294E+02	19	4.7294E+02	19	4.7294E+02
11	.0000E+00	1	-4.6269E+02	1	-4.6269E+02	1	-4.6269E+02
12	.0000E+00	16	4.5831E+02	16	4.5831E+02	16	4.5831E+02
13	.0000E+00	15	4.5680E+02	15	4.5680E+02	15	4.5680E+02
14	.0000E+00	18	4.4716E+02	18	4.4716E+02	18	4.4716E+02
15	.0000E+00	29	3.4725E+02	29	3.4725E+02	29	3.4725E+02
16	.0000E+00	34	-3.0637E+02	34	-3.0637E+02	34	-3.0637E+02
17	.0000E+00	14	-2.3204E+02	14	-2.3204E+02	14	-2.3204E+02
18	.0000E+00	38	-2.2894E+02	38	-2.2894E+02	38	-2.2894E+02
19	.0000E+00	26	2.1840E+02	26	2.1840E+02	26	2.1840E+02
20	.0000E+00	21	2.1743E+02	21	2.1743E+02	21	2.1743E+02
21	.0000E+00	22	1.7549E+02	22	1.7549E+02	22	1.7549E+02
22	.0000E+00	25	1.7318E+02	25	1.7318E+02	25	1.7318E+02
23	.0000E+00	31	1.5223E+02	31	1.5223E+02	31	1.5223E+02
24	.0000E+00	20	-1.3453E+02	20	-1.3453E+02	20	-1.3453E+02
25	.0000E+00	23	-8.7333E+01	23	-8.7333E+01	23	-8.7333E+01
26	.0000E+00	13	5.1699E+01	13	5.1699E+01	13	5.1699E+01
27	.0000E+00	8	5.1432E+01	8	5.1432E+01	8	5.1432E+01
28	.0000E+00	9	4.0943E+01	9	4.0943E+01	9	4.0943E+01
29	.0000E+00	12	4.0280E+01	12	4.0280E+01	12	4.0280E+01
30	.0000E+00	7	-3.0242E+01	7	-3.0242E+01	7	-3.0242E+01
31	.0000E+00	10	-2.3213E+01	10	-2.3213E+01	10	-2.3213E+01
34	.0000E+00	11	-4.0120E+00	11	-4.0120E+00	11	-4.0120E+00
38	.0000E+00	24	2.8144E+00	24	2.8144E+00	24	2.8144E+00
--- MATERIAL SET NO. 2 ---							
32	.0000E+00	37	-3.9665E+02	37	-3.9665E+02	37	-3.9665E+02
33	.0000E+00	36	-3.0637E+02	36	-3.0637E+02	36	-3.0637E+02
36	.0000E+00	33	-3.0637E+02	33	-3.0637E+02	33	-3.0637E+02
37	.0000E+00	32	-2.2894E+02	32	-2.2894E+02	32	-2.2894E+02

--- MATERIAL SET NO. 3 ---

46	**8.5344E+02**	**58**	**2.8817E+02**	**58**	**2.8817E+02**	**58**	**2.8817E+02**
58	8.5344E+02	46	2.6812E+02	46	2.6812E+02	46	2.6812E+02
55	6.9150E+02	67	2.0891E+02	67	2.0891E+02	67	2.0891E+02
67	6.9150E+02	51	2.0617E+02	51	2.0617E+02	51	2.0617E+02
51	5.0299E+02	55	1.9315E+02	55	1.9315E+02	55	1.9315E+02
69	5.0299E+02	69	1.7486E+02	69	1.7486E+02	69	1.7486E+02
44	4.6378E+02	44	1.7468E+02	44	1.7468E+02	44	1.7468E+02
62	4.6378E+02	62	1.4061E+02	62	1.4061E+02	62	1.4061E+02
61	3.1988E+02	61	1.1155E+02	61	1.1155E+02	61	1.1155E+02
43	3.1988E+02	70	1.0949E+02	70	1.0949E+02	70	1.0949E+02
52	2.8099E+02	54	1.0229E+02	54	1.0229E+02	54	1.0229E+02
70	2.8099E+02	66	8.6580E+01	66	8.6580E+01	66	8.6580E+01
66	2.3410E+02	43	8.5527E+01	43	8.5527E+01	43	8.5527E+01
54	2.3410E+02	72	8.4547E+01	72	8.4547E+01	72	8.4547E+01
47	1.9550E+02	65	7.8202E+01	65	7.8202E+01	65	7.8202E+01
59	1.9550E+02	52	6.5885E+01	52	6.5885E+01	52	6.5885E+01
48	1.7359E+02	48	6.2212E+01	48	6.2212E+01	48	6.2212E+01
72	1.7359E+02	59	5.9634E+01	59	5.9634E+01	59	5.9634E+01
65	1.6549E+02	47	5.7876E+01	47	5.7876E+01	47	5.7876E+01
41	1.6549E+02	41	4.7033E+01	41	4.7033E+01	41	4.7033E+01
68	7.8057E+01	68	3.3636E+01	68	3.3636E+01	68	3.3636E+01
56	7.8057E+01	74	2.9147E+01	74	2.9147E+01	74	2.9147E+01
49	6.3730E+01	56	2.8652E+01	56	2.8652E+01	56	2.8652E+01
74	6.3730E+01	49	2.7267E+01	49	2.7267E+01	49	2.7267E+01
57	5.7385E+01	57	2.4179E+01	57	2.4179E+01	57	2.4179E+01
45	5.7385E+01	64	2.1624E+01	64	2.1624E+01	64	2.1624E+01
40	5.1380E+01	45	2.1514E+01	45	2.1514E+01	45	2.1514E+01
64	5.1380E+01	40	2.1288E+01	40	2.1288E+01	40	2.1288E+01
50	3.9058E+01	50	1.4469E+01	50	1.4469E+01	50	1.4469E+01
75	3.9058E+01	63	1.3428E+01	63	1.3428E+01	63	1.3428E+01
71	3.4053E+01	71	1.2819E+01	71	1.2819E+01	71	1.2819E+01
53	3.4053E+01	39	1.1433E+01	39	1.1433E+01	39	1.1433E+01
63	3.3179E+01	42	1.1295E+01	42	1.1295E+01	42	1.1295E+01
39	3.3179E+01	53	1.0543E+01	53	1.0543E+01	53	1.0543E+01
42	3.1130E+01	60	9.3146E+00	60	9.3146E+00	60	9.3146E+00
60	3.1130E+01	75	9.2359E+00	75	9.2359E+00	75	9.2359E+00

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: E-SUPK.POS

REACTION LOADS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
1	.000E+00	.000E+00	-1.353E+03	.000E+00	.000E+00	.000E+00
3	.000E+00	.000E+00	-1.103E+03	.000E+00	.000E+00	.000E+00
10	.000E+00	.000E+00	-1.353E+03	.000E+00	.000E+00	.000E+00
12	.000E+00	.000E+00	-1.103E+03	.000E+00	.000E+00	.000E+00
26	.000E+00	.000E+00	1.730E+03	.000E+00	.000E+00	.000E+00
29	.000E+00	.000E+00	4.124E+02	.000E+00	.000E+00	.000E+00
30	.000E+00	.000E+00	3.418E+01	.000E+00	.000E+00	.000E+00
45	.000E+00	.000E+00	1.485E+03	.000E+00	.000E+00	.000E+00
49	.000E+00	.000E+00	2.670E+01	.000E+00	.000E+00	.000E+00
50	.000E+00	.000E+00	4.185E+02	.000E+00	.000E+00	.000E+00
65	.000E+00	.000E+00	4.124E+02	.000E+00	.000E+00	.000E+00
66	.000E+00	.000E+00	3.418E+01	.000E+00	.000E+00	.000E+00
70	.000E+00	.000E+00	1.730E+03	.000E+00	.000E+00	.000E+00
85	.000E+00	.000E+00	2.670E+01	.000E+00	.000E+00	.000E+00
86	.000E+00	.000E+00	4.185E+02	.000E+00	.000E+00	.000E+00
89	.000E+00	.000E+00	1.485E+03	.000E+00	.000E+00	.000E+00

APENDICE 3

BASE DE DATOS DE PIEZA 03

LIBRA Finite Element Program
Version 3.0 Revision 2

PLACA SUPERIOR

FILE SPECIFICATIONS

INPUT placa4-k
OUTPUT placa4-k.sol
BANDWIDTH ..... NONE
POST PROCESS .. placa4-k.pos

NSTYPE	NP	NE	NB	NELPR	NCNCN1	EL TYPES
1	99	80	11	2	0	11

IDATCK	IBNDOP	IPOST	ISING	IRSFLG	ISUPR
0	1	1	0	0	0

LIBRA Finite Element Program
Version 3.0 Revision 2

PLACA SUPERIOR

NODAL COORDINATES

NODE POINT	X-COORDINATE	Y-COORDINATE	Z-COORDINATE
1	.0000E+00	3.3000E+01	.0000E+00
2	1.5000E+00	3.3000E+01	.0000E+00
3	1.1130E+01	3.3000E+01	.0000E+00
4	2.0500E+01	3.3000E+01	.0000E+00
5	2.9880E+01	3.3000E+01	.0000E+00
6	3.9500E+01	3.3000E+01	.0000E+00
7	4.1000E+01	3.3000E+01	.0000E+00
8	.0000E+00	3.1500E+01	.0000E+00
9	1.5000E+00	3.1500E+01	.0000E+00
10	1.1130E+01	3.1500E+01	.0000E+00
11	2.0500E+01	3.1500E+01	.0000E+00
12	2.9880E+01	3.1500E+01	.0000E+00
13	3.9500E+01	3.1500E+01	.0000E+00
14	4.1000E+01	3.1500E+01	.0000E+00
15	.0000E+00	2.6000E+01	.0000E+00
16	1.5000E+00	2.6000E+01	.0000E+00
17	1.1130E+01	2.6000E+01	.0000E+00
18	2.0500E+01	2.6000E+01	.0000E+00
19	2.9880E+01	2.6000E+01	.0000E+00
20	3.9500E+01	2.6000E+01	.0000E+00
21	4.1000E+01	2.6000E+01	.0000E+00
22	.0000E+00	2.1500E+01	.0000E+00
23	1.5000E+00	2.1500E+01	.0000E+00
24	1.1130E+01	2.1500E+01	.0000E+00
25	2.0500E+01	2.1500E+01	.0000E+00
26	2.9880E+01	2.1500E+01	.0000E+00
27	3.9500E+01	2.1500E+01	.0000E+00
28	4.1000E+01	2.1500E+01	.0000E+00
29	.0000E+00	1.6500E+01	.0000E+00
30	1.5000E+00	1.6500E+01	.0000E+00
31	1.1130E+01	1.6500E+01	.0000E+00
32	2.0500E+01	1.6500E+01	.0000E+00
33	2.9880E+01	1.6500E+01	.0000E+00
34	3.9500E+01	1.6500E+01	.0000E+00
35	4.1000E+01	1.6500E+01	.0000E+00
36	.0000E+00	1.1500E+01	.0000E+00
37	1.5000E+00	1.1500E+01	.0000E+00
38	1.1130E+01	1.1500E+01	.0000E+00
39	2.0500E+01	1.1500E+01	.0000E+00
40	2.9880E+01	1.1500E+01	.0000E+00
41	3.9500E+01	1.1500E+01	.0000E+00
42	4.1000E+01	1.1500E+01	.0000E+00
43	.0000E+00	7.0000E+00	.0000E+00
44	1.5000E+00	7.0000E+00	.0000E+00
45	1.1130E+01	7.0000E+00	.0000E+00
46	2.0500E+01	7.0000E+00	.0000E+00
47	2.9880E+01	7.0000E+00	.0000E+00
48	3.9500E+01	7.0000E+00	.0000E+00

49	4.1000E+01	7.0000E+00	.0000E+00
50	.0000E+00	1.5000E+00	.0000E+00
51	1.5000E+00	1.5000E+00	.0000E+00
52	1.1130E+01	1.5000E+00	.0000E+00
53	2.0500E+01	1.5000E+00	.0000E+00
54	2.9880E+01	1.5000E+00	.0000E+00
55	3.9500E+01	1.5000E+00	.0000E+00
56	4.1000E+01	1.5000E+00	.0000E+00
57	.0000E+00	.0000E+00	.0000E+00
58	1.5000E+00	.0000E+00	.0000E+00
59	1.1130E+01	.0000E+00	.0000E+00
60	2.0500E+01	.0000E+00	.0000E+00
61	2.9880E+01	.0000E+00	.0000E+00
62	3.9500E+01	.0000E+00	.0000E+00
63	4.1000E+01	.0000E+00	.0000E+00
71	6.5000E+00	3.3000E+01	.0000E+00
72	1.5500E+01	3.3000E+01	.0000E+00
73	2.5500E+01	3.3000E+01	.0000E+00
74	3.4500E+01	3.3000E+01	.0000E+00
75	6.5000E+00	3.1500E+01	.0000E+00
76	1.5500E+01	3.1500E+01	.0000E+00
77	2.5500E+01	3.1500E+01	.0000E+00
78	3.4500E+01	3.1500E+01	.0000E+00
79	6.5000E+00	2.6000E+01	.0000E+00
80	1.5500E+01	2.6000E+01	.0000E+00
81	2.5500E+01	2.6000E+01	.0000E+00
82	3.4500E+01	2.6000E+01	.0000E+00
83	6.5000E+00	2.1500E+01	.0000E+00
84	1.5500E+01	2.1500E+01	.0000E+00
85	2.5500E+01	2.1500E+01	.0000E+00
86	3.4500E+01	2.1500E+01	.0000E+00
87	6.5000E+00	1.6500E+01	.0000E+00
88	1.5500E+01	1.6500E+01	.0000E+00
89	2.5500E+01	1.6500E+01	.0000E+00
90	3.4500E+01	1.6500E+01	.0000E+00
91	6.5000E+00	1.1500E+01	.0000E+00
92	1.5500E+01	1.1500E+01	.0000E+00
93	2.5500E+01	1.1500E+01	.0000E+00
94	3.4500E+01	1.1500E+01	.0000E+00
95	6.5000E+00	7.0000E+00	.0000E+00
96	1.5500E+01	7.0000E+00	.0000E+00
97	2.5500E+01	7.0000E+00	.0000E+00
98	3.4500E+01	7.0000E+00	.0000E+00
99	6.5000E+00	1.5000E+00	.0000E+00
100	1.5500E+01	1.5000E+00	.0000E+00
101	2.5500E+01	1.5000E+00	.0000E+00
102	3.4500E+01	1.5000E+00	.0000E+00
103	6.5000E+00	.0000E+00	.0000E+00
104	1.5500E+01	.0000E+00	.0000E+00
105	2.5500E+01	.0000E+00	.0000E+00
106	3.4500E+01	.0000E+00	.0000E+00

ELEMENT DATA

ELEMENT	EL TYPE	MATERIAL	.....NODES.....			
1	11	1	1	8	9	2
2	11	1	2	9	75	71
3	11	1	71	75	10	3
4	11	1	3	10	76	72
5	11	1	72	76	11	4
6	11	1	4	11	77	73
7	11	1	73	77	12	5
8	11	1	5	12	78	74
9	11	1	74	78	13	6
10	11	1	6	13	14	7
11	11	1	8	15	16	9
12	11	1	9	16	79	75
13	11	1	75	79	17	10
14	11	1	10	17	80	76
15	11	1	76	80	18	11
16	11	1	11	18	81	77
17	11	1	77	81	19	12
18	11	1	12	19	82	78
19	11	1	78	82	20	13
20	11	1	13	20	21	14
21	11	1	15	22	23	16
22	11	1	16	23	83	79
23	11	1	79	83	24	17
24	11	1	17	24	84	80
25	11	1	80	84	25	18
26	11	1	18	25	85	81
27	11	1	81	85	26	19
28	11	1	19	26	86	82
29	11	1	82	86	27	20
30	11	1	20	27	28	21
31	11	1	22	29	30	23
32	11	1	23	30	87	83
33	11	1	83	87	31	24
34	11	1	24	31	88	84
35	11	1	84	88	32	25
36	11	1	25	32	89	85
37	11	1	85	89	33	26
38	11	1	26	33	90	86
39	11	1	86	90	34	27
40	11	1	27	34	35	28
41	11	1	29	36	37	30
42	11	1	30	37	91	87
43	11	1	87	91	38	31
44	11	1	31	38	92	88
45	11	1	88	92	39	32
46	11	1	32	39	93	89
47	11	1	89	93	40	33
48	11	1	33	40	94	90
49	11	1	90	94	41	34
50	11	1	34	41	42	35
51	11	1	36	43	44	37
52	11	1	37	44	95	91
53	11	1	91	95	45	38
54	11	1	38	45	96	92
55	11	1	92	96	46	39
56	11	1	39	46	97	93
57	11	1	93	97	47	40
58	11	1	40	47	98	94
59	11	1	94	98	48	41

60	11	1	41	48	49	42
61	11	1	43	50	51	44
62	11	1	44	51	99	95
63	11	1	95	99	52	45
64	11	1	45	52	100	96
65	11	1	96	100	53	46
66	11	1	46	53	101	97
67	11	1	97	101	54	47
68	11	1	47	54	102	98
69	11	1	98	102	55	48
70	11	1	48	55	56	49
71	11	1	50	57	58	51
72	11	1	51	58	103	99
73	11	1	99	103	59	52
74	11	1	52	59	104	100
75	11	1	100	104	60	53
76	11	1	53	60	105	101
77	11	1	101	105	61	54
78	11	1	54	61	106	102
79	11	1	102	106	62	55
80	11	1	55	62	63	56

MATERIAL PROPERTIES

SET	TEMP	PROP(1)	PROP(2)	PROP(3)	PROP(4)	PROP(5)	PROP(6)
1	.000E+00	1.000E+07	3.300E-01	2.000E+0	1.350E+01	9.500E-02	3.800E+06
1	.000E+00	1.000E+07	3.300E-01	2.000E+00	1.350E+01	9.500E-02	3.800E+06

DISPLACEMENT BOUNDARY CONDITIONS

NODE	DOF FIXED	DISP
79	001000	.0000E+00
80	001000	.0000E+00
81	001000	.0000E+00
82	001000	.0000E+00
31	001000	.0000E+00
32	001000	.0000E+00
33	001000	.0000E+00
95	001000	.0000E+00
96	001000	.0000E+00
97	001000	.0000E+00
98	001000	.0000E+00

PROBLEM SIZE INFORMATION

TOTAL NUMBER OF NODES	99
TOTAL NUMBER OF ELEMENTS	80
TOTAL NUMBER OF BOUNDARY CONDITIONS	11
TOTAL NUMBER OF CONSTRAINING CONDITIONS	0
TOTAL NUMBER OF EQUATIONS	594
BAND WIDTH	96
NUMBER OF EQUATIONS PER BLOCK	78
NUMBER OF EQUATION BLOCKS	8

LIBRA Finite Element Program
Version 3.0 Revision 2

PLACA SUPERIOR

SOLUTION CONTROL PARAMETERS, LOAD CASE NUMBER 1

NUMBER OF NODAL LOAD RECORDS 4
NUMBER OF NODAL TEMPERATURE RECORDS ... 0
REACTION LOAD CALCULATION OPTION 1
BODY FORCE OPTION 0
ROTATIONAL SPEED OPTION 0
SKIP STRESS CALCULATION OPTION 0
ZERO STRESS TEMPERATURE ..... .0000E+00

NODAL LOADS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
24	.0000E+00	.0000E+00	-2.2372E+03	.0000E+00	.0000E+00	.0000E+00
26	.0000E+00	.0000E+00	-2.2372E+03	.0000E+00	.0000E+00	.0000E+00
38	.0000E+00	.0000E+00	-2.2372E+03	.0000E+00	.0000E+00	.0000E+00
40	.0000E+00	.0000E+00	-2.2372E+03	.0000E+00	.0000E+00	.0000E+00

DISPLACEMENTS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
1	.000E+00	.000E+00	1.489E-03	1.166E-04	-2.994E-04	.000E+00
2	.000E+00	.000E+00	5.707E-03	2.150E-04	-3.033E-04	.000E+00
3	.000E+00	.000E+00	8.063E-03	6.124E-04	-1.346E-04	.000E+00
4	.000E+00	.000E+00	8.527E-03	6.742E-04	-3.446E-08	.000E+00
5	.000E+00	.000E+00	8.063E-03	6.124E-04	1.346E-04	.000E+00
6	.000E+00	.000E+00	5.711E-03	2.157E-04	3.030E-04	.000E+00
7	.000E+00	.000E+00	1.493E-03	1.175E-04	2.992E-04	.000E+00
8	.000E+00	.000E+00	5.085E-03	1.209E-04	-2.104E-04	.000E+00
9	.000E+00	.000E+00	1.623E-03	2.115E-04	-2.094E-04	.000E+00
10	.000E+00	.000E+00	3.393E-03	6.273E-04	-1.146E-04	.000E+00
11	.000E+00	.000E+00	3.782E-03	6.780E-04	-5.248E-10	.000E+00
12	.000E+00	.000E+00	3.394E-03	6.273E-04	1.145E-04	.000E+00
13	.000E+00	.000E+00	1.626E-03	2.122E-04	2.093E-04	.000E+00

14	.000E+00	.000E+00	5.087E-03	1.218E-04	2.102E-04	.000E+00
15	.000E+00	.000E+00	6.907E-04	9.777E-05	1.116E-04	.000E+00
16	.000E+00	.000E+00	4.310E-03	1.798E-04	1.071E-04	.000E+00
17	.000E+00	.000E+00	3.553E-03	6.803E-04	-1.151E-05	.000E+00
18	.000E+00	.000E+00	3.824E-03	6.468E-04	1.355E-09	.000E+00
19	.000E+00	.000E+00	3.553E-03	6.802E-04	1.136E-05	.000E+00
20	.000E+00	.000E+00	4.309E-03	1.805E-04	-1.069E-04	.000E+00
21	.000E+00	.000E+00	6.897E-04	9.847E-05	-1.115E-04	.000E+00
22	.000E+00	.000E+00	4.164E-03	4.249E-05	3.761E-04	.000E+00
23	.000E+00	.000E+00	-1.874E-04	1.308E-04	3.668E-04	.000E+00
24	.000E+00	.000E+00	-2.888E-03	4.327E-04	7.817E-05	.000E+00
25	.000E+00	.000E+00	-2.530E-03	4.878E-04	-8.055E-08	.000E+00
26	.000E+00	.000E+00	-2.888E-03	4.327E-04	-7.822E-05	.000E+00
27	.000E+00	.000E+00	-1.908E-04	1.312E-04	-3.666E-04	.000E+00
28	.000E+00	.000E+00	4.160E-03	4.294E-05	-3.760E-04	.000E+00
29	.000E+00	.000E+00	2.797E-04	-3.646E-18	5.146E-04	.000E+00
30	.000E+00	.000E+00	3.311E-03	-3.534E-18	5.085E-04	.000E+00
31	.000E+00	.000E+00	.000E+00	7.630E-18	1.266E-04	.000E+00
32	.000E+00	.000E+00	.000E+00	1.480E-17	-1.062E-07	.000E+00
33	.000E+00	.000E+00	.000E+00	-1.111E-18	-1.265E-04	.000E+00
34	.000E+00	.000E+00	3.306E-03	4.925E-18	-5.084E-04	.000E+00
35	.000E+00	.000E+00	2.749E-04	1.035E-17	-5.145E-04	.000E+00
36	.000E+00	.000E+00	4.164E-03	-4.249E-05	3.761E-04	.000E+00
37	.000E+00	.000E+00	-1.874E-04	-1.308E-04	3.668E-04	.000E+00
38	.000E+00	.000E+00	-2.888E-03	-4.327E-04	7.817E-05	.000E+00
39	.000E+00	.000E+00	-2.530E-03	-4.878E-04	-8.055E-08	.000E+00
40	.000E+00	.000E+00	-2.888E-03	-4.327E-04	-7.822E-05	.000E+00
41	.000E+00	.000E+00	-1.908E-04	-1.312E-04	-3.666E-04	.000E+00
42	.000E+00	.000E+00	4.160E-03	-4.294E-05	-3.760E-04	.000E+00
43	.000E+00	.000E+00	6.907E-04	-9.777E-05	1.116E-04	.000E+00
44	.000E+00	.000E+00	4.310E-03	-1.798E-04	1.071E-04	.000E+00
45	.000E+00	.000E+00	3.553E-03	-6.803E-04	-1.151E-05	.000E+00
46	.000E+00	.000E+00	3.824E-03	-6.468E-04	1.355E-09	.000E+00
47	.000E+00	.000E+00	3.553E-03	-6.802E-04	1.136E-05	.000E+00
48	.000E+00	.000E+00	4.309E-03	-1.805E-04	-1.069E-04	.000E+00
49	.000E+00	.000E+00	6.897E-04	-9.847E-05	-1.115E-04	.000E+00
50	.000E+00	.000E+00	5.085E-03	-1.209E-04	-2.104E-04	.000E+00
51	.000E+00	.000E+00	1.623E-03	-2.115E-04	-2.094E-04	.000E+00
52	.000E+00	.000E+00	3.393E-03	-6.273E-04	-1.146E-04	.000E+00
53	.000E+00	.000E+00	3.782E-03	-6.780E-04	-5.248E-10	.000E+00
54	.000E+00	.000E+00	3.394E-03	-6.273E-04	1.145E-04	.000E+00
55	.000E+00	.000E+00	1.626E-03	-2.122E-04	2.093E-04	.000E+00
56	.000E+00	.000E+00	5.087E-03	-1.218E-04	2.102E-04	.000E+00
57	.000E+00	.000E+00	1.489E-03	-1.166E-04	-2.994E-04	.000E+00
58	.000E+00	.000E+00	5.707E-03	-2.150E-04	-3.033E-04	.000E+00
59	.000E+00	.000E+00	8.063E-03	-6.124E-04	-1.346E-04	.000E+00
60	.000E+00	.000E+00	8.527E-03	-6.742E-04	-3.446E-08	.000E+00
61	.000E+00	.000E+00	8.063E-03	-6.124E-04	1.346E-04	.000E+00
62	.000E+00	.000E+00	5.711E-03	-2.157E-04	3.030E-04	.000E+00
63	.000E+00	.000E+00	1.493E-03	-1.175E-04	2.992E-04	.000E+00
71	.000E+00	.000E+00	3.387E-03	4.779E-04	-2.619E-04	.000E+00
72	.000E+00	.000E+00	4.690E-03	6.628E-04	-4.247E-05	.000E+00
73	.000E+00	.000E+00	4.690E-03	6.630E-04	4.231E-05	.000E+00
74	.000E+00	.000E+00	3.390E-03	4.783E-04	2.616E-04	.000E+00
75	.000E+00	.000E+00	6.419E-03	4.862E-04	-1.963E-04	.000E+00
76	.000E+00	.000E+00	7.425E-03	6.666E-04	-3.079E-05	.000E+00
77	.000E+00	.000E+00	7.425E-03	6.667E-04	3.067E-05	.000E+00
78	.000E+00	.000E+00	6.421E-03	4.866E-04	1.961E-04	.000E+00
79	.000E+00	.000E+00	.000E+00	4.791E-04	9.993E-05	.000E+00
80	.000E+00	.000E+00	.000E+00	6.846E-04	-5.239E-05	.000E+00

81	.000E+00	.000E+00	.000E+00	6.845E-04	5.239E-05	.000E+00
82	.000E+00	.000E+00	.000E+00	4.796E-04	-9.983E-05	.000E+00
83	.000E+00	.000E+00	1.953E-03	3.275E-04	3.109E-04	.000E+00
84	.000E+00	.000E+00	1.058E-03	4.826E-04	-7.762E-05	.000E+00
85	.000E+00	.000E+00	1.058E-03	4.825E-04	7.770E-05	.000E+00
86	.000E+00	.000E+00	1.950E-03	3.279E-04	-3.106E-04	.000E+00
87	.000E+00	.000E+00	-2.758E-03	-2.050E-19	3.695E-04	.000E+00
88	.000E+00	.000E+00	-4.010E-03	1.121E-17	-5.088E-05	.000E+00
89	.000E+00	.000E+00	-4.010E-03	6.719E-18	5.102E-05	.000E+00
90	.000E+00	.000E+00	-2.762E-03	-3.731E-18	-3.690E-04	.000E+00
91	.000E+00	.000E+00	1.953E-03	-3.275E-04	3.109E-04	.000E+00
92	.000E+00	.000E+00	1.058E-03	-4.826E-04	-7.762E-05	.000E+00
93	.000E+00	.000E+00	1.058E-03	-4.825E-04	7.770E-05	.000E+00
94	.000E+00	.000E+00	1.950E-03	-3.279E-04	-3.106E-04	.000E+00
95	.000E+00	.000E+00	.000E+00	-4.791E-04	9.993E-05	.000E+00
96	.000E+00	.000E+00	.000E+00	-6.846E-04	-5.239E-05	.000E+00
97	.000E+00	.000E+00	.000E+00	-6.845E-04	5.239E-05	.000E+00
98	.000E+00	.000E+00	.000E+00	-4.796E-04	-9.983E-05	.000E+00
99	.000E+00	.000E+00	6.419E-03	-4.862E-04	-1.963E-04	.000E+00
100	.000E+00	.000E+00	7.425E-03	-6.666E-04	-3.079E-05	.000E+00
101	.000E+00	.000E+00	7.425E-03	-6.667E-04	3.067E-05	.000E+00
102	.000E+00	.000E+00	6.421E-03	-4.866E-04	1.961E-04	.000E+00
103	.000E+00	.000E+00	3.387E-03	-4.779E-04	-2.619E-04	.000E+00
104	.000E+00	.000E+00	4.690E-03	-6.628E-04	-4.247E-05	.000E+00
105	.000E+00	.000E+00	4.690E-03	-6.630E-04	4.231E-05	.000E+00
106	.000E+00	.000E+00	3.390E-03	-4.783E-04	2.616E-04	.000E+00

ELEMENT STRESSES

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
1	1	3.170E-01	3.268E+01	.000E+00	3.185E+01	-3.250E+01	3.217E+01
					3.250E+01	-3.185E+01	3.217E+01
1	2	1.183E+00	3.268E+01	.000E+00	-7.731E-01	-2.252E+01	1.087E+01
					2.252E+01	7.731E-01	1.087E+01
1	3	3.170E-01	3.182E+01	.000E+00	2.135E+01	-8.037E+00	1.469E+01
					8.037E+00	-2.135E+01	1.469E+01
1	4	1.183E+00	3.182E+01	.000E+00	4.254E+00	-1.358E+01	8.919E+00
					1.358E+01	-4.254E+00	8.919E+00

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
2	1	2.557E+00	3.268E+01	.000E+00	8.555E+01	-3.720E+01	6.138E+01
					3.720E+01	-8.555E+01	6.138E+01
2	2	5.443E+00	3.268E+01	.000E+00	7.244E+01	9.964E+00	3.124E+01

					-9.964E+00	-7.244E+01	3.124E+01
2	3	2.557E+00	3.182E+01	.000E+00	4.878E+01	-2.498E+01	3.688E+01
					2.498E+01	-4.878E+01	3.688E+01
2	4	5.443E+00	3.182E+01	.000E+00	5.410E+01	3.742E+00	2.518E+01
					-3.742E+00	-5.410E+01	2.518E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
3	1	7.478E+00	3.268E+01	.000E+00	2.645E+02	-2.479E+01	1.446E+02
					2.479E+01	-2.645E+02	1.446E+02
3	2	1.015E+01	3.268E+01	.000E+00	2.571E+02	1.568E+00	1.278E+02
					-1.568E+00	-2.571E+02	1.278E+02
3	3	7.478E+00	3.182E+01	.000E+00	2.011E+02	-4.164E+00	1.026E+02
					4.164E+00	-2.011E+02	1.026E+02
3	4	1.015E+01	3.182E+01	.000E+00	1.972E+02	1.879E+01	8.918E+01
					-1.879E+01	-1.972E+02	8.918E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
4	1	1.205E+01	3.268E+01	.000E+00	2.012E+02	1.709E+01	9.205E+01
					-1.709E+01	-2.012E+02	9.205E+01
4	2	1.458E+01	3.268E+01	.000E+00	2.171E+02	-3.091E+01	1.240E+02
					3.091E+01	-2.171E+02	1.240E+02
4	3	1.205E+01	3.182E+01	.000E+00	1.893E+02	2.069E+01	8.431E+01
					-2.069E+01	-1.893E+02	8.431E+01
4	4	1.458E+01	3.182E+01	.000E+00	2.045E+02	-2.661E+01	1.156E+02
					2.661E+01	-2.045E+02	1.156E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
5	1	1.656E+01	3.268E+01	.000E+00	8.285E+01	-3.733E+00	4.329E+01
					3.733E+00	-8.285E+01	4.329E+01
5	2	1.944E+01	3.268E+01	.000E+00	8.042E+01	-1.300E+00	4.086E+01
					1.300E+00	-8.042E+01	4.086E+01
5	3	1.656E+01	3.182E+01	.000E+00	6.851E+01	4.990E-01	3.401E+01
					-4.990E-01	-6.851E+01	3.401E+01
5	4	1.944E+01	3.182E+01	.000E+00	6.535E+01	3.656E+00	3.085E+01
					-3.656E+00	-6.535E+01	3.085E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
6	1	2.156E+01	3.268E+01	.000E+00	8.022E+01	-1.254E+00	4.074E+01
					1.254E+00	-8.022E+01	4.074E+01
6	2	2.444E+01	3.268E+01	.000E+00	8.268E+01	-3.759E+00	4.322E+01
					3.759E+00	-8.268E+01	4.322E+01
6	3	2.156E+01	3.182E+01	.000E+00	6.511E+01	3.715E+00	3.070E+01
					-3.715E+00	-6.511E+01	3.070E+01
6	4	2.444E+01	3.182E+01	.000E+00	6.830E+01	4.829E-01	3.391E+01
					-4.829E-01	-6.830E+01	3.391E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
7	1	2.643E+01	3.268E+01	.000E+00	2.169E+02	-3.091E+01	1.239E+02
					3.091E+01	-2.169E+02	1.239E+02
7	2	2.895E+01	3.268E+01	.000E+00	2.009E+02	1.716E+01	9.189E+01
					-1.716E+01	-2.009E+02	9.189E+01
7	3	2.643E+01	3.182E+01	.000E+00	2.042E+02	-2.658E+01	1.154E+02
					2.658E+01	-2.042E+02	1.154E+02
7	4	2.895E+01	3.182E+01	.000E+00	1.890E+02	2.079E+01	8.409E+01
					-2.079E+01	-1.890E+02	8.409E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
8	1	3.086E+01	3.268E+01	.000E+00	2.572E+02	1.575E+00	1.278E+02
					-1.575E+00	-2.572E+02	1.278E+02
8	2	3.352E+01	3.268E+01	.000E+00	2.646E+02	-2.484E+01	1.447E+02
					2.484E+01	-2.646E+02	1.447E+02
8	3	3.086E+01	3.182E+01	.000E+00	1.972E+02	1.880E+01	8.922E+01
					-1.880E+01	-1.972E+02	8.922E+01
8	4	3.352E+01	3.182E+01	.000E+00	2.012E+02	-4.221E+00	1.027E+02
					4.221E+00	-2.012E+02	1.027E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
9	1	3.556E+01	3.268E+01	.000E+00	7.245E+01	9.966E+00	3.124E+01
					-9.966E+00	-7.245E+01	3.124E+01
9	2	3.844E+01	3.268E+01	.000E+00	8.552E+01	-3.707E+01	6.129E+01
					3.707E+01	-8.552E+01	6.129E+01

9	3	3.556E+01	3.182E+01	.000E+00	5.411E+01	3.825E+00	2.514E+01
					-3.825E+00	-5.411E+01	2.514E+01
9	4	3.844E+01	3.182E+01	.000E+00	4.885E+01	-2.488E+01	3.687E+01
					2.488E+01	-4.885E+01	3.687E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
10	1	3.982E+01	3.268E+01	.000E+00	-8.019E-01	-2.235E+01	1.077E+01
					2.235E+01	8.019E-01	1.077E+01
10	2	4.068E+01	3.268E+01	.000E+00	3.163E+01	-3.227E+01	3.195E+01
					3.227E+01	-3.163E+01	3.195E+01
10	3	3.982E+01	3.182E+01	.000E+00	4.219E+00	-1.351E+01	8.863E+00
					1.351E+01	-4.219E+00	8.863E+00
10	4	4.068E+01	3.182E+01	.000E+00	2.120E+01	-7.988E+00	1.459E+01
					7.988E+00	-2.120E+01	1.459E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
11	1	3.170E-01	3.034E+01	.000E+00	1.547E+01	-5.065E+01	3.306E+01
					5.065E+01	-1.547E+01	3.306E+01
11	2	1.183E+00	3.034E+01	.000E+00	1.901E+01	-6.096E+01	3.999E+01
					6.096E+01	-1.901E+01	3.999E+01
11	3	3.170E-01	2.716E+01	.000E+00	-6.239E+00	-4.496E+01	1.936E+01
					4.496E+01	6.239E+00	1.936E+01
11	4	1.183E+00	2.716E+01	.000E+00	-4.230E+00	-5.374E+01	2.476E+01
					5.374E+01	4.230E+00	2.476E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
12	1	2.557E+00	3.034E+01	.000E+00	3.778E+01	-6.079E+01	4.928E+01
					6.079E+01	-3.778E+01	4.928E+01
12	2	5.443E+00	3.034E+01	.000E+00	2.853E+01	-3.206E+01	3.030E+01
					3.206E+01	-2.853E+01	3.030E+01
12	3	2.557E+00	2.716E+01	.000E+00	1.241E+01	-5.299E+01	3.270E+01
					5.299E+01	-1.241E+01	3.270E+01
12	4	5.443E+00	2.716E+01	.000E+00	9.529E+00	-3.064E+01	2.008E+01
					3.064E+01	-9.529E+00	2.008E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
13	1	7.478E+00	3.034E+01	.000E+00	1.136E+02	-3.958E+01	7.661E+01
					3.958E+01	-1.136E+02	7.661E+01
13	2	1.015E+01	3.034E+01	.000E+00	8.955E+01	3.188E+01	2.884E+01
					-3.188E+01	-8.955E+01	2.884E+01
13	3	7.478E+00	2.716E+01	.000E+00	6.981E+01	-1.769E+02	1.233E+02
					1.769E+02	-6.981E+01	1.233E+02
13	4	1.015E+01	2.716E+01	.000E+00	1.473E+02	-2.069E+02	1.771E+02
					2.069E+02	-1.473E+02	1.771E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
14	1	1.205E+01	3.034E+01	.000E+00	1.246E+02	3.650E+01	4.405E+01
					-3.650E+01	-1.246E+02	4.405E+01
14	2	1.458E+01	3.034E+01	.000E+00	1.348E+02	-1.311E+00	6.807E+01
					1.311E+00	-1.348E+02	6.807E+01
14	3	1.205E+01	2.716E+01	.000E+00	1.151E+02	-7.780E+01	9.644E+01
					7.780E+01	-1.151E+02	9.644E+01
14	4	1.458E+01	2.716E+01	.000E+00	6.451E+01	-5.481E+01	5.966E+01
					5.481E+01	-6.451E+01	5.966E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
15	1	1.656E+01	3.034E+01	.000E+00	7.601E+01	-1.245E+01	4.423E+01
					1.245E+01	-7.601E+01	4.423E+01
15	2	1.944E+01	3.034E+01	.000E+00	9.346E+01	-6.875E+01	8.111E+01
					6.875E+01	-9.346E+01	8.111E+01
15	3	1.656E+01	2.716E+01	.000E+00	1.029E+02	-2.056E+01	6.172E+01
					2.056E+01	-1.029E+02	6.172E+01
15	4	1.944E+01	2.716E+01	.000E+00	1.229E+02	-7.942E+01	1.011E+02
					7.942E+01	-1.229E+02	1.011E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
16	1	2.156E+01	3.034E+01	.000E+00	9.328E+01	-6.877E+01	8.102E+01
					6.877E+01	-9.328E+01	8.102E+01
16	2	2.444E+01	3.034E+01	.000E+00	7.590E+01	-1.272E+01	4.431E+01
					1.272E+01	-7.590E+01	4.431E+01

16	3	2.156E+01	2.716E+01	.000E+00	1.228E+02	-7.949E+01	1.012E+02
					7.949E+01	-1.228E+02	1.012E+02
16	4	2.444E+01	2.716E+01	.000E+00	1.029E+02	-2.088E+01	6.190E+01
					2.088E+01	-1.029E+02	6.190E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
17	1	2.643E+01	3.034E+01	.000E+00	1.346E+02	-1.580E+00	6.811E+01
					1.580E+00	-1.346E+02	6.811E+01
17	2	2.895E+01	3.034E+01	.000E+00	1.243E+02	3.646E+01	4.393E+01
					-3.646E+01	-1.243E+02	4.393E+01
17	3	2.643E+01	2.716E+01	.000E+00	6.423E+01	-5.491E+01	5.957E+01
					5.491E+01	-6.423E+01	5.957E+01
17	4	2.895E+01	2.716E+01	.000E+00	1.150E+02	-7.799E+01	9.652E+01
					7.799E+01	-1.150E+02	9.652E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
18	1	3.086E+01	3.034E+01	.000E+00	8.958E+01	3.196E+01	2.881E+01
					-3.196E+01	-8.958E+01	2.881E+01
18	2	3.352E+01	3.034E+01	.000E+00	1.136E+02	-3.934E+01	7.649E+01
					3.934E+01	-1.136E+02	7.649E+01
18	3	3.086E+01	2.716E+01	.000E+00	1.473E+02	-2.069E+02	1.771E+02
					2.069E+02	-1.473E+02	1.771E+02
18	4	3.352E+01	2.716E+01	.000E+00	7.002E+01	-1.768E+02	1.234E+02
					1.768E+02	-7.002E+01	1.234E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
19	1	3.556E+01	3.034E+01	.000E+00	2.863E+01	-3.188E+01	3.026E+01
					3.188E+01	-2.863E+01	3.026E+01
19	2	3.844E+01	3.034E+01	.000E+00	3.796E+01	-6.083E+01	4.939E+01
					6.083E+01	-3.796E+01	4.939E+01
19	3	3.556E+01	2.716E+01	.000E+00	9.669E+00	-3.050E+01	2.009E+01
					3.050E+01	-9.669E+00	2.009E+01
19	4	3.844E+01	2.716E+01	.000E+00	1.257E+01	-5.303E+01	3.280E+01
					5.303E+01	-1.257E+01	3.280E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
20	1	3.982E+01	3.034E+01	.000E+00	1.895E+01	-6.104E+01	4.000E+01
					6.104E+01	-1.895E+01	4.000E+01
20	2	4.068E+01	3.034E+01	.000E+00	1.547E+01	-5.091E+01	3.319E+01
					5.091E+01	-1.547E+01	3.319E+01
20	3	3.982E+01	2.716E+01	.000E+00	-4.341E+00	-5.379E+01	2.473E+01
					5.379E+01	4.341E+00	2.473E+01
20	4	4.068E+01	2.716E+01	.000E+00	-6.325E+00	-4.516E+01	1.942E+01
					4.516E+01	6.325E+00	1.942E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
21	1	3.170E-01	2.505E+01	.000E+00	3.684E+00	-1.218E+02	6.274E+01
					1.218E+02	-3.684E+00	6.274E+01
21	2	1.183E+00	2.505E+01	.000E+00	3.970E-01	-1.125E+02	5.643E+01
					1.125E+02	-3.970E-01	5.643E+01
21	3	3.170E-01	2.245E+01	.000E+00	-1.797E+01	-1.140E+02	4.802E+01
					1.140E+02	1.797E+01	4.802E+01
21	4	1.183E+00	2.245E+01	.000E+00	-2.100E+01	-1.049E+02	4.195E+01
					1.049E+02	2.100E+01	4.195E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
22	1	2.557E+00	2.505E+01	.000E+00	1.906E+01	-1.634E+02	9.122E+01
					1.634E+02	-1.906E+01	9.122E+01
22	2	5.443E+00	2.505E+01	.000E+00	6.933E+01	-3.127E+02	1.910E+02
					3.127E+02	-6.933E+01	1.910E+02
22	3	2.557E+00	2.245E+01	.000E+00	-2.719E+01	-1.594E+02	6.613E+01
					1.594E+02	2.719E+01	6.613E+01
22	4	5.443E+00	2.245E+01	.000E+00	6.112E+00	-2.918E+02	1.489E+02
					2.918E+02	-6.112E+00	1.489E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
23	1	7.478E+00	2.505E+01	.000E+00	-1.903E+02	-3.196E+02	6.465E+01
					3.196E+02	1.903E+02	6.465E+01
23	2	1.015E+01	2.505E+01	.000E+00	-1.372E+02	-4.652E+02	1.640E+02
					4.652E+02	1.372E+02	1.640E+02
23	3	7.478E+00	2.245E+01	.000E+00	-2.398E+02	-3.837E+02	7.196E+01

					3.837E+02	2.398E+02	7.196E+01
23	4	1.015E+01	2.245E+01	.000E+00	-3.146E+02	-4.015E+02	4.348E+01
					4.015E+02	3.146E+02	4.348E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
24	1	1.205E+01	2.505E+01	.000E+00	3.168E+01	-5.414E+02	2.865E+02
					5.414E+02	-3.168E+01	2.865E+02
24	2	1.458E+01	2.505E+01	.000E+00	7.192E+00	-4.729E+02	2.401E+02
					4.729E+02	-7.192E+00	2.401E+02
24	3	1.205E+01	2.245E+01	.000E+00	-1.407E+02	-4.831E+02	1.712E+02
					4.831E+02	1.407E+02	1.712E+02
24	4	1.458E+01	2.245E+01	.000E+00	-1.587E+02	-4.212E+02	1.313E+02
					4.212E+02	1.587E+02	1.313E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
25	1	1.656E+01	2.505E+01	.000E+00	2.883E+02	-5.239E+02	4.061E+02
					5.239E+02	-2.883E+02	4.061E+02
25	2	1.944E+01	2.505E+01	.000E+00	2.682E+02	-4.623E+02	3.653E+02
					4.623E+02	-2.682E+02	3.653E+02
25	3	1.656E+01	2.245E+01	.000E+00	3.211E+02	-5.348E+02	4.280E+02
					5.348E+02	-3.211E+02	4.280E+02
25	4	1.944E+01	2.245E+01	.000E+00	3.004E+02	-4.727E+02	3.865E+02
					4.727E+02	-3.004E+02	3.865E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
26	1	2.156E+01	2.505E+01	.000E+00	2.684E+02	-4.623E+02	3.653E+02
					4.623E+02	-2.684E+02	3.653E+02
26	2	2.444E+01	2.505E+01	.000E+00	2.884E+02	-5.239E+02	4.062E+02
					5.239E+02	-2.884E+02	4.062E+02
26	3	2.156E+01	2.245E+01	.000E+00	3.009E+02	-4.728E+02	3.868E+02
					4.728E+02	-3.009E+02	3.868E+02
26	4	2.444E+01	2.245E+01	.000E+00	3.215E+02	-5.350E+02	4.283E+02
					5.350E+02	-3.215E+02	4.283E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B

27	1	2.643E+01	2.505E+01	.000E+00	7.179E+00	-4.729E+02	2.401E+02
					4.729E+02	-7.179E+00	2.401E+02
27	2	2.895E+01	2.505E+01	.000E+00	3.167E+01	-5.414E+02	2.865E+02
					5.414E+02	-3.167E+01	2.865E+02
27	3	2.643E+01	2.245E+01	.000E+00	-1.583E+02	-4.214E+02	1.315E+02
					4.214E+02	1.583E+02	1.315E+02
27	4	2.895E+01	2.245E+01	.000E+00	-1.403E+02	-4.833E+02	1.715E+02
					4.833E+02	1.403E+02	1.715E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
28	1	3.086E+01	2.505E+01	.000E+00	-1.372E+02	-4.653E+02	1.640E+02
					4.653E+02	1.372E+02	1.640E+02
28	2	3.352E+01	2.505E+01	.000E+00	-1.902E+02	-3.198E+02	6.479E+01
					3.198E+02	1.902E+02	6.479E+01
28	3	3.086E+01	2.245E+01	.000E+00	-3.148E+02	-4.015E+02	4.337E+01
					4.015E+02	3.148E+02	4.337E+01
28	4	3.352E+01	2.245E+01	.000E+00	-2.400E+02	-3.839E+02	7.195E+01
					3.839E+02	2.400E+02	7.195E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
29	1	3.556E+01	2.505E+01	.000E+00	6.950E+01	-3.130E+02	1.913E+02
					3.130E+02	-6.950E+01	1.913E+02
29	2	3.844E+01	2.505E+01	.000E+00	1.927E+01	-1.639E+02	9.158E+01
					1.639E+02	-1.927E+01	9.158E+01
29	3	3.556E+01	2.245E+01	.000E+00	5.968E+00	-2.920E+02	1.490E+02
					2.920E+02	-5.968E+00	1.490E+02
29	4	3.844E+01	2.245E+01	.000E+00	-2.729E+01	-1.598E+02	6.628E+01
					1.598E+02	2.729E+01	6.628E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
30	1	3.982E+01	2.505E+01	.000E+00	4.243E-01	-1.130E+02	5.669E+01
					1.130E+02	-4.243E-01	5.669E+01
30	2	4.068E+01	2.505E+01	.000E+00	3.728E+00	-1.224E+02	6.304E+01
					1.224E+02	-3.728E+00	6.304E+01
30	3	3.982E+01	2.245E+01	.000E+00	-2.103E+01	-1.054E+02	4.219E+01
					1.054E+02	2.103E+01	4.219E+01

30	4	4.068E+01	2.245E+01	.000E+00	-1.798E+01	-1.145E+02	4.828E+01
					1.145E+02	1.798E+01	4.828E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
31	1	3.170E-01	2.044E+01	.000E+00	1.712E+01	-1.525E+02	8.482E+01
					1.525E+02	-1.712E+01	8.482E+01
31	2	1.183E+00	2.044E+01	.000E+00	3.578E+01	-2.478E+02	1.418E+02
					2.478E+02	-3.578E+01	1.418E+02
31	3	3.170E-01	1.756E+01	.000E+00	1.853E+01	-1.445E+02	8.153E+01
					1.445E+02	-1.853E+01	8.153E+01
31	4	1.183E+00	1.756E+01	.000E+00	4.474E+01	-2.474E+02	1.461E+02
					2.474E+02	-4.474E+01	1.461E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
32	1	2.557E+00	2.044E+01	.000E+00	-3.536E+01	-3.342E+02	1.494E+02
					3.342E+02	3.536E+01	1.494E+02
32	2	5.443E+00	2.044E+01	.000E+00	5.245E+01	-5.928E+02	3.226E+02
					5.928E+02	-5.245E+01	3.226E+02
32	3	2.557E+00	1.756E+01	.000E+00	-1.228E+02	-3.190E+02	9.808E+01
					3.190E+02	1.228E+02	9.808E+01
32	4	5.443E+00	1.756E+01	.000E+00	-5.944E+01	-5.531E+02	2.468E+02
					5.531E+02	5.944E+01	2.468E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
33	1	7.478E+00	2.044E+01	.000E+00	-3.081E+02	-5.992E+02	1.455E+02
					5.992E+02	3.081E+02	1.455E+02
33	2	1.015E+01	2.044E+01	.000E+00	-2.635E+02	-7.352E+02	2.359E+02
					7.352E+02	2.635E+02	2.359E+02
33	3	7.478E+00	1.756E+01	.000E+00	-3.223E+02	-5.945E+02	1.361E+02
					5.945E+02	3.223E+02	1.361E+02
33	4	1.015E+01	1.756E+01	.000E+00	-2.786E+02	-7.295E+02	2.255E+02
					7.295E+02	2.786E+02	2.255E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B

34	1	1.205E+01	2.044E+01	.000E+00	-8.355E+01	-8.589E+02	3.877E+02
					8.589E+02	8.355E+01	3.877E+02
34	2	1.458E+01	2.044E+01	.000E+00	-6.211E+01	-9.236E+02	4.308E+02
					9.236E+02	6.211E+01	4.308E+02
34	3	1.205E+01	1.756E+01	.000E+00	-1.149E+02	-8.490E+02	3.671E+02
					8.490E+02	1.149E+02	3.671E+02
34	4	1.458E+01	1.756E+01	.000E+00	-9.411E+01	-9.131E+02	4.095E+02
					9.131E+02	9.411E+01	4.095E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
35	1	1.656E+01	2.044E+01	.000E+00	5.197E+02	-1.139E+03	8.293E+02
					1.139E+03	-5.197E+02	8.293E+02
35	2	1.944E+01	2.044E+01	.000E+00	5.218E+02	-1.146E+03	8.337E+02
					1.146E+03	-5.218E+02	8.337E+02
35	3	1.656E+01	1.756E+01	.000E+00	4.850E+02	-1.127E+03	8.063E+02
					1.127E+03	-4.850E+02	8.063E+02
35	4	1.944E+01	1.756E+01	.000E+00	4.871E+02	-1.134E+03	8.106E+02
					1.134E+03	-4.871E+02	8.106E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
36	1	2.156E+01	2.044E+01	.000E+00	5.224E+02	-1.146E+03	8.341E+02
					1.146E+03	-5.224E+02	8.341E+02
36	2	2.444E+01	2.044E+01	.000E+00	5.202E+02	-1.139E+03	8.296E+02
					1.139E+03	-5.202E+02	8.296E+02
36	3	2.156E+01	1.756E+01	.000E+00	4.879E+02	-1.134E+03	8.111E+02
					1.134E+03	-4.879E+02	8.111E+02
36	4	2.444E+01	1.756E+01	.000E+00	4.857E+02	-1.128E+03	8.067E+02
					1.128E+03	-4.857E+02	8.067E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
37	1	2.643E+01	2.044E+01	.000E+00	-6.150E+01	-9.237E+02	4.311E+02
					9.237E+02	6.150E+01	4.311E+02
37	2	2.895E+01	2.044E+01	.000E+00	-8.294E+01	-8.590E+02	3.880E+02
					8.590E+02	8.294E+01	3.880E+02
37	3	2.643E+01	1.756E+01	.000E+00	-9.334E+01	-9.133E+02	4.100E+02
					9.133E+02	9.334E+01	4.100E+02

37	4	2.895E+01	1.756E+01	.000E+00	-1.141E+02	-8.492E+02	3.676E+02
					8.492E+02	1.141E+02	3.676E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
38	1	3.086E+01	2.044E+01	.000E+00	-2.638E+02	-7.352E+02	2.357E+02
					7.352E+02	2.638E+02	2.357E+02
38	2	3.352E+01	2.044E+01	.000E+00	-3.083E+02	-5.998E+02	1.457E+02
					5.998E+02	3.083E+02	1.457E+02
38	3	3.086E+01	1.756E+01	.000E+00	-2.789E+02	-7.296E+02	2.253E+02
					7.296E+02	2.789E+02	2.253E+02
38	4	3.352E+01	1.756E+01	.000E+00	-3.224E+02	-5.951E+02	1.363E+02
					5.951E+02	3.224E+02	1.363E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
39	1	3.556E+01	2.044E+01	.000E+00	5.232E+01	-5.936E+02	3.230E+02
					5.936E+02	-5.232E+01	3.230E+02
39	2	3.844E+01	2.044E+01	.000E+00	-3.546E+01	-3.351E+02	1.498E+02
					3.351E+02	3.546E+01	1.498E+02
39	3	3.556E+01	1.756E+01	.000E+00	-5.977E+01	-5.538E+02	2.470E+02
					5.538E+02	5.977E+01	2.470E+02
39	4	3.844E+01	1.756E+01	.000E+00	-1.231E+02	-3.197E+02	9.831E+01
					3.197E+02	1.231E+02	9.831E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
40	1	3.982E+01	2.044E+01	.000E+00	3.581E+01	-2.487E+02	1.423E+02
					2.487E+02	-3.581E+01	1.423E+02
40	2	4.068E+01	2.044E+01	.000E+00	1.698E+01	-1.533E+02	8.512E+01
					1.533E+02	-1.698E+01	8.512E+01
40	3	3.982E+01	1.756E+01	.000E+00	4.465E+01	-2.483E+02	1.465E+02
					2.483E+02	-4.465E+01	1.465E+02
40	4	4.068E+01	1.756E+01	.000E+00	1.836E+01	-1.453E+02	8.184E+01
					1.453E+02	-1.836E+01	8.184E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
41	1	3.170E-01	1.544E+01	.000E+00	1.853E+01	-1.445E+02	8.153E+01

					1.445E+02	-1.853E+01	8.153E+01
41	2	1.183E+00	1.544E+01	.000E+00	4.474E+01	-2.474E+02	1.461E+02
					2.474E+02	-4.474E+01	1.461E+02
41	3	3.170E-01	1.256E+01	.000E+00	1.712E+01	-1.525E+02	8.482E+01
					1.525E+02	-1.712E+01	8.482E+01
41	4	1.183E+00	1.256E+01	.000E+00	3.578E+01	-2.478E+02	1.418E+02
					2.478E+02	-3.578E+01	1.418E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
42	1	2.557E+00	1.544E+01	.000E+00	-1.228E+02	-3.190E+02	9.808E+01
					3.190E+02	1.228E+02	9.808E+01
42	2	5.443E+00	1.544E+01	.000E+00	-5.944E+01	-5.531E+02	2.468E+02
					5.531E+02	5.944E+01	2.468E+02
42	3	2.557E+00	1.256E+01	.000E+00	-3.536E+01	-3.342E+02	1.494E+02
					3.342E+02	3.536E+01	1.494E+02
42	4	5.443E+00	1.256E+01	.000E+00	5.245E+01	-5.928E+02	3.226E+02
					5.928E+02	-5.245E+01	3.226E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
43	1	7.478E+00	1.544E+01	.000E+00	-3.223E+02	-5.945E+02	1.361E+02
					5.945E+02	3.223E+02	1.361E+02
43	2	1.015E+01	1.544E+01	.000E+00	-2.786E+02	-7.295E+02	2.255E+02
					7.295E+02	2.786E+02	2.255E+02
43	3	7.478E+00	1.256E+01	.000E+00	-3.081E+02	-5.992E+02	1.455E+02
					5.992E+02	3.081E+02	1.455E+02
43	4	1.015E+01	1.256E+01	.000E+00	-2.635E+02	-7.352E+02	2.359E+02
					7.352E+02	2.635E+02	2.359E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
44	1	1.205E+01	1.544E+01	.000E+00	-1.149E+02	-8.490E+02	3.671E+02
					8.490E+02	1.149E+02	3.671E+02
44	2	1.458E+01	1.544E+01	.000E+00	-9.411E+01	-9.131E+02	4.095E+02
					9.131E+02	9.411E+01	4.095E+02
44	3	1.205E+01	1.256E+01	.000E+00	-8.355E+01	-8.589E+02	3.877E+02
					8.589E+02	8.355E+01	3.877E+02
44	4	1.458E+01	1.256E+01	.000E+00	-6.211E+01	-9.236E+02	4.308E+02

					9.236E+02	6.211E+01	4.308E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
45	1	1.656E+01	1.544E+01	.000E+00	4.850E+02	-1.127E+03	8.063E+02
					1.127E+03	-4.850E+02	8.063E+02
45	2	1.944E+01	1.544E+01	.000E+00	4.871E+02	-1.134E+03	8.106E+02
					1.134E+03	-4.871E+02	8.106E+02
45	3	1.656E+01	1.256E+01	.000E+00	5.197E+02	-1.139E+03	8.293E+02
					1.139E+03	-5.197E+02	8.293E+02
45	4	1.944E+01	1.256E+01	.000E+00	5.218E+02	-1.146E+03	8.337E+02
					1.146E+03	-5.218E+02	8.337E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
46	1	2.156E+01	1.544E+01	.000E+00	4.879E+02	-1.134E+03	8.111E+02
					1.134E+03	-4.879E+02	8.111E+02
46	2	2.444E+01	1.544E+01	.000E+00	4.857E+02	-1.128E+03	8.067E+02
					1.128E+03	-4.857E+02	8.067E+02
46	3	2.156E+01	1.256E+01	.000E+00	5.224E+02	-1.146E+03	8.341E+02
					1.146E+03	-5.224E+02	8.341E+02
46	4	2.444E+01	1.256E+01	.000E+00	5.202E+02	-1.139E+03	8.296E+02
					1.139E+03	-5.202E+02	8.296E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
47	1	2.643E+01	1.544E+01	.000E+00	-9.334E+01	-9.133E+02	4.100E+02
					9.133E+02	9.334E+01	4.100E+02
47	2	2.895E+01	1.544E+01	.000E+00	-1.141E+02	-8.492E+02	3.676E+02
					8.492E+02	1.141E+02	3.676E+02
47	3	2.643E+01	1.256E+01	.000E+00	-6.150E+01	-9.237E+02	4.311E+02
					9.237E+02	6.150E+01	4.311E+02
47	4	2.895E+01	1.256E+01	.000E+00	-8.294E+01	-8.590E+02	3.880E+02
					8.590E+02	8.294E+01	3.880E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
48	1	3.086E+01	1.544E+01	.000E+00	-2.789E+02	-7.296E+02	2.253E+02
					7.296E+02	2.789E+02	2.253E+02

48	2	3.352E+01	1.544E+01	.000E+00	-3.224E+02	-5.951E+02	1.363E+02
					5.951E+02	3.224E+02	1.363E+02
48	3	3.086E+01	1.256E+01	.000E+00	-2.638E+02	-7.352E+02	2.357E+02
					7.352E+02	2.638E+02	2.357E+02
48	4	3.352E+01	1.256E+01	.000E+00	-3.083E+02	-5.998E+02	1.457E+02
					5.998E+02	3.083E+02	1.457E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
49	1	3.556E+01	1.544E+01	.000E+00	-5.977E+01	-5.538E+02	2.470E+02
					5.538E+02	5.977E+01	2.470E+02
49	2	3.844E+01	1.544E+01	.000E+00	-1.231E+02	-3.197E+02	9.831E+01
					3.197E+02	1.231E+02	9.831E+01
49	3	3.556E+01	1.256E+01	.000E+00	5.232E+01	-5.936E+02	3.230E+02
					5.936E+02	-5.232E+01	3.230E+02
49	4	3.844E+01	1.256E+01	.000E+00	-3.546E+01	-3.351E+02	1.498E+02
					3.351E+02	3.546E+01	1.498E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
50	1	3.982E+01	1.544E+01	.000E+00	4.465E+01	-2.483E+02	1.465E+02
					2.483E+02	-4.465E+01	1.465E+02
50	2	4.068E+01	1.544E+01	.000E+00	1.836E+01	-1.453E+02	8.184E+01
					1.453E+02	-1.836E+01	8.184E+01
50	3	3.982E+01	1.256E+01	.000E+00	3.581E+01	-2.487E+02	1.423E+02
					2.487E+02	-3.581E+01	1.423E+02
50	4	4.068E+01	1.256E+01	.000E+00	1.698E+01	-1.533E+02	8.512E+01
					1.533E+02	-1.698E+01	8.512E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
51	1	3.170E-01	1.055E+01	.000E+00	-1.797E+01	-1.140E+02	4.802E+01
					1.140E+02	1.797E+01	4.802E+01
51	2	1.183E+00	1.055E+01	.000E+00	-2.100E+01	-1.049E+02	4.195E+01
					1.049E+02	2.100E+01	4.195E+01
51	3	3.170E-01	7.951E+00	.000E+00	3.684E+00	-1.218E+02	6.274E+01
					1.218E+02	-3.684E+00	6.274E+01
51	4	1.183E+00	7.951E+00	.000E+00	3.970E-01	-1.125E+02	5.643E+01
					1.125E+02	-3.970E-01	5.643E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
52	1	2.557E+00	1.055E+01	.000E+00	-2.719E+01	-1.594E+02	6.613E+01
					1.594E+02	2.719E+01	6.613E+01
52	2	5.443E+00	1.055E+01	.000E+00	6.112E+00	-2.918E+02	1.489E+02
					2.918E+02	-6.112E+00	1.489E+02
52	3	2.557E+00	7.951E+00	.000E+00	1.906E+01	-1.634E+02	9.122E+01
					1.634E+02	-1.906E+01	9.122E+01
52	4	5.443E+00	7.951E+00	.000E+00	6.933E+01	-3.127E+02	1.910E+02
					3.127E+02	-6.933E+01	1.910E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
53	1	7.478E+00	1.055E+01	.000E+00	-2.398E+02	-3.837E+02	7.196E+01
					3.837E+02	2.398E+02	7.196E+01
53	2	1.015E+01	1.055E+01	.000E+00	-3.146E+02	-4.015E+02	4.348E+01
					4.015E+02	3.146E+02	4.348E+01
53	3	7.478E+00	7.951E+00	.000E+00	-1.903E+02	-3.196E+02	6.465E+01
					3.196E+02	1.903E+02	6.465E+01
53	4	1.015E+01	7.951E+00	.000E+00	-1.372E+02	-4.652E+02	1.640E+02
					4.652E+02	1.372E+02	1.640E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
54	1	1.205E+01	1.055E+01	.000E+00	-1.407E+02	-4.831E+02	1.712E+02
					4.831E+02	1.407E+02	1.712E+02
54	2	1.458E+01	1.055E+01	.000E+00	-1.587E+02	-4.212E+02	1.313E+02
					4.212E+02	1.587E+02	1.313E+02
54	3	1.205E+01	7.951E+00	.000E+00	3.168E+01	-5.414E+02	2.865E+02
					5.414E+02	-3.168E+01	2.865E+02
54	4	1.458E+01	7.951E+00	.000E+00	7.192E+00	-4.729E+02	2.401E+02
					4.729E+02	-7.192E+00	2.401E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
55	1	1.656E+01	1.055E+01	.000E+00	3.211E+02	-5.348E+02	4.280E+02
					5.348E+02	-3.211E+02	4.280E+02

55	2	1.944E+01	1.055E+01	.000E+00	3.004E+02	-4.727E+02	3.865E+02
					4.727E+02	-3.004E+02	3.865E+02
55	3	1.656E+01	7.951E+00	.000E+00	2.883E+02	-5.239E+02	4.061E+02
					5.239E+02	-2.883E+02	4.061E+02
55	4	1.944E+01	7.951E+00	.000E+00	2.682E+02	-4.623E+02	3.653E+02
					4.623E+02	-2.682E+02	3.653E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
56	1	2.156E+01	1.055E+01	.000E+00	3.009E+02	-4.728E+02	3.868E+02
					4.728E+02	-3.009E+02	3.868E+02
56	2	2.444E+01	1.055E+01	.000E+00	3.215E+02	-5.350E+02	4.283E+02
					5.350E+02	-3.215E+02	4.283E+02
56	3	2.156E+01	7.951E+00	.000E+00	2.684E+02	-4.623E+02	3.653E+02
					4.623E+02	-2.684E+02	3.653E+02
56	4	2.444E+01	7.951E+00	.000E+00	2.884E+02	-5.239E+02	4.062E+02
					5.239E+02	-2.884E+02	4.062E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
57	1	2.643E+01	1.055E+01	.000E+00	-1.583E+02	-4.214E+02	1.315E+02
					4.214E+02	1.583E+02	1.315E+02
57	2	2.895E+01	1.055E+01	.000E+00	-1.403E+02	-4.833E+02	1.715E+02
					4.833E+02	1.403E+02	1.715E+02
57	3	2.643E+01	7.951E+00	.000E+00	7.179E+00	-4.729E+02	2.401E+02
					4.729E+02	-7.179E+00	2.401E+02
57	4	2.895E+01	7.951E+00	.000E+00	3.167E+01	-5.414E+02	2.865E+02
					5.414E+02	-3.167E+01	2.865E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
58	1	3.086E+01	1.055E+01	.000E+00	-3.148E+02	-4.015E+02	4.337E+01
					4.015E+02	3.148E+02	4.337E+01
58	2	3.352E+01	1.055E+01	.000E+00	-2.400E+02	-3.839E+02	7.195E+01
					3.839E+02	2.400E+02	7.195E+01
58	3	3.086E+01	7.951E+00	.000E+00	-1.372E+02	-4.653E+02	1.640E+02
					4.653E+02	1.372E+02	1.640E+02
58	4	3.352E+01	7.951E+00	.000E+00	-1.902E+02	-3.198E+02	6.479E+01
					3.198E+02	1.902E+02	6.479E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
59	1	3.556E+01	1.055E+01	.000E+00	5.968E+00	-2.920E+02	1.490E+02
					2.920E+02	-5.968E+00	1.490E+02
59	2	3.844E+01	1.055E+01	.000E+00	-2.729E+01	-1.598E+02	6.628E+01
					1.598E+02	2.729E+01	6.628E+01
59	3	3.556E+01	7.951E+00	.000E+00	6.950E+01	-3.130E+02	1.913E+02
					3.130E+02	-6.950E+01	1.913E+02
59	4	3.844E+01	7.951E+00	.000E+00	1.927E+01	-1.639E+02	9.158E+01
					1.639E+02	-1.927E+01	9.158E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
60	1	3.982E+01	1.055E+01	.000E+00	-2.103E+01	-1.054E+02	4.219E+01
					1.054E+02	2.103E+01	4.219E+01
60	2	4.068E+01	1.055E+01	.000E+00	-1.798E+01	-1.145E+02	4.828E+01
					1.145E+02	1.798E+01	4.828E+01
60	3	3.982E+01	7.951E+00	.000E+00	4.243E-01	-1.130E+02	5.669E+01
					1.130E+02	-4.243E-01	5.669E+01
60	4	4.068E+01	7.951E+00	.000E+00	3.728E+00	-1.224E+02	6.304E+01
					1.224E+02	-3.728E+00	6.304E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
61	1	3.170E-01	5.838E+00	.000E+00	-6.239E+00	-4.496E+01	1.936E+01
					4.496E+01	6.239E+00	1.936E+01
61	2	1.183E+00	5.838E+00	.000E+00	-4.230E+00	-5.374E+01	2.476E+01
					5.374E+01	4.230E+00	2.476E+01
61	3	3.170E-01	2.662E+00	.000E+00	1.547E+01	-5.065E+01	3.306E+01
					5.065E+01	-1.547E+01	3.306E+01
61	4	1.183E+00	2.662E+00	.000E+00	1.901E+01	-6.096E+01	3.999E+01
					6.096E+01	-1.901E+01	3.999E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
62	1	2.557E+00	5.838E+00	.000E+00	1.241E+01	-5.299E+01	3.270E+01
					5.299E+01	-1.241E+01	3.270E+01
62	2	5.443E+00	5.838E+00	.000E+00	9.529E+00	-3.064E+01	2.008E+01

					3.064E+01	-9.529E+00	2.008E+01
62	3	2.557E+00	2.662E+00	.000E+00	3.778E+01	-6.079E+01	4.928E+01
					6.079E+01	-3.778E+01	4.928E+01
62	4	5.443E+00	2.662E+00	.000E+00	2.853E+01	-3.206E+01	3.030E+01
					3.206E+01	-2.853E+01	3.030E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
63	1	7.478E+00	5.838E+00	.000E+00	6.981E+01	-1.769E+02	1.233E+02
					1.769E+02	-6.981E+01	1.233E+02
63	2	1.015E+01	5.838E+00	.000E+00	1.473E+02	-2.069E+02	1.771E+02
					2.069E+02	-1.473E+02	1.771E+02
63	3	7.478E+00	2.662E+00	.000E+00	1.136E+02	-3.958E+01	7.661E+01
					3.958E+01	-1.136E+02	7.661E+01
63	4	1.015E+01	2.662E+00	.000E+00	8.955E+01	3.188E+01	2.884E+01
					-3.188E+01	-8.955E+01	2.884E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
64	1	1.205E+01	5.838E+00	.000E+00	1.151E+02	-7.780E+01	9.644E+01
					7.780E+01	-1.151E+02	9.644E+01
64	2	1.458E+01	5.838E+00	.000E+00	6.451E+01	-5.481E+01	5.966E+01
					5.481E+01	-6.451E+01	5.966E+01
64	3	1.205E+01	2.662E+00	.000E+00	1.246E+02	3.650E+01	4.405E+01
					-3.650E+01	-1.246E+02	4.405E+01
64	4	1.458E+01	2.662E+00	.000E+00	1.348E+02	-1.311E+00	6.807E+01
					1.311E+00	-1.348E+02	6.807E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
65	1	1.656E+01	5.838E+00	.000E+00	1.029E+02	-2.056E+01	6.172E+01
					2.056E+01	-1.029E+02	6.172E+01
65	2	1.944E+01	5.838E+00	.000E+00	1.229E+02	-7.942E+01	1.011E+02
					7.942E+01	-1.229E+02	1.011E+02
65	3	1.656E+01	2.662E+00	.000E+00	7.601E+01	-1.245E+01	4.423E+01
					1.245E+01	-7.601E+01	4.423E+01
65	4	1.944E+01	2.662E+00	.000E+00	9.346E+01	-6.875E+01	8.111E+01
					6.875E+01	-9.346E+01	8.111E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
66	1	2.156E+01	5.838E+00	.000E+00	1.228E+02	-7.949E+01	1.012E+02
					7.949E+01	-1.228E+02	1.012E+02
66	2	2.444E+01	5.838E+00	.000E+00	1.029E+02	-2.088E+01	6.190E+01
					2.088E+01	-1.029E+02	6.190E+01
66	3	2.156E+01	2.662E+00	.000E+00	9.328E+01	-6.877E+01	8.102E+01
					6.877E+01	-9.328E+01	8.102E+01
66	4	2.444E+01	2.662E+00	.000E+00	7.590E+01	-1.272E+01	4.431E+01
					1.272E+01	-7.590E+01	4.431E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
67	1	2.643E+01	5.838E+00	.000E+00	6.423E+01	-5.491E+01	5.957E+01
					5.491E+01	-6.423E+01	5.957E+01
67	2	2.895E+01	5.838E+00	.000E+00	1.150E+02	-7.799E+01	9.652E+01
					7.799E+01	-1.150E+02	9.652E+01
67	3	2.643E+01	2.662E+00	.000E+00	1.346E+02	-1.580E+00	6.811E+01
					1.580E+00	-1.346E+02	6.811E+01
67	4	2.895E+01	2.662E+00	.000E+00	1.243E+02	3.646E+01	4.393E+01
					-3.646E+01	-1.243E+02	4.393E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
68	1	3.086E+01	5.838E+00	.000E+00	1.473E+02	-2.069E+02	1.771E+02
					2.069E+02	-1.473E+02	1.771E+02
68	2	3.352E+01	5.838E+00	.000E+00	7.002E+01	-1.768E+02	1.234E+02
					1.768E+02	-7.002E+01	1.234E+02
68	3	3.086E+01	2.662E+00	.000E+00	8.958E+01	3.196E+01	2.881E+01
					-3.196E+01	-8.958E+01	2.881E+01
68	4	3.352E+01	2.662E+00	.000E+00	1.136E+02	-3.934E+01	7.649E+01
					3.934E+01	-1.136E+02	7.649E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
69	1	3.556E+01	5.838E+00	.000E+00	9.669E+00	-3.050E+01	2.009E+01
					3.050E+01	-9.669E+00	2.009E+01
69	2	3.844E+01	5.838E+00	.000E+00	1.257E+01	-5.303E+01	3.280E+01
					5.303E+01	-1.257E+01	3.280E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
69	3	3.556E+01	2.662E+00	.000E+00	2.863E+01	-3.188E+01	3.026E+01
					3.188E+01	-2.863E+01	3.026E+01
69	4	3.844E+01	2.662E+00	.000E+00	3.796E+01	-6.083E+01	4.939E+01
					6.083E+01	-3.796E+01	4.939E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
70	1	3.982E+01	5.838E+00	.000E+00	-4.341E+00	-5.379E+01	2.473E+01
					5.379E+01	4.341E+00	2.473E+01
70	2	4.068E+01	5.838E+00	.000E+00	-6.325E+00	-4.516E+01	1.942E+01
					4.516E+01	6.325E+00	1.942E+01
70	3	3.982E+01	2.662E+00	.000E+00	1.895E+01	-6.104E+01	4.000E+01
					6.104E+01	-1.895E+01	4.000E+01
70	4	4.068E+01	2.662E+00	.000E+00	1.547E+01	-5.091E+01	3.319E+01
					5.091E+01	-1.547E+01	3.319E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
71	1	3.170E-01	1.183E+00	.000E+00	2.135E+01	-8.037E+00	1.469E+01
					8.037E+00	-2.135E+01	1.469E+01
71	2	1.183E+00	1.183E+00	.000E+00	4.254E+00	-1.358E+01	8.919E+00
					1.358E+01	-4.254E+00	8.919E+00
71	3	3.170E-01	3.170E-01	.000E+00	3.185E+01	-3.250E+01	3.217E+01
					3.250E+01	-3.185E+01	3.217E+01
71	4	1.183E+00	3.170E-01	.000E+00	-7.731E-01	-2.252E+01	1.087E+01
					2.252E+01	7.731E-01	1.087E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
72	1	2.557E+00	1.183E+00	.000E+00	4.878E+01	-2.498E+01	3.688E+01
					2.498E+01	-4.878E+01	3.688E+01
72	2	5.443E+00	1.183E+00	.000E+00	5.410E+01	3.742E+00	2.518E+01
					-3.742E+00	-5.410E+01	2.518E+01
72	3	2.557E+00	3.170E-01	.000E+00	8.555E+01	-3.720E+01	6.138E+01
					3.720E+01	-8.555E+01	6.138E+01
72	4	5.443E+00	3.170E-01	.000E+00	7.244E+01	9.964E+00	3.124E+01
					-9.964E+00	-7.244E+01	3.124E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
73	1	7.478E+00	1.183E+00	.000E+00	2.011E+02	-4.164E+00	1.026E+02
					4.164E+00	-2.011E+02	1.026E+02
73	2	1.015E+01	1.183E+00	.000E+00	1.972E+02	1.879E+01	8.918E+01
					-1.879E+01	-1.972E+02	8.918E+01
73	3	7.478E+00	3.170E-01	.000E+00	2.645E+02	-2.479E+01	1.446E+02
					2.479E+01	-2.645E+02	1.446E+02
73	4	1.015E+01	3.170E-01	.000E+00	2.571E+02	1.568E+00	1.278E+02
					-1.568E+00	-2.571E+02	1.278E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
74	1	1.205E+01	1.183E+00	.000E+00	1.893E+02	2.069E+01	8.431E+01
					-2.069E+01	-1.893E+02	8.431E+01
74	2	1.458E+01	1.183E+00	.000E+00	2.045E+02	-2.661E+01	1.156E+02
					2.661E+01	-2.045E+02	1.156E+02
74	3	1.205E+01	3.170E-01	.000E+00	2.012E+02	1.709E+01	9.205E+01
					-1.709E+01	-2.012E+02	9.205E+01
74	4	1.458E+01	3.170E-01	.000E+00	2.171E+02	-3.091E+01	1.240E+02
					3.091E+01	-2.171E+02	1.240E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
75	1	1.656E+01	1.183E+00	.000E+00	6.851E+01	4.990E-01	3.401E+01
					-4.990E-01	-6.851E+01	3.401E+01
75	2	1.944E+01	1.183E+00	.000E+00	6.535E+01	3.656E+00	3.085E+01
					-3.656E+00	-6.535E+01	3.085E+01
75	3	1.656E+01	3.170E-01	.000E+00	8.285E+01	-3.733E+00	4.329E+01
					3.733E+00	-8.285E+01	4.329E+01
75	4	1.944E+01	3.170E-01	.000E+00	8.042E+01	-1.300E+00	4.086E+01
					1.300E+00	-8.042E+01	4.086E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
76	1	2.156E+01	1.183E+00	.000E+00	6.511E+01	3.715E+00	3.070E+01
					-3.715E+00	-6.511E+01	3.070E+01
76	2	2.444E+01	1.183E+00	.000E+00	6.830E+01	4.829E-01	3.391E+01
					-4.829E-01	-6.830E+01	3.391E+01

76	3	2.156E+01	3.170E-01	.000E+00	8.022E+01	-1.254E+00	4.074E+01
					1.254E+00	-8.022E+01	4.074E+01
76	4	2.444E+01	3.170E-01	.000E+00	8.268E+01	-3.759E+00	4.322E+01
					3.759E+00	-8.268E+01	4.322E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
77	1	2.643E+01	1.183E+00	.000E+00	2.042E+02	-2.658E+01	1.154E+02
					2.658E+01	-2.042E+02	1.154E+02
77	2	2.895E+01	1.183E+00	.000E+00	1.890E+02	2.079E+01	8.409E+01
					-2.079E+01	-1.890E+02	8.409E+01
77	3	2.643E+01	3.170E-01	.000E+00	2.169E+02	-3.091E+01	1.239E+02
					3.091E+01	-2.169E+02	1.239E+02
77	4	2.895E+01	3.170E-01	.000E+00	2.009E+02	1.716E+01	9.189E+01
					-1.716E+01	-2.009E+02	9.189E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
78	1	3.086E+01	1.183E+00	.000E+00	1.972E+02	1.880E+01	8.922E+01
					-1.880E+01	-1.972E+02	8.922E+01
78	2	3.352E+01	1.183E+00	.000E+00	2.012E+02	-4.221E+00	1.027E+02
					4.221E+00	-2.012E+02	1.027E+02
78	3	3.086E+01	3.170E-01	.000E+00	2.572E+02	1.575E+00	1.278E+02
					-1.575E+00	-2.572E+02	1.278E+02
78	4	3.352E+01	3.170E-01	.000E+00	2.646E+02	-2.484E+01	1.447E+02
					2.484E+01	-2.646E+02	1.447E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
79	1	3.556E+01	1.183E+00	.000E+00	5.411E+01	3.825E+00	2.514E+01
					-3.825E+00	-5.411E+01	2.514E+01
79	2	3.844E+01	1.183E+00	.000E+00	4.885E+01	-2.488E+01	3.687E+01
					2.488E+01	-4.885E+01	3.687E+01
79	3	3.556E+01	3.170E-01	.000E+00	7.245E+01	9.966E+00	3.124E+01
					-9.966E+00	-7.245E+01	3.124E+01
79	4	3.844E+01	3.170E-01	.000E+00	8.552E+01	-3.707E+01	6.129E+01
					3.707E+01	-8.552E+01	6.129E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
80	1	3.982E+01	1.183E+00	.000E+00	4.219E+00	-1.351E+01	8.863E+00
					1.351E+01	-4.219E+00	8.863E+00
80	2	4.068E+01	1.183E+00	.000E+00	2.120E+01	-7.988E+00	1.459E+01
					7.988E+00	-2.120E+01	1.459E+01
80	3	3.982E+01	3.170E-01	.000E+00	-8.019E-01	-2.235E+01	1.077E+01
					2.235E+01	8.019E-01	1.077E+01
80	4	4.068E+01	3.170E-01	.000E+00	3.163E+01	-3.227E+01	3.195E+01
					3.227E+01	-3.163E+01	3.195E+01

REACTION LOADS FOR LOAD CASE 1

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
31	.000E+00	.000E+00	4.506E+01	.000E+00	.000E+00	.000E+00
32	.000E+00	.000E+00	-9.022E+01	.000E+00	.000E+00	.000E+00
33	.000E+00	.000E+00	4.516E+01	.000E+00	.000E+00	.000E+00
79	.000E+00	.000E+00	7.367E+02	.000E+00	.000E+00	.000E+00
80	.000E+00	.000E+00	1.500E+03	.000E+00	.000E+00	.000E+00
81	.000E+00	.000E+00	1.499E+03	.000E+00	.000E+00	.000E+00
82	.000E+00	.000E+00	7.386E+02	.000E+00	.000E+00	.000E+00
95	.000E+00	.000E+00	7.367E+02	.000E+00	.000E+00	.000E+00
96	.000E+00	.000E+00	1.500E+03	.000E+00	.000E+00	.000E+00
97	.000E+00	.000E+00	1.499E+03	.000E+00	.000E+00	.000E+00
98	.000E+00	.000E+00	7.386E+02	.000E+00	.000E+00	.000E+00

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: placa4-k.pos

NUMBER OF ELEMENTS = 80
NUMBER OF NODES = 99
NUMBER OF DOF'S = 6
NUMBER OF NDS/ELEM = 4

---- LOAD CASE NO. 1 ----

NODE	DEFL-1	DEFL-2	DEFL-3	DEFL-4	DEFL-5	DEFL-6
1	.000E+00	.000E+00	1.489E-03	1.166E-04	-2.994E-04	.000E+00
2	.000E+00	.000E+00	5.707E-03	2.150E-04	-3.033E-04	.000E+00
3	.000E+00	.000E+00	8.063E-03	6.124E-04	-1.346E-04	.000E+00
4	.000E+00	.000E+00	8.527E-03	6.742E-04	-3.446E-08	.000E+00
5	.000E+00	.000E+00	8.063E-03	6.124E-04	1.346E-04	.000E+00
6	.000E+00	.000E+00	5.711E-03	2.157E-04	3.030E-04	.000E+00
7	.000E+00	.000E+00	1.493E-03	1.175E-04	2.992E-04	.000E+00
8	.000E+00	.000E+00	5.085E-03	1.209E-04	-2.104E-04	.000E+00
9	.000E+00	.000E+00	1.623E-03	2.115E-04	-2.094E-04	.000E+00
10	.000E+00	.000E+00	3.393E-03	6.273E-04	-1.146E-04	.000E+00
11	.000E+00	.000E+00	3.782E-03	6.780E-04	-5.248E-10	.000E+00
12	.000E+00	.000E+00	3.394E-03	6.273E-04	1.145E-04	.000E+00
13	.000E+00	.000E+00	1.626E-03	2.122E-04	2.093E-04	.000E+00
14	.000E+00	.000E+00	5.087E-03	1.218E-04	2.102E-04	.000E+00
15	.000E+00	.000E+00	6.907E-04	9.777E-05	1.116E-04	.000E+00
16	.000E+00	.000E+00	4.310E-03	1.798E-04	1.071E-04	.000E+00
17	.000E+00	.000E+00	3.553E-03	6.803E-04	-1.151E-05	.000E+00
18	.000E+00	.000E+00	3.824E-03	6.468E-04	1.355E-09	.000E+00
19	.000E+00	.000E+00	3.553E-03	6.802E-04	1.136E-05	.000E+00
20	.000E+00	.000E+00	4.309E-03	1.805E-04	-1.069E-04	.000E+00
21	.000E+00	.000E+00	6.897E-04	9.847E-05	-1.115E-04	.000E+00
22	.000E+00	.000E+00	4.164E-03	4.249E-05	3.761E-04	.000E+00
23	.000E+00	.000E+00	-1.874E-04	1.308E-04	3.668E-04	.000E+00
24	.000E+00	.000E+00	-2.888E-03	4.327E-04	7.817E-05	.000E+00
25	.000E+00	.000E+00	-2.530E-03	4.878E-04	-8.055E-08	.000E+00
26	.000E+00	.000E+00	-2.888E-03	4.327E-04	-7.822E-05	.000E+00
27	.000E+00	.000E+00	-1.908E-04	1.312E-04	-3.666E-04	.000E+00
28	.000E+00	.000E+00	4.160E-03	4.294E-05	-3.760E-04	.000E+00
29	.000E+00	.000E+00	2.797E-04	-3.646E-18	5.146E-04	.000E+00
30	.000E+00	.000E+00	3.311E-03	-3.534E-18	5.085E-04	.000E+00
31	.000E+00	.000E+00	.000E+00	7.630E-18	1.266E-04	.000E+00
32	.000E+00	.000E+00	.000E+00	1.480E-17	-1.062E-07	.000E+00
33	.000E+00	.000E+00	.000E+00	-1.111E-18	-1.265E-04	.000E+00
34	.000E+00	.000E+00	3.306E-03	4.925E-18	-5.084E-04	.000E+00
35	.000E+00	.000E+00	2.749E-04	1.035E-17	-5.145E-04	.000E+00

36	.000E+00	.000E+00	4.164E-03	-4.249E-05	3.761E-04	.000E+00
37	.000E+00	.000E+00	-1.874E-04	-1.308E-04	3.668E-04	.000E+00
38	.000E+00	.000E+00	-2.888E-03	-4.327E-04	7.817E-05	.000E+00
39	.000E+00	.000E+00	-2.530E-03	-4.878E-04	-8.055E-08	.000E+00
40	.000E+00	.000E+00	-2.888E-03	-4.327E-04	-7.822E-05	.000E+00
41	.000E+00	.000E+00	-1.908E-04	-1.312E-04	-3.666E-04	.000E+00
42	.000E+00	.000E+00	4.160E-03	-4.294E-05	-3.760E-04	.000E+00
43	.000E+00	.000E+00	6.907E-04	-9.777E-05	1.116E-04	.000E+00
44	.000E+00	.000E+00	4.310E-03	-1.798E-04	1.071E-04	.000E+00
45	.000E+00	.000E+00	3.553E-03	-6.803E-04	-1.151E-05	.000E+00
46	.000E+00	.000E+00	3.824E-03	-6.468E-04	1.355E-09	.000E+00
47	.000E+00	.000E+00	3.553E-03	-6.802E-04	1.136E-05	.000E+00
48	.000E+00	.000E+00	4.309E-03	-1.805E-04	-1.069E-04	.000E+00
49	.000E+00	.000E+00	6.897E-04	-9.847E-05	-1.115E-04	.000E+00
50	.000E+00	.000E+00	5.085E-03	-1.209E-04	-2.104E-04	.000E+00
51	.000E+00	.000E+00	1.623E-03	-2.115E-04	-2.094E-04	.000E+00
52	.000E+00	.000E+00	3.393E-03	-6.273E-04	-1.146E-04	.000E+00
53	.000E+00	.000E+00	3.782E-03	-6.780E-04	-5.248E-10	.000E+00
54	.000E+00	.000E+00	3.394E-03	-6.273E-04	1.145E-04	.000E+00
55	.000E+00	.000E+00	1.626E-03	-2.122E-04	2.093E-04	.000E+00
56	.000E+00	.000E+00	5.087E-03	-1.218E-04	2.102E-04	.000E+00
57	.000E+00	.000E+00	1.489E-03	-1.166E-04	-2.994E-04	.000E+00
58	.000E+00	.000E+00	5.707E-03	-2.150E-04	-3.033E-04	.000E+00
59	.000E+00	.000E+00	8.063E-03	-6.124E-04	-1.346E-04	.000E+00
60	.000E+00	.000E+00	8.527E-03	-6.742E-04	-3.446E-08	.000E+00
61	.000E+00	.000E+00	8.063E-03	-6.124E-04	1.346E-04	.000E+00
62	.000E+00	.000E+00	5.711E-03	-2.157E-04	3.030E-04	.000E+00
63	.000E+00	.000E+00	1.493E-03	-1.175E-04	2.992E-04	.000E+00
71	.000E+00	.000E+00	3.387E-03	4.779E-04	-2.619E-04	.000E+00
72	.000E+00	.000E+00	4.690E-03	6.628E-04	-4.247E-05	.000E+00
73	.000E+00	.000E+00	4.690E-03	6.630E-04	4.231E-05	.000E+00
74	.000E+00	.000E+00	3.390E-03	4.783E-04	2.616E-04	.000E+00
75	.000E+00	.000E+00	6.419E-03	4.862E-04	-1.963E-04	.000E+00
76	.000E+00	.000E+00	7.425E-03	6.666E-04	-3.079E-05	.000E+00
77	.000E+00	.000E+00	7.425E-03	6.667E-04	3.067E-05	.000E+00
78	.000E+00	.000E+00	6.421E-03	4.866E-04	1.961E-04	.000E+00
79	.000E+00	.000E+00	.000E+00	4.791E-04	9.993E-05	.000E+00
80	.000E+00	.000E+00	.000E+00	6.846E-04	-5.239E-05	.000E+00
81	.000E+00	.000E+00	.000E+00	6.845E-04	5.239E-05	.000E+00
82	.000E+00	.000E+00	.000E+00	4.796E-04	-9.983E-05	.000E+00
83	.000E+00	.000E+00	1.953E-03	3.275E-04	3.109E-04	.000E+00
84	.000E+00	.000E+00	1.058E-03	4.826E-04	-7.762E-05	.000E+00
85	.000E+00	.000E+00	1.058E-03	4.825E-04	7.770E-05	.000E+00
86	.000E+00	.000E+00	1.950E-03	3.279E-04	-3.106E-04	.000E+00
87	.000E+00	.000E+00	-2.758E-03	-2.050E-19	3.695E-04	.000E+00
88	.000E+00	.000E+00	-4.010E-03	1.121E-17	-5.088E-05	.000E+00
89	.000E+00	.000E+00	-4.010E-03	6.719E-18	5.102E-05	.000E+00
90	.000E+00	.000E+00	-2.762E-03	-3.731E-18	-3.690E-04	.000E+00
91	.000E+00	.000E+00	1.953E-03	-3.275E-04	3.109E-04	.000E+00
92	.000E+00	.000E+00	1.058E-03	-4.826E-04	-7.762E-05	.000E+00
93	.000E+00	.000E+00	1.058E-03	-4.825E-04	7.770E-05	.000E+00
94	.000E+00	.000E+00	1.950E-03	-3.279E-04	-3.106E-04	.000E+00
95	.000E+00	.000E+00	.000E+00	-4.791E-04	9.993E-05	.000E+00
96	.000E+00	.000E+00	.000E+00	-6.846E-04	-5.239E-05	.000E+00
97	.000E+00	.000E+00	.000E+00	-6.845E-04	5.239E-05	.000E+00
98	.000E+00	.000E+00	.000E+00	-4.796E-04	-9.983E-05	.000E+00
99	.000E+00	.000E+00	6.419E-03	-4.862E-04	-1.963E-04	.000E+00
100	.000E+00	.000E+00	7.425E-03	-6.666E-04	-3.079E-05	.000E+00
101	.000E+00	.000E+00	7.425E-03	-6.667E-04	3.067E-05	.000E+00
102	.000E+00	.000E+00	6.421E-03	-4.866E-04	1.961E-04	.000E+00

103	.000E+00	.000E+00	3.387E-03	-4.779E-04	-2.619E-04	.000E+00
104	.000E+00	.000E+00	4.690E-03	-6.628E-04	-4.247E-05	.000E+00
105	.000E+00	.000E+00	4.690E-03	-6.630E-04	4.231E-05	.000E+00
106	.000E+00	.000E+00	3.390E-03	-4.783E-04	2.616E-04	.000E+00

NUMBER OF STRESS RECORDS = 80
NUMBER OF REACTION LOADS = 11

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: placa4-k.pos

PEAK PRINCIPAL STRESSES BY ELEMENT

ELEM	PEAK TENSILE STRESS(PSI)	PEAK COMPRES STRESS(PSI)	PEAK SHEAR STRESS(PSI)
1	3.2175E+01	3.2501E+01	3.2501E+01
2	8.5555E+01	3.7197E+01	3.7197E+01
3	2.6448E+02	2.4787E+01	2.4787E+01
4	2.1711E+02	3.0908E+01	3.0908E+01
5	8.2849E+01	3.7333E+00	3.7333E+00
6	8.2681E+01	3.7585E+00	3.7585E+00
7	2.1690E+02	3.0910E+01	3.0910E+01
8	2.6457E+02	2.4839E+01	2.4839E+01
9	8.5522E+01	3.7065E+01	3.7065E+01
10	3.1950E+01	3.2275E+01	3.2275E+01
11	3.9985E+01	6.0959E+01	6.0959E+01
12	4.9284E+01	6.0787E+01	6.0787E+01
13	1.7711E+02	2.0694E+02	2.0694E+02
14	1.3483E+02	7.7797E+01	7.7797E+01
15	1.2288E+02	7.9417E+01	7.9417E+01
16	1.2285E+02	7.9485E+01	7.9485E+01
17	1.3464E+02	7.7993E+01	7.7993E+01
18	1.7707E+02	2.0686E+02	2.0686E+02
19	4.9395E+01	6.0829E+01	6.0829E+01
20	3.9996E+01	6.1038E+01	6.1038E+01
21	6.2742E+01	1.2180E+02	1.2180E+02
22	1.9100E+02	3.1267E+02	3.1267E+02
23	1.6398E+02	4.6517E+02	4.6517E+02
24	2.8652E+02	5.4136E+02	5.4136E+02
25	4.2796E+02	5.3484E+02	5.3484E+02
26	4.2826E+02	5.3498E+02	5.3498E+02
27	2.8653E+02	5.4138E+02	5.4138E+02
28	1.6402E+02	4.6526E+02	4.6526E+02
29	1.9127E+02	3.1304E+02	3.1304E+02
30	6.3042E+01	1.2236E+02	1.2236E+02
31	1.4606E+02	2.4780E+02	2.4780E+02
32	3.2263E+02	5.9281E+02	5.9281E+02
33	2.3585E+02	7.3518E+02	7.3518E+02
34	4.3076E+02	9.2362E+02	9.2362E+02
35	8.3370E+02	1.1456E+03	1.1456E+03
36	8.3408E+02	1.1458E+03	1.1458E+03
37	4.3111E+02	9.2372E+02	9.2372E+02
38	2.3572E+02	7.3522E+02	7.3522E+02
39	3.2296E+02	5.9361E+02	5.9361E+02
40	1.4647E+02	2.4874E+02	2.4874E+02
41	1.4606E+02	2.4780E+02	2.4780E+02
42	3.2263E+02	5.9281E+02	5.9281E+02
43	2.3585E+02	7.3518E+02	7.3518E+02
44	4.3076E+02	9.2362E+02	9.2362E+02
45	8.3370E+02	1.1456E+03	1.1456E+03

46	8.3408E+02	1.1458E+03	1.1458E+03
47	4.3111E+02	9.2372E+02	9.2372E+02
48	2.3572E+02	7.3522E+02	7.3522E+02
49	3.2296E+02	5.9361E+02	5.9361E+02
50	1.4647E+02	2.4874E+02	2.4874E+02
51	6.2742E+01	1.2180E+02	1.2180E+02
52	1.9100E+02	3.1267E+02	3.1267E+02
53	1.6398E+02	4.6517E+02	4.6517E+02
54	2.8652E+02	5.4136E+02	5.4136E+02
55	4.2796E+02	5.3484E+02	5.3484E+02
56	4.2826E+02	5.3498E+02	5.3498E+02
57	2.8653E+02	5.4138E+02	5.4138E+02
58	1.6402E+02	4.6526E+02	4.6526E+02
59	1.9127E+02	3.1304E+02	3.1304E+02
60	6.3042E+01	1.2236E+02	1.2236E+02
61	3.9985E+01	6.0959E+01	6.0959E+01
62	4.9284E+01	6.0787E+01	6.0787E+01
63	1.7711E+02	2.0694E+02	2.0694E+02
64	1.3483E+02	7.7797E+01	7.7797E+01
65	1.2288E+02	7.9417E+01	7.9417E+01
66	1.2285E+02	7.9485E+01	7.9485E+01
67	1.3464E+02	7.7993E+01	7.7993E+01
68	1.7707E+02	2.0686E+02	2.0686E+02
69	4.9395E+01	6.0829E+01	6.0829E+01
70	3.9996E+01	6.1038E+01	6.1038E+01
71	3.2175E+01	3.2501E+01	3.2501E+01
72	8.5555E+01	3.7197E+01	3.7197E+01
73	2.6448E+02	2.4787E+01	2.4787E+01
74	2.1711E+02	3.0908E+01	3.0908E+01
75	8.2849E+01	3.7333E+00	3.7333E+00
76	8.2681E+01	3.7585E+00	3.7585E+00
77	2.1690E+02	3.0910E+01	3.0910E+01
78	2.6457E+02	2.4839E+01	2.4839E+01
79	8.5522E+01	3.7065E+01	3.7065E+01
80	3.1950E+01	3.2275E+01	3.2275E+01

LIBRA Finite Element Program
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PRINCIPAL STRESSES FROM POST PROCESSING FILE: placa4-k.pos

AVERAGE PRINCIPAL STRESSES BY ELEMENT

ELEM	AVG TENSILE STRESS(PSI)	AVG COMPRES STRESS(PSI)	AVG SHEAR STRESS(PSI)
1	1.6665E+01	1.9160E+01	1.9160E+01
2	6.5219E+01	1.2119E+01	1.2119E+01
3	2.2996E+02	2.1490E+00	2.1490E+00
4	2.0303E+02	4.9360E+00	4.9360E+00
5	7.4282E+01	2.1940E-01	2.1940E-01
6	7.4078E+01	2.0379E-01	2.0379E-01
7	2.0276E+02	4.8862E+00	4.8862E+00
8	2.3005E+02	2.1709E+00	2.1709E+00
9	6.5236E+01	1.2038E+01	1.2038E+01
10	1.6545E+01	1.9029E+01	1.9029E+01
11	2.9290E+01	5.2578E+01	5.2578E+01
12	3.3090E+01	4.4118E+01	4.4118E+01
13	1.0507E+02	9.7873E+01	9.7873E+01
14	1.0975E+02	2.4354E+01	2.4354E+01
15	9.8805E+01	4.5296E+01	4.5296E+01
16	9.8737E+01	4.5463E+01	4.5463E+01
17	1.0956E+02	2.4505E+01	2.4505E+01
18	1.0513E+02	9.7771E+01	9.7771E+01
19	3.3134E+01	4.4060E+01	4.4060E+01
20	2.9332E+01	5.2724E+01	5.2724E+01
21	5.2285E+01	1.1329E+02	1.1329E+02
22	1.2432E+02	2.3181E+02	2.3181E+02
23	8.6019E+01	3.9251E+02	3.9251E+02
24	2.0727E+02	4.7966E+02	4.7966E+02
25	3.9647E+02	4.9842E+02	4.9842E+02
26	3.9665E+02	4.9851E+02	4.9851E+02
27	2.0741E+02	4.7974E+02	4.7974E+02
28	8.6032E+01	3.9263E+02	3.9263E+02
29	1.2453E+02	2.3220E+02	2.3220E+02
30	5.2552E+01	1.1382E+02	1.1382E+02
31	1.1355E+02	1.9806E+02	1.9806E+02
32	2.0424E+02	4.4977E+02	4.4977E+02
33	1.8574E+02	6.6460E+02	6.6460E+02
34	3.9875E+02	8.8617E+02	8.8617E+02
35	8.1997E+02	1.1365E+03	1.1365E+03
36	8.2037E+02	1.1367E+03	1.1367E+03
37	3.9917E+02	8.8632E+02	8.8632E+02
38	1.8578E+02	6.6491E+02	6.6491E+02
39	2.0453E+02	4.5057E+02	4.5057E+02
40	1.1393E+02	1.9890E+02	1.9890E+02
41	1.1355E+02	1.9806E+02	1.9806E+02
42	2.0424E+02	4.4977E+02	4.4977E+02
43	1.8574E+02	6.6460E+02	6.6460E+02
44	3.9875E+02	8.8617E+02	8.8617E+02
45	8.1997E+02	1.1365E+03	1.1365E+03

46	8.2037E+02	1.1367E+03	1.1367E+03
47	3.9917E+02	8.8632E+02	8.8632E+02
48	1.8578E+02	6.6491E+02	6.6491E+02
49	2.0453E+02	4.5057E+02	4.5057E+02
50	1.1393E+02	1.9890E+02	1.9890E+02
51	5.2285E+01	1.1329E+02	1.1329E+02
52	1.2432E+02	2.3181E+02	2.3181E+02
53	8.6019E+01	3.9251E+02	3.9251E+02
54	2.0727E+02	4.7966E+02	4.7966E+02
55	3.9647E+02	4.9842E+02	4.9842E+02
56	3.9665E+02	4.9851E+02	4.9851E+02
57	2.0741E+02	4.7974E+02	4.7974E+02
58	8.6032E+01	3.9263E+02	3.9263E+02
59	1.2453E+02	2.3220E+02	2.3220E+02
60	5.2552E+01	1.1382E+02	1.1382E+02
61	2.9290E+01	5.2578E+01	5.2578E+01
62	3.3090E+01	4.4118E+01	4.4118E+01
63	1.0507E+02	9.7873E+01	9.7873E+01
64	1.0975E+02	2.4354E+01	2.4354E+01
65	9.8805E+01	4.5296E+01	4.5296E+01
66	9.8737E+01	4.5463E+01	4.5463E+01
67	1.0956E+02	2.4505E+01	2.4505E+01
68	1.0513E+02	9.7771E+01	9.7771E+01
69	3.3134E+01	4.4060E+01	4.4060E+01
70	2.9332E+01	5.2724E+01	5.2724E+01
71	1.6665E+01	1.9160E+01	1.9160E+01
72	6.5219E+01	1.2119E+01	1.2119E+01
73	2.2996E+02	2.1490E+00	2.1490E+00
74	2.0303E+02	4.9360E+00	4.9360E+00
75	7.4282E+01	2.1940E-01	2.1940E-01
76	7.4078E+01	2.0379E-01	2.0379E-01
77	2.0276E+02	4.8862E+00	4.8862E+00
78	2.3005E+02	2.1709E+00	2.1709E+00
79	6.5236E+01	1.2038E+01	1.2038E+01
80	1.6545E+01	1.9029E+01	1.9029E+01

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: placa4-k.pos

PEAK PRINCIPAL STRESSES BY VALUE

ELEM	PEAK TENSILE STRESS(PSI)	ELEM	PEAK COMPRES STRESS(PSI)	ELEM	PEAK SHEAR STRESS(PSI)
--- MATERIAL SET NO. 1 ---					
36	8.3408E+02	36	1.1458E+03	36	1.1458E+03
46	8.3408E+02	46	1.1458E+03	46	1.1458E+03
45	8.3370E+02	45	1.1456E+03	45	1.1456E+03
35	8.3370E+02	35	1.1456E+03	35	1.1456E+03
37	4.3111E+02	37	9.2372E+02	37	9.2372E+02
47	4.3111E+02	47	9.2372E+02	47	9.2372E+02
44	4.3076E+02	44	9.2362E+02	44	9.2362E+02
34	4.3076E+02	34	9.2362E+02	34	9.2362E+02
26	4.2826E+02	38	7.3522E+02	38	7.3522E+02
56	4.2826E+02	48	7.3522E+02	48	7.3522E+02
55	4.2796E+02	43	7.3518E+02	43	7.3518E+02
25	4.2796E+02	33	7.3518E+02	33	7.3518E+02
39	3.2296E+02	39	5.9361E+02	39	5.9361E+02
49	3.2296E+02	49	5.9361E+02	49	5.9361E+02
42	3.2263E+02	42	5.9281E+02	42	5.9281E+02
32	3.2263E+02	32	5.9281E+02	32	5.9281E+02
27	2.8653E+02	27	5.4138E+02	27	5.4138E+02
57	2.8653E+02	57	5.4138E+02	57	5.4138E+02
54	2.8652E+02	54	5.4136E+02	54	5.4136E+02
24	2.8652E+02	24	5.4136E+02	24	5.4136E+02
8	2.6457E+02	56	5.3498E+02	56	5.3498E+02
78	2.6457E+02	26	5.3498E+02	26	5.3498E+02
73	2.6448E+02	25	5.3484E+02	25	5.3484E+02
3	2.6448E+02	55	5.3484E+02	55	5.3484E+02
43	2.3585E+02	28	4.6526E+02	28	4.6526E+02
33	2.3585E+02	58	4.6526E+02	58	4.6526E+02
48	2.3572E+02	53	4.6517E+02	53	4.6517E+02
38	2.3572E+02	23	4.6517E+02	23	4.6517E+02
74	2.1711E+02	29	3.1304E+02	29	3.1304E+02
4	2.1711E+02	59	3.1304E+02	59	3.1304E+02
77	2.1690E+02	52	3.1267E+02	52	3.1267E+02
7	2.1690E+02	22	3.1267E+02	22	3.1267E+02
29	1.9127E+02	40	2.4874E+02	40	2.4874E+02
59	1.9127E+02	50	2.4874E+02	50	2.4874E+02
52	1.9100E+02	41	2.4780E+02	41	2.4780E+02
22	1.9100E+02	31	2.4780E+02	31	2.4780E+02
13	1.7711E+02	13	2.0694E+02	13	2.0694E+02
63	1.7711E+02	63	2.0694E+02	63	2.0694E+02
18	1.7707E+02	18	2.0686E+02	18	2.0686E+02
68	1.7707E+02	68	2.0686E+02	68	2.0686E+02
58	1.6402E+02	30	1.2236E+02	30	1.2236E+02
28	1.6402E+02	60	1.2236E+02	60	1.2236E+02
23	1.6398E+02	51	1.2180E+02	51	1.2180E+02

53	1.6398E+02	21	1.2180E+02	21	1.2180E+02
40	1.4647E+02	66	7.9485E+01	66	7.9485E+01
50	1.4647E+02	16	7.9485E+01	16	7.9485E+01
41	1.4606E+02	15	7.9417E+01	15	7.9417E+01
31	1.4606E+02	65	7.9417E+01	65	7.9417E+01
64	1.3483E+02	67	7.7993E+01	67	7.7993E+01
14	1.3483E+02	17	7.7993E+01	17	7.7993E+01
67	1.3464E+02	14	7.7797E+01	14	7.7797E+01
17	1.3464E+02	64	7.7797E+01	64	7.7797E+01
15	1.2288E+02	20	6.1038E+01	20	6.1038E+01
65	1.2288E+02	70	6.1038E+01	70	6.1038E+01
16	1.2285E+02	61	6.0959E+01	61	6.0959E+01
66	1.2285E+02	11	6.0959E+01	11	6.0959E+01
2	8.5555E+01	69	6.0829E+01	69	6.0829E+01
72	8.5555E+01	19	6.0829E+01	19	6.0829E+01
9	8.5522E+01	12	6.0787E+01	12	6.0787E+01
79	8.5522E+01	62	6.0787E+01	62	6.0787E+01
75	8.2849E+01	2	3.7197E+01	2	3.7197E+01
5	8.2849E+01	72	3.7197E+01	72	3.7197E+01
76	8.2681E+01	9	3.7065E+01	9	3.7065E+01
6	8.2681E+01	79	3.7065E+01	79	3.7065E+01
30	6.3042E+01	1	3.2501E+01	1	3.2501E+01
60	6.3042E+01	71	3.2501E+01	71	3.2501E+01
51	6.2742E+01	10	3.2275E+01	10	3.2275E+01
21	6.2742E+01	80	3.2275E+01	80	3.2275E+01
19	4.9395E+01	7	3.0910E+01	7	3.0910E+01
69	4.9395E+01	77	3.0910E+01	77	3.0910E+01
62	4.9284E+01	74	3.0908E+01	74	3.0908E+01
12	4.9284E+01	4	3.0908E+01	4	3.0908E+01
20	3.9996E+01	8	2.4839E+01	8	2.4839E+01
70	3.9996E+01	78	2.4839E+01	78	2.4839E+01
61	3.9985E+01	73	2.4787E+01	73	2.4787E+01
11	3.9985E+01	3	2.4787E+01	3	2.4787E+01
1	3.2175E+01	6	3.7585E+00	6	3.7585E+00
71	3.2175E+01	76	3.7585E+00	76	3.7585E+00
10	3.1950E+01	75	3.7333E+00	75	3.7333E+00
80	3.1950E+01	5	3.7333E+00	5	3.7333E+00

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: placa4-k.pos

AVERAGE PRINCIPAL STRESSES BY VALUE

--- MATERIAL SET NO. 1 ---

ELEM	AVG TENSILE STRESS(PSI)	ELEM	AVG COMPRES STRESS(PSI)	ELEM	AVG SHEAR STRESS(PSI)
36	8.2037E+02	36	1.1367E+03	36	1.1367E+03
46	8.2037E+02	46	1.1367E+03	46	1.1367E+03
45	8.1997E+02	45	1.1365E+03	45	1.1365E+03
35	8.1997E+02	35	1.1365E+03	35	1.1365E+03
37	3.9917E+02	37	8.8632E+02	37	8.8632E+02
47	3.9917E+02	47	8.8632E+02	47	8.8632E+02
44	3.9875E+02	44	8.8617E+02	44	8.8617E+02
34	3.9875E+02	34	8.8617E+02	34	8.8617E+02
26	3.9665E+02	38	6.6491E+02	38	6.6491E+02
56	3.9665E+02	48	6.6491E+02	48	6.6491E+02
55	3.9647E+02	43	6.6460E+02	43	6.6460E+02
25	3.9647E+02	33	6.6460E+02	33	6.6460E+02
78	2.3005E+02	56	4.9851E+02	56	4.9851E+02
8	2.3005E+02	26	4.9851E+02	26	4.9851E+02
73	2.2996E+02	55	4.9842E+02	55	4.9842E+02
3	2.2996E+02	25	4.9842E+02	25	4.9842E+02
27	2.0741E+02	57	4.7974E+02	57	4.7974E+02
57	2.0741E+02	27	4.7974E+02	27	4.7974E+02
54	2.0727E+02	54	4.7966E+02	54	4.7966E+02
24	2.0727E+02	24	4.7966E+02	24	4.7966E+02
39	2.0453E+02	49	4.5057E+02	49	4.5057E+02
49	2.0453E+02	39	4.5057E+02	39	4.5057E+02
42	2.0424E+02	42	4.4977E+02	42	4.4977E+02
32	2.0424E+02	32	4.4977E+02	32	4.4977E+02
74	2.0303E+02	58	3.9263E+02	58	3.9263E+02
4	2.0303E+02	28	3.9263E+02	28	3.9263E+02
77	2.0276E+02	53	3.9251E+02	53	3.9251E+02
7	2.0276E+02	23	3.9251E+02	23	3.9251E+02
48	1.8578E+02	29	2.3220E+02	29	2.3220E+02
38	1.8578E+02	59	2.3220E+02	59	2.3220E+02
33	1.8574E+02	52	2.3181E+02	52	2.3181E+02
43	1.8574E+02	22	2.3181E+02	22	2.3181E+02
59	1.2453E+02	40	1.9890E+02	40	1.9890E+02
29	1.2453E+02	50	1.9890E+02	50	1.9890E+02
22	1.2432E+02	41	1.9806E+02	41	1.9806E+02
52	1.2432E+02	31	1.9806E+02	31	1.9806E+02
40	1.1393E+02	30	1.1382E+02	30	1.1382E+02
50	1.1393E+02	60	1.1382E+02	60	1.1382E+02
41	1.1355E+02	21	1.1329E+02	21	1.1329E+02
31	1.1355E+02	51	1.1329E+02	51	1.1329E+02
14	1.0975E+02	13	9.7873E+01	13	9.7873E+01
64	1.0975E+02	63	9.7873E+01	63	9.7873E+01
17	1.0956E+02	18	9.7771E+01	18	9.7771E+01

67	1.0956E+02	68	9.7771E+01	68	9.7771E+01
18	1.0513E+02	70	5.2724E+01	70	5.2724E+01
68	1.0513E+02	20	5.2724E+01	20	5.2724E+01
63	1.0507E+02	61	5.2578E+01	61	5.2578E+01
13	1.0507E+02	11	5.2578E+01	11	5.2578E+01
15	9.8805E+01	66	4.5463E+01	66	4.5463E+01
65	9.8805E+01	16	4.5463E+01	16	4.5463E+01
16	9.8737E+01	65	4.5296E+01	65	4.5296E+01
66	9.8737E+01	15	4.5296E+01	15	4.5296E+01
58	8.6032E+01	62	4.4118E+01	62	4.4118E+01
28	8.6032E+01	12	4.4118E+01	12	4.4118E+01
23	8.6019E+01	69	4.4060E+01	69	4.4060E+01
53	8.6019E+01	19	4.4060E+01	19	4.4060E+01
5	7.4282E+01	67	2.4505E+01	67	2.4505E+01
75	7.4282E+01	17	2.4505E+01	17	2.4505E+01
6	7.4078E+01	14	2.4354E+01	14	2.4354E+01
76	7.4078E+01	64	2.4354E+01	64	2.4354E+01
9	6.5236E+01	1	1.9160E+01	1	1.9160E+01
79	6.5236E+01	71	1.9160E+01	71	1.9160E+01
72	6.5219E+01	80	1.9029E+01	80	1.9029E+01
2	6.5219E+01	10	1.9029E+01	10	1.9029E+01
30	5.2552E+01	72	1.2119E+01	72	1.2119E+01
60	5.2552E+01	2	1.2119E+01	2	1.2119E+01
51	5.2285E+01	9	1.2038E+01	9	1.2038E+01
21	5.2285E+01	79	1.2038E+01	79	1.2038E+01
19	3.3134E+01	4	4.9360E+00	4	4.9360E+00
69	3.3134E+01	74	4.9360E+00	74	4.9360E+00
62	3.3090E+01	7	4.8862E+00	7	4.8862E+00
12	3.3090E+01	77	4.8862E+00	77	4.8862E+00
70	2.9332E+01	8	2.1709E+00	8	2.1709E+00
20	2.9332E+01	78	2.1709E+00	78	2.1709E+00
61	2.9290E+01	73	2.1490E+00	73	2.1490E+00
11	2.9290E+01	3	2.1490E+00	3	2.1490E+00
71	1.6665E+01	75	2.1940E-01	75	2.1940E-01
1	1.6665E+01	5	2.1940E-01	5	2.1940E-01
10	1.6545E+01	6	2.0379E-01	6	2.0379E-01
80	1.6545E+01	76	2.0379E-01	76	2.0379E-01

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: placa4-k.pos

PEAK EFFECTIVE AND LOCAL SHEAR STRESSES BY ELEMENT

ELEM	PEAK EFF STRESS(PSI)	PEAK TAU-XY STRESS(PSI)	PEAK TAU-XZ STRESS(PSI)	PEAK TAU-YZ STRESS(PSI)
1	6.4514E+01	3.2175E+01	3.2175E+01	3.2175E+01
2	1.1263E+02	6.1376E+01	6.1376E+01	6.1376E+01
3	2.5173E+02	1.4463E+02	1.4463E+02	1.4463E+02
4	2.1700E+02	1.2401E+02	1.2401E+02	1.2401E+02
5	7.5075E+01	4.3291E+01	4.3291E+01	4.3291E+01
6	7.4953E+01	4.3220E+01	4.3220E+01	4.3220E+01
7	2.1682E+02	1.2390E+02	1.2390E+02	1.2390E+02
8	2.5186E+02	1.4470E+02	1.4470E+02	1.4470E+02
9	1.1245E+02	6.1293E+01	6.1293E+01	6.1293E+01
10	6.4063E+01	3.1950E+01	3.1950E+01	3.1950E+01
11	9.2263E+01	3.9985E+01	3.9985E+01	3.9985E+01
12	1.0479E+02	4.9284E+01	4.9284E+01	4.9284E+01
13	3.7004E+02	1.2333E+02	1.2333E+02	1.2333E+02
14	1.8426E+02	9.6435E+01	9.6435E+01	9.6435E+01
15	1.9235E+02	8.1107E+01	8.1107E+01	8.1107E+01
16	1.9241E+02	1.0117E+02	1.0117E+02	1.0117E+02
17	1.8447E+02	6.8111E+01	6.8111E+01	6.8111E+01
18	3.6993E+02	1.7707E+02	1.7707E+02	1.7707E+02
19	1.0497E+02	4.9395E+01	4.9395E+01	4.9395E+01
20	9.2329E+01	3.9996E+01	3.9996E+01	3.9996E+01
21	1.6323E+02	6.2742E+01	6.2742E+01	6.2742E+01
22	4.5519E+02	1.9100E+02	1.9100E+02	1.9100E+02
23	5.4503E+02	1.6398E+02	1.6398E+02	1.6398E+02
24	7.3441E+02	2.8652E+02	2.8652E+02	2.8652E+02
25	9.1406E+02	4.2796E+02	4.2796E+02	4.2796E+02
26	9.1456E+02	4.0618E+02	4.0618E+02	4.0618E+02
27	7.3443E+02	2.8653E+02	2.8653E+02	2.8653E+02
28	5.4513E+02	1.6402E+02	1.6402E+02	1.6402E+02
29	4.5579E+02	1.9127E+02	1.9127E+02	1.9127E+02
30	1.6399E+02	6.3042E+01	6.3042E+01	6.3042E+01
31	3.5384E+02	1.4179E+02	1.4179E+02	1.4179E+02
32	8.1467E+02	3.2263E+02	3.2263E+02	3.2263E+02
33	8.4105E+02	2.3585E+02	2.3585E+02	2.3585E+02
34	1.1873E+03	4.3076E+02	4.3076E+02	4.3076E+02
35	1.8432E+03	8.3370E+02	8.3370E+02	8.3370E+02
36	1.8439E+03	8.3408E+02	8.3408E+02	8.3408E+02
37	1.1878E+03	4.3111E+02	4.3111E+02	4.3111E+02
38	8.4098E+02	2.3572E+02	2.3572E+02	2.3572E+02
39	8.1565E+02	3.2296E+02	3.2296E+02	3.2296E+02
40	3.5498E+02	1.4647E+02	1.4647E+02	1.4647E+02
41	3.5384E+02	1.4606E+02	1.4606E+02	1.4606E+02
42	8.1467E+02	2.4683E+02	2.4683E+02	2.4683E+02
43	8.4105E+02	2.2546E+02	2.2546E+02	2.2546E+02
44	1.1873E+03	4.0952E+02	4.0952E+02	4.0952E+02
45	1.8432E+03	8.2927E+02	8.2927E+02	8.2927E+02

46	1.8439E+03	8.3408E+02	8.3408E+02	8.3408E+02
47	1.1878E+03	4.3111E+02	4.3111E+02	4.3111E+02
48	8.4098E+02	2.3572E+02	2.3572E+02	2.3572E+02
49	8.1565E+02	3.2296E+02	3.2296E+02	3.2296E+02
50	3.5498E+02	1.4647E+02	1.4647E+02	1.4647E+02
51	1.6323E+02	6.2742E+01	6.2742E+01	6.2742E+01
52	4.5519E+02	1.4894E+02	1.4894E+02	1.4894E+02
53	5.4503E+02	7.1963E+01	7.1963E+01	7.1963E+01
54	7.3441E+02	2.8652E+02	2.8652E+02	2.8652E+02
55	9.1406E+02	4.2796E+02	4.2796E+02	4.2796E+02
56	9.1456E+02	4.2826E+02	4.2826E+02	4.2826E+02
57	7.3443E+02	2.4006E+02	2.4006E+02	2.4006E+02
58	5.4513E+02	1.6402E+02	1.6402E+02	1.6402E+02
59	4.5579E+02	1.9127E+02	1.9127E+02	1.9127E+02
60	1.6399E+02	5.6694E+01	5.6694E+01	5.6694E+01
61	9.2263E+01	3.3059E+01	3.3059E+01	3.3059E+01
62	1.0479E+02	4.9284E+01	4.9284E+01	4.9284E+01
63	3.7004E+02	1.7711E+02	1.7711E+02	1.7711E+02
64	1.8426E+02	9.6435E+01	9.6435E+01	9.6435E+01
65	1.9235E+02	1.0115E+02	1.0115E+02	1.0115E+02
66	1.9241E+02	1.0117E+02	1.0117E+02	1.0117E+02
67	1.8447E+02	9.6518E+01	9.6518E+01	9.6518E+01
68	3.6993E+02	1.7707E+02	1.7707E+02	1.7707E+02
69	1.0497E+02	3.2800E+01	3.2800E+01	3.2800E+01
70	9.2329E+01	3.9996E+01	3.9996E+01	3.9996E+01
71	6.4514E+01	3.2175E+01	3.2175E+01	3.2175E+01
72	1.1263E+02	6.1376E+01	6.1376E+01	6.1376E+01
73	2.5173E+02	1.4463E+02	1.4463E+02	1.4463E+02
74	2.1700E+02	1.1557E+02	1.1557E+02	1.1557E+02
75	7.5075E+01	4.3291E+01	4.3291E+01	4.3291E+01
76	7.4953E+01	4.0736E+01	4.0736E+01	4.0736E+01
77	2.1682E+02	1.2390E+02	1.2390E+02	1.2390E+02
78	2.5186E+02	1.2782E+02	1.2782E+02	1.2782E+02
79	1.1245E+02	3.6866E+01	3.6866E+01	3.6866E+01
80	6.4063E+01	1.4594E+01	1.4594E+01	1.4594E+01

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: placa4-k.pos

AVG EFFECTIVE AND LOCAL SHEAR STRESSES BY ELEMENT

ELEM	AVG EFF STRESS(PSI)	AVG TAU-XY STRESS(PSI)	AVG TAU-XZ STRESS(PSI)	AVG TAU-YZ STRESS(PSI)
1	3.5281E+01	1.4435E+01	1.4435E+01	1.4435E+01
2	7.0001E+01	3.2374E+01	3.2374E+01	3.2374E+01
3	2.0162E+02	9.3760E+01	9.3760E+01	9.3760E+01
4	1.8169E+02	7.5092E+01	7.5092E+01	7.5092E+01
5	6.4578E+01	2.9539E+01	2.9539E+01	2.9539E+01
6	6.4390E+01	2.8664E+01	2.8664E+01	2.8664E+01
7	1.8142E+02	8.2799E+01	8.2799E+01	8.2799E+01
8	2.0172E+02	9.0434E+01	9.0434E+01	9.0434E+01
9	6.9930E+01	2.9420E+01	2.9420E+01	2.9420E+01
10	3.5033E+01	1.2896E+01	1.2896E+01	1.2896E+01
11	7.3388E+01	2.3102E+01	2.3102E+01	2.3102E+01
12	7.2549E+01	2.8069E+01	2.8069E+01	2.8069E+01
13	2.1127E+02	5.7194E+01	5.7194E+01	5.7194E+01
14	1.2593E+02	5.2140E+01	5.2140E+01	5.2140E+01
15	1.3381E+02	4.6764E+01	4.6764E+01	4.6764E+01
16	1.3393E+02	5.6626E+01	5.6626E+01	5.6626E+01
17	1.2593E+02	4.2904E+01	4.2904E+01	4.2904E+01
18	2.1121E+02	7.0592E+01	7.0592E+01	7.0592E+01
19	7.2574E+01	2.4934E+01	2.4934E+01	2.4934E+01
20	7.3545E+01	2.4478E+01	2.4478E+01	2.4478E+01
21	1.4524E+02	4.1796E+01	4.1796E+01	4.1796E+01
22	3.1706E+02	8.7085E+01	8.7085E+01	8.7085E+01
23	4.2392E+02	7.5148E+01	7.5148E+01	7.5148E+01
24	6.0243E+02	1.7445E+02	1.7445E+02	1.7445E+02
25	8.4855E+02	2.9983E+02	2.9983E+02	2.9983E+02
26	8.4887E+02	2.8959E+02	2.8959E+02	2.8959E+02
27	6.0261E+02	1.6453E+02	1.6453E+02	1.6453E+02
28	4.2405E+02	6.8044E+01	6.8044E+01	6.8044E+01
29	3.1760E+02	1.0796E+02	1.0796E+02	1.0796E+02
30	1.4594E+02	4.0481E+01	4.0481E+01	4.0481E+01
31	2.7914E+02	7.7036E+01	7.7036E+01	7.7036E+01
32	5.7446E+02	1.4253E+02	1.4253E+02	1.4253E+02
33	7.3953E+02	1.2937E+02	1.2937E+02	1.2937E+02
34	1.1236E+03	2.9637E+02	2.9637E+02	2.9637E+02
35	1.8190E+03	6.1730E+02	6.1730E+02	6.1730E+02
36	1.8196E+03	6.1870E+02	6.1870E+02	6.1870E+02
37	1.1242E+03	3.0728E+02	3.0728E+02	3.0728E+02
38	7.3984E+02	1.5170E+02	1.5170E+02	1.5170E+02
39	5.7540E+02	1.7995E+02	1.7995E+02	1.7995E+02
40	2.8020E+02	9.3466E+01	9.3466E+01	9.3466E+01
41	2.7914E+02	7.8104E+01	7.8104E+01	7.8104E+01
42	5.7446E+02	1.2359E+02	1.2359E+02	1.2359E+02
43	7.3953E+02	1.2677E+02	1.2677E+02	1.2677E+02
44	1.1236E+03	2.9106E+02	2.9106E+02	2.9106E+02
45	1.8190E+03	6.1154E+02	6.1154E+02	6.1154E+02

46	1.8196E+03	6.1297E+02	6.1297E+02	6.1297E+02
47	1.1242E+03	3.0216E+02	3.0216E+02	3.0216E+02
48	7.3984E+02	1.4935E+02	1.4935E+02	1.4935E+02
49	5.7540E+02	1.6708E+02	1.6708E+02	1.6708E+02
50	2.8020E+02	9.2647E+01	9.2647E+01	9.2647E+01
51	1.4524E+02	3.8178E+01	3.8178E+01	3.8178E+01
52	3.1706E+02	7.6571E+01	7.6571E+01	7.6571E+01
53	4.2392E+02	4.5024E+01	4.5024E+01	4.5024E+01
54	6.0243E+02	1.4725E+02	1.4725E+02	1.4725E+02
55	8.4855E+02	3.0515E+02	3.0515E+02	3.0515E+02
56	8.4887E+02	2.9511E+02	2.9511E+02	2.9511E+02
57	6.0261E+02	1.3578E+02	1.3578E+02	1.3578E+02
58	4.2405E+02	6.9835E+01	6.9835E+01	6.9835E+01
59	3.1760E+02	1.0164E+02	1.0164E+02	1.0164E+02
60	1.4594E+02	3.6791E+01	3.6791E+01	3.6791E+01
61	7.3388E+01	1.9294E+01	1.9294E+01	1.9294E+01
62	7.2549E+01	2.5516E+01	2.5516E+01	2.5516E+01
63	2.1127E+02	9.4262E+01	9.4262E+01	9.4262E+01
64	1.2593E+02	5.0036E+01	5.0036E+01	5.0036E+01
65	1.3381E+02	5.1774E+01	5.1774E+01	5.1774E+01
66	1.3393E+02	6.1022E+01	6.1022E+01	6.1022E+01
67	1.2593E+02	5.6050E+01	5.6050E+01	5.6050E+01
68	2.1121E+02	8.2328E+01	8.2328E+01	8.2328E+01
69	7.2574E+01	2.0786E+01	2.0786E+01	2.0786E+01
70	7.3545E+01	2.1035E+01	2.1035E+01	2.1035E+01
71	3.5281E+01	1.3946E+01	1.3946E+01	1.3946E+01
72	7.0001E+01	3.0860E+01	3.0860E+01	3.0860E+01
73	2.0162E+02	8.4109E+01	8.4109E+01	8.4109E+01
74	1.8169E+02	7.2982E+01	7.2982E+01	7.2982E+01
75	6.4578E+01	2.7036E+01	2.7036E+01	2.7036E+01
76	6.4390E+01	2.6336E+01	2.6336E+01	2.6336E+01
77	1.8142E+02	8.0848E+01	8.0848E+01	8.0848E+01
78	2.0172E+02	7.9935E+01	7.9935E+01	7.9935E+01
79	6.9930E+01	2.3314E+01	2.3314E+01	2.3314E+01
80	3.5033E+01	8.5572E+00	8.5572E+00	8.5572E+00

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: placa4-k.pos

PEAK EFFECTIVE AND SHEAR STRESSES BY VALUE

PEAK EFF ELEM	STRESS(PSI)	PEAK TAU-XY ELEM	STRESS(PSI)	PEAK TAU-XZ ELEM	STRESS(PSI)	PEAK TAU-YZ ELEM	STRESS(PSI)
--- MATERIAL SET NO. 1 ---							
36	1.8439E+03	36	8.3408E+02	36	8.3408E+02	36	8.3408E+02
46	1.8439E+03	46	8.3408E+02	46	8.3408E+02	46	8.3408E+02
45	1.8432E+03	35	8.3370E+02	35	8.3370E+02	35	8.3370E+02
35	1.8432E+03	45	8.2927E+02	45	8.2927E+02	45	8.2927E+02
37	1.1878E+03	37	4.3111E+02	37	4.3111E+02	37	4.3111E+02
47	1.1878E+03	47	4.3111E+02	47	4.3111E+02	47	4.3111E+02
44	1.1873E+03	34	4.3076E+02	34	4.3076E+02	34	4.3076E+02
34	1.1873E+03	56	4.2826E+02	56	4.2826E+02	56	4.2826E+02
26	9.1456E+02	55	4.2796E+02	55	4.2796E+02	55	4.2796E+02
56	9.1456E+02	25	4.2796E+02	25	4.2796E+02	25	4.2796E+02
55	9.1406E+02	44	4.0952E+02	44	4.0952E+02	44	4.0952E+02
25	9.1406E+02	26	4.0618E+02	26	4.0618E+02	26	4.0618E+02
33	8.4105E+02	39	3.2296E+02	39	3.2296E+02	39	3.2296E+02
43	8.4105E+02	49	3.2296E+02	49	3.2296E+02	49	3.2296E+02
38	8.4098E+02	32	3.2263E+02	32	3.2263E+02	32	3.2263E+02
48	8.4098E+02	27	2.8653E+02	27	2.8653E+02	27	2.8653E+02
39	8.1565E+02	24	2.8652E+02	24	2.8652E+02	24	2.8652E+02
49	8.1565E+02	54	2.8652E+02	54	2.8652E+02	54	2.8652E+02
42	8.1467E+02	42	2.4683E+02	42	2.4683E+02	42	2.4683E+02
32	8.1467E+02	57	2.4006E+02	57	2.4006E+02	57	2.4006E+02
27	7.3443E+02	33	2.3585E+02	33	2.3585E+02	33	2.3585E+02
57	7.3443E+02	48	2.3572E+02	48	2.3572E+02	48	2.3572E+02
54	7.3441E+02	38	2.3572E+02	38	2.3572E+02	38	2.3572E+02
24	7.3441E+02	43	2.2546E+02	43	2.2546E+02	43	2.2546E+02
28	5.4513E+02	29	1.9127E+02	29	1.9127E+02	29	1.9127E+02
58	5.4513E+02	59	1.9127E+02	59	1.9127E+02	59	1.9127E+02
53	5.4503E+02	22	1.9100E+02	22	1.9100E+02	22	1.9100E+02
23	5.4503E+02	63	1.7711E+02	63	1.7711E+02	63	1.7711E+02
29	4.5579E+02	18	1.7707E+02	18	1.7707E+02	18	1.7707E+02
59	4.5579E+02	68	1.7707E+02	68	1.7707E+02	68	1.7707E+02
52	4.5519E+02	58	1.6402E+02	58	1.6402E+02	58	1.6402E+02
22	4.5519E+02	28	1.6402E+02	28	1.6402E+02	28	1.6402E+02
13	3.7004E+02	23	1.6398E+02	23	1.6398E+02	23	1.6398E+02
63	3.7004E+02	52	1.4894E+02	52	1.4894E+02	52	1.4894E+02
18	3.6993E+02	50	1.4647E+02	50	1.4647E+02	50	1.4647E+02
68	3.6993E+02	40	1.4647E+02	40	1.4647E+02	40	1.4647E+02
40	3.5498E+02	41	1.4606E+02	41	1.4606E+02	41	1.4606E+02
50	3.5498E+02	8	1.4470E+02	8	1.4470E+02	8	1.4470E+02
41	3.5384E+02	3	1.4463E+02	3	1.4463E+02	3	1.4463E+02
31	3.5384E+02	73	1.4463E+02	73	1.4463E+02	73	1.4463E+02
8	2.5186E+02	31	1.4179E+02	31	1.4179E+02	31	1.4179E+02
78	2.5186E+02	78	1.2782E+02	78	1.2782E+02	78	1.2782E+02
73	2.5173E+02	4	1.2401E+02	4	1.2401E+02	4	1.2401E+02

3	2.5173E+02	77	1.2390E+02	77	1.2390E+02	77	1.2390E+02
74	2.1700E+02	7	1.2390E+02	7	1.2390E+02	7	1.2390E+02
4	2.1700E+02	13	1.2333E+02	13	1.2333E+02	13	1.2333E+02
77	2.1682E+02	74	1.1557E+02	74	1.1557E+02	74	1.1557E+02
7	2.1682E+02	66	1.0117E+02	66	1.0117E+02	66	1.0117E+02
66	1.9241E+02	16	1.0117E+02	16	1.0117E+02	16	1.0117E+02
16	1.9241E+02	65	1.0115E+02	65	1.0115E+02	65	1.0115E+02
15	1.9235E+02	67	9.6518E+01	67	9.6518E+01	67	9.6518E+01
65	1.9235E+02	14	9.6435E+01	14	9.6435E+01	14	9.6435E+01
67	1.8447E+02	64	9.6435E+01	64	9.6435E+01	64	9.6435E+01
17	1.8447E+02	15	8.1107E+01	15	8.1107E+01	15	8.1107E+01
14	1.8426E+02	53	7.1963E+01	53	7.1963E+01	53	7.1963E+01
64	1.8426E+02	17	6.8111E+01	17	6.8111E+01	17	6.8111E+01
30	1.6399E+02	30	6.3042E+01	30	6.3042E+01	30	6.3042E+01
60	1.6399E+02	21	6.2742E+01	21	6.2742E+01	21	6.2742E+01
51	1.6323E+02	51	6.2742E+01	51	6.2742E+01	51	6.2742E+01
21	1.6323E+02	2	6.1376E+01	2	6.1376E+01	2	6.1376E+01
2	1.1263E+02	72	6.1376E+01	72	6.1376E+01	72	6.1376E+01
72	1.1263E+02	9	6.1293E+01	9	6.1293E+01	9	6.1293E+01
9	1.1245E+02	60	5.6694E+01	60	5.6694E+01	60	5.6694E+01
79	1.1245E+02	19	4.9395E+01	19	4.9395E+01	19	4.9395E+01
19	1.0497E+02	62	4.9284E+01	62	4.9284E+01	62	4.9284E+01
69	1.0497E+02	12	4.9284E+01	12	4.9284E+01	12	4.9284E+01
62	1.0479E+02	5	4.3291E+01	5	4.3291E+01	5	4.3291E+01
12	1.0479E+02	75	4.3291E+01	75	4.3291E+01	75	4.3291E+01
20	9.2329E+01	6	4.3220E+01	6	4.3220E+01	6	4.3220E+01
70	9.2329E+01	76	4.0736E+01	76	4.0736E+01	76	4.0736E+01
61	9.2263E+01	70	3.9996E+01	70	3.9996E+01	70	3.9996E+01
11	9.2263E+01	20	3.9996E+01	20	3.9996E+01	20	3.9996E+01
75	7.5075E+01	11	3.9985E+01	11	3.9985E+01	11	3.9985E+01
5	7.5075E+01	79	3.6866E+01	79	3.6866E+01	79	3.6866E+01
76	7.4953E+01	61	3.3059E+01	61	3.3059E+01	61	3.3059E+01
6	7.4953E+01	69	3.2800E+01	69	3.2800E+01	69	3.2800E+01
1	6.4514E+01	1	3.2175E+01	1	3.2175E+01	1	3.2175E+01
71	6.4514E+01	71	3.2175E+01	71	3.2175E+01	71	3.2175E+01
10	6.4063E+01	10	3.1950E+01	10	3.1950E+01	10	3.1950E+01
80	6.4063E+01	80	1.4594E+01	80	1.4594E+01	80	1.4594E+01

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PRINCIPAL STRESSES FROM POST PROCESSING FILE: placa4-k.pos

AVG EFFECTIVE AND SHEAR STRESSES BY VALUE

AVG EFF ELEM	STRESS(PSI)	AVG TAU-XY ELEM	STRESS(PSI)	AVG TAU-XZ ELEM	STRESS(PSI)	AVG TAU-YZ ELEM	STRESS(PSI)
--- MATERIAL SET NO. 1 ---							
36	1.8196E+03	36	6.1870E+02	36	6.1870E+02	36	6.1870E+02
46	1.8196E+03	35	6.1730E+02	35	6.1730E+02	35	6.1730E+02
45	1.8190E+03	46	6.1297E+02	46	6.1297E+02	46	6.1297E+02
35	1.8190E+03	45	6.1154E+02	45	6.1154E+02	45	6.1154E+02
47	1.1242E+03	37	3.0728E+02	37	3.0728E+02	37	3.0728E+02
37	1.1242E+03	55	3.0515E+02	55	3.0515E+02	55	3.0515E+02
44	1.1236E+03	47	3.0216E+02	47	3.0216E+02	47	3.0216E+02
34	1.1236E+03	25	2.9983E+02	25	2.9983E+02	25	2.9983E+02
26	8.4887E+02	34	2.9637E+02	34	2.9637E+02	34	2.9637E+02
56	8.4887E+02	56	2.9511E+02	56	2.9511E+02	56	2.9511E+02
55	8.4855E+02	44	2.9106E+02	44	2.9106E+02	44	2.9106E+02
25	8.4855E+02	26	2.8959E+02	26	2.8959E+02	26	2.8959E+02
38	7.3984E+02	39	1.7995E+02	39	1.7995E+02	39	1.7995E+02
48	7.3984E+02	24	1.7445E+02	24	1.7445E+02	24	1.7445E+02
43	7.3953E+02	49	1.6708E+02	49	1.6708E+02	49	1.6708E+02
33	7.3953E+02	27	1.6453E+02	27	1.6453E+02	27	1.6453E+02
27	6.0261E+02	38	1.5170E+02	38	1.5170E+02	38	1.5170E+02
57	6.0261E+02	48	1.4935E+02	48	1.4935E+02	48	1.4935E+02
24	6.0243E+02	54	1.4725E+02	54	1.4725E+02	54	1.4725E+02
54	6.0243E+02	32	1.4253E+02	32	1.4253E+02	32	1.4253E+02
39	5.7540E+02	57	1.3578E+02	57	1.3578E+02	57	1.3578E+02
49	5.7540E+02	33	1.2937E+02	33	1.2937E+02	33	1.2937E+02
42	5.7446E+02	43	1.2677E+02	43	1.2677E+02	43	1.2677E+02
32	5.7446E+02	42	1.2359E+02	42	1.2359E+02	42	1.2359E+02
28	4.2405E+02	29	1.0796E+02	29	1.0796E+02	29	1.0796E+02
58	4.2405E+02	59	1.0164E+02	59	1.0164E+02	59	1.0164E+02
23	4.2392E+02	63	9.4262E+01	63	9.4262E+01	63	9.4262E+01
53	4.2392E+02	3	9.3760E+01	3	9.3760E+01	3	9.3760E+01
29	3.1760E+02	40	9.3466E+01	40	9.3466E+01	40	9.3466E+01
59	3.1760E+02	50	9.2647E+01	50	9.2647E+01	50	9.2647E+01
52	3.1706E+02	8	9.0434E+01	8	9.0434E+01	8	9.0434E+01
22	3.1706E+02	22	8.7085E+01	22	8.7085E+01	22	8.7085E+01
40	2.8020E+02	73	8.4109E+01	73	8.4109E+01	73	8.4109E+01
50	2.8020E+02	7	8.2799E+01	7	8.2799E+01	7	8.2799E+01
41	2.7914E+02	68	8.2328E+01	68	8.2328E+01	68	8.2328E+01
31	2.7914E+02	77	8.0848E+01	77	8.0848E+01	77	8.0848E+01
13	2.1127E+02	78	7.9935E+01	78	7.9935E+01	78	7.9935E+01
63	2.1127E+02	41	7.8104E+01	41	7.8104E+01	41	7.8104E+01
18	2.1121E+02	31	7.7036E+01	31	7.7036E+01	31	7.7036E+01
68	2.1121E+02	52	7.6571E+01	52	7.6571E+01	52	7.6571E+01
8	2.0172E+02	23	7.5148E+01	23	7.5148E+01	23	7.5148E+01
78	2.0172E+02	4	7.5092E+01	4	7.5092E+01	4	7.5092E+01
73	2.0162E+02	74	7.2982E+01	74	7.2982E+01	74	7.2982E+01

3	2.0162E+02	18	7.0592E+01	18	7.0592E+01	18	7.0592E+01
74	1.8169E+02	58	6.9835E+01	58	6.9835E+01	58	6.9835E+01
4	1.8169E+02	28	6.8044E+01	28	6.8044E+01	28	6.8044E+01
77	1.8142E+02	66	6.1022E+01	66	6.1022E+01	66	6.1022E+01
7	1.8142E+02	13	5.7194E+01	13	5.7194E+01	13	5.7194E+01
30	1.4594E+02	16	5.6626E+01	16	5.6626E+01	16	5.6626E+01
60	1.4594E+02	67	5.6050E+01	67	5.6050E+01	67	5.6050E+01
21	1.4524E+02	14	5.2140E+01	14	5.2140E+01	14	5.2140E+01
51	1.4524E+02	65	5.1774E+01	65	5.1774E+01	65	5.1774E+01
16	1.3393E+02	64	5.0036E+01	64	5.0036E+01	64	5.0036E+01
66	1.3393E+02	15	4.6764E+01	15	4.6764E+01	15	4.6764E+01
15	1.3381E+02	53	4.5024E+01	53	4.5024E+01	53	4.5024E+01
65	1.3381E+02	17	4.2904E+01	17	4.2904E+01	17	4.2904E+01
67	1.2593E+02	21	4.1796E+01	21	4.1796E+01	21	4.1796E+01
17	1.2593E+02	30	4.0481E+01	30	4.0481E+01	30	4.0481E+01
14	1.2593E+02	51	3.8178E+01	51	3.8178E+01	51	3.8178E+01
64	1.2593E+02	60	3.6791E+01	60	3.6791E+01	60	3.6791E+01
20	7.3545E+01	2	3.2374E+01	2	3.2374E+01	2	3.2374E+01
70	7.3545E+01	72	3.0860E+01	72	3.0860E+01	72	3.0860E+01
61	7.3388E+01	5	2.9539E+01	5	2.9539E+01	5	2.9539E+01
11	7.3388E+01	9	2.9420E+01	9	2.9420E+01	9	2.9420E+01
69	7.2574E+01	6	2.8664E+01	6	2.8664E+01	6	2.8664E+01
19	7.2574E+01	12	2.8069E+01	12	2.8069E+01	12	2.8069E+01
12	7.2549E+01	75	2.7036E+01	75	2.7036E+01	75	2.7036E+01
62	7.2549E+01	76	2.6336E+01	76	2.6336E+01	76	2.6336E+01
2	7.0001E+01	62	2.5516E+01	62	2.5516E+01	62	2.5516E+01
72	7.0001E+01	19	2.4934E+01	19	2.4934E+01	19	2.4934E+01
9	6.9930E+01	20	2.4478E+01	20	2.4478E+01	20	2.4478E+01
79	6.9930E+01	79	2.3314E+01	79	2.3314E+01	79	2.3314E+01
75	6.4578E+01	11	2.3102E+01	11	2.3102E+01	11	2.3102E+01
5	6.4578E+01	70	2.1035E+01	70	2.1035E+01	70	2.1035E+01
76	6.4390E+01	69	2.0786E+01	69	2.0786E+01	69	2.0786E+01
6	6.4390E+01	61	1.9294E+01	61	1.9294E+01	61	1.9294E+01
1	3.5281E+01	1	1.4435E+01	1	1.4435E+01	1	1.4435E+01
71	3.5281E+01	71	1.3946E+01	71	1.3946E+01	71	1.3946E+01
10	3.5033E+01	10	1.2896E+01	10	1.2896E+01	10	1.2896E+01
80	3.5033E+01	80	8.5572E+00	80	8.5572E+00	80	8.5572E+00

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PRINCIPAL STRESSES FROM POST PROCESSING FILE: placa4-k.pos

REACTION LOADS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
31	.000E+00	.000E+00	4.506E+01	.000E+00	.000E+00	.000E+00
32	.000E+00	.000E+00	-9.022E+01	.000E+00	.000E+00	.000E+00
33	.000E+00	.000E+00	4.516E+01	.000E+00	.000E+00	.000E+00
79	.000E+00	.000E+00	7.367E+02	.000E+00	.000E+00	.000E+00
80	.000E+00	.000E+00	1.500E+03	.000E+00	.000E+00	.000E+00
81	.000E+00	.000E+00	1.499E+03	.000E+00	.000E+00	.000E+00
82	.000E+00	.000E+00	7.386E+02	.000E+00	.000E+00	.000E+00
95	.000E+00	.000E+00	7.367E+02	.000E+00	.000E+00	.000E+00
96	.000E+00	.000E+00	1.500E+03	.000E+00	.000E+00	.000E+00
97	.000E+00	.000E+00	1.499E+03	.000E+00	.000E+00	.000E+00
98	.000E+00	.000E+00	7.386E+02	.000E+00	.000E+00	.000E+00

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REDISEÑO DE LA PLACA
DATOS DE ENTRADA

PLACA SUPERIOR

1	99	80	11	2	0	11
0	1	1	0	0	0	
0	99	80				

1	0.0	33.0	0.0
8	0.0	31.5	0.0
2	1.5	33.0	0.0
9	1.5	31.5	0.0
71	6.5	33.0	0.0
75	6.5	31.5	0.0
76	15.5	31.5	0.0
72	15.5	33.0	0.0
4	20.5	33.0	0.0
11	20.5	31.5	0.0
73	25.5	33.0	0.0
77	25.5	31.5	0.0
5	29.88	33.0	0.0
12	29.88	31.5	0.0
74	34.5	33.0	0.0
78	34.5	31.5	0.0
6	39.5	33.0	0.0
13	39.5	31.5	0.0
7	41.0	33.0	0.0
14	41.0	31.5	0.0
3	11.13	33.0	0.0
10	11.13	31.5	0.0
15	0.0	26.0	0.0
16	1.5	26.0	0.0
79	6.5	26.0	0.0
17	11.13	26.0	0.0
80	15.5	26.0	0.0
18	20.5	26.0	0.0
81	25.5	26.0	0.0
19	29.88	26.0	0.0
82	34.5	26.0	0.0
20	39.5	26.0	0.0
21	41.0	26.0	0.0
22	0.0	21.5	0.0
23	1.5	21.5	0.0
83	6.5	21.5	0.0
24	11.13	21.5	0.0
84	15.5	21.5	0.0
25	20.5	21.5	0.0
85	25.5	21.5	0.0
26	29.88	21.5	0.0
86	34.5	21.5	0.0
27	39.5	21.5	0.0
28	41.0	21.5	0.0
29	0.0	16.5	0.0
30	1.5	16.5	0.0
87	6.5	16.5	0.0
31	11.13	16.5	0.0
88	15.5	16.5	0.0

32			20.5	16.5		0.0
89			25.5	16.5		0.0
33			29.88	16.5		0.0
90			34.5	16.5		0.0
34			39.5	16.5		0.0
35			41.0	16.5		0.0
36			0.0	11.5		0.0
37			1.5	11.5		0.0
91			6.5	11.5		0.0
38			11.13	11.5		0.0
92			15.5	11.5		0.0
39			20.5	11.5		0.0
93			25.5	11.5		0.0
40			29.88	11.5		0.0
94			34.5	11.5		0.0
41			39.5	11.5		0.0
42			41.0	11.5		0.0
43			0.0	7.0		0.0
44			1.5	7.0		0.0
95			6.5	7.0		0.0
45			11.13	7.0		0.0
96			15.5	7.0		0.0
46			20.5	7.0		0.0
97			25.5	7.0		0.0
47			29.88	7.0		0.0
98			34.5	7.0		0.0
48			39.5	7.0		0.0
49			41.0	7.0		0.0
50			0.0	1.5		0.0
51			1.5	1.5		0.0
99			6.5	1.5		0.0
52			11.13	1.5		0.0
100			15.5	1.5		0.0
53			20.5	1.5		0.0
101			25.5	1.5		0.0
54			29.88	1.5		0.0
102			34.5	1.5		0.0
55			39.5	1.5		0.0
56			41.0	1.5		0.0
57			0.0	0.0		0.0
58			1.5	0.0		0.0
103			6.5	0.0		0.0
59			11.13	0.0		0.0
104			15.5	0.0		0.0
60			20.5	0.0		0.0
105			25.5	0.0		0.0
61			29.88	0.0		0.0
106			34.5	0.0		0.0
62			39.5	0.0		0.0
63			41.0	0.0		0.0
1	11	1	1	8	9	2
2	11	1	2	9	75	71
5	11	1	72	76	11	4
6	11	1	4	11	77	73
7	11	1	73	77	12	5
8	11	1	5	12	78	74
9	11	1	74	78	13	6
10	11	1	6	13	14	7
3	11	1	71	75	10	3
4	11	1	3	10	76	72

11	11	1	8	15	16	9
12	11	1	9	16	79	75
13	11	1	75	79	17	10
14	11	1	10	17	80	76
15	11	1	76	80	18	11
16	11	1	11	18	81	77
17	11	1	77	81	19	12
18	11	1	12	19	82	78
19	11	1	78	82	20	13
20	11	1	13	20	21	14
21	11	1	15	22	23	16
22	11	1	16	23	83	79
23	11	1	79	83	24	17
24	11	1	17	24	84	80
25	11	1	80	84	25	18
26	11	1	18	25	85	81
27	11	1	81	85	26	19
28	11	1	19	26	86	82
29	11	1	82	86	27	20
30	11	1	20	27	28	21
31	11	1	22	29	30	23
32	11	1	23	30	87	83
33	11	1	83	87	31	24
34	11	1	24	31	88	84
35	11	1	84	88	32	25
36	11	1	25	32	89	85
37	11	1	85	89	33	26
38	11	1	26	33	90	86
39	11	1	86	90	34	27
40	11	1	27	34	35	28
41	11	1	29	36	37	30
42	11	1	30	37	91	87
43	11	1	87	91	38	31
44	11	1	31	38	92	88
45	11	1	88	92	39	32
46	11	1	32	39	93	89
47	11	1	89	93	40	33
48	11	1	33	40	94	90
49	11	1	90	94	41	34
50	11	1	34	41	42	35
51	11	1	36	43	44	37
52	11	1	37	44	95	91
53	11	1	91	95	45	38
54	11	1	38	45	96	92
55	11	1	92	96	46	39
56	11	1	39	46	97	93
57	11	1	93	97	47	40
58	11	1	40	47	98	94
59	11	1	94	98	48	41
60	11	1	41	48	49	42
61	11	1	43	50	51	44
62	11	1	44	51	99	95
63	11	1	95	99	52	45
64	11	1	45	52	100	96
65	11	1	96	100	53	46
66	11	1	46	53	101	97
67	11	1	97	101	54	47
68	11	1	47	54	102	98
69	11	1	98	102	55	48
70	11	1	48	55	56	49

```
71   11   1   50   57   58   51
72   11   1   51   58  103   99
73   11   1   99  103   59   52
74   11   1   52   59  104  100
75   11   1  100  104   60   53
76   11   1   53   60  105  101
77   11   1  101  105   61   54
78   11   1   54   61  106  102
79   11   1  102  106   62   55
80   11   1   55   62   63   56
 1        0.0   1.0+07      .33      2.0     13.5     .095  3800000.A
 1        0.0   1.0+07      .33      2.0     13.5     .095  3800000.A
79   001000           0.0   0    0    0
80   001000           0.0   0    0    0
81   001000           0.0   0    0    0
82   001000           0.0   0    0    0
31   001000           0.0   0    0    0
32   001000           0.0   0    0    0
33   001000           0.0   0    0    0
95   001000           0.0   0    0    0
96   001000           0.0   0    0    0
97   001000           0.0   0    0    0
98   001000           0.0   0    0    0
 0
24   0    1    0    0    0       0.0
17   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
18   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
19   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
24   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
25   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
26   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
38   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
39   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
40   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
45   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
46   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
47   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
83   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
84   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
85   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
86   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
87   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
88   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
89   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
90   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
91   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
92   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
93   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
94   1    0         0.0      0.0   -372.87     0.0     0.0     0.0
 0
```

LIBRA Finite Element Program
Version 3.0 Revision 2

PLACA SUPERIOR

FILE SPECIFICATIONS

INPUT a:placa4k1
OUTPUT a:placa4k1.sol
BANDWIDTH ..... NONE
POST PROCESS .. a:placa4k1.pos

NSTYPE	NP	NE	NB	NELPR	NCNCN1	EL TYPES
1	99	80	11	2	0	11

IDATCK	IBNDOP	IPOST	ISING	IRSFLG	ISUPR
0	1	1	0	0	0

LIBRA Finite Element Program
Version 3.0 Revision 2

PLACA SUPERIOR

NODAL COORDINATES

NODE POINT	X-COORDINATE	Y-COORDINATE	Z-COORDINATE
1	.0000E+00	3.3000E+01	.0000E+00
2	1.5000E+00	3.3000E+01	.0000E+00
3	1.1130E+01	3.3000E+01	.0000E+00
4	2.0500E+01	3.3000E+01	.0000E+00
5	2.9880E+01	3.3000E+01	.0000E+00
6	3.9500E+01	3.3000E+01	.0000E+00
7	4.1000E+01	3.3000E+01	.0000E+00
8	.0000E+00	3.1500E+01	.0000E+00
9	1.5000E+00	3.1500E+01	.0000E+00
10	1.1130E+01	3.1500E+01	.0000E+00
11	2.0500E+01	3.1500E+01	.0000E+00
12	2.9880E+01	3.1500E+01	.0000E+00
13	3.9500E+01	3.1500E+01	.0000E+00
14	4.1000E+01	3.1500E+01	.0000E+00
15	.0000E+00	2.6000E+01	.0000E+00
16	1.5000E+00	2.6000E+01	.0000E+00
17	1.1130E+01	2.6000E+01	.0000E+00
18	2.0500E+01	2.6000E+01	.0000E+00
19	2.9880E+01	2.6000E+01	.0000E+00
20	3.9500E+01	2.6000E+01	.0000E+00
21	4.1000E+01	2.6000E+01	.0000E+00
22	.0000E+00	2.1500E+01	.0000E+00
23	1.5000E+00	2.1500E+01	.0000E+00
24	1.1130E+01	2.1500E+01	.0000E+00
25	2.0500E+01	2.1500E+01	.0000E+00
26	2.9880E+01	2.1500E+01	.0000E+00
27	3.9500E+01	2.1500E+01	.0000E+00
28	4.1000E+01	2.1500E+01	.0000E+00
29	.0000E+00	1.6500E+01	.0000E+00
30	1.5000E+00	1.6500E+01	.0000E+00
31	1.1130E+01	1.6500E+01	.0000E+00
32	2.0500E+01	1.6500E+01	.0000E+00
33	2.9880E+01	1.6500E+01	.0000E+00
34	3.9500E+01	1.6500E+01	.0000E+00
35	4.1000E+01	1.6500E+01	.0000E+00
36	.0000E+00	1.1500E+01	.0000E+00
37	1.5000E+00	1.1500E+01	.0000E+00
38	1.1130E+01	1.1500E+01	.0000E+00
39	2.0500E+01	1.1500E+01	.0000E+00
40	2.9880E+01	1.1500E+01	.0000E+00
41	3.9500E+01	1.1500E+01	.0000E+00
42	4.1000E+01	1.1500E+01	.0000E+00
43	.0000E+00	7.0000E+00	.0000E+00
44	1.5000E+00	7.0000E+00	.0000E+00
45	1.1130E+01	7.0000E+00	.0000E+00
46	2.0500E+01	7.0000E+00	.0000E+00
47	2.9880E+01	7.0000E+00	.0000E+00
48	3.9500E+01	7.0000E+00	.0000E+00

49	4.1000E+01	7.0000E+00	.0000E+00
50	.0000E+00	1.5000E+00	.0000E+00
51	1.5000E+00	1.5000E+00	.0000E+00
52	1.1130E+01	1.5000E+00	.0000E+00
53	2.0500E+01	1.5000E+00	.0000E+00
54	2.9880E+01	1.5000E+00	.0000E+00
55	3.9500E+01	1.5000E+00	.0000E+00
56	4.1000E+01	1.5000E+00	.0000E+00
57	.0000E+00	.0000E+00	.0000E+00
58	1.5000E+00	.0000E+00	.0000E+00
59	1.1130E+01	.0000E+00	.0000E+00
60	2.0500E+01	.0000E+00	.0000E+00
61	2.9880E+01	.0000E+00	.0000E+00
62	3.9500E+01	.0000E+00	.0000E+00
63	4.1000E+01	.0000E+00	.0000E+00
71	6.5000E+00	3.3000E+01	.0000E+00
72	1.5500E+01	3.3000E+01	.0000E+00
73	2.5500E+01	3.3000E+01	.0000E+00
74	3.4500E+01	3.3000E+01	.0000E+00
75	6.5000E+00	3.1500E+01	.0000E+00
76	1.5500E+01	3.1500E+01	.0000E+00
77	2.5500E+01	3.1500E+01	.0000E+00
78	3.4500E+01	3.1500E+01	.0000E+00
79	6.5000E+00	2.6000E+01	.0000E+00
80	1.5500E+01	2.6000E+01	.0000E+00
81	2.5500E+01	2.6000E+01	.0000E+00
82	3.4500E+01	2.6000E+01	.0000E+00
83	6.5000E+00	2.1500E+01	.0000E+00
84	1.5500E+01	2.1500E+01	.0000E+00
85	2.5500E+01	2.1500E+01	.0000E+00
86	3.4500E+01	2.1500E+01	.0000E+00
87	6.5000E+00	1.6500E+01	.0000E+00
88	1.5500E+01	1.6500E+01	.0000E+00
89	2.5500E+01	1.6500E+01	.0000E+00
90	3.4500E+01	1.6500E+01	.0000E+00
91	6.5000E+00	1.1500E+01	.0000E+00
92	1.5500E+01	1.1500E+01	.0000E+00
93	2.5500E+01	1.1500E+01	.0000E+00
94	3.4500E+01	1.1500E+01	.0000E+00
95	6.5000E+00	7.0000E+00	.0000E+00
96	1.5500E+01	7.0000E+00	.0000E+00
97	2.5500E+01	7.0000E+00	.0000E+00
98	3.4500E+01	7.0000E+00	.0000E+00
99	6.5000E+00	1.5000E+00	.0000E+00
100	1.5500E+01	1.5000E+00	.0000E+00
101	2.5500E+01	1.5000E+00	.0000E+00
102	3.4500E+01	1.5000E+00	.0000E+00
103	6.5000E+00	.0000E+00	.0000E+00
104	1.5500E+01	.0000E+00	.0000E+00
105	2.5500E+01	.0000E+00	.0000E+00
106	3.4500E+01	.0000E+00	.0000E+00

ELEMENT DATA

ELEMENT	EL TYPE	MATERIAL	.....NODES.....			
1	11	1	1	8	9	2
2	11	1	2	9	75	71
3	11	1	71	75	10	3
4	11	1	3	10	76	72
5	11	1	72	76	11	4
6	11	1	4	11	77	73
7	11	1	73	77	12	5
8	11	1	5	12	78	74
9	11	1	74	78	13	6
10	11	1	6	13	14	7
11	11	1	8	15	16	9
12	11	1	9	16	79	75
13	11	1	75	79	17	10
14	11	1	10	17	80	76
15	11	1	76	80	18	11
16	11	1	11	18	81	77
17	11	1	77	81	19	12
18	11	1	12	19	82	78
19	11	1	78	82	20	13
20	11	1	13	20	21	14
21	11	1	15	22	23	16
22	11	1	16	23	83	79
23	11	1	79	83	24	17
24	11	1	17	24	84	80
25	11	1	80	84	25	18
26	11	1	18	25	85	81
27	11	1	81	85	26	19
28	11	1	19	26	86	82
29	11	1	82	86	27	20
30	11	1	20	27	28	21
31	11	1	22	29	30	23
32	11	1	23	30	87	83
33	11	1	83	87	31	24
34	11	1	24	31	88	84
35	11	1	84	88	32	25
36	11	1	25	32	89	85
37	11	1	85	89	33	26
38	11	1	26	33	90	86
39	11	1	86	90	34	27
40	11	1	27	34	35	28
41	11	1	29	36	37	30
42	11	1	30	37	91	87
43	11	1	87	91	38	31
44	11	1	31	38	92	88
45	11	1	88	92	39	32
46	11	1	32	39	93	89
47	11	1	89	93	40	33
48	11	1	33	40	94	90
49	11	1	90	94	41	34
50	11	1	34	41	42	35
51	11	1	36	43	44	37
52	11	1	37	44	95	91
53	11	1	91	95	45	38
54	11	1	38	45	96	92
55	11	1	92	96	46	39
56	11	1	39	46	97	93
57	11	1	93	97	47	40
58	11	1	40	47	98	94
59	11	1	94	98	48	41

60	11	1	41	48	49	42
61	11	1	43	50	51	44
62	11	1	44	51	99	95
63	11	1	95	99	52	45
64	11	1	45	52	100	96
65	11	1	96	100	53	46
66	11	1	46	53	101	97
67	11	1	97	101	54	47
68	11	1	47	54	102	98
69	11	1	98	102	55	48
70	11	1	48	55	56	49
71	11	1	50	57	58	51
72	11	1	51	58	103	99
73	11	1	99	103	59	52
74	11	1	52	59	104	100
75	11	1	100	104	60	53
76	11	1	53	60	105	101
77	11	1	101	105	61	54
78	11	1	54	61	106	102
79	11	1	102	106	62	55
80	11	1	55	62	63	56

MATERIAL PROPERTIES

SET	TEMP	PROP(1)	PROP(2)	PROP(3)	PROP(4)	PROP(5)	PROP(6)
1	000E+00	1.000E+07	3.300E-01	2.000E+00	1.350E+01	9.500E-02	3.800E+06
1	.000E+00	1.000E+07	3.300E-01	2.000E+00	1.350E+01	9.500E-02	3.800E+06

DISPLACEMENT BOUNDARY CONDITIONS

NODE	DOF FIXED	DISP
79	001000	.0000E+00
80	001000	.0000E+00
81	001000	.0000E+00
82	001000	.0000E+00
31	001000	.0000E+00
32	001000	.0000E+00
33	001000	.0000E+00
95	001000	.0000E+00
96	001000	.0000E+00
97	001000	.0000E+00
98	001000	.0000E+00

PROBLEM SIZE INFORMATION

TOTAL NUMBER OF NODES	99
TOTAL NUMBER OF ELEMENTS	80
TOTAL NUMBER OF BOUNDARY CONDITIONS	11
TOTAL NUMBER OF CONSTRAINING CONDITIONS	0
TOTAL NUMBER OF EQUATIONS	594
BAND WIDTH	96
NUMBER OF EQUATIONS PER BLOCK	78
NUMBER OF EQUATION BLOCKS	8

LIBRA Finite Element Program
Version 3.0 Revision 2

PLACA SUPERIOR

SOLUTION CONTROL PARAMETERS, LOAD CASE NUMBER 1

NUMBER OF NODAL LOAD RECORDS 24
NUMBER OF NODAL TEMPERATURE RECORDS ... 0
REACTION LOAD CALCULATION OPTION 1
BODY FORCE OPTION 0
ROTATIONAL SPEED OPTION 0
SKIP STRESS CALCULATION OPTION 0
ZERO STRESS TEMPERATURE ..... .0000E+00

NODAL LOADS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
17	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
18	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
19	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
24	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
25	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
26	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
38	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
39	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
40	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
45	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
46	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
47	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
83	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
84	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
85	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
86	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
87	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
88	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
89	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
90	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
91	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
92	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
93	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00
94	.0000E+00	.0000E+00	-3.7287E+02	.0000E+00	.0000E+00	.0000E+00

DISPLACEMENTS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
1	.000E+00	.000E+00	8.032E-04	1.113E-04	1.107E-04	.000E+00
2	.000E+00	.000E+00	2.782E-05	8.875E-05	1.066E-04	.000E+00
3	.000E+00	.000E+00	-7.996E-04	-1.034E-05	6.745E-05	.000E+00
4	.000E+00	.000E+00	-1.160E-03	-8.226E-05	4.804E-08	.000E+00
5	.000E+00	.000E+00	-7.999E-04	-1.036E-05	-6.739E-05	.000E+00
6	.000E+00	.000E+00	2.571E-05	8.838E-05	-1.064E-04	.000E+00
7	.000E+00	.000E+00	8.010E-04	1.108E-04	-1.105E-04	.000E+00
8	.000E+00	.000E+00	2.796E-05	1.154E-04	7.945E-05	.000E+00
9	.000E+00	.000E+00	5.106E-04	8.639E-05	8.163E-05	.000E+00
10	.000E+00	.000E+00	-1.600E-04	-1.146E-05	5.562E-05	.000E+00
11	.000E+00	.000E+00	-4.081E-04	-8.531E-05	3.565E-08	.000E+00
12	.000E+00	.000E+00	-1.602E-04	-1.148E-05	-5.558E-05	.000E+00
13	.000E+00	.000E+00	5.091E-04	8.602E-05	-8.157E-05	.000E+00
14	.000E+00	.000E+00	2.630E-05	1.150E-04	-7.940E-05	.000E+00
15	.000E+00	.000E+00	-4.391E-05	1.289E-04	-2.182E-05	.000E+00
16	.000E+00	.000E+00	-6.101E-04	9.864E-05	-2.018E-05	.000E+00
17	.000E+00	.000E+00	-6.788E-04	-3.047E-05	-3.593E-06	.000E+00
18	.000E+00	.000E+00	-5.893E-04	-7.526E-05	-8.866E-09	.000E+00
19	.000E+00	.000E+00	-6.789E-04	-3.048E-05	3.582E-06	.000E+00
20	.000E+00	.000E+00	-6.097E-04	9.828E-05	2.004E-05	.000E+00
21	.000E+00	.000E+00	-4.316E-05	1.285E-04	2.169E-05	.000E+00
22	.000E+00	.000E+00	-1.164E-03	9.588E-05	-6.376E-05	.000E+00
23	.000E+00	.000E+00	-4.701E-04	9.955E-05	-7.116E-05	.000E+00
24	.000E+00	.000E+00	1.562E-04	-9.476E-05	-4.930E-05	.000E+00
25	.000E+00	.000E+00	2.853E-04	-6.238E-05	2.946E-08	.000E+00
26	.000E+00	.000E+00	1.562E-04	-9.478E-05	4.921E-05	.000E+00
27	.000E+00	.000E+00	-4.681E-04	9.928E-05	7.105E-05	.000E+00
28	.000E+00	.000E+00	-1.162E-03	9.568E-05	6.368E-05	.000E+00
29	.000E+00	.000E+00	-8.156E-04	6.573E-19	-6.762E-05	.000E+00
30	.000E+00	.000E+00	-1.298E-03	3.284E-19	-7.847E-05	.000E+00
31	.000E+00	.000E+00	.000E+00	-1.142E-18	-6.623E-05	.000E+00
32	.000E+00	.000E+00	.000E+00	-1.431E-18	9.096E-08	.000E+00
33	.000E+00	.000E+00	.000E+00	-1.745E-19	6.607E-05	.000E+00
34	.000E+00	.000E+00	-1.295E-03	-2.376E-20	7.846E-05	.000E+00
35	.000E+00	.000E+00	-8.130E-04	-4.526E-19	6.764E-05	.000E+00
36	.000E+00	.000E+00	-1.164E-03	-9.588E-05	-6.376E-05	.000E+00
37	.000E+00	.000E+00	-4.701E-04	-9.955E-05	-7.116E-05	.000E+00
38	.000E+00	.000E+00	1.562E-04	9.476E-05	-4.930E-05	.000E+00
39	.000E+00	.000E+00	2.853E-04	6.238E-05	2.946E-08	.000E+00
40	.000E+00	.000E+00	1.562E-04	9.478E-05	4.921E-05	.000E+00
41	.000E+00	.000E+00	-4.681E-04	-9.928E-05	7.105E-05	.000E+00
42	.000E+00	.000E+00	-1.162E-03	-9.568E-05	6.368E-05	.000E+00
43	.000E+00	.000E+00	-4.391E-05	-1.289E-04	-2.182E-05	.000E+00
44	.000E+00	.000E+00	-6.101E-04	-9.864E-05	-2.018E-05	.000E+00
45	.000E+00	.000E+00	-6.788E-04	3.047E-05	-3.593E-06	.000E+00
46	.000E+00	.000E+00	-5.893E-04	7.526E-05	-8.866E-09	.000E+00
47	.000E+00	.000E+00	-6.789E-04	3.048E-05	3.582E-06	.000E+00
48	.000E+00	.000E+00	-6.097E-04	-9.828E-05	2.004E-05	.000E+00
49	.000E+00	.000E+00	-4.316E-05	-1.285E-04	2.169E-05	.000E+00
50	.000E+00	.000E+00	2.796E-05	-1.154E-04	7.945E-05	.000E+00
51	.000E+00	.000E+00	5.106E-04	-8.639E-05	8.163E-05	.000E+00
52	.000E+00	.000E+00	-1.600E-04	1.146E-05	5.562E-05	.000E+00
53	.000E+00	.000E+00	-4.081E-04	8.531E-05	3.565E-08	.000E+00

54	.000E+00	.000E+00	-1.602E-04	1.148E-05	-5.558E-05	.000E+00
55	.000E+00	.000E+00	5.091E-04	-8.602E-05	-8.157E-05	.000E+00
56	.000E+00	.000E+00	2.630E-05	-1.150E-04	-7.940E-05	.000E+00
57	.000E+00	.000E+00	8.032E-04	-1.113E-04	1.107E-04	.000E+00
58	.000E+00	.000E+00	2.782E-05	-8.875E-05	1.066E-04	.000E+00
59	.000E+00	.000E+00	-7.996E-04	1.034E-05	6.745E-05	.000E+00
60	.000E+00	.000E+00	-1.160E-03	8.226E-05	4.804E-08	.000E+00
61	.000E+00	.000E+00	-7.999E-04	1.036E-05	-6.739E-05	.000E+00
62	.000E+00	.000E+00	2.571E-05	-8.838E-05	-1.064E-04	.000E+00
63	.000E+00	.000E+00	8.010E-04	-1.108E-04	-1.105E-04	.000E+00
71	.000E+00	.000E+00	1.661E-04	2.519E-05	8.406E-05	.000E+00
72	.000E+00	.000E+00	-4.254E-04	-5.193E-05	4.306E-05	.000E+00
73	.000E+00	.000E+00	-4.259E-04	-5.202E-05	-4.296E-05	.000E+00
74	.000E+00	.000E+00	1.646E-04	2.500E-05	-8.394E-05	.000E+00
75	.000E+00	.000E+00	-4.893E-04	2.317E-05	7.023E-05	.000E+00
76	.000E+00	.000E+00	-9.697E-04	-5.621E-05	2.714E-05	.000E+00
77	.000E+00	.000E+00	-9.701E-04	-5.630E-05	-2.705E-05	.000E+00
78	.000E+00	.000E+00	-4.905E-04	2.298E-05	-7.015E-05	.000E+00
79	.000E+00	.000E+00	.000E+00	2.645E-05	2.322E-05	.000E+00
80	.000E+00	.000E+00	.000E+00	-6.851E-05	-1.548E-05	.000E+00
81	.000E+00	.000E+00	.000E+00	-6.856E-05	1.549E-05	.000E+00
82	.000E+00	.000E+00	.000E+00	2.621E-05	-2.330E-05	.000E+00
83	.000E+00	.000E+00	-6.700E-04	4.868E-06	-7.693E-05	.000E+00
84	.000E+00	.000E+00	-2.355E-04	-8.105E-05	-6.564E-06	.000E+00
85	.000E+00	.000E+00	-2.356E-04	-8.096E-05	6.519E-06	.000E+00
86	.000E+00	.000E+00	-6.689E-04	4.582E-06	7.676E-05	.000E+00
87	.000E+00	.000E+00	-1.472E-04	-5.523E-19	-1.692E-04	.000E+00
88	.000E+00	.000E+00	4.687E-04	-1.294E-18	1.801E-05	.000E+00
89	.000E+00	.000E+00	4.683E-04	-7.996E-19	-1.809E-05	.000E+00
90	.000E+00	.000E+00	-1.450E-04	1.559E-19	1.690E-04	.000E+00
91	.000E+00	.000E+00	-6.700E-04	-4.868E-06	-7.693E-05	.000E+00
92	.000E+00	.000E+00	-2.355E-04	8.105E-05	-6.564E-06	.000E+00
93	.000E+00	.000E+00	-2.356E-04	8.096E-05	6.519E-06	.000E+00
94	.000E+00	.000E+00	-6.689E-04	-4.582E-06	7.676E-05	.000E+00
95	.000E+00	.000E+00	.000E+00	-2.645E-05	2.322E-05	.000E+00
96	.000E+00	.000E+00	.000E+00	6.851E-05	-1.548E-05	.000E+00
97	.000E+00	.000E+00	.000E+00	6.856E-05	1.549E-05	.000E+00
98	.000E+00	.000E+00	.000E+00	-2.621E-05	-2.330E-05	.000E+00
99	.000E+00	.000E+00	-4.893E-04	-2.317E-05	7.023E-05	.000E+00
100	.000E+00	.000E+00	-9.697E-04	5.621E-05	2.714E-05	.000E+00
101	.000E+00	.000E+00	-9.701E-04	5.630E-05	-2.705E-05	.000E+00
102	.000E+00	.000E+00	-4.905E-04	-2.298E-05	-7.015E-05	.000E+00
103	.000E+00	.000E+00	1.661E-04	-2.519E-05	8.406E-05	.000E+00
104	.000E+00	.000E+00	-4.254E-04	5.193E-05	4.306E-05	.000E+00
105	.000E+00	.000E+00	-4.259E-04	5.202E-05	-4.296E-05	.000E+00
106	.000E+00	.000E+00	1.646E-04	-2.500E-05	-8.394E-05	.000E+00

ELEMENT STRESSES

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
1	1	3.170E-01	3.268E+01	.000E+00	3.136E+01	-3.141E+01	3.138E+01

					3.141E+01	-3.136E+01	3.138E+01
1	2	1.183E+00	3.268E+01	.000E+00	1.216E+00	-2.010E+01	1.066E+01
					2.010E+01	-1.216E+00	1.066E+01
1	3	3.170E-01	3.182E+01	.000E+00	2.010E+01	-1.964E+00	1.103E+01
					1.964E+00	-2.010E+01	1.103E+01
1	4	1.183E+00	3.182E+01	.000E+00	9.472E+00	-1.017E+01	9.820E+00
					1.017E+01	-9.472E+00	9.820E+00

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
2	1	2.557E+00	3.268E+01	.000E+00	-2.250E-01	-4.157E+01	2.067E+01
					4.157E+01	2.250E-01	2.067E+01
2	2	5.443E+00	3.268E+01	.000E+00	5.531E-01	-4.135E+01	2.095E+01
					4.135E+01	-5.531E-01	2.095E+01
2	3	2.557E+00	3.182E+01	.000E+00	-3.265E+00	-2.890E+01	1.282E+01
					2.890E+01	3.265E+00	1.282E+01
2	4	5.443E+00	3.182E+01	.000E+00	-3.254E+00	-2.791E+01	1.233E+01
					2.791E+01	3.254E+00	1.233E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
3	1	7.478E+00	3.268E+01	.000E+00	-4.661E-02	-3.541E+01	1.768E+01
					3.541E+01	4.661E-02	1.768E+01
3	2	1.015E+01	3.268E+01	.000E+00	3.239E+00	-3.610E+01	1.967E+01
					3.610E+01	-3.239E+00	1.967E+01
3	3	7.478E+00	3.182E+01	.000E+00	-7.553E-01	-3.282E+01	1.603E+01
					3.282E+01	7.553E-01	1.603E+01
3	4	1.015E+01	3.182E+01	.000E+00	2.377E+00	-3.336E+01	1.787E+01
					3.336E+01	-2.377E+00	1.787E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
4	1	1.205E+01	3.268E+01	.000E+00	8.317E+00	-6.074E+01	3.453E+01
					6.074E+01	-8.317E+00	3.453E+01
4	2	1.458E+01	3.268E+01	.000E+00	-5.593E+00	-5.597E+01	2.519E+01
					5.597E+01	5.593E+00	2.519E+01
4	3	1.205E+01	3.182E+01	.000E+00	1.051E+01	-6.700E+01	3.876E+01
					6.700E+01	-1.051E+01	3.876E+01
4	4	1.458E+01	3.182E+01	.000E+00	-3.624E+00	-6.201E+01	2.920E+01

					6.201E+01	3.624E+00	2.920E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
5	1	1.656E+01	3.268E+01	.000E+00	2.779E-01	-8.006E+01	4.017E+01
					8.006E+01	-2.779E-01	4.017E+01
5	2	1.944E+01	3.268E+01	.000E+00	6.875E+00	-8.310E+01	4.499E+01
					8.310E+01	-6.875E+00	4.499E+01
5	3	1.656E+01	3.182E+01	.000E+00	-5.836E+00	-6.013E+01	2.715E+01
					6.013E+01	5.836E+00	2.715E+01
5	4	1.944E+01	3.182E+01	.000E+00	8.244E-01	-6.323E+01	3.203E+01
					6.323E+01	-8.244E-01	3.203E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
6	1	2.156E+01	3.268E+01	.000E+00	6.874E+00	-8.309E+01	4.498E+01
					8.309E+01	-6.874E+00	4.498E+01
6	2	2.444E+01	3.268E+01	.000E+00	2.929E-01	-8.006E+01	4.017E+01
					8.006E+01	-2.929E-01	4.017E+01
6	3	2.156E+01	3.182E+01	.000E+00	8.206E-01	-6.321E+01	3.202E+01
					6.321E+01	-8.206E-01	3.202E+01
6	4	2.444E+01	3.182E+01	.000E+00	-5.822E+00	-6.012E+01	2.715E+01
					6.012E+01	5.822E+00	2.715E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
7	1	2.643E+01	3.268E+01	.000E+00	-5.590E+00	-5.593E+01	2.517E+01
					5.593E+01	5.590E+00	2.517E+01
7	2	2.895E+01	3.268E+01	.000E+00	8.321E+00	-6.070E+01	3.451E+01
					6.070E+01	-8.321E+00	3.451E+01
7	3	2.643E+01	3.182E+01	.000E+00	-3.625E+00	-6.196E+01	2.917E+01
					6.196E+01	3.625E+00	2.917E+01
7	4	2.895E+01	3.182E+01	.000E+00	1.051E+01	-6.695E+01	3.873E+01
					6.695E+01	-1.051E+01	3.873E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
8	1	3.086E+01	3.268E+01	.000E+00	3.236E+00	-3.605E+01	1.964E+01
					3.605E+01	-3.236E+00	1.964E+01

8	2	3.352E+01	3.268E+01	.000E+00	-6.856E-02	-3.536E+01	1.764E+01
					3.536E+01	6.856E-02	1.764E+01
8	3	3.086E+01	3.182E+01	.000E+00	2.381E+00	-3.333E+01	1.786E+01
					3.333E+01	-2.381E+00	1.786E+01
8	4	3.352E+01	3.182E+01	.000E+00	-7.708E-01	-3.279E+01	1.601E+01
					3.279E+01	7.708E-01	1.601E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
9	1	3.556E+01	3.268E+01	.000E+00	5.338E-01	-4.133E+01	2.093E+01
					4.133E+01	-5.338E-01	2.093E+01
9	2	3.844E+01	3.268E+01	.000E+00	-2.261E-01	-4.156E+01	2.067E+01
					4.156E+01	2.261E-01	2.067E+01
9	3	3.556E+01	3.182E+01	.000E+00	-3.268E+00	-2.792E+01	1.232E+01
					2.792E+01	3.268E+00	1.232E+01
9	4	3.844E+01	3.182E+01	.000E+00	-3.266E+00	-2.891E+01	1.282E+01
					2.891E+01	3.266E+00	1.282E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
10	1	3.982E+01	3.268E+01	.000E+00	1.205E+00	-2.006E+01	1.063E+01
					2.006E+01	-1.205E+00	1.063E+01
10	2	4.068E+01	3.268E+01	.000E+00	3.131E+01	-3.136E+01	3.133E+01
					3.136E+01	-3.131E+01	3.133E+01
10	3	3.982E+01	3.182E+01	.000E+00	9.454E+00	-1.016E+01	9.807E+00
					1.016E+01	-9.454E+00	9.807E+00
10	4	4.068E+01	3.182E+01	.000E+00	2.007E+01	-1.964E+00	1.102E+01
					1.964E+00	-2.007E+01	1.102E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
11	1	3.170E-01	3.034E+01	.000E+00	2.291E+01	5.502E+00	8.705E+00
					-5.502E+00	-2.291E+01	8.705E+00
11	2	1.183E+00	3.034E+01	.000E+00	2.149E+01	5.958E+00	7.767E+00
					-5.958E+00	-2.149E+01	7.767E+00
11	3	3.170E-01	2.716E+01	.000E+00	2.437E+01	2.485E+00	1.094E+01
					-2.485E+00	-2.437E+01	1.094E+01
11	4	1.183E+00	2.716E+01	.000E+00	2.297E+01	2.918E+00	1.003E+01
					-2.918E+00	-2.297E+01	1.003E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
12	1	2.557E+00	3.034E+01	.000E+00	2.597E+01	-1.154E+01	1.875E+01
					1.154E+01	-2.597E+01	1.875E+01
12	2	5.443E+00	3.034E+01	.000E+00	1.486E+01	-7.507E+00	1.118E+01
					7.507E+00	-1.486E+01	1.118E+01
12	3	2.557E+00	2.716E+01	.000E+00	6.559E+01	-3.583E+00	3.459E+01
					3.583E+00	-6.559E+01	3.459E+01
12	4	5.443E+00	2.716E+01	.000E+00	6.991E+01	-1.498E+01	4.245E+01
					1.498E+01	-6.991E+01	4.245E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
13	1	7.478E+00	3.034E+01	.000E+00	1.091E+01	-4.077E+01	2.584E+01
					4.077E+01	-1.091E+01	2.584E+01
13	2	1.015E+01	3.034E+01	.000E+00	-1.301E+01	-3.444E+01	1.071E+01
					3.444E+01	1.301E+01	1.071E+01
13	3	7.478E+00	2.716E+01	.000E+00	1.744E+01	-5.875E+01	3.809E+01
					5.875E+01	-1.744E+01	3.809E+01
13	4	1.015E+01	2.716E+01	.000E+00	-9.445E+00	-4.946E+01	2.001E+01
					4.946E+01	9.445E+00	2.001E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
14	1	1.205E+01	3.034E+01	.000E+00	-1.470E+01	-5.232E+01	1.881E+01
					5.232E+01	1.470E+01	1.881E+01
14	2	1.458E+01	3.034E+01	.000E+00	-6.137E+00	-5.559E+01	2.473E+01
					5.559E+01	6.137E+00	2.473E+01
14	3	1.205E+01	2.716E+01	.000E+00	-2.048E+01	-3.005E+01	4.784E+00
					3.005E+01	2.048E+01	4.784E+00
14	4	1.458E+01	2.716E+01	.000E+00	-1.457E+01	-3.067E+01	8.049E+00
					3.067E+01	1.457E+01	8.049E+00

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
15	1	1.656E+01	3.034E+01	.000E+00	-1.416E+00	-3.617E+01	1.738E+01
					3.617E+01	1.416E+00	1.738E+01

15	2	1.944E+01	3.034E+01	.000E+00	2.636E+01	-4.631E+01	3.633E+01
					4.631E+01	-2.636E+01	3.633E+01
15	3	1.656E+01	2.716E+01	.000E+00	2.426E+01	-2.488E+01	2.457E+01
					2.488E+01	-2.426E+01	2.457E+01
15	4	1.944E+01	2.716E+01	.000E+00	1.196E+01	5.051E+00	3.453E+00
					-5.051E+00	-1.196E+01	3.453E+00

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
16	1	2.156E+01	3.034E+01	.000E+00	2.637E+01	-4.628E+01	3.632E+01
					4.628E+01	-2.637E+01	3.632E+01
16	2	2.444E+01	3.034E+01	.000E+00	-1.363E+00	-3.615E+01	1.740E+01
					3.615E+01	1.363E+00	1.740E+01
16	3	2.156E+01	2.716E+01	.000E+00	1.202E+01	5.043E+00	3.488E+00
					-5.043E+00	-1.202E+01	3.488E+00
16	4	2.444E+01	2.716E+01	.000E+00	2.429E+01	-2.483E+01	2.456E+01
					2.483E+01	-2.429E+01	2.456E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
17	1	2.643E+01	3.034E+01	.000E+00	-6.088E+00	-5.556E+01	2.474E+01
					5.556E+01	6.088E+00	2.474E+01
17	2	2.895E+01	3.034E+01	.000E+00	-1.469E+01	-5.228E+01	1.879E+01
					5.228E+01	1.469E+01	1.879E+01
17	3	2.643E+01	2.716E+01	.000E+00	-1.451E+01	-3.067E+01	8.078E+00
					3.067E+01	1.451E+01	8.078E+00
17	4	2.895E+01	2.716E+01	.000E+00	-2.045E+01	-3.005E+01	4.797E+00
					3.005E+01	2.045E+01	4.797E+00

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
18	1	3.086E+01	3.034E+01	.000E+00	-1.300E+01	-3.449E+01	1.074E+01
					3.449E+01	1.300E+01	1.074E+01
18	2	3.352E+01	3.034E+01	.000E+00	1.084E+01	-4.078E+01	2.581E+01
					4.078E+01	-1.084E+01	2.581E+01
18	3	3.086E+01	2.716E+01	.000E+00	-9.392E+00	-4.967E+01	2.014E+01
					4.967E+01	9.392E+00	2.014E+01
18	4	3.352E+01	2.716E+01	.000E+00	1.742E+01	-5.894E+01	3.818E+01
					5.894E+01	-1.742E+01	3.818E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
19	1	3.556E+01	3.034E+01	.000E+00	1.479E+01	-7.544E+00	1.117E+01
					7.544E+00	-1.479E+01	1.117E+01
19	2	3.844E+01	3.034E+01	.000E+00	2.597E+01	-1.160E+01	1.878E+01
					1.160E+01	-2.597E+01	1.878E+01
19	3	3.556E+01	2.716E+01	.000E+00	6.982E+01	-1.503E+01	4.242E+01
					1.503E+01	-6.982E+01	4.242E+01
19	4	3.844E+01	2.716E+01	.000E+00	6.546E+01	-3.546E+00	3.450E+01
					3.546E+00	-6.546E+01	3.450E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
20	1	3.982E+01	3.034E+01	.000E+00	2.151E+01	5.953E+00	7.781E+00
					-5.953E+00	-2.151E+01	7.781E+00
20	2	4.068E+01	3.034E+01	.000E+00	2.298E+01	5.484E+00	8.750E+00
					-5.484E+00	-2.298E+01	8.750E+00
20	3	3.982E+01	2.716E+01	.000E+00	2.301E+01	2.930E+00	1.004E+01
					-2.930E+00	-2.301E+01	1.004E+01
20	4	4.068E+01	2.716E+01	.000E+00	2.446E+01	2.489E+00	1.098E+01
					-2.489E+00	-2.446E+01	1.098E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
21	1	3.170E-01	2.505E+01	.000E+00	2.437E+01	-6.893E+01	4.665E+01
					6.893E+01	-2.437E+01	4.665E+01
21	2	1.183E+00	2.505E+01	.000E+00	1.324E+01	-2.507E+01	1.915E+01
					2.507E+01	-1.324E+01	1.915E+01
21	3	3.170E-01	2.245E+01	.000E+00	-3.441E+00	-6.727E+01	3.191E+01
					6.727E+01	3.441E+00	3.191E+01
21	4	1.183E+00	2.245E+01	.000E+00	1.740E+01	-5.538E+01	3.639E+01
					5.538E+01	-1.740E+01	3.639E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
22	1	2.557E+00	2.505E+01	.000E+00	7.764E+01	-3.443E+01	5.603E+01
					3.443E+01	-7.764E+01	5.603E+01
22	2	5.443E+00	2.505E+01	.000E+00	8.982E+01	-6.831E+01	7.907E+01

					6.831E+01	-8.982E+01	7.907E+01
22	3	2.557E+00	2.245E+01	.000E+00	2.131E+01	-2.079E+01	2.105E+01
					2.079E+01	-2.131E+01	2.105E+01
22	4	5.443E+00	2.245E+01	.000E+00	2.499E+01	-4.617E+01	3.558E+01
					4.617E+01	-2.499E+01	3.558E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
23	1	7.478E+00	2.505E+01	.000E+00	-4.817E+00	-7.119E+01	3.319E+01
					7.119E+01	4.817E+00	3.319E+01
23	2	1.015E+01	2.505E+01	.000E+00	8.621E+00	-1.258E+02	6.723E+01
					1.258E+02	-8.621E+00	6.723E+01
23	3	7.478E+00	2.245E+01	.000E+00	6.428E+01	-8.924E+01	7.676E+01
					8.924E+01	-6.428E+01	7.676E+01
23	4	1.015E+01	2.245E+01	.000E+00	8.736E+01	-1.535E+02	1.204E+02
					1.535E+02	-8.736E+01	1.204E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
24	1	1.205E+01	2.505E+01	.000E+00	4.319E+01	-1.329E+02	8.806E+01
					1.329E+02	-4.319E+01	8.806E+01
24	2	1.458E+01	2.505E+01	.000E+00	2.388E+01	-6.369E+01	4.378E+01
					6.369E+01	-2.388E+01	4.378E+01
24	3	1.205E+01	2.245E+01	.000E+00	1.274E+02	-1.628E+02	1.451E+02
					1.628E+02	-1.274E+02	1.451E+02
24	4	1.458E+01	2.245E+01	.000E+00	9.954E+01	-8.509E+01	9.232E+01
					8.509E+01	-9.954E+01	9.232E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
25	1	1.656E+01	2.505E+01	.000E+00	3.714E+01	-2.867E+01	3.290E+01
					2.867E+01	-3.714E+01	3.290E+01
25	2	1.944E+01	2.505E+01	.000E+00	2.476E+01	8.236E+00	8.259E+00
					-8.236E+00	-2.476E+01	8.259E+00
25	3	1.656E+01	2.245E+01	.000E+00	2.525E+01	-2.448E+01	2.487E+01
					2.448E+01	-2.525E+01	2.487E+01
25	4	1.944E+01	2.245E+01	.000E+00	2.105E+01	4.240E+00	8.403E+00
					-4.240E+00	-2.105E+01	8.403E+00

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
26	1	2.156E+01	2.505E+01	.000E+00	2.473E+01	8.318E+00	8.204E+00
					-8.318E+00	-2.473E+01	8.204E+00
26	2	2.444E+01	2.505E+01	.000E+00	3.707E+01	-2.842E+01	3.274E+01
					2.842E+01	-3.707E+01	3.274E+01
26	3	2.156E+01	2.245E+01	.000E+00	2.101E+01	4.215E+00	8.395E+00
					-4.215E+00	-2.101E+01	8.395E+00
26	4	2.444E+01	2.245E+01	.000E+00	2.498E+01	-2.416E+01	2.457E+01
					2.416E+01	-2.498E+01	2.457E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
27	1	2.643E+01	2.505E+01	.000E+00	2.375E+01	-6.343E+01	4.359E+01
					6.343E+01	-2.375E+01	4.359E+01
27	2	2.895E+01	2.505E+01	.000E+00	4.310E+01	-1.328E+02	8.797E+01
					1.328E+02	-4.310E+01	8.797E+01
27	3	2.643E+01	2.245E+01	.000E+00	9.917E+01	-8.474E+01	9.196E+01
					8.474E+01	-9.917E+01	9.196E+01
27	4	2.895E+01	2.245E+01	.000E+00	1.271E+02	-1.627E+02	1.449E+02
					1.627E+02	-1.271E+02	1.449E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
28	1	3.086E+01	2.505E+01	.000E+00	8.390E+00	-1.258E+02	6.709E+01
					1.258E+02	-8.390E+00	6.709E+01
28	2	3.352E+01	2.505E+01	.000E+00	-5.013E+00	-7.122E+01	3.310E+01
					7.122E+01	5.013E+00	3.310E+01
28	3	3.086E+01	2.245E+01	.000E+00	8.726E+01	-1.535E+02	1.204E+02
					1.535E+02	-8.726E+01	1.204E+02
28	4	3.352E+01	2.245E+01	.000E+00	6.419E+01	-8.929E+01	7.674E+01
					8.929E+01	-6.419E+01	7.674E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
29	1	3.556E+01	2.505E+01	.000E+00	8.975E+01	-6.831E+01	7.903E+01
					6.831E+01	-8.975E+01	7.903E+01
29	2	3.844E+01	2.505E+01	.000E+00	7.750E+01	-3.422E+01	5.586E+01
					3.422E+01	-7.750E+01	5.586E+01

29	3	3.556E+01	2.245E+01	.000E+00	2.508E+01	-4.622E+01	3.565E+01
					4.622E+01	-2.508E+01	3.565E+01
29	4	3.844E+01	2.245E+01	.000E+00	2.136E+01	-2.066E+01	2.101E+01
					2.066E+01	-2.136E+01	2.101E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
30	1	3.982E+01	2.505E+01	.000E+00	1.326E+01	-2.482E+01	1.904E+01
					2.482E+01	-1.326E+01	1.904E+01
30	2	4.068E+01	2.505E+01	.000E+00	2.432E+01	-6.853E+01	4.642E+01
					6.853E+01	-2.432E+01	4.642E+01
30	3	3.982E+01	2.245E+01	.000E+00	1.753E+01	-5.519E+01	3.636E+01
					5.519E+01	-1.753E+01	3.636E+01
30	4	4.068E+01	2.245E+01	.000E+00	-3.387E+00	-6.693E+01	3.177E+01
					6.693E+01	3.387E+00	3.177E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
31	1	3.170E-01	2.044E+01	.000E+00	1.134E+01	-1.974E+02	1.044E+02
					1.974E+02	-1.134E+01	1.044E+02
31	2	1.183E+00	2.044E+01	.000E+00	1.305E+01	-2.023E+02	1.077E+02
					2.023E+02	-1.305E+01	1.077E+02
31	3	3.170E-01	1.756E+01	.000E+00	-3.939E+00	-1.921E+02	9.408E+01
					1.921E+02	3.939E+00	9.408E+01
31	4	1.183E+00	1.756E+01	.000E+00	-2.281E+00	-1.970E+02	9.734E+01
					1.970E+02	2.281E+00	9.734E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
32	1	2.557E+00	2.044E+01	.000E+00	1.356E+01	-1.689E+02	9.121E+01
					1.689E+02	-1.356E+01	9.121E+01
32	2	5.443E+00	2.044E+01	.000E+00	-3.481E+01	-3.828E+01	1.736E+00
					3.828E+01	3.481E+01	1.736E+00
32	3	2.557E+00	1.756E+01	.000E+00	-1.037E+02	-1.254E+02	1.085E+01
					1.254E+02	1.037E+02	1.085E+01
32	4	5.443E+00	1.756E+01	.000E+00	8.900E+00	-1.557E+02	8.232E+01
					1.557E+02	-8.900E+00	8.232E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
33	1	7.478E+00	2.044E+01	.000E+00	9.401E+01	1.051E+00	4.648E+01
					-1.051E+00	-9.401E+01	4.648E+01
33	2	1.015E+01	2.044E+01	.000E+00	1.466E+02	3.497E+01	5.581E+01
					-3.497E+01	-1.466E+02	5.581E+01
33	3	7.478E+00	1.756E+01	.000E+00	2.058E+02	-4.008E+01	1.229E+02
					4.008E+01	-2.058E+02	1.229E+02
33	4	1.015E+01	1.756E+01	.000E+00	1.573E+02	9.487E+01	3.122E+01
					-9.487E+01	-1.573E+02	3.122E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
34	1	1.205E+01	2.044E+01	.000E+00	1.649E+02	6.186E+01	5.152E+01
					-6.186E+01	-1.649E+02	5.152E+01
34	2	1.458E+01	2.044E+01	.000E+00	1.449E+02	7.000E+01	3.743E+01
					-7.000E+01	-1.449E+02	3.743E+01
34	3	1.205E+01	1.756E+01	.000E+00	1.459E+02	1.221E+02	1.193E+01
					-1.221E+02	-1.459E+02	1.193E+01
34	4	1.458E+01	1.756E+01	.000E+00	1.381E+02	1.180E+02	1.005E+01
					-1.180E+02	-1.381E+02	1.005E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
35	1	1.656E+01	2.044E+01	.000E+00	1.721E+02	-5.399E+01	1.130E+02
					5.399E+01	-1.721E+02	1.130E+02
35	2	1.944E+01	2.044E+01	.000E+00	1.481E+02	-4.621E+01	9.714E+01
					4.621E+01	-1.481E+02	9.714E+01
35	3	1.656E+01	1.756E+01	.000E+00	1.830E+02	-8.620E+01	1.346E+02
					8.620E+01	-1.830E+02	1.346E+02
35	4	1.944E+01	1.756E+01	.000E+00	1.583E+02	-7.771E+01	1.180E+02
					7.771E+01	-1.583E+02	1.180E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
36	1	2.156E+01	2.044E+01	.000E+00	1.481E+02	-4.651E+01	9.732E+01
					4.651E+01	-1.481E+02	9.732E+01
36	2	2.444E+01	2.044E+01	.000E+00	1.720E+02	-5.425E+01	1.131E+02
					5.425E+01	-1.720E+02	1.131E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
36	3	2.156E+01	1.756E+01	.000E+00	1.584E+02	-7.821E+01	1.183E+02
					7.821E+01	-1.584E+02	1.183E+02
36	4	2.444E+01	1.756E+01	.000E+00	1.830E+02	-8.665E+01	1.348E+02
					8.665E+01	-1.830E+02	1.348E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
37	1	2.643E+01	2.044E+01	.000E+00	1.448E+02	6.963E+01	3.761E+01
					-6.963E+01	-1.448E+02	3.761E+01
37	2	2.895E+01	2.044E+01	.000E+00	1.650E+02	6.145E+01	5.179E+01
					-6.145E+01	-1.650E+02	5.179E+01
37	3	2.643E+01	1.756E+01	.000E+00	1.377E+02	1.178E+02	9.955E+00
					-1.178E+02	-1.377E+02	9.955E+00
37	4	2.895E+01	1.756E+01	.000E+00	1.460E+02	1.216E+02	1.219E+01
					-1.216E+02	-1.460E+02	1.219E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
38	1	3.086E+01	2.044E+01	.000E+00	1.467E+02	3.496E+01	5.589E+01
					-3.496E+01	-1.467E+02	5.589E+01
38	2	3.352E+01	2.044E+01	.000E+00	9.387E+01	1.554E+00	4.616E+01
					-1.554E+00	-9.387E+01	4.616E+01
38	3	3.086E+01	1.756E+01	.000E+00	1.575E+02	9.496E+01	3.129E+01
					-9.496E+01	-1.575E+02	3.129E+01
38	4	3.352E+01	1.756E+01	.000E+00	2.059E+02	-3.967E+01	1.228E+02
					3.967E+01	-2.059E+02	1.228E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
39	1	3.556E+01	2.044E+01	.000E+00	-3.478E+01	-3.773E+01	1.477E+00
					3.773E+01	3.478E+01	1.477E+00
39	2	3.844E+01	2.044E+01	.000E+00	1.360E+01	-1.683E+02	9.097E+01
					1.683E+02	-1.360E+01	9.097E+01
39	3	3.556E+01	1.756E+01	.000E+00	9.374E+00	-1.555E+02	8.245E+01
					1.555E+02	-9.374E+00	8.245E+01
39	4	3.844E+01	1.756E+01	.000E+00	-1.034E+02	-1.249E+02	1.074E+01
					1.249E+02	1.034E+02	1.074E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
40	1	3.982E+01	2.044E+01	.000E+00	1.304E+01	-2.018E+02	1.074E+02
					2.018E+02	-1.304E+01	1.074E+02
40	2	4.068E+01	2.044E+01	.000E+00	1.136E+01	-1.970E+02	1.042E+02
					1.970E+02	-1.136E+01	1.042E+02
40	3	3.982E+01	1.756E+01	.000E+00	-2.318E+00	-1.964E+02	9.706E+01
					1.964E+02	2.318E+00	9.706E+01
40	4	4.068E+01	1.756E+01	.000E+00	-3.951E+00	-1.917E+02	9.386E+01
					1.917E+02	3.951E+00	9.386E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
41	1	3.170E-01	1.544E+01	.000E+00	-3.939E+00	-1.921E+02	9.408E+01
					1.921E+02	3.939E+00	9.408E+01
41	2	1.183E+00	1.544E+01	.000E+00	-2.281E+00	-1.970E+02	9.734E+01
					1.970E+02	2.281E+00	9.734E+01
41	3	3.170E-01	1.256E+01	.000E+00	1.134E+01	-1.974E+02	1.044E+02
					1.974E+02	-1.134E+01	1.044E+02
41	4	1.183E+00	1.256E+01	.000E+00	1.305E+01	-2.023E+02	1.077E+02
					2.023E+02	-1.305E+01	1.077E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
42	1	2.557E+00	1.544E+01	.000E+00	-1.037E+02	-1.254E+02	1.085E+01
					1.254E+02	1.037E+02	1.085E+01
42	2	5.443E+00	1.544E+01	.000E+00	8.900E+00	-1.557E+02	8.232E+01
					1.557E+02	-8.900E+00	8.232E+01
42	3	2.557E+00	1.256E+01	.000E+00	1.356E+01	-1.689E+02	9.121E+01
					1.689E+02	-1.356E+01	9.121E+01
42	4	5.443E+00	1.256E+01	.000E+00	-3.481E+01	-3.828E+01	1.736E+00
					3.828E+01	3.481E+01	1.736E+00

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
43	1	7.478E+00	1.544E+01	.000E+00	2.058E+02	-4.008E+01	1.229E+02
					4.008E+01	-2.058E+02	1.229E+02
43	2	1.015E+01	1.544E+01	.000E+00	1.573E+02	9.487E+01	3.122E+01
					-9.487E+01	-1.573E+02	3.122E+01
43	3	7.478E+00	1.256E+01	.000E+00	9.401E+01	1.051E+00	4.648E+01

					-1.051E+00	-9.401E+01	4.648E+01
43	4	1.015E+01	1.256E+01	.000E+00	1.466E+02	3.497E+01	5.581E+01
					-3.497E+01	-1.466E+02	5.581E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
44	1	1.205E+01	1.544E+01	.000E+00	1.459E+02	1.221E+02	1.193E+01
					-1.221E+02	-1.459E+02	1.193E+01
44	2	1.458E+01	1.544E+01	.000E+00	1.381E+02	1.180E+02	1.005E+01
					-1.180E+02	-1.381E+02	1.005E+01
44	3	1.205E+01	1.256E+01	.000E+00	1.649E+02	6.186E+01	5.152E+01
					-6.186E+01	-1.649E+02	5.152E+01
44	4	1.458E+01	1.256E+01	.000E+00	1.449E+02	7.000E+01	3.743E+01
					-7.000E+01	-1.449E+02	3.743E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
45	1	1.656E+01	1.544E+01	.000E+00	1.830E+02	-8.620E+01	1.346E+02
					8.620E+01	-1.830E+02	1.346E+02
45	2	1.944E+01	1.544E+01	.000E+00	1.583E+02	-7.771E+01	1.180E+02
					7.771E+01	-1.583E+02	1.180E+02
45	3	1.656E+01	1.256E+01	.000E+00	1.721E+02	-5.399E+01	1.130E+02
					5.399E+01	-1.721E+02	1.130E+02
45	4	1.944E+01	1.256E+01	.000E+00	1.481E+02	-4.621E+01	9.714E+01
					4.621E+01	-1.481E+02	9.714E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
46	1	2.156E+01	1.544E+01	.000E+00	1.584E+02	-7.821E+01	1.183E+02
					7.821E+01	-1.584E+02	1.183E+02
46	2	2.444E+01	1.544E+01	.000E+00	1.830E+02	-8.665E+01	1.348E+02
					8.665E+01	-1.830E+02	1.348E+02
46	3	2.156E+01	1.256E+01	.000E+00	1.481E+02	-4.651E+01	9.732E+01
					4.651E+01	-1.481E+02	9.732E+01
46	4	2.444E+01	1.256E+01	.000E+00	1.720E+02	-5.425E+01	1.131E+02
					5.425E+01	-1.720E+02	1.131E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B

47	1	2.643E+01	1.544E+01	.000E+00	1.377E+02	1.178E+02	9.955E+00
					-1.178E+02	-1.377E+02	9.955E+00
47	2	2.895E+01	1.544E+01	.000E+00	1.460E+02	1.216E+02	1.219E+01
					-1.216E+02	-1.460E+02	1.219E+01
47	3	2.643E+01	1.256E+01	.000E+00	1.448E+02	6.963E+01	3.761E+01
					-6.963E+01	-1.448E+02	3.761E+01
47	4	2.895E+01	1.256E+01	.000E+00	1.650E+02	6.145E+01	5.179E+01
					-6.145E+01	-1.650E+02	5.179E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
48	1	3.086E+01	1.544E+01	.000E+00	1.575E+02	9.496E+01	3.129E+01
					-9.496E+01	-1.575E+02	3.129E+01
48	2	3.352E+01	1.544E+01	.000E+00	2.059E+02	-3.967E+01	1.228E+02
					3.967E+01	-2.059E+02	1.228E+02
48	3	3.086E+01	1.256E+01	.000E+00	1.467E+02	3.496E+01	5.589E+01
					-3.496E+01	-1.467E+02	5.589E+01
48	4	3.352E+01	1.256E+01	.000E+00	9.387E+01	1.554E+00	4.616E+01
					-1.554E+00	-9.387E+01	4.616E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
49	1	3.556E+01	1.544E+01	.000E+00	9.374E+00	-1.555E+02	8.245E+01
					1.555E+02	-9.374E+00	8.245E+01
49	2	3.844E+01	1.544E+01	.000E+00	-1.034E+02	-1.249E+02	1.074E+01
					1.249E+02	1.034E+02	1.074E+01
49	3	3.556E+01	1.256E+01	.000E+00	-3.478E+01	-3.773E+01	1.477E+00
					3.773E+01	3.478E+01	1.477E+00
49	4	3.844E+01	1.256E+01	.000E+00	1.360E+01	-1.683E+02	9.097E+01
					1.683E+02	-1.360E+01	9.097E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
50	1	3.982E+01	1.544E+01	.000E+00	-2.318E+00	-1.964E+02	9.706E+01
					1.964E+02	2.318E+00	9.706E+01
50	2	4.068E+01	1.544E+01	.000E+00	-3.951E+00	-1.917E+02	9.386E+01
					1.917E+02	3.951E+00	9.386E+01
50	3	3.982E+01	1.256E+01	.000E+00	1.304E+01	-2.018E+02	1.074E+02
					2.018E+02	-1.304E+01	1.074E+02

50	4	4.068E+01	1.256E+01	.000E+00	1.136E+01	-1.970E+02	1.042E+02
					1.970E+02	-1.136E+01	1.042E+02

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
51	1	3.170E-01	1.055E+01	.000E+00	-3.441E+00	-6.727E+01	3.191E+01
					6.727E+01	3.441E+00	3.191E+01
51	2	1.183E+00	1.055E+01	.000E+00	1.740E+01	-5.538E+01	3.639E+01
					5.538E+01	-1.740E+01	3.639E+01
51	3	3.170E-01	7.951E+00	.000E+00	2.437E+01	-6.893E+01	4.665E+01
					6.893E+01	-2.437E+01	4.665E+01
51	4	1.183E+00	7.951E+00	.000E+00	1.324E+01	-2.507E+01	1.915E+01
					2.507E+01	-1.324E+01	1.915E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
52	1	2.557E+00	1.055E+01	.000E+00	2.131E+01	-2.079E+01	2.105E+01
					2.079E+01	-2.131E+01	2.105E+01
52	2	5.443E+00	1.055E+01	.000E+00	2.499E+01	-4.617E+01	3.558E+01
					4.617E+01	-2.499E+01	3.558E+01
52	3	2.557E+00	7.951E+00	.000E+00	7.764E+01	-3.443E+01	5.603E+01
					3.443E+01	-7.764E+01	5.603E+01
52	4	5.443E+00	7.951E+00	.000E+00	8.982E+01	-6.831E+01	7.907E+01
					6.831E+01	-8.982E+01	7.907E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
53	1	7.478E+00	1.055E+01	.000E+00	6.428E+01	-8.924E+01	7.676E+01
					8.924E+01	-6.428E+01	7.676E+01
53	2	1.015E+01	1.055E+01	.000E+00	8.736E+01	-1.535E+02	1.204E+02
					1.535E+02	-8.736E+01	1.204E+02
53	3	7.478E+00	7.951E+00	.000E+00	-4.817E+00	-7.119E+01	3.319E+01
					7.119E+01	4.817E+00	3.319E+01
53	4	1.015E+01	7.951E+00	.000E+00	8.621E+00	-1.258E+02	6.723E+01
					1.258E+02	-8.621E+00	6.723E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B

54	1	1.205E+01	1.055E+01	.000E+00	1.274E+02	-1.628E+02	1.451E+02
					1.628E+02	-1.274E+02	1.451E+02
54	2	1.458E+01	1.055E+01	.000E+00	9.954E+01	-8.509E+01	9.232E+01
					8.509E+01	-9.954E+01	9.232E+01
54	3	1.205E+01	7.951E+00	.000E+00	4.319E+01	-1.329E+02	8.806E+01
					1.329E+02	-4.319E+01	8.806E+01
54	4	1.458E+01	7.951E+00	.000E+00	2.388E+01	-6.369E+01	4.378E+01
					6.369E+01	-2.388E+01	4.378E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
55	1	1.656E+01	1.055E+01	.000E+00	2.525E+01	-2.448E+01	2.487E+01
					2.448E+01	-2.525E+01	2.487E+01
55	2	1.944E+01	1.055E+01	.000E+00	2.105E+01	4.240E+00	8.403E+00
					-4.240E+00	-2.105E+01	8.403E+00
55	3	1.656E+01	7.951E+00	.000E+00	3.714E+01	-2.867E+01	3.290E+01
					2.867E+01	-3.714E+01	3.290E+01
55	4	1.944E+01	7.951E+00	.000E+00	2.476E+01	8.236E+00	8.259E+00
					-8.236E+00	-2.476E+01	8.259E+00

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
56	1	2.156E+01	1.055E+01	.000E+00	2.101E+01	4.215E+00	8.395E+00
					-4.215E+00	-2.101E+01	8.395E+00
56	2	2.444E+01	1.055E+01	.000E+00	2.498E+01	-2.416E+01	2.457E+01
					2.416E+01	-2.498E+01	2.457E+01
56	3	2.156E+01	7.951E+00	.000E+00	2.473E+01	8.318E+00	8.204E+00
					-8.318E+00	-2.473E+01	8.204E+00
56	4	2.444E+01	7.951E+00	.000E+00	3.707E+01	-2.842E+01	3.274E+01
					2.842E+01	-3.707E+01	3.274E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
57	1	2.643E+01	1.055E+01	.000E+00	9.917E+01	-8.474E+01	9.196E+01
					8.474E+01	-9.917E+01	9.196E+01
57	2	2.895E+01	1.055E+01	.000E+00	1.271E+02	-1.627E+02	1.449E+02
					1.627E+02	-1.271E+02	1.449E+02
57	3	2.643E+01	7.951E+00	.000E+00	2.375E+01	-6.343E+01	4.359E+01
					6.343E+01	-2.375E+01	4.359E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
57	4	2.895E+01	7.951E+00	.000E+00	4.310E+01	-1.328E+02	8.797E+01
					1.328E+02	-4.310E+01	8.797E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
58	1	3.086E+01	1.055E+01	.000E+00	8.726E+01	-1.535E+02	1.204E+02
					1.535E+02	-8.726E+01	1.204E+02
58	2	3.352E+01	1.055E+01	.000E+00	6.419E+01	-8.929E+01	7.674E+01
					8.929E+01	-6.419E+01	7.674E+01
58	3	3.086E+01	7.951E+00	.000E+00	8.390E+00	-1.258E+02	6.709E+01
					1.258E+02	-8.390E+00	6.709E+01
58	4	3.352E+01	7.951E+00	.000E+00	-5.013E+00	-7.122E+01	3.310E+01
					7.122E+01	5.013E+00	3.310E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
59	1	3.556E+01	1.055E+01	.000E+00	2.508E+01	-4.622E+01	3.565E+01
					4.622E+01	-2.508E+01	3.565E+01
59	2	3.844E+01	1.055E+01	.000E+00	2.136E+01	-2.066E+01	2.101E+01
					2.066E+01	-2.136E+01	2.101E+01
59	3	3.556E+01	7.951E+00	.000E+00	8.975E+01	-6.831E+01	7.903E+01
					6.831E+01	-8.975E+01	7.903E+01
59	4	3.844E+01	7.951E+00	.000E+00	7.750E+01	-3.422E+01	5.586E+01
					3.422E+01	-7.750E+01	5.586E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
60	1	3.982E+01	1.055E+01	.000E+00	1.753E+01	-5.519E+01	3.636E+01
					5.519E+01	-1.753E+01	3.636E+01
60	2	4.068E+01	1.055E+01	.000E+00	-3.387E+00	-6.693E+01	3.177E+01
					6.693E+01	3.387E+00	3.177E+01
60	3	3.982E+01	7.951E+00	.000E+00	1.326E+01	-2.482E+01	1.904E+01
					2.482E+01	-1.326E+01	1.904E+01
60	4	4.068E+01	7.951E+00	.000E+00	2.432E+01	-6.853E+01	4.642E+01
					6.853E+01	-2.432E+01	4.642E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
61	1	3.170E-01	5.838E+00	.000E+00	2.437E+01	2.485E+00	1.094E+01

					-2.485E+00	-2.437E+01	1.094E+01
61	2	1.183E+00	5.838E+00	.000E+00	2.297E+01	2.918E+00	1.003E+01
					-2.918E+00	-2.297E+01	1.003E+01
61	3	3.170E-01	2.662E+00	.000E+00	2.291E+01	5.502E+00	8.705E+00
					-5.502E+00	-2.291E+01	8.705E+00
61	4	1.183E+00	2.662E+00	.000E+00	2.149E+01	5.958E+00	7.767E+00
					-5.958E+00	-2.149E+01	7.767E+00

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
62	1	2.557E+00	5.838E+00	.000E+00	6.559E+01	-3.583E+00	3.459E+01
					3.583E+00	-6.559E+01	3.459E+01
62	2	5.443E+00	5.838E+00	.000E+00	6.991E+01	-1.498E+01	4.245E+01
					1.498E+01	-6.991E+01	4.245E+01
62	3	2.557E+00	2.662E+00	.000E+00	2.597E+01	-1.154E+01	1.875E+01
					1.154E+01	-2.597E+01	1.875E+01
62	4	5.443E+00	2.662E+00	.000E+00	1.486E+01	-7.507E+00	1.118E+01
					7.507E+00	-1.486E+01	1.118E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
63	1	7.478E+00	5.838E+00	.000E+00	1.744E+01	-5.875E+01	3.809E+01
					5.875E+01	-1.744E+01	3.809E+01
63	2	1.015E+01	5.838E+00	.000E+00	-9.445E+00	-4.946E+01	2.001E+01
					4.946E+01	9.445E+00	2.001E+01
63	3	7.478E+00	2.662E+00	.000E+00	1.091E+01	-4.077E+01	2.584E+01
					4.077E+01	-1.091E+01	2.584E+01
63	4	1.015E+01	2.662E+00	.000E+00	-1.301E+01	-3.444E+01	1.071E+01
					3.444E+01	1.301E+01	1.071E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
64	1	1.205E+01	5.838E+00	.000E+00	-2.048E+01	-3.005E+01	4.784E+00
					3.005E+01	2.048E+01	4.784E+00
64	2	1.458E+01	5.838E+00	.000E+00	-1.457E+01	-3.067E+01	8.049E+00
					3.067E+01	1.457E+01	8.049E+00
64	3	1.205E+01	2.662E+00	.000E+00	-1.470E+01	-5.232E+01	1.881E+01
					5.232E+01	1.470E+01	1.881E+01
64	4	1.458E+01	2.662E+00	.000E+00	-6.137E+00	-5.559E+01	2.473E+01

					5.559E+01	6.137E+00	2.473E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
65	1	1.656E+01	5.838E+00	.000E+00	2.426E+01	-2.488E+01	2.457E+01
					2.488E+01	-2.426E+01	2.457E+01
65	2	1.944E+01	5.838E+00	.000E+00	1.196E+01	5.051E+00	3.453E+00
					-5.051E+00	-1.196E+01	3.453E+00
65	3	1.656E+01	2.662E+00	.000E+00	-1.416E+00	-3.617E+01	1.738E+01
					3.617E+01	1.416E+00	1.738E+01
65	4	1.944E+01	2.662E+00	.000E+00	2.636E+01	-4.631E+01	3.633E+01
					4.631E+01	-2.636E+01	3.633E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
66	1	2.156E+01	5.838E+00	.000E+00	1.202E+01	5.043E+00	3.488E+00
					-5.043E+00	-1.202E+01	3.488E+00
66	2	2.444E+01	5.838E+00	.000E+00	2.429E+01	-2.483E+01	2.456E+01
					2.483E+01	-2.429E+01	2.456E+01
66	3	2.156E+01	2.662E+00	.000E+00	2.637E+01	-4.628E+01	3.632E+01
					4.628E+01	-2.637E+01	3.632E+01
66	4	2.444E+01	2.662E+00	.000E+00	-1.363E+00	-3.615E+01	1.740E+01
					3.615E+01	1.363E+00	1.740E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
67	1	2.643E+01	5.838E+00	.000E+00	-1.451E+01	-3.067E+01	8.078E+00
					3.067E+01	1.451E+01	8.078E+00
67	2	2.895E+01	5.838E+00	.000E+00	-2.045E+01	-3.005E+01	4.797E+00
					3.005E+01	2.045E+01	4.797E+00
67	3	2.643E+01	2.662E+00	.000E+00	-6.088E+00	-5.556E+01	2.474E+01
					5.556E+01	6.088E+00	2.474E+01
67	4	2.895E+01	2.662E+00	.000E+00	-1.469E+01	-5.228E+01	1.879E+01
					5.228E+01	1.469E+01	1.879E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
68	1	3.086E+01	5.838E+00	.000E+00	-9.392E+00	-4.967E+01	2.014E+01
					4.967E+01	9.392E+00	2.014E+01

68	2	3.352E+01	5.838E+00	.000E+00	1.742E+01	-5.894E+01	3.818E+01
					5.894E+01	-1.742E+01	3.818E+01
68	3	3.086E+01	2.662E+00	.000E+00	-1.300E+01	-3.449E+01	1.074E+01
					3.449E+01	1.300E+01	1.074E+01
68	4	3.352E+01	2.662E+00	.000E+00	1.084E+01	-4.078E+01	2.581E+01
					4.078E+01	-1.084E+01	2.581E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
69	1	3.556E+01	5.838E+00	.000E+00	6.982E+01	-1.503E+01	4.242E+01
					1.503E+01	-6.982E+01	4.242E+01
69	2	3.844E+01	5.838E+00	.000E+00	6.546E+01	-3.546E+00	3.450E+01
					3.546E+00	-6.546E+01	3.450E+01
69	3	3.556E+01	2.662E+00	.000E+00	1.479E+01	-7.544E+00	1.117E+01
					7.544E+00	-1.479E+01	1.117E+01
69	4	3.844E+01	2.662E+00	.000E+00	2.597E+01	-1.160E+01	1.878E+01
					1.160E+01	-2.597E+01	1.878E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
70	1	3.982E+01	5.838E+00	.000E+00	2.301E+01	2.930E+00	1.004E+01
					-2.930E+00	-2.301E+01	1.004E+01
70	2	4.068E+01	5.838E+00	.000E+00	2.446E+01	2.489E+00	1.098E+01
					-2.489E+00	-2.446E+01	1.098E+01
70	3	3.982E+01	2.662E+00	.000E+00	2.151E+01	5.953E+00	7.781E+00
					-5.953E+00	-2.151E+01	7.781E+00
70	4	4.068E+01	2.662E+00	.000E+00	2.298E+01	5.484E+00	8.750E+00
					-5.484E+00	-2.298E+01	8.750E+00

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
71	1	3.170E-01	1.183E+00	.000E+00	2.010E+01	-1.964E+00	1.103E+01
					1.964E+00	-2.010E+01	1.103E+01
71	2	1.183E+00	1.183E+00	.000E+00	9.472E+00	-1.017E+01	9.820E+00
					1.017E+01	-9.472E+00	9.820E+00
71	3	3.170E-01	3.170E-01	.000E+00	3.136E+01	-3.141E+01	3.138E+01
					3.141E+01	-3.136E+01	3.138E+01
71	4	1.183E+00	3.170E-01	.000E+00	1.216E+00	-2.010E+01	1.066E+01
					2.010E+01	-1.216E+00	1.066E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
72	1	2.557E+00	1.183E+00	.000E+00	-3.265E+00	-2.890E+01	1.282E+01
					2.890E+01	3.265E+00	1.282E+01
72	2	5.443E+00	1.183E+00	.000E+00	-3.254E+00	-2.791E+01	1.233E+01
					2.791E+01	3.254E+00	1.233E+01
72	3	2.557E+00	3.170E-01	.000E+00	-2.250E-01	-4.157E+01	2.067E+01
					4.157E+01	2.250E-01	2.067E+01
72	4	5.443E+00	3.170E-01	.000E+00	5.531E-01	-4.135E+01	2.095E+01
					4.135E+01	-5.531E-01	2.095E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
73	1	7.478E+00	1.183E+00	.000E+00	-7.553E-01	-3.282E+01	1.603E+01
					3.282E+01	7.553E-01	1.603E+01
73	2	1.015E+01	1.183E+00	.000E+00	2.377E+00	-3.336E+01	1.787E+01
					3.336E+01	-2.377E+00	1.787E+01
73	3	7.478E+00	3.170E-01	.000E+00	-4.661E-02	-3.541E+01	1.768E+01
					3.541E+01	4.661E-02	1.768E+01
73	4	1.015E+01	3.170E-01	.000E+00	3.239E+00	-3.610E+01	1.967E+01
					3.610E+01	-3.239E+00	1.967E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
74	1	1.205E+01	1.183E+00	.000E+00	1.051E+01	-6.700E+01	3.876E+01
					6.700E+01	-1.051E+01	3.876E+01
74	2	1.458E+01	1.183E+00	.000E+00	-3.624E+00	-6.201E+01	2.920E+01
					6.201E+01	3.624E+00	2.920E+01
74	3	1.205E+01	3.170E-01	.000E+00	8.317E+00	-6.074E+01	3.453E+01
					6.074E+01	-8.317E+00	3.453E+01
74	4	1.458E+01	3.170E-01	.000E+00	-5.593E+00	-5.597E+01	2.519E+01
					5.597E+01	5.593E+00	2.519E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
75	1	1.656E+01	1.183E+00	.000E+00	-5.836E+00	-6.013E+01	2.715E+01
					6.013E+01	5.836E+00	2.715E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
75	2	1.944E+01	1.183E+00	.000E+00	8.244E-01	-6.323E+01	3.203E+01
					6.323E+01	-8.244E-01	3.203E+01
75	3	1.656E+01	3.170E-01	.000E+00	2.779E-01	-8.006E+01	4.017E+01
					8.006E+01	-2.779E-01	4.017E+01
75	4	1.944E+01	3.170E-01	.000E+00	6.875E+00	-8.310E+01	4.499E+01
					8.310E+01	-6.875E+00	4.499E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
76	1	2.156E+01	1.183E+00	.000E+00	8.206E-01	-6.321E+01	3.202E+01
					6.321E+01	-8.206E-01	3.202E+01
76	2	2.444E+01	1.183E+00	.000E+00	-5.822E+00	-6.012E+01	2.715E+01
					6.012E+01	5.822E+00	2.715E+01
76	3	2.156E+01	3.170E-01	.000E+00	6.874E+00	-8.309E+01	4.498E+01
					8.309E+01	-6.874E+00	4.498E+01
76	4	2.444E+01	3.170E-01	.000E+00	2.929E-01	-8.006E+01	4.017E+01
					8.006E+01	-2.929E-01	4.017E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
77	1	2.643E+01	1.183E+00	.000E+00	-3.625E+00	-6.196E+01	2.917E+01
					6.196E+01	3.625E+00	2.917E+01
77	2	2.895E+01	1.183E+00	.000E+00	1.051E+01	-6.695E+01	3.873E+01
					6.695E+01	-1.051E+01	3.873E+01
77	3	2.643E+01	3.170E-01	.000E+00	-5.590E+00	-5.593E+01	2.517E+01
					5.593E+01	5.590E+00	2.517E+01
77	4	2.895E+01	3.170E-01	.000E+00	8.321E+00	-6.070E+01	3.451E+01
					6.070E+01	-8.321E+00	3.451E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
78	1	3.086E+01	1.183E+00	.000E+00	2.381E+00	-3.333E+01	1.786E+01
					3.333E+01	-2.381E+00	1.786E+01
78	2	3.352E+01	1.183E+00	.000E+00	-7.708E-01	-3.279E+01	1.601E+01
					3.279E+01	7.708E-01	1.601E+01
78	3	3.086E+01	3.170E-01	.000E+00	3.236E+00	-3.605E+01	1.964E+01
					3.605E+01	-3.236E+00	1.964E+01
78	4	3.352E+01	3.170E-01	.000E+00	-6.856E-02	-3.536E+01	1.764E+01
					3.536E+01	6.856E-02	1.764E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
79	1	3.556E+01	1.183E+00	.000E+00	-3.268E+00	-2.792E+01	1.232E+01
					2.792E+01	3.268E+00	1.232E+01
79	2	3.844E+01	1.183E+00	.000E+00	-3.266E+00	-2.891E+01	1.282E+01
					2.891E+01	3.266E+00	1.282E+01
79	3	3.556E+01	3.170E-01	.000E+00	5.338E-01	-4.133E+01	2.093E+01
					4.133E+01	-5.338E-01	2.093E+01
79	4	3.844E+01	3.170E-01	.000E+00	-2.261E-01	-4.156E+01	2.067E+01
					4.156E+01	2.261E-01	2.067E+01

EL	PT	X-GAUSS	Y-GAUSS	Z-GAUSS	SIG1-T/B	SIG2-T/B	TAU-T/B
80	1	3.982E+01	1.183E+00	.000E+00	9.454E+00	-1.016E+01	9.807E+00
					1.016E+01	-9.454E+00	9.807E+00
80	2	4.068E+01	1.183E+00	.000E+00	2.007E+01	-1.964E+00	1.102E+01
					1.964E+00	-2.007E+01	1.102E+01
80	3	3.982E+01	3.170E-01	.000E+00	1.205E+00	-2.006E+01	1.063E+01
					2.006E+01	-1.205E+00	1.063E+01
80	4	4.068E+01	3.170E-01	.000E+00	3.131E+01	-3.136E+01	3.133E+01
					3.136E+01	-3.131E+01	3.133E+01

REACTION LOADS FOR LOAD CASE 1

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
31	.000E+00	.000E+00	2.073E+03	.000E+00	.000E+00	.000E+00
32	.000E+00	.000E+00	1.075E+03	.000E+00	.000E+00	.000E+00
33	.000E+00	.000E+00	2.073E+03	.000E+00	.000E+00	.000E+00
79	.000E+00	.000E+00	4.181E+02	.000E+00	.000E+00	.000E+00
80	.000E+00	.000E+00	5.144E+02	.000E+00	.000E+00	.000E+00
81	.000E+00	.000E+00	5.138E+02	.000E+00	.000E+00	.000E+00
82	.000E+00	.000E+00	4.181E+02	.000E+00	.000E+00	.000E+00
95	.000E+00	.000E+00	4.181E+02	.000E+00	.000E+00	.000E+00
96	.000E+00	.000E+00	5.144E+02	.000E+00	.000E+00	.000E+00
97	.000E+00	.000E+00	5.138E+02	.000E+00	.000E+00	.000E+00
98	.000E+00	.000E+00	4.181E+02	.000E+00	.000E+00	.000E+00

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: a:placa4k1.pos

NUMBER OF ELEMENTS = 80
NUMBER OF NODES = 99
NUMBER OF DOF'S = 6
NUMBER OF NDS/ELEM = 4

---- LOAD CASE NO. 1 ----

NODE	DEFL-1	DEFL-2	DEFL-3	DEFL-4	DEFL-5	DEFL-6
1	.000E+00	.000E+00	8.032E-04	1.113E-04	1.107E-04	.000E+00
2	.000E+00	.000E+00	2.782E-05	8.875E-05	1.066E-04	.000E+00
3	.000E+00	.000E+00	-7.996E-04	-1.034E-05	6.745E-05	.000E+00
4	.000E+00	.000E+00	-1.160E-03	-8.226E-05	4.804E-08	.000E+00
5	.000E+00	.000E+00	-7.999E-04	-1.036E-05	-6.739E-05	.000E+00
6	.000E+00	.000E+00	2.571E-05	8.838E-05	-1.064E-04	.000E+00
7	.000E+00	.000E+00	8.010E-04	1.108E-04	-1.105E-04	.000E+00
8	.000E+00	.000E+00	2.796E-05	1.154E-04	7.945E-05	.000E+00
9	.000E+00	.000E+00	5.106E-04	8.639E-05	8.163E-05	.000E+00
10	.000E+00	.000E+00	-1.600E-04	-1.146E-05	5.562E-05	.000E+00
11	.000E+00	.000E+00	-4.081E-04	-8.531E-05	3.565E-08	.000E+00
12	.000E+00	.000E+00	-1.602E-04	-1.148E-05	-5.558E-05	.000E+00
13	.000E+00	.000E+00	5.091E-04	8.602E-05	-8.157E-05	.000E+00
14	.000E+00	.000E+00	2.630E-05	1.150E-04	-7.940E-05	.000E+00
15	.000E+00	.000E+00	-4.391E-05	1.289E-04	-2.182E-05	.000E+00
16	.000E+00	.000E+00	-6.101E-04	9.864E-05	-2.018E-05	.000E+00
17	.000E+00	.000E+00	-6.788E-04	-3.047E-05	3.593E-06	.000E+00
18	.000E+00	.000E+00	-5.893E-04	-7.526E-05	-8.866E-09	.000E+00
19	.000E+00	.000E+00	-6.789E-04	-3.048E-05	3.582E-06	.000E+00
20	.000E+00	.000E+00	-6.097E-04	9.828E-05	2.004E-05	.000E+00
21	.000E+00	.000E+00	-4.316E-05	1.285E-04	2.169E-05	.000E+00
22	.000E+00	.000E+00	-1.164E-03	9.588E-05	-6.376E-05	.000E+00
23	.000E+00	.000E+00	-4.701E-04	9.955E-05	-7.116E-05	.000E+00
24	.000E+00	.000E+00	1.562E-04	-9.476E-05	-4.930E-05	.000E+00
25	.000E+00	.000E+00	2.853E-04	-6.238E-05	2.946E-08	.000E+00
26	.000E+00	.000E+00	1.562E-04	-9.478E-05	4.921E-05	.000E+00
27	.000E+00	.000E+00	-4.681E-04	9.928E-05	7.105E-05	.000E+00
28	.000E+00	.000E+00	-1.162E-03	9.568E-05	6.368E-05	.000E+00
29	.000E+00	.000E+00	-8.156E-04	6.573E-19	-6.762E-05	.000E+00
30	.000E+00	.000E+00	-1.298E-03	3.284E-19	-7.847E-05	.000E+00
31	.000E+00	.000E+00	.000E+00	-1.142E-18	-6.623E-05	.000E+00
32	.000E+00	.000E+00	.000E+00	-1.431E-18	9.096E-08	.000E+00
33	.000E+00	.000E+00	.000E+00	-1.745E-19	6.607E-05	.000E+00
34	.000E+00	.000E+00	-1.295E-03	-2.376E-20	7.846E-05	.000E+00
35	.000E+00	.000E+00	-8.130E-04	-4.526E-19	6.764E-05	.000E+00

36	.000E+00	.000E+00	-1.164E-03	-9.588E-05	-6.376E-05	.000E+00
37	.000E+00	.000E+00	-4.701E-04	-9.955E-05	-7.116E-05	.000E+00
38	.000E+00	.000E+00	1.562E-04	9.476E-05	-4.930E-05	.000E+00
39	.000E+00	.000E+00	2.853E-04	6.238E-05	2.946E-08	.000E+00
40	.000E+00	.000E+00	1.562E-04	9.478E-05	4.921E-05	.000E+00
41	.000E+00	.000E+00	-4.681E-04	-9.928E-05	7.105E-05	.000E+00
42	.000E+00	.000E+00	-1.162E-03	-9.568E-05	6.368E-05	.000E+00
43	.000E+00	.000E+00	-4.391E-05	-1.289E-04	-2.182E-05	.000E+00
44	.000E+00	.000E+00	-6.101E-04	-9.864E-05	-2.018E-05	.000E+00
45	.000E+00	.000E+00	-6.788E-04	3.047E-05	-3.593E-06	.000E+00
46	.000E+00	.000E+00	-5.893E-04	7.526E-05	-8.866E-09	.000E+00
47	.000E+00	.000E+00	-6.789E-04	3.048E-05	3.582E-06	.000E+00
48	.000E+00	.000E+00	-6.097E-04	-9.828E-05	2.004E-05	.000E+00
49	.000E+00	.000E+00	-4.316E-05	-1.285E-04	2.169E-05	.000E+00
50	.000E+00	.000E+00	2.796E-05	-1.154E-04	7.945E-05	.000E+00
51	.000E+00	.000E+00	5.106E-04	-8.639E-05	8.163E-05	.000E+00
52	.000E+00	.000E+00	-1.600E-04	1.146E-05	5.562E-05	.000E+00
53	.000E+00	.000E+00	-4.081E-04	8.531E-05	3.565E-08	.000E+00
54	.000E+00	.000E+00	-1.602E-04	1.148E-05	-5.558E-05	.000E+00
55	.000E+00	.000E+00	5.091E-04	-8.602E-05	-8.157E-05	.000E+00
56	.000E+00	.000E+00	2.630E-05	-1.150E-04	-7.940E-05	.000E+00
57	.000E+00	.000E+00	8.032E-04	-1.113E-04	1.107E-04	.000E+00
58	.000E+00	.000E+00	2.782E-05	-8.875E-05	1.066E-04	.000E+00
59	.000E+00	.000E+00	-7.996E-04	1.034E-05	6.745E-05	.000E+00
60	.000E+00	.000E+00	-1.160E-03	8.226E-05	4.804E-08	.000E+00
61	.000E+00	.000E+00	-7.999E-04	1.036E-05	-6.739E-05	.000E+00
62	.000E+00	.000E+00	2.571E-05	-8.838E-05	-1.064E-04	.000E+00
63	.000E+00	.000E+00	8.010E-04	-1.108E-04	-1.105E-04	.000E+00
71	.000E+00	.000E+00	1.661E-04	2.519E-05	8.406E-05	.000E+00
72	.000E+00	.000E+00	-4.254E-04	-5.193E-05	4.306E-05	.000E+00
73	.000E+00	.000E+00	-4.259E-04	-5.202E-05	-4.296E-05	.000E+00
74	.000E+00	.000E+00	1.646E-04	2.500E-05	-8.394E-05	.000E+00
75	.000E+00	.000E+00	-4.893E-04	2.317E-05	7.023E-05	.000E+00
76	.000E+00	.000E+00	-9.697E-04	-5.621E-05	2.714E-05	.000E+00
77	.000E+00	.000E+00	-9.701E-04	-5.630E-05	-2.705E-05	.000E+00
78	.000E+00	.000E+00	-4.905E-04	2.298E-05	-7.015E-05	.000E+00
79	.000E+00	.000E+00	.000E+00	2.645E-05	2.322E-05	.000E+00
80	.000E+00	.000E+00	.000E+00	-6.851E-05	-1.548E-05	.000E+00
81	.000E+00	.000E+00	.000E+00	-6.856E-05	1.549E-05	.000E+00
82	.000E+00	.000E+00	.000E+00	2.621E-05	-2.330E-05	.000E+00
83	.000E+00	.000E+00	-6.700E-04	4.868E-06	-7.693E-05	.000E+00
84	.000E+00	.000E+00	-2.355E-04	-8.105E-05	-6.564E-06	.000E+00
85	.000E+00	.000E+00	-2.356E-04	-8.096E-05	6.519E-06	.000E+00
86	.000E+00	.000E+00	-6.689E-04	4.582E-06	7.676E-05	.000E+00
87	.000E+00	.000E+00	-1.472E-04	-5.523E-19	-1.692E-04	.000E+00
88	.000E+00	.000E+00	4.687E-04	-1.294E-18	1.801E-05	.000E+00
89	.000E+00	.000E+00	4.683E-04	-7.996E-19	-1.809E-05	.000E+00
90	.000E+00	.000E+00	-1.450E-04	1.559E-19	1.690E-04	.000E+00
91	.000E+00	.000E+00	-6.700E-04	-4.868E-06	-7.693E-05	.000E+00
92	.000E+00	.000E+00	-2.355E-04	8.105E-05	-6.564E-06	.000E+00
93	.000E+00	.000E+00	-2.356E-04	8.096E-05	6.519E-06	.000E+00
94	.000E+00	.000E+00	-6.689E-04	-4.582E-06	7.676E-05	.000E+00
95	.000E+00	.000E+00	.000E+00	-2.645E-05	2.322E-05	.000E+00
96	.000E+00	.000E+00	.000E+00	6.851E-05	-1.548E-05	.000E+00
97	.000E+00	.000E+00	.000E+00	6.856E-05	1.549E-05	.000E+00
98	.000E+00	.000E+00	.000E+00	-2.621E-05	-2.330E-05	.000E+00
99	.000E+00	.000E+00	-4.893E-04	-2.317E-05	7.023E-05	.000E+00
100	.000E+00	.000E+00	-9.697E-04	5.621E-05	2.714E-05	.000E+00
101	.000E+00	.000E+00	-9.701E-04	5.630E-05	-2.705E-05	.000E+00
102	.000E+00	.000E+00	-4.905E-04	-2.298E-05	-7.015E-05	.000E+00

103	.000E+00	.000E+00	1.661E-04	-2.519E-05	8.406E-05	.000E+00
104	.000E+00	.000E+00	-4.254E-04	5.193E-05	4.306E-05	.000E+00
105	.000E+00	.000E+00	-4.259E-04	5.202E-05	-4.296E-05	.000E+00
106	.000E+00	.000E+00	1.646E-04	-2.500E-05	-8.394E-05	.000E+00

NUMBER OF STRESS RECORDS = 80
NUMBER OF REACTION LOADS = 11

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: a:placa4k1.pos

PEAK PRINCIPAL STRESSES BY ELEMENT

ELEM	PEAK TENSILE STRESS(PSI)	PEAK COMPRES STRESS(PSI)	PEAK SHEAR STRESS(PSI)
1	3.1385E+01	3.1409E+01	3.1409E+01
2	2.0952E+01	4.1574E+01	4.1574E+01
3	1.9668E+01	3.6096E+01	3.6096E+01
4	3.8757E+01	6.7004E+01	6.7004E+01
5	4.4987E+01	8.3098E+01	8.3098E+01
6	4.4980E+01	8.3086E+01	8.3086E+01
7	3.8729E+01	6.6950E+01	6.6950E+01
8	1.9645E+01	3.6054E+01	3.6054E+01
9	2.0930E+01	4.1557E+01	4.1557E+01
10	3.1332E+01	3.1357E+01	3.1357E+01
11	2.4366E+01	.0000E+00	.0000E+00
12	6.9913E+01	1.4979E+01	1.4979E+01
13	3.8090E+01	5.8745E+01	5.8745E+01
14	2.4728E+01	5.5593E+01	5.5593E+01
15	3.6333E+01	4.6307E+01	4.6307E+01
16	3.6323E+01	4.6279E+01	4.6279E+01
17	2.4737E+01	5.5562E+01	5.5562E+01
18	3.8180E+01	5.8937E+01	5.8937E+01
19	6.9816E+01	1.5026E+01	1.5026E+01
20	2.4455E+01	.0000E+00	.0000E+00
21	4.6649E+01	6.8928E+01	6.8928E+01
22	8.9824E+01	6.8308E+01	6.8308E+01
23	1.2044E+02	1.5352E+02	1.5352E+02
24	1.4510E+02	1.6284E+02	1.6284E+02
25	3.7138E+01	2.8671E+01	2.8671E+01
26	3.7066E+01	2.8418E+01	2.8418E+01
27	1.4487E+02	1.6268E+02	1.6268E+02
28	1.2039E+02	1.5352E+02	1.5352E+02
29	8.9752E+01	6.8314E+01	6.8314E+01
30	4.6425E+01	6.8530E+01	6.8530E+01
31	1.0768E+02	2.0232E+02	2.0232E+02
32	9.1209E+01	1.6885E+02	1.6885E+02
33	2.0577E+02	4.0083E+01	4.0083E+01
34	1.6490E+02	.0000E+00	.0000E+00
35	1.8299E+02	8.6195E+01	8.6195E+01
36	1.8300E+02	8.6655E+01	8.6655E+01
37	1.6503E+02	.0000E+00	.0000E+00
38	2.0590E+02	3.9667E+01	3.9667E+01
39	9.0967E+01	1.6833E+02	1.6833E+02
40	1.0743E+02	2.0181E+02	2.0181E+02
41	1.0768E+02	2.0232E+02	2.0232E+02
42	9.1209E+01	1.6885E+02	1.6885E+02
43	2.0577E+02	4.0083E+01	4.0083E+01
44	1.6490E+02	.0000E+00	.0000E+00
45	1.8299E+02	8.6195E+01	8.6195E+01

46	1.8300E+02	8.6655E+01	8.6655E+01
47	1.6503E+02	.0000E+00	.0000E+00
48	2.0590E+02	3.9667E+01	3.9667E+01
49	9.0967E+01	1.6833E+02	1.6833E+02
50	1.0743E+02	2.0181E+02	2.0181E+02
51	4.6649E+01	6.8928E+01	6.8928E+01
52	8.9824E+01	6.8308E+01	6.8308E+01
53	1.2044E+02	1.5352E+02	1.5352E+02
54	1.4510E+02	1.6284E+02	1.6284E+02
55	3.7138E+01	2.8671E+01	2.8671E+01
56	3.7066E+01	2.8418E+01	2.8418E+01
57	1.4487E+02	1.6268E+02	1.6268E+02
58	1.2039E+02	1.5352E+02	1.5352E+02
59	8.9752E+01	6.8314E+01	6.8314E+01
60	4.6425E+01	6.8530E+01	6.8530E+01
61	2.4366E+01	.0000E+00	.0000E+00
62	6.9913E+01	1.4979E+01	1.4979E+01
63	3.8090E+01	5.8745E+01	5.8745E+01
64	2.4728E+01	5.5593E+01	5.5593E+01
65	3.6333E+01	4.6307E+01	4.6307E+01
66	3.6323E+01	4.6279E+01	4.6279E+01
67	2.4737E+01	5.5562E+01	5.5562E+01
68	3.8180E+01	5.8937E+01	5.8937E+01
69	6.9816E+01	1.5026E+01	1.5026E+01
70	2.4455E+01	.0000E+00	.0000E+00
71	3.1385E+01	3.1409E+01	3.1409E+01
72	2.0952E+01	4.1574E+01	4.1574E+01
73	1.9668E+01	3.6096E+01	3.6096E+01
74	3.8757E+01	6.7004E+01	6.7004E+01
75	4.4987E+01	8.3098E+01	8.3098E+01
76	4.4980E+01	8.3086E+01	8.3086E+01
77	3.8729E+01	6.6950E+01	6.6950E+01
78	1.9645E+01	3.6054E+01	3.6054E+01
79	2.0930E+01	4.1557E+01	4.1557E+01
80	3.1332E+01	3.1357E+01	3.1357E+01

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: a:placa4k1.pos

AVERAGE PRINCIPAL STRESSES BY ELEMENT

ELEM	AVG TENSILE STRESS(PSI)	AVG COMPRES STRESS(PSI)	AVG SHEAR STRESS(PSI)
1	1.5724E+01	1.5910E+01	1.5910E+01
2	1.6692E+01	3.4932E+01	3.4932E+01
3	1.7812E+01	3.4420E+01	3.4420E+01
4	3.1917E+01	6.1431E+01	6.1431E+01
5	3.6082E+01	7.1629E+01	7.1629E+01
6	3.6079E+01	7.1617E+01	7.1617E+01
7	3.1894E+01	6.1384E+01	6.1384E+01
8	1.7789E+01	3.4383E+01	3.4383E+01
9	1.6686E+01	3.4928E+01	3.4928E+01
10	1.5697E+01	1.5886E+01	1.5886E+01
11	2.2935E+01	.0000E+00	-4.2160E+00
12	4.4084E+01	9.4021E+00	9.4021E+00
13	2.3663E+01	4.5854E+01	4.5854E+01
14	1.4092E+01	4.2158E+01	4.2158E+01
15	2.0432E+01	2.5576E+01	2.5576E+01
16	2.0442E+01	2.5555E+01	2.5555E+01
17	1.4101E+01	4.2138E+01	4.2138E+01
18	2.3718E+01	4.5970E+01	4.5970E+01
19	4.4010E+01	9.4282E+00	9.4282E+00
20	2.2992E+01	.0000E+00	-4.2139E+00
21	3.3526E+01	5.4160E+01	5.4160E+01
22	5.3440E+01	4.2424E+01	4.2424E+01
23	7.4405E+01	1.0995E+02	1.0995E+02
24	9.2315E+01	1.1114E+02	1.1114E+02
25	2.7047E+01	1.0170E+01	1.0170E+01
26	2.6945E+01	1.0011E+01	1.0011E+01
27	9.2097E+01	1.1092E+02	1.1092E+02
28	7.4329E+01	1.0995E+02	1.0995E+02
29	5.3422E+01	4.2355E+01	4.2355E+01
30	3.3399E+01	5.3869E+01	5.3869E+01
31	1.0087E+02	1.9720E+02	1.9720E+02
32	4.6528E+01	1.2206E+02	1.2206E+02
33	1.5092E+02	.0000E+00	-2.2704E+01
34	1.4844E+02	.0000E+00	-9.2979E+01
35	1.6535E+02	6.6027E+01	6.6027E+01
36	1.6539E+02	6.6404E+01	6.6404E+01
37	1.4840E+02	.0000E+00	-9.2623E+01
38	1.5101E+02	.0000E+00	-2.2952E+01
39	4.6408E+01	1.2163E+02	1.2163E+02
40	1.0063E+02	1.9673E+02	1.9673E+02
41	1.0087E+02	1.9720E+02	1.9720E+02
42	4.6528E+01	1.2206E+02	1.2206E+02
43	1.5092E+02	.0000E+00	-2.2704E+01
44	1.4844E+02	.0000E+00	-9.2979E+01
45	1.6535E+02	6.6027E+01	6.6027E+01

46	1.6539E+02	6.6404E+01	6.6404E+01
47	1.4840E+02	.0000E+00	-9.2623E+01
48	1.5101E+02	.0000E+00	-2.2952E+01
49	4.6408E+01	1.2163E+02	1.2163E+02
50	1.0063E+02	1.9673E+02	1.9673E+02
51	3.3526E+01	5.4160E+01	5.4160E+01
52	5.3440E+01	4.2424E+01	4.2424E+01
53	7.4405E+01	1.0995E+02	1.0995E+02
54	9.2315E+01	1.1114E+02	1.1114E+02
55	2.7047E+01	1.0170E+01	1.0170E+01
56	2.6945E+01	1.0011E+01	1.0011E+01
57	9.2097E+01	1.1092E+02	1.1092E+02
58	7.4329E+01	1.0995E+02	1.0995E+02
59	5.3422E+01	4.2355E+01	4.2355E+01
60	3.3399E+01	5.3869E+01	5.3869E+01
61	2.2935E+01	.0000E+00	-4.2160E+00
62	4.4084E+01	9.4021E+00	9.4021E+00
63	2.3663E+01	4.5854E+01	4.5854E+01
64	1.4092E+01	4.2158E+01	4.2158E+01
65	2.0432E+01	2.5576E+01	2.5576E+01
66	2.0442E+01	2.5555E+01	2.5555E+01
67	1.4101E+01	4.2138E+01	4.2138E+01
68	2.3718E+01	4.5970E+01	4.5970E+01
69	4.4010E+01	9.4282E+00	9.4282E+00
70	2.2992E+01	.0000E+00	-4.2139E+00
71	1.5724E+01	1.5910E+01	1.5910E+01
72	1.6692E+01	3.4932E+01	3.4932E+01
73	1.7812E+01	3.4420E+01	3.4420E+01
74	3.1917E+01	6.1431E+01	6.1431E+01
75	3.6082E+01	7.1629E+01	7.1629E+01
76	3.6079E+01	7.1617E+01	7.1617E+01
77	3.1894E+01	6.1384E+01	6.1384E+01
78	1.7789E+01	3.4383E+01	3.4383E+01
79	1.6686E+01	3.4928E+01	3.4928E+01
80	1.5697E+01	1.5886E+01	1.5886E+01

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: a:placa4k1.pos

PEAK PRINCIPAL STRESSES BY VALUE

ELEM	PEAK TENSILE STRESS(PSI)	ELEM	PEAK COMPRES STRESS(PSI)	ELEM	PEAK SHEAR STRESS(PSI)
--- MATERIAL SET NO. 1 ---					
38	2.0590E+02	31	2.0232E+02	31	2.0232E+02
48	2.0590E+02	41	2.0232E+02	41	2.0232E+02
43	2.0577E+02	40	2.0181E+02	40	2.0181E+02
33	2.0577E+02	50	2.0181E+02	50	2.0181E+02
46	1.8300E+02	42	1.6885E+02	42	1.6885E+02
36	1.8300E+02	32	1.6885E+02	32	1.6885E+02
35	1.8299E+02	49	1.6833E+02	49	1.6833E+02
45	1.8299E+02	39	1.6833E+02	39	1.6833E+02
47	1.6503E+02	24	1.6284E+02	24	1.6284E+02
37	1.6503E+02	54	1.6284E+02	54	1.6284E+02
34	1.6490E+02	27	1.6268E+02	27	1.6268E+02
44	1.6490E+02	57	1.6268E+02	57	1.6268E+02
24	1.4510E+02	23	1.5352E+02	23	1.5352E+02
54	1.4510E+02	53	1.5352E+02	53	1.5352E+02
27	1.4487E+02	28	1.5352E+02	28	1.5352E+02
57	1.4487E+02	58	1.5352E+02	58	1.5352E+02
23	1.2044E+02	36	8.6655E+01	36	8.6655E+01
53	1.2044E+02	46	8.6655E+01	46	8.6655E+01
28	1.2039E+02	45	8.6195E+01	45	8.6195E+01
58	1.2039E+02	35	8.6195E+01	35	8.6195E+01
31	1.0768E+02	5	8.3098E+01	5	8.3098E+01
41	1.0768E+02	75	8.3098E+01	75	8.3098E+01
40	1.0743E+02	6	8.3086E+01	6	8.3086E+01
50	1.0743E+02	76	8.3086E+01	76	8.3086E+01
42	9.1209E+01	21	6.8928E+01	21	6.8928E+01
32	9.1209E+01	51	6.8928E+01	51	6.8928E+01
49	9.0967E+01	30	6.8530E+01	30	6.8530E+01
39	9.0967E+01	60	6.8530E+01	60	6.8530E+01
22	8.9824E+01	59	6.8314E+01	59	6.8314E+01
52	8.9824E+01	29	6.8314E+01	29	6.8314E+01
29	8.9752E+01	22	6.8308E+01	22	6.8308E+01
59	8.9752E+01	52	6.8308E+01	52	6.8308E+01
12	6.9913E+01	4	6.7004E+01	4	6.7004E+01
62	6.9913E+01	74	6.7004E+01	74	6.7004E+01
19	6.9816E+01	7	6.6950E+01	7	6.6950E+01
69	6.9816E+01	77	6.6950E+01	77	6.6950E+01
21	4.6649E+01	18	5.8937E+01	18	5.8937E+01
51	4.6649E+01	68	5.8937E+01	68	5.8937E+01
30	4.6425E+01	63	5.8745E+01	63	5.8745E+01
60	4.6425E+01	13	5.8745E+01	13	5.8745E+01
5	4.4987E+01	64	5.5593E+01	64	5.5593E+01
75	4.4987E+01	14	5.5593E+01	14	5.5593E+01
6	4.4980E+01	67	5.5562E+01	67	5.5562E+01

76	4.4980E+01	17	5.5562E+01	17	5.5562E+01
4	3.8757E+01	15	4.6307E+01	15	4.6307E+01
74	3.8757E+01	65	4.6307E+01	65	4.6307E+01
7	3.8729E+01	16	4.6279E+01	16	4.6279E+01
77	3.8729E+01	66	4.6279E+01	66	4.6279E+01
68	3.8180E+01	2	4.1574E+01	2	4.1574E+01
18	3.8180E+01	72	4.1574E+01	72	4.1574E+01
13	3.8090E+01	9	4.1557E+01	9	4.1557E+01
63	3.8090E+01	79	4.1557E+01	79	4.1557E+01
25	3.7138E+01	33	4.0083E+01	33	4.0083E+01
55	3.7138E+01	43	4.0083E+01	43	4.0083E+01
26	3.7066E+01	38	3.9667E+01	38	3.9667E+01
56	3.7066E+01	48	3.9667E+01	48	3.9667E+01
15	3.6333E+01	73	3.6096E+01	73	3.6096E+01
65	3.6333E+01	3	3.6096E+01	3	3.6096E+01
16	3.6323E+01	78	3.6054E+01	78	3.6054E+01
66	3.6323E+01	8	3.6054E+01	8	3.6054E+01
1	3.1385E+01	1	3.1409E+01	1	3.1409E+01
71	3.1385E+01	71	3.1409E+01	71	3.1409E+01
10	3.1332E+01	10	3.1357E+01	10	3.1357E+01
80	3.1332E+01	80	3.1357E+01	80	3.1357E+01
17	2.4737E+01	25	2.8671E+01	25	2.8671E+01
67	2.4737E+01	55	2.8671E+01	55	2.8671E+01
64	2.4728E+01	26	2.8418E+01	26	2.8418E+01
14	2.4728E+01	56	2.8418E+01	56	2.8418E+01
20	2.4455E+01	19	1.5026E+01	19	1.5026E+01
70	2.4455E+01	69	1.5026E+01	69	1.5026E+01
61	2.4366E+01	62	1.4979E+01	62	1.4979E+01
11	2.4366E+01	12	1.4979E+01	12	1.4979E+01
72	2.0952E+01	37	.0000E+00	37	.0000E+00
2	2.0952E+01	47	.0000E+00	47	.0000E+00
79	2.0930E+01	34	.0000E+00	34	.0000E+00
9	2.0930E+01	61	.0000E+00	61	.0000E+00
3	1.9668E+01	20	.0000E+00	20	.0000E+00
73	1.9668E+01	70	.0000E+00	70	.0000E+00
8	1.9645E+01	44	.0000E+00	44	.0000E+00
78	1.9645E+01	11	.0000E+00	11	.0000E+00

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PRINCIPAL STRESSES FROM POST PROCESSING FILE: a:placa4k1.pos

AVERAGE PRINCIPAL STRESSES BY VALUE

ELEM	AVG TENSILE STRESS(PSI)	ELEM	AVG COMPRES STRESS(PSI)	ELEM	AVG SHEAR STRESS(PSI)
--- MATERIAL SET NO. 1 ---					
36	1.6539E+02	31	1.9720E+02	31	1.9720E+02
46	1.6539E+02	41	1.9720E+02	41	1.9720E+02
45	1.6535E+02	40	1.9673E+02	40	1.9673E+02
35	1.6535E+02	50	1.9673E+02	50	1.9673E+02
38	1.5101E+02	42	1.2206E+02	42	1.2206E+02
48	1.5101E+02	32	1.2206E+02	32	1.2206E+02
43	1.5092E+02	49	1.2163E+02	49	1.2163E+02
33	1.5092E+02	39	1.2163E+02	39	1.2163E+02
44	1.4844E+02	24	1.1114E+02	24	1.1114E+02
34	1.4844E+02	54	1.1114E+02	54	1.1114E+02
47	1.4840E+02	27	1.1092E+02	27	1.1092E+02
37	1.4840E+02	57	1.1092E+02	57	1.1092E+02
31	1.0087E+02	28	1.0995E+02	28	1.0995E+02
41	1.0087E+02	58	1.0995E+02	58	1.0995E+02
50	1.0063E+02	53	1.0995E+02	53	1.0995E+02
40	1.0063E+02	23	1.0995E+02	23	1.0995E+02
54	9.2315E+01	5	7.1629E+01	5	7.1629E+01
24	9.2315E+01	75	7.1629E+01	75	7.1629E+01
57	9.2097E+01	76	7.1617E+01	76	7.1617E+01
27	9.2097E+01	6	7.1617E+01	6	7.1617E+01
23	7.4405E+01	36	6.6404E+01	36	6.6404E+01
53	7.4405E+01	46	6.6404E+01	46	6.6404E+01
58	7.4329E+01	45	6.6027E+01	45	6.6027E+01
28	7.4329E+01	35	6.6027E+01	35	6.6027E+01
22	5.3440E+01	4	6.1431E+01	4	6.1431E+01
52	5.3440E+01	74	6.1431E+01	74	6.1431E+01
29	5.3422E+01	7	6.1384E+01	7	6.1384E+01
59	5.3422E+01	77	6.1384E+01	77	6.1384E+01
42	4.6528E+01	21	5.4160E+01	21	5.4160E+01
32	4.6528E+01	51	5.4160E+01	51	5.4160E+01
39	4.6408E+01	30	5.3869E+01	30	5.3869E+01
49	4.6408E+01	60	5.3869E+01	60	5.3869E+01
12	4.4084E+01	68	4.5970E+01	68	4.5970E+01
62	4.4084E+01	18	4.5970E+01	18	4.5970E+01
19	4.4010E+01	63	4.5854E+01	63	4.5854E+01
69	4.4010E+01	13	4.5854E+01	13	4.5854E+01
5	3.6082E+01	52	4.2424E+01	52	4.2424E+01
75	3.6082E+01	22	4.2424E+01	22	4.2424E+01
6	3.6079E+01	59	4.2355E+01	59	4.2355E+01
76	3.6079E+01	29	4.2355E+01	29	4.2355E+01
21	3.3526E+01	64	4.2158E+01	64	4.2158E+01
51	3.3526E+01	14	4.2158E+01	14	4.2158E+01
30	3.3399E+01	67	4.2138E+01	67	4.2138E+01

60	3.3399E+01	17	4.2138E+01	17	4.2138E+01
4	3.1917E+01	2	3.4932E+01	2	3.4932E+01
74	3.1917E+01	72	3.4932E+01	72	3.4932E+01
7	3.1894E+01	79	3.4928E+01	79	3.4928E+01
77	3.1894E+01	9	3.4928E+01	9	3.4928E+01
55	2.7047E+01	73	3.4420E+01	73	3.4420E+01
25	2.7047E+01	3	3.4420E+01	3	3.4420E+01
26	2.6945E+01	8	3.4383E+01	8	3.4383E+01
56	2.6945E+01	78	3.4383E+01	78	3.4383E+01
18	2.3718E+01	15	2.5576E+01	15	2.5576E+01
68	2.3718E+01	65	2.5576E+01	65	2.5576E+01
63	2.3663E+01	16	2.5555E+01	16	2.5555E+01
13	2.3663E+01	66	2.5555E+01	66	2.5555E+01
20	2.2992E+01	71	1.5910E+01	71	1.5910E+01
70	2.2992E+01	1	1.5910E+01	1	1.5910E+01
11	2.2935E+01	80	1.5886E+01	80	1.5886E+01
61	2.2935E+01	10	1.5886E+01	10	1.5886E+01
66	2.0442E+01	25	1.0170E+01	25	1.0170E+01
16	2.0442E+01	55	1.0170E+01	55	1.0170E+01
15	2.0432E+01	26	1.0011E+01	26	1.0011E+01
65	2.0432E+01	56	1.0011E+01	56	1.0011E+01
3	1.7812E+01	69	9.4282E+00	69	9.4282E+00
73	1.7812E+01	19	9.4282E+00	19	9.4282E+00
8	1.7789E+01	62	9.4021E+00	62	9.4021E+00
78	1.7789E+01	12	9.4021E+00	12	9.4021E+00
2	1.6692E+01	48	.0000E+00	20	-4.2139E+00
72	1.6692E+01	70	.0000E+00	70	-4.2139E+00
79	1.6686E+01	33	.0000E+00	61	-4.2160E+00
9	1.6686E+01	34	.0000E+00	11	-4.2160E+00
71	1.5724E+01	61	.0000E+00	33	-2.2704E+01
1	1.5724E+01	11	.0000E+00	43	-2.2704E+01
10	1.5697E+01	20	.0000E+00	48	-2.2952E+01
80	1.5697E+01	43	.0000E+00	38	-2.2952E+01
67	1.4101E+01	44	.0000E+00	47	-9.2623E+01
17	1.4101E+01	37	.0000E+00	37	-9.2623E+01
14	1.4092E+01	38	.0000E+00	34	-9.2979E+01
64	1.4092E+01	47	.0000E+00	44	-9.2979E+01

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PRINCIPAL STRESSES FROM POST PROCESSING FILE: a:placa4k1.pos

PEAK EFFECTIVE AND LOCAL SHEAR STRESSES BY ELEMENT

ELEM	PEAK EFF STRESS(PSI)	PEAK TAU-XY STRESS(PSI)	PEAK TAU-XZ STRESS(PSI)	PEAK TAU-YZ STRESS(PSI)
1	6.2782E+01	3.1385E+01	3.1385E+01	3.1385E+01
2	5.5016E+01	2.0952E+01	2.0952E+01	2.0952E+01
3	4.9632E+01	1.9668E+01	1.9668E+01	1.9668E+01
4	9.4846E+01	3.8757E+01	3.8757E+01	3.8757E+01
5	1.1392E+02	4.4987E+01	4.4987E+01	4.4987E+01
6	1.1390E+02	4.4980E+01	4.4980E+01	4.4980E+01
7	9.4773E+01	3.4509E+01	3.4509E+01	3.4509E+01
8	4.9574E+01	1.9645E+01	1.9645E+01	1.9645E+01
9	5.4973E+01	2.0930E+01	2.0930E+01	2.0930E+01
10	6.2676E+01	3.1332E+01	3.1332E+01	3.1332E+01
11	1.9111E+01	1.0940E+01	1.0940E+01	1.0940E+01
12	7.5029E+01	3.4589E+01	3.4589E+01	3.4589E+01
13	8.8338E+01	3.8090E+01	3.8090E+01	3.8090E+01
14	7.0179E+01	2.4728E+01	2.4728E+01	2.4728E+01
15	7.8133E+01	3.6333E+01	3.6333E+01	3.6333E+01
16	7.8101E+01	3.6323E+01	3.6323E+01	3.6323E+01
17	7.0163E+01	2.4737E+01	2.4737E+01	2.4737E+01
18	8.8581E+01	2.5810E+01	2.5810E+01	2.5810E+01
19	7.4997E+01	4.2421E+01	4.2421E+01	4.2421E+01
20	1.9185E+01	1.0042E+01	1.0042E+01	1.0042E+01
21	1.0620E+02	4.6649E+01	4.6649E+01	4.6649E+01
22	1.5304E+02	7.9066E+01	7.9066E+01	7.9066E+01
23	2.5901E+02	7.6760E+01	7.6760E+01	7.6760E+01
24	2.9946E+02	1.4510E+02	1.4510E+02	1.4510E+02
25	6.3797E+01	3.2904E+01	3.2904E+01	3.2904E+01
26	6.3433E+01	3.2742E+01	3.2742E+01	3.2742E+01
27	2.9905E+02	9.1958E+01	9.1958E+01	9.1958E+01
28	2.5893E+02	1.2039E+02	1.2039E+02	1.2039E+02
29	1.5299E+02	7.9033E+01	7.9033E+01	7.9033E+01
30	1.0565E+02	4.6425E+01	4.6425E+01	4.6425E+01
31	2.7517E+02	1.0768E+02	1.0768E+02	1.0768E+02
32	2.3123E+02	9.1209E+01	9.1209E+01	9.1209E+01
33	2.1666E+02	1.2293E+02	1.2293E+02	1.2293E+02
34	1.2380E+02	5.1520E+01	5.1520E+01	5.1520E+01
35	2.4854E+02	1.3459E+02	1.3459E+02	1.3459E+02
36	2.4909E+02	1.1832E+02	1.1832E+02	1.1832E+02
37	1.2341E+02	5.1790E+01	5.1790E+01	5.1790E+01
38	2.1634E+02	5.5886E+01	5.5886E+01	5.5886E+01
39	2.3057E+02	9.0967E+01	9.0967E+01	9.0967E+01
40	2.7450E+02	1.0743E+02	1.0743E+02	1.0743E+02
41	2.7517E+02	1.0438E+02	1.0438E+02	1.0438E+02
42	2.3123E+02	9.1209E+01	9.1209E+01	9.1209E+01
43	2.1666E+02	1.2293E+02	1.2293E+02	1.2293E+02
44	1.2380E+02	5.1520E+01	5.1520E+01	5.1520E+01
45	2.4854E+02	1.3459E+02	1.3459E+02	1.3459E+02

46	2.4909E+02	1.3483E+02	1.3483E+02	1.3483E+02
47	1.2341E+02	3.7609E+01	3.7609E+01	3.7609E+01
48	2.1634E+02	1.2278E+02	1.2278E+02	1.2278E+02
49	2.3057E+02	8.2446E+01	8.2446E+01	8.2446E+01
50	2.7450E+02	1.0743E+02	1.0743E+02	1.0743E+02
51	1.0620E+02	4.6649E+01	4.6649E+01	4.6649E+01
52	1.5304E+02	5.6035E+01	5.6035E+01	5.6035E+01
53	2.5901E+02	1.2044E+02	1.2044E+02	1.2044E+02
54	2.9946E+02	1.4510E+02	1.4510E+02	1.4510E+02
55	6.3797E+01	3.2904E+01	3.2904E+01	3.2904E+01
56	6.3433E+01	2.4572E+01	2.4572E+01	2.4572E+01
57	2.9905E+02	1.4487E+02	1.4487E+02	1.4487E+02
58	2.5893E+02	1.2039E+02	1.2039E+02	1.2039E+02
59	1.5299E+02	7.9033E+01	7.9033E+01	7.9033E+01
60	1.0565E+02	3.6359E+01	3.6359E+01	3.6359E+01
61	1.9111E+01	1.0940E+01	1.0940E+01	1.0940E+01
62	7.5029E+01	4.2446E+01	4.2446E+01	4.2446E+01
63	8.8338E+01	3.8090E+01	3.8090E+01	3.8090E+01
64	7.0179E+01	1.8808E+01	1.8808E+01	1.8808E+01
65	7.8133E+01	2.4568E+01	2.4568E+01	2.4568E+01
66	7.8101E+01	3.6323E+01	3.6323E+01	3.6323E+01
67	7.0163E+01	2.4737E+01	2.4737E+01	2.4737E+01
68	8.8581E+01	3.8180E+01	3.8180E+01	3.8180E+01
69	7.4997E+01	4.2421E+01	4.2421E+01	4.2421E+01
70	1.9185E+01	1.0983E+01	1.0983E+01	1.0983E+01
71	6.2782E+01	3.1385E+01	3.1385E+01	3.1385E+01
72	5.5016E+01	2.0674E+01	2.0674E+01	2.0674E+01
73	4.9632E+01	1.7867E+01	1.7867E+01	1.7867E+01
74	9.4846E+01	3.8757E+01	3.8757E+01	3.8757E+01
75	1.1392E+02	4.0169E+01	4.0169E+01	4.0169E+01
76	1.1390E+02	4.4980E+01	4.4980E+01	4.4980E+01
77	9.4773E+01	3.8729E+01	3.8729E+01	3.8729E+01
78	4.9574E+01	1.9645E+01	1.9645E+01	1.9645E+01
79	5.4973E+01	2.0930E+01	2.0930E+01	2.0930E+01
80	6.2676E+01	1.1015E+01	1.1015E+01	1.1015E+01

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PRINCIPAL STRESSES FROM POST PROCESSING FILE: a:placa4k1.pos

AVG EFFECTIVE AND LOCAL SHEAR STRESSES BY ELEMENT

ELEM	AVG EFF STRESS(PSI)	AVG TAU-XY STRESS(PSI)	AVG TAU-XZ STRESS(PSI)	AVG TAU-YZ STRESS(PSI)
1	3.2274E+01	1.3269E+01	1.3269E+01	1.3269E+01
2	4.5365E+01	1.3610E+01	1.3610E+01	1.3610E+01
3	4.6235E+01	1.3345E+01	1.3345E+01	1.3345E+01
4	8.2766E+01	2.4618E+01	2.4618E+01	2.4618E+01
5	9.5107E+01	2.8075E+01	2.8075E+01	2.8075E+01
6	9.5094E+01	2.9292E+01	2.9292E+01	2.9292E+01
7	8.2705E+01	2.2212E+01	2.2212E+01	2.2212E+01
8	4.6181E+01	1.3787E+01	1.3787E+01	1.3787E+01
9	4.5356E+01	1.3480E+01	1.3480E+01	1.3480E+01
10	3.2221E+01	1.2943E+01	1.2943E+01	1.2943E+01
11	1.6871E+01	6.8531E+00	6.8531E+00	6.8531E+00
12	4.7573E+01	1.6132E+01	1.6132E+01	1.6132E+01
13	6.2099E+01	1.8661E+01	1.8661E+01	1.8661E+01
14	4.9168E+01	1.2080E+01	1.2080E+01	1.2080E+01
15	4.5576E+01	1.9569E+01	1.9569E+01	1.9569E+01
16	4.5573E+01	1.4301E+01	1.4301E+01	1.4301E+01
17	4.9157E+01	1.2902E+01	1.2902E+01	1.2902E+01
18	6.2244E+01	1.4173E+01	1.4173E+01	1.4173E+01
19	4.7541E+01	1.8093E+01	1.8093E+01	1.8093E+01
20	1.6918E+01	6.6432E+00	6.6432E+00	6.6432E+00
21	7.9688E+01	2.4429E+01	2.4429E+01	2.4429E+01
22	9.3747E+01	3.9038E+01	3.9038E+01	3.9038E+01
23	1.7052E+02	4.4294E+01	4.4294E+01	4.4294E+01
24	1.9549E+02	6.9235E+01	6.9235E+01	6.9235E+01
25	3.6251E+01	1.6507E+01	1.6507E+01	1.6507E+01
26	3.5994E+01	1.2335E+01	1.2335E+01	1.2335E+01
27	1.9505E+02	5.5879E+01	5.5879E+01	5.5879E+01
28	1.7043E+02	5.5144E+01	5.5144E+01	5.5144E+01
29	9.3649E+01	4.2636E+01	4.2636E+01	4.2636E+01
30	7.9329E+01	2.5457E+01	2.5457E+01	2.5457E+01
31	2.6351E+02	7.6537E+01	7.6537E+01	7.6537E+01
32	1.5189E+02	2.5948E+01	2.5948E+01	2.5948E+01
33	1.2729E+02	5.6304E+01	5.6304E+01	5.6304E+01
34	1.1176E+02	2.5219E+01	2.5219E+01	2.5219E+01
35	2.1119E+02	8.6190E+01	8.6190E+01	8.6190E+01
36	2.1165E+02	8.2190E+01	8.2190E+01	8.2190E+01
37	1.1164E+02	2.4839E+01	2.4839E+01	2.4839E+01
38	1.2714E+02	3.3335E+01	3.3335E+01	3.3335E+01
39	1.5146E+02	4.3722E+01	4.3722E+01	4.3722E+01
40	2.6289E+02	7.7167E+01	7.7167E+01	7.7167E+01
41	2.6351E+02	7.3950E+01	7.3950E+01	7.3950E+01
42	1.5189E+02	4.6094E+01	4.6094E+01	4.6094E+01
43	1.2729E+02	5.0157E+01	5.0157E+01	5.0157E+01
44	1.1176E+02	1.8374E+01	1.8374E+01	1.8374E+01
45	2.1119E+02	9.1405E+01	9.1405E+01	9.1405E+01

46	2.1165E+02	8.7616E+01	8.7616E+01	8.7616E+01
47	1.1164E+02	1.4939E+01	1.4939E+01	1.4939E+01
48	1.2714E+02	5.2491E+01	5.2491E+01	5.2491E+01
49	1.5146E+02	2.3666E+01	2.3666E+01	2.3666E+01
50	2.6289E+02	7.4589E+01	7.4589E+01	7.4589E+01
51	7.9688E+01	2.8738E+01	2.8738E+01	2.8738E+01
52	9.3747E+01	2.8166E+01	2.8166E+01	2.8166E+01
53	1.7052E+02	5.7598E+01	5.7598E+01	5.7598E+01
54	1.9549E+02	8.1369E+01	8.1369E+01	8.1369E+01
55	3.6251E+01	1.6543E+01	1.6543E+01	1.6543E+01
56	3.5994E+01	1.0293E+01	1.0293E+01	1.0293E+01
57	1.9505E+02	7.0104E+01	7.0104E+01	7.0104E+01
58	1.7043E+02	6.6053E+01	6.6053E+01	6.6053E+01
59	9.3649E+01	3.3924E+01	3.3924E+01	3.3924E+01
60	7.9329E+01	2.1793E+01	2.1793E+01	2.1793E+01
61	1.6871E+01	7.4178E+00	7.4178E+00	7.4178E+00
62	4.7573E+01	2.3947E+01	2.3947E+01	2.3947E+01
63	6.2099E+01	2.0984E+01	2.0984E+01	2.0984E+01
64	4.9168E+01	7.9104E+00	7.9104E+00	7.9104E+00
65	4.5576E+01	1.1349E+01	1.1349E+01	1.1349E+01
66	4.5573E+01	1.6093E+01	1.6093E+01	1.6093E+01
67	4.9157E+01	9.4029E+00	9.4029E+00	9.4029E+00
68	6.2244E+01	1.7265E+01	1.7265E+01	1.7265E+01
69	4.7541E+01	2.2023E+01	2.2023E+01	2.2023E+01
70	1.6918E+01	7.2014E+00	7.2014E+00	7.2014E+00
71	3.2274E+01	1.3059E+01	1.3059E+01	1.3059E+01
72	4.5365E+01	1.1454E+01	1.1454E+01	1.1454E+01
73	4.6235E+01	1.2895E+01	1.2895E+01	1.2895E+01
74	8.2766E+01	2.5620E+01	2.5620E+01	2.5620E+01
75	9.5107E+01	2.4836E+01	2.4836E+01	2.4836E+01
76	9.5094E+01	2.6036E+01	2.6036E+01	2.6036E+01
77	8.2705E+01	2.3266E+01	2.3266E+01	2.3266E+01
78	4.6181E+01	1.3378E+01	1.3378E+01	1.3378E+01
79	4.5356E+01	1.1519E+01	1.1519E+01	1.1519E+01
80	3.2221E+01	7.8641E+00	7.8641E+00	7.8641E+00

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: a:placa4k1.pos

PEAK EFFECTIVE AND SHEAR STRESSES BY VALUE

ELEM	PEAK EFF STRESS(PSI)	ELEM	PEAK TAU-XY STRESS(PSI)	ELEM	PEAK TAU-XZ STRESS(PSI)	ELEM	PEAK TAU-YZ STRESS(PSI)
--- MATERIAL SET NO. 1 ---							
24	2.9946E+02	24	1.4510E+02	24	1.4510E+02	24	1.4510E+02
54	2.9946E+02	54	1.4510E+02	54	1.4510E+02	54	1.4510E+02
27	2.9905E+02	57	1.4487E+02	57	1.4487E+02	57	1.4487E+02
57	2.9905E+02	46	1.3483E+02	46	1.3483E+02	46	1.3483E+02
31	2.7517E+02	45	1.3459E+02	45	1.3459E+02	45	1.3459E+02
41	2.7517E+02	35	1.3459E+02	35	1.3459E+02	35	1.3459E+02
40	2.7450E+02	33	1.2293E+02	33	1.2293E+02	33	1.2293E+02
50	2.7450E+02	43	1.2293E+02	43	1.2293E+02	43	1.2293E+02
23	2.5901E+02	48	1.2278E+02	48	1.2278E+02	48	1.2278E+02
53	2.5901E+02	53	1.2044E+02	53	1.2044E+02	53	1.2044E+02
28	2.5893E+02	28	1.2039E+02	28	1.2039E+02	28	1.2039E+02
58	2.5893E+02	58	1.2039E+02	58	1.2039E+02	58	1.2039E+02
46	2.4909E+02	36	1.1832E+02	36	1.1832E+02	36	1.1832E+02
36	2.4909E+02	31	1.0768E+02	31	1.0768E+02	31	1.0768E+02
35	2.4854E+02	40	1.0743E+02	40	1.0743E+02	40	1.0743E+02
45	2.4854E+02	50	1.0743E+02	50	1.0743E+02	50	1.0743E+02
42	2.3123E+02	41	1.0438E+02	41	1.0438E+02	41	1.0438E+02
32	2.3123E+02	27	9.1958E+01	27	9.1958E+01	27	9.1958E+01
49	2.3057E+02	42	9.1209E+01	42	9.1209E+01	42	9.1209E+01
39	2.3057E+02	32	9.1209E+01	32	9.1209E+01	32	9.1209E+01
33	2.1666E+02	39	9.0967E+01	39	9.0967E+01	39	9.0967E+01
43	2.1666E+02	49	8.2446E+01	49	8.2446E+01	49	8.2446E+01
38	2.1634E+02	22	7.9066E+01	22	7.9066E+01	22	7.9066E+01
48	2.1634E+02	29	7.9033E+01	29	7.9033E+01	29	7.9033E+01
22	1.5304E+02	59	7.9033E+01	59	7.9033E+01	59	7.9033E+01
52	1.5304E+02	23	7.6760E+01	23	7.6760E+01	23	7.6760E+01
29	1.5299E+02	52	5.6035E+01	52	5.6035E+01	52	5.6035E+01
59	1.5299E+02	38	5.5886E+01	38	5.5886E+01	38	5.5886E+01
44	1.2380E+02	37	5.1790E+01	37	5.1790E+01	37	5.1790E+01
34	1.2380E+02	44	5.1520E+01	44	5.1520E+01	44	5.1520E+01
47	1.2341E+02	34	5.1520E+01	34	5.1520E+01	34	5.1520E+01
37	1.2341E+02	21	4.6649E+01	21	4.6649E+01	21	4.6649E+01
5	1.1392E+02	51	4.6649E+01	51	4.6649E+01	51	4.6649E+01
75	1.1392E+02	30	4.6425E+01	30	4.6425E+01	30	4.6425E+01
6	1.1390E+02	5	4.4987E+01	5	4.4987E+01	5	4.4987E+01
76	1.1390E+02	6	4.4980E+01	6	4.4980E+01	6	4.4980E+01
21	1.0620E+02	76	4.4980E+01	76	4.4980E+01	76	4.4980E+01
51	1.0620E+02	62	4.2446E+01	62	4.2446E+01	62	4.2446E+01
30	1.0565E+02	69	4.2421E+01	69	4.2421E+01	69	4.2421E+01
60	1.0565E+02	19	4.2421E+01	19	4.2421E+01	19	4.2421E+01
4	9.4846E+01	75	4.0169E+01	75	4.0169E+01	75	4.0169E+01
74	9.4846E+01	4	3.8757E+01	4	3.8757E+01	4	3.8757E+01
7	9.4773E+01	74	3.8757E+01	74	3.8757E+01	74	3.8757E+01

77	9.4773E+01	77	3.8729E+01	77	3.8729E+01	77	3.8729E+01
18	8.8581E+01	68	3.8180E+01	68	3.8180E+01	68	3.8180E+01
68	8.8581E+01	13	3.8090E+01	13	3.8090E+01	13	3.8090E+01
63	8.8338E+01	63	3.8090E+01	63	3.8090E+01	63	3.8090E+01
13	8.8338E+01	47	3.7609E+01	47	3.7609E+01	47	3.7609E+01
65	7.8133E+01	60	3.6359E+01	60	3.6359E+01	60	3.6359E+01
15	7.8133E+01	15	3.6333E+01	15	3.6333E+01	15	3.6333E+01
66	7.8101E+01	16	3.6323E+01	16	3.6323E+01	16	3.6323E+01
16	7.8101E+01	66	3.6323E+01	66	3.6323E+01	66	3.6323E+01
12	7.5029E+01	12	3.4589E+01	12	3.4589E+01	12	3.4589E+01
62	7.5029E+01	7	3.4509E+01	7	3.4509E+01	7	3.4509E+01
19	7.4997E+01	55	3.2904E+01	55	3.2904E+01	55	3.2904E+01
69	7.4997E+01	25	3.2904E+01	25	3.2904E+01	25	3.2904E+01
14	7.0179E+01	26	3.2742E+01	26	3.2742E+01	26	3.2742E+01
64	7.0179E+01	1	3.1385E+01	1	3.1385E+01	1	3.1385E+01
17	7.0163E+01	71	3.1385E+01	71	3.1385E+01	71	3.1385E+01
67	7.0163E+01	10	3.1332E+01	10	3.1332E+01	10	3.1332E+01
25	6.3797E+01	18	2.5810E+01	18	2.5810E+01	18	2.5810E+01
55	6.3797E+01	67	2.4737E+01	67	2.4737E+01	67	2.4737E+01
26	6.3433E+01	17	2.4737E+01	17	2.4737E+01	17	2.4737E+01
56	6.3433E+01	14	2.4728E+01	14	2.4728E+01	14	2.4728E+01
1	6.2782E+01	56	2.4572E+01	56	2.4572E+01	56	2.4572E+01
71	6.2782E+01	65	2.4568E+01	65	2.4568E+01	65	2.4568E+01
10	6.2676E+01	2	2.0952E+01	2	2.0952E+01	2	2.0952E+01
80	6.2676E+01	9	2.0930E+01	9	2.0930E+01	9	2.0930E+01
72	5.5016E+01	79	2.0930E+01	79	2.0930E+01	79	2.0930E+01
2	5.5016E+01	72	2.0674E+01	72	2.0674E+01	72	2.0674E+01
79	5.4973E+01	3	1.9668E+01	3	1.9668E+01	3	1.9668E+01
9	5.4973E+01	78	1.9645E+01	78	1.9645E+01	78	1.9645E+01
3	4.9632E+01	8	1.9645E+01	8	1.9645E+01	8	1.9645E+01
73	4.9632E+01	64	1.8808E+01	64	1.8808E+01	64	1.8808E+01
8	4.9574E+01	73	1.7867E+01	73	1.7867E+01	73	1.7867E+01
78	4.9574E+01	80	1.1015E+01	80	1.1015E+01	80	1.1015E+01
20	1.9185E+01	70	1.0983E+01	70	1.0983E+01	70	1.0983E+01
70	1.9185E+01	61	1.0940E+01	61	1.0940E+01	61	1.0940E+01
61	1.9111E+01	11	1.0940E+01	11	1.0940E+01	11	1.0940E+01
11	1.9111E+01	20	1.0042E+01	20	1.0042E+01	20	1.0042E+01

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: a:placa4k1.pos

AVG EFFECTIVE AND SHEAR STRESSES BY VALUE

AVG EFF ELEM	STRESS(PSI)	AVG TAU-XY ELEM	STRESS(PSI)	AVG TAU-XZ ELEM	STRESS(PSI)	AVG TAU-YZ ELEM	STRESS(PSI)
--- MATERIAL SET NO. 1 ---							
31	2.6351E+02	45	9.1405E+01	45	9.1405E+01	45	9.1405E+01
41	2.6351E+02	46	8.7616E+01	46	8.7616E+01	46	8.7616E+01
40	2.6289E+02	35	8.6190E+01	35	8.6190E+01	35	8.6190E+01
50	2.6289E+02	36	8.2190E+01	36	8.2190E+01	36	8.2190E+01
46	2.1165E+02	54	8.1369E+01	54	8.1369E+01	54	8.1369E+01
36	2.1165E+02	40	7.7167E+01	40	7.7167E+01	40	7.7167E+01
45	2.1119E+02	31	7.6537E+01	31	7.6537E+01	31	7.6537E+01
35	2.1119E+02	50	7.4589E+01	50	7.4589E+01	50	7.4589E+01
54	1.9549E+02	41	7.3950E+01	41	7.3950E+01	41	7.3950E+01
24	1.9549E+02	57	7.0104E+01	57	7.0104E+01	57	7.0104E+01
27	1.9505E+02	24	6.9235E+01	24	6.9235E+01	24	6.9235E+01
57	1.9505E+02	58	6.6053E+01	58	6.6053E+01	58	6.6053E+01
23	1.7052E+02	53	5.7598E+01	53	5.7598E+01	53	5.7598E+01
53	1.7052E+02	33	5.6304E+01	33	5.6304E+01	33	5.6304E+01
28	1.7043E+02	27	5.5879E+01	27	5.5879E+01	27	5.5879E+01
58	1.7043E+02	28	5.5144E+01	28	5.5144E+01	28	5.5144E+01
42	1.5189E+02	48	5.2491E+01	48	5.2491E+01	48	5.2491E+01
32	1.5189E+02	43	5.0157E+01	43	5.0157E+01	43	5.0157E+01
49	1.5146E+02	42	4.6094E+01	42	4.6094E+01	42	4.6094E+01
39	1.5146E+02	23	4.4294E+01	23	4.4294E+01	23	4.4294E+01
33	1.2729E+02	39	4.3722E+01	39	4.3722E+01	39	4.3722E+01
43	1.2729E+02	29	4.2636E+01	29	4.2636E+01	29	4.2636E+01
48	1.2714E+02	22	3.9038E+01	22	3.9038E+01	22	3.9038E+01
38	1.2714E+02	59	3.3924E+01	59	3.3924E+01	59	3.3924E+01
44	1.1176E+02	38	3.3335E+01	38	3.3335E+01	38	3.3335E+01
34	1.1176E+02	6	2.9292E+01	6	2.9292E+01	6	2.9292E+01
37	1.1164E+02	51	2.8738E+01	51	2.8738E+01	51	2.8738E+01
47	1.1164E+02	52	2.8166E+01	52	2.8166E+01	52	2.8166E+01
5	9.5107E+01	5	2.8075E+01	5	2.8075E+01	5	2.8075E+01
75	9.5107E+01	76	2.6036E+01	76	2.6036E+01	76	2.6036E+01
6	9.5094E+01	32	2.5948E+01	32	2.5948E+01	32	2.5948E+01
76	9.5094E+01	74	2.5620E+01	74	2.5620E+01	74	2.5620E+01
22	9.3747E+01	30	2.5457E+01	30	2.5457E+01	30	2.5457E+01
52	9.3747E+01	34	2.5219E+01	34	2.5219E+01	34	2.5219E+01
59	9.3649E+01	37	2.4839E+01	37	2.4839E+01	37	2.4839E+01
29	9.3649E+01	75	2.4836E+01	75	2.4836E+01	75	2.4836E+01
4	8.2766E+01	4	2.4618E+01	4	2.4618E+01	4	2.4618E+01
74	8.2766E+01	21	2.4429E+01	21	2.4429E+01	21	2.4429E+01
7	8.2705E+01	62	2.3947E+01	62	2.3947E+01	62	2.3947E+01
77	8.2705E+01	49	2.3666E+01	49	2.3666E+01	49	2.3666E+01
51	7.9688E+01	77	2.3266E+01	77	2.3266E+01	77	2.3266E+01
21	7.9688E+01	7	2.2212E+01	7	2.2212E+01	7	2.2212E+01
30	7.9329E+01	69	2.2023E+01	69	2.2023E+01	69	2.2023E+01

60	7.9329E+01	60	2.1793E+01	60	2.1793E+01	60	2.1793E+01
18	6.2244E+01	63	2.0984E+01	63	2.0984E+01	63	2.0984E+01
68	6.2244E+01	15	1.9569E+01	15	1.9569E+01	15	1.9569E+01
13	6.2099E+01	13	1.8661E+01	13	1.8661E+01	13	1.8661E+01
63	6.2099E+01	44	1.8374E+01	44	1.8374E+01	44	1.8374E+01
64	4.9168E+01	19	1.8093E+01	19	1.8093E+01	19	1.8093E+01
14	4.9168E+01	68	1.7265E+01	68	1.7265E+01	68	1.7265E+01
67	4.9157E+01	55	1.6543E+01	55	1.6543E+01	55	1.6543E+01
17	4.9157E+01	25	1.6507E+01	25	1.6507E+01	25	1.6507E+01
12	4.7573E+01	12	1.6132E+01	12	1.6132E+01	12	1.6132E+01
62	4.7573E+01	66	1.6093E+01	66	1.6093E+01	66	1.6093E+01
19	4.7541E+01	47	1.4939E+01	47	1.4939E+01	47	1.4939E+01
69	4.7541E+01	16	1.4301E+01	16	1.4301E+01	16	1.4301E+01
3	4.6235E+01	18	1.4173E+01	18	1.4173E+01	18	1.4173E+01
73	4.6235E+01	8	1.3787E+01	8	1.3787E+01	8	1.3787E+01
8	4.6181E+01	2	1.3610E+01	2	1.3610E+01	2	1.3610E+01
78	4.6181E+01	9	1.3480E+01	9	1.3480E+01	9	1.3480E+01
15	4.5576E+01	78	1.3378E+01	78	1.3378E+01	78	1.3378E+01
65	4.5576E+01	3	1.3345E+01	3	1.3345E+01	3	1.3345E+01
16	4.5573E+01	1	1.3269E+01	1	1.3269E+01	1	1.3269E+01
66	4.5573E+01	71	1.3059E+01	71	1.3059E+01	71	1.3059E+01
2	4.5365E+01	10	1.2943E+01	10	1.2943E+01	10	1.2943E+01
72	4.5365E+01	17	1.2902E+01	17	1.2902E+01	17	1.2902E+01
9	4.5356E+01	73	1.2895E+01	73	1.2895E+01	73	1.2895E+01
79	4.5356E+01	26	1.2335E+01	26	1.2335E+01	26	1.2335E+01
55	3.6251E+01	14	1.2080E+01	14	1.2080E+01	14	1.2080E+01
25	3.6251E+01	79	1.1519E+01	79	1.1519E+01	79	1.1519E+01
26	3.5994E+01	72	1.1454E+01	72	1.1454E+01	72	1.1454E+01
56	3.5994E+01	65	1.1349E+01	65	1.1349E+01	65	1.1349E+01
1	3.2274E+01	56	1.0293E+01	56	1.0293E+01	56	1.0293E+01
71	3.2274E+01	67	9.4029E+00	67	9.4029E+00	67	9.4029E+00
10	3.2221E+01	64	7.9104E+00	64	7.9104E+00	64	7.9104E+00
80	3.2221E+01	80	7.8641E+00	80	7.8641E+00	80	7.8641E+00
20	1.6918E+01	61	7.4178E+00	61	7.4178E+00	61	7.4178E+00
70	1.6918E+01	70	7.2014E+00	70	7.2014E+00	70	7.2014E+00
61	1.6871E+01	11	6.8531E+00	11	6.8531E+00	11	6.8531E+00
11	1.6871E+01	20	6.6432E+00	20	6.6432E+00	20	6.6432E+00

LIBRA Finite Element Program
Version 3.0 Revision 2

PRINCIPAL STRESSES FROM POST PROCESSING FILE: a:placa4k1.pos

REACTION LOADS

NODE	DOF 1	DOF 2	DOF 3	DOF 4	DOF 5	DOF 6
31	.000E+00	.000E+00	2.073E+03	.000E+00	.000E+00	.000E+00
32	.000E+00	.000E+00	1.075E+03	.000E+00	.000E+00	.000E+00
33	.000E+00	.000E+00	2.073E+03	.000E+00	.000E+00	.000E+00
79	.000E+00	.000E+00	4.181E+02	.000E+00	.000E+00	.000E+00
80	.000E+00	.000E+00	5.144E+02	.000E+00	.000E+00	.000E+00
81	.000E+00	.000E+00	5.138E+02	.000E+00	.000E+00	.000E+00
82	.000E+00	.000E+00	4.181E+02	.000E+00	.000E+00	.000E+00
95	.000E+00	.000E+00	4.181E+02	.000E+00	.000E+00	.000E+00
96	.000E+00	.000E+00	5.144E+02	.000E+00	.000E+00	.000E+00
97	.000E+00	.000E+00	5.138E+02	.000E+00	.000E+00	.000E+00
98	.000E+00	.000E+00	4.181E+02	.000E+00	.000E+00	.000E+00