

ANÁLISE DE TENSÃO EM RODAS

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TRABALHO DE FORMATURA

ANALISE DE TENSÃO EM RODA

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SUMÁRIO

O presente trabalho têm como objetivo apresentar informações relacionadas ao projeto de uma roda.

Inicia-se o trabalho apresentando o histórico e o desenvolvimento da roda.

Dá-se a noção do cálculo por meio de elementos finitos e do programa SAP90.

É apresentado o resultado em uma roda de passeio mostrando os arquivos criados e o seu desenho gráfico.

Por fim, situam-se normas para ensaio e bibliografias.

INTRODUÇÃO:

As rodas, ou parte metálica do conjunto do pneu, são elementos de capital importância no automóvel, dos quais dependem, em grande parte, das características de estabilidade de marcha do veículo, assim como a eficácia de frenagem e, em parte, o comportamento da suspensão.

Embora se costume denominá-los aros, na verdade são conjuntos constituídos por duas peças soldadas entre si: o disco de roda - ou parte central - onde é fixada ao eixo através de parafusos, e uma borda de forma circular e perfilada - rodeando o disco - que vem a ser o aro propriamente dito que assenta o pneu.

FUNÇÕES DA RODA:

O objetivo básico é servir de apoio ao pneu, amoldando a parte interna do mesmo. Nesse aspecto, além de uma absoluta rigidez, deve ter medidas adequadas ao tipo de carro e de pneu.

As dimensões do aro são medidas em função de seu diâmetro e da largura da tala, valores em geral expressos em polegadas e que são determinados pelo fabricante do veículo, que especifica, assim, o tipo do pneu adequado ao mesmo. A cada medida do aro corresponde outra do pneu, já que aquele é a forma deste.

A fixação da roda ao resto do carro é feita mediante vários parafusos que, situados nos discos, transmitem os enormes esforços e torções aos quais o carro se vê submetido durante a rodagem. Assim sendo, torna-se muito importante a qualidade da roda, para suportar cargas muito pesadas.

Além das funções principais de suportar o peso do veículo e efetuar a transmissão dos esforços de tração e frenagem, a roda deve assegurar uma boa refrigeração dos conjuntos de freio. Para tanto, o disco de roda conta com aberturas para a passagem do ar, a fim de que, durante a rodagem, se possa estabelecer uma ventilação adequada que permita a dissipação do calor gerado pelos discos e tambores do freio.

HISTÓRIA DO DESENVOLVIMENTO

Há cerca de 5500 anos, os sumérios (povo que habitava a região onde hoje se situa o Iraque) já usavam a roda. E, pela tecnologia usada, presume-se que a invenção deve ter sido bem anterior.

Desde o início, um dos grandes problemas das rodas foi o atrito do aro com o solo. Para reduzi-lo, tentou-se de tudo: anéis de metal, de couro e de corda, almofadões, etc. As soluções eram paliativas e o choque das rodas contra pedras e outras irregularidades do piso continuavam a incomodar.

Essa situação persistiu até que em 1839, ao descobrir por acaso a forma de vulcanizar a borracha, o inglês Charles Goodyear encontrou o começo da solução do problema, criando um produto flexível e mais resistente ao atrito com o solo. Graças a esse processo de transformação, pelo calor, do látex defumado tratado com enxofre, Goodyear, Robert William Taupson, Alexander Winton, John Boyd Dunlop e os irmãos Edward e André Michelin, realizando experiências isoladas e individuais, entre 1845 e 1895 desenvolveram o pneu.

Com o passar dos anos, os pneus foram se desenvolvendo e adquirindo maior resistência e durabilidade, embora o setor de transporte de cargas pesadas fosse o último a aderir à novidade, pois, até o começo da década de 20, os grandes caminhões usavam ainda pneus de borracha maciça, montados sobre os aros. E paralelamente à evolução dos pneus, ocorria também a das rodas.

Gradualmente, foram abandonados os antigos raios de madeira em favor de componentes inteiramente metálicos, às vezes, em forma de discos inteiricos - como as rodas do Packard, Citroen e Peugeot, por exemplo - outras com raios de arame, como Ford e Chevrolet. E não faltaram soluções diversas, como a da Fiat, cujos aros e raios feitos de chapas prensadas e justapostas, formando uma única peça.

Normalmente, as rodas eram fixadas às pontas de eixo por quatro, cinco e até seis parafusos, mas existia uma solução mais cara, vinda das pistas de corrida, com um "cubo rápido" cuja fixação era feita apenas por uma grande porca, às vezes, com "orelhas" para facilitar a remoção e recolocação por meio de martelos.

Na década de 30, começaram a se popularizar as rodas em chapas de aço estampado, com furos para a ventilação dos freios, e as primitivas calotinhas perderam o seu caráter exclusivamente funcional para se transformarem em componentes ornamentais. No pós guerra (final dos anos 40), o estilo norte-americano trouxe calotas cromadas, de grandes dimensões, cobrindo inteiramente a própria roda.

Na década de 70, com a difusão das rodas de liga-leve, as calotas diminuíram drasticamente de peso, fazendo ressaltar o desenho da roda.

Por fim dos anos 80, as rodas passaram a ter destaque no estilo e até mesmo na aerodinâmica dos carros. Para isso, ganharam desenhos mais lisos e atuam como uma espécie de hélice, ajudando a tirar ar debaixo do carro e refrigerar os freios (evitando o seu superaquecimento).

O PROJETO DE UMA RODA

Atualmente, o projeto de uma nova roda chega a ser executado inicialmente por auxílio do computador (CAE) que permite submeter a peça a testes de resistência a tensões. Isto facilita alterar o projeto nos pontos em que sejam eventualmente observadas falhas (grande concentrações de tensão, por exemplo), permitindo ganhar tempo e diminuir custos eventuais evitando-se construções de protótipos e ferramentais.

A utilização de ligas-leves se deve a tentativa de reduzir ao máximo o peso da roda. Esta questão do peso das rodas não era levado muito em conta, mas foi ganhando importância com o progressivo aumento da largura dos pneus, que exigiu rodas mais largas. Além disso, sendo a roda o elemento de maior dimensão e, às vezes de maior peso entre as massas não suspensas do carro, massas estas que desempenham um papel decisivo no comportamento da suspensão, pois quanto maior for a leveza e menores as inércias, mais perfeito será o trabalho da suspensão, permanecendo o pneu por mais tempo em contato com o solo.

A grande importância do fator peso levou os fabricantes a buscarem o máximo de leveza no desenho e fabricação de rodas. Tradicionalmente as rodas eram feitas de aço (aço estampado SAE-100B/1010) a fim de suportarem sem problemas os enormes esforços desenvolvidos na tração, na frenagem e na rodagem sobre pistas nem sempre perfeitamente uniformes. Com o tempo, contudo, ficou provado que as rodas de liga-leve, apesar da sua aparente fragilidade, também suportam, melhor até que as de aço, as pressões próprias de rodagem, com a grande vantagem de uma redução de peso, muitas vezes superior a cinquenta por cento.

Nesta tentativa de se reduzir ao máximo o peso da roda, a fim de diminuir a inércia para melhorar o consumo, tempo de aceleração/frenagem, desgaste de pneus/freio/suspensão, etc aumenta-se o tamanho do furo de ventilação (de maneira adequada em que este aumento não comprometa a aerodinâmica do automóvel e nem a refrigeração do freio).

As rodas de alumínio não têm total crédito por boa parte dos consumidores, uma vez que aconteceram muitas quebras por causa do produto final fraco devido a formação de bolhas de ar no processo de fabricação. Além disso, estas rodas não possuem a mesma resistência ao choque (pedras, guia de calçada, etc). Boa parte dos problemas de quebra devido a formação de bolhas foi eliminada após o surgimento da fundição sob pressão.

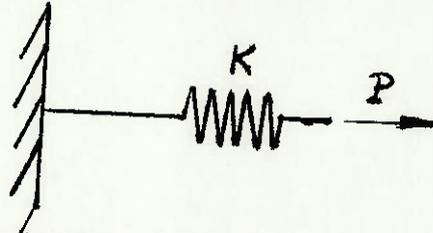
CONCEITOS BÁSICOS DE ELEMENTOS FINITOS :

A análise teórica de uma estrutura é baseada em uma solução analítica ou numérica (ou ambas).

Aqui, introduz-se o conceito de rigidez e flexibilidade de uma mola simples, e posteriormente o do sistema de matriz de rigidez.

1) Rigidez e flexibilidade:

Considere uma mola elástica uniforme sujeita a uma carga P , como mostrado na fig. abaixo:



Se K - rigidez da mola
 u - desloc. da mola devido a carga P
então:

$$P = K \cdot u \quad (1.1)$$

$$u = P/K = f \cdot u \quad (1.2)$$

onde:

f - flexibilidade da mola

Obs: note que a flexibilidade é inversa do rigidez.

Este problema elementar é de fato uma descrição muito simples de como a maioria das estruturas comportam-se. No caso, estas estruturas podem ser consideradas sendo compostas de milhares de "molas" interligadas de várias rigidez em várias direções e sujeitas a complexas combinações de cargas.

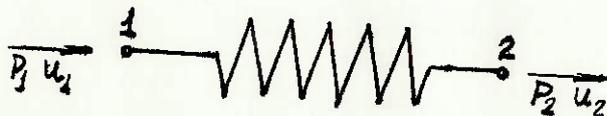
Para uma estrutura complexa, é necessário considerar a contribuição individual de cada mola e, isso, é feito isolando-se os efeitos de cada mola por um sistemas de nós. Para um problema prático, a mola é de fato chamada de elemento finito e por várias combinações destes, todas conectadas em suas delimitações, é possível descrever uma estrutura complexa.

Embora as estruturas possam ser de mais variadas formas e complexidade, os elementos finitos são de forma muito simples.

Para cada extremidade da mola (elemento finito), teremos um ponto (ou nó) que os autores denominam-o por PONTO NODAL e, são tomados convenientemente na estrutura geralmente com a finalidade de simplificar a estrutura.

MATRIZ DE RIGIDEZ :

Para analisarmos uma estrutura mais complicada, será necessário expandir a expressão (1.1) na forma matricial. Supondo que a mola elástica uniforme da fig. abaixo tem pontos nodais 1 e 2 situados à ponta, e que as forças nestes pontos são P_1 e P_2 com deslocamento correspondente u_1 e u_2 .



$$\begin{aligned} P_1 &= K \cdot (\text{deslocamento da mola}) \\ &= K \cdot (u_1 - u_2) \end{aligned} \quad (1.3)$$

Do equilíbrio :

$$\begin{aligned} P_2 &= - P_1 \\ &= K \cdot (u_2 - u_1) \end{aligned} \quad (1.4)$$

é conveniente mostrar (1.3) e (1.4) na forma matricial como segue:

$$\begin{bmatrix} P_1 \\ P_2 \end{bmatrix} = \begin{bmatrix} K & -K \\ -K & K \end{bmatrix} \begin{bmatrix} u_1 \\ u_2 \end{bmatrix} \quad (1.5)$$

ou

$$\{P_1\} = [K] \cdot \{u_1\} \quad (1.6)$$

onde:

$\{P_1\}$ - vetor de força nodal interna
 $\{u_1\}$ - vetor de deslocamento nodal
 $[K]$ - matriz de rigidez elementar

$$[K] = \begin{bmatrix} K & -K \\ -K & K \end{bmatrix} \quad (1.7)$$

Normalmente, como a estrutura pode ser considerada como sendo composta de muitos elementos de molas interligadas, a seguinte expressão deve ser obtida:

$$\{q\} = [K] \{u_1\} \quad (1.8)$$

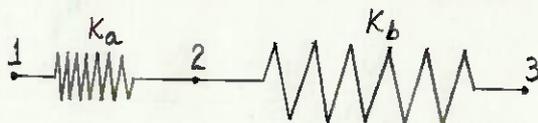
onde:

$\{q\}$ - vetor de forças nodais externas.
 $[K]$ - matriz de rigidez.
 $\{u_1\}$ - vetor de desloc. nodal da estrutura.

As expressões (1.6) e (1.8) podem ser vistas de forma similar. Elas podem ser resolvidas se um numero suficiente de restrições são introduzidas. O número mínimo de restrição requerida será aquela que previne a estrutura de flutuar no espaço.

CÁLCULO DA ESTRUTURA DA MATRIZ DE RIGIDEZ:

Considere uma estrutura composta de duas molas em série como mostrada na figura abaixo:



Como as duas molas tem diferentes rigidez, será conveniente representar a estrutura com dois elementos. O primeiro elemento é uma mola (1) que pode ser limitado pelos nós 1 e 2.

O segundo elemento é a outra mola limitada pelos nós 2 e 3 Desde que :

- P_1 = Força interna no nó 1 na mola (1)
- P_2 = Força interna no nó 2 na mola (1) = - P_1
- P_2 = Força interna do nó 2 na mola (2) = - P_3
- P_3 = Força interna do nó 3 na mola (2)
- Q_1 = Força interna aplicada no nó 1
- Q_2 = Força interna aplicada no nó 2
- Q_3 = Força interna aplicada no nó 3
- u_1 = Deslocamento do nó 1
- u_2 = Deslocamento do nó 2
- u_3 = Deslocamento do nó 3

Para obter a relação entre forças e deslocamentos, o efeito de cada deslocamento nodal devido as forças internas P serão consideradas, como se cada força fosse atuada separadamente.

Caso (a):

Deixando o nó (1) ter um deslocamento u_1 , e fixando a mola nos nós 2 e 3.

Da equação (1.3):

$$P_1 = K_m \cdot (u_1 - 0) \\ = K_m \cdot u_1$$

Da equação (1.4):

$$P_2^{(1)} = -P_1 = K_m \cdot (0 - u_1) \\ = -K_m \cdot u_1$$

Como os nós 2 e 3 são fixados, $P_2^{(2)} = P_3 = 0$

Caso (b):

Sendo que o nó 2 tem um deslocamento de u_2 , e fixando a mola nos nós 1 e 3 teremos:

$$P_1 = K_m \cdot (0 - u_2) = -K_m \cdot u_2 \\ P_3 = K_b \cdot (0 - u_2) = -K_b \cdot u_2$$

Da consideração de equilíbrio:

$$P_2^{(1)} = -P_1 = K_m \cdot u_2 \\ P_2^{(2)} = -P_3 = K_b \cdot u_2$$

Caso (c):

Sendo que o nó 3 tem um deslocamento de u_3 , e fixando a mola nos nós 1 e 2 teremos:

$$P_2^{(2)} = -K_b \cdot u_3 \\ P_3 = K_b \cdot u_3$$

Como a mola é fixada nos nós 1 e 2, $P_1 = P_2^{(1)} = 0$

Para obter todas as relações, serão necessário considerar a estrutura com todos os três deslocamentos.

$$Q_1 = \sum F_1 = K_m \cdot u_1 - K_m \cdot u_2 \\ Q_2 = \sum (P_2^{(1)} + P_2^{(2)}) = -K_m \cdot u_1 + K_m \cdot u_2 + K_b \cdot u_2 - K_b \cdot u_3 \\ = -K_m \cdot u_1 + (K_m + K_b) \cdot u_2 - K_b \cdot u_3 \\ Q_3 = \sum P_3 = -K_b \cdot u_2 + K_b \cdot u_3 \quad (1.9)$$

Reescrevendo a eq.(1.9) na forma matricial, o seguinte é obtido:

$$\begin{bmatrix} Q_1 \\ Q_2 \\ Q_3 \end{bmatrix} = \begin{bmatrix} K_m & -K_m & 0 \\ -K_m & K_m + K_b & -K_b \\ 0 & -K_b & K_b \end{bmatrix} \cdot \begin{bmatrix} u_1 \\ u_2 \\ u_3 \end{bmatrix} \quad (1.10)$$

$$\text{ou} \\ \{q\} = [K] \cdot \{u_s\} \quad (1.11)$$

onde:

$$\{q\} = \begin{bmatrix} Q_1 \\ Q_2 \\ Q_3 \end{bmatrix} = \text{vetor de carga externa nodal atuando na estrutura}$$

$$[K] = \text{Matriz de rigidez}$$

$$\{u_s\} = \begin{bmatrix} u_1 \\ u_2 \\ u_3 \end{bmatrix}$$

MÉTODO ALTERNATIVO DE FORMAÇÃO (K):

O sistema de rigidez pode ser formado pela superposição direta das matrizes de rigidez elementares, como segue.

Elemento 1-2:

De (1.5), a matriz de rigidez elementar para o elemento 1-2 é dado por (1.12):

$$[K_{1-2}] = \begin{bmatrix} K_m & -K_m \\ -K_m & K_m \end{bmatrix} \quad (1.12)$$

De (1.5), a matriz de rigidez elementar para o elemento

2-3 é dado por (1.13):

$$[K_{2-3}] = \begin{bmatrix} K_b & -K_b \\ -K_b & K_b \end{bmatrix} \quad (1.13)$$

Em ambos (1.12) e (1.13), os deslocamentos u_1, u_2 e u_3 são mostrados para indicar que componentes da matriz de rigidez correspondem a que deslocamentos e também para ajudar a construir o sistema de matriz como mostrado em (1.14).

$$[K] = \sum K = \begin{bmatrix} K_m & -K_m & 0 \\ -K_m & K_m + K_b & -K_b \\ 0 & -K_b & K_b \end{bmatrix} \quad (1.14)$$

MÉTODO DE SOLUÇÃO:

A equação (1.11) não pode ser resolvida como mostrada, porque $[K]$ é singular e "flutuando no espaço". Portanto, será necessário restringir a estrutura.

No caso das duas molas em série, prendendo-se o nó 3, ou seja, fazendo $u_3 = 0$ e substituindo em (1.10), o seguinte é obtido:

$$\begin{bmatrix} Q_1 \\ Q_2 \\ R \end{bmatrix} = \begin{bmatrix} K_m & -K_m & 0 \\ -K_m & K_m + K_b & -K_b \\ 0 & -K_b & K_b \end{bmatrix} \begin{bmatrix} u_1 \\ u_2 \\ 0 \end{bmatrix}$$

ou

$$\begin{bmatrix} q_f \\ R \end{bmatrix} = \begin{bmatrix} K_{11} & K_{12} \\ K_{21} & K_{22} \end{bmatrix} \begin{bmatrix} u_f \\ 0 \end{bmatrix} \quad (1.15)$$

Onde:

$\{q_f\}$ - vetor de carga correspondente a posição do livre deslocamento.
 $\{u_f\}$ - vetor de deslocamento do nó livre.
 $\{R\}$ - vetor de reação.

$$\begin{bmatrix} K_{11} \\ K_{12} \\ K_{22} \end{bmatrix} = \begin{bmatrix} K_m & -K_m \\ -K_m & K_m + K_b \\ 0 & -K_b \end{bmatrix} \quad \text{- Matriz de rigidez correspondente ao deslocamento livre}$$

$$K_{12} = \begin{bmatrix} 0 \\ -K_b \end{bmatrix} = K_{21}$$

$$K_{22} = [K_b]$$

Expandindo (1.15), o seguinte é obtido:

$$\begin{aligned} \{q_r\} &= [K_{11}]\{u_r\} \\ \text{ou} \\ \{u_r\} &= [K_{11}]^{-1}\{q_r\} \end{aligned} \quad (1.16)$$

$$[R] = [K_{21}]\{u_r\} = [K_{21}][K_{11}]^{-1}\{q_r\} \quad (1.17)$$

a equação (1.16) torna-se:

$$\{u_r\} = [K_{11}]^{-1}\{q_r\} + [K_{12}]\{u_m\}$$

$$[R] = [K_{12}]\{u_r\} + [K_{22}]\{u_m\}$$

ANÁLISE DE ELEMENTOS FINITOS:

Embora o método do deslocamento da matriz é parcela do método de elemento finito, a descrição é geralmente associada com a teoria apresentada no presente capítulo.

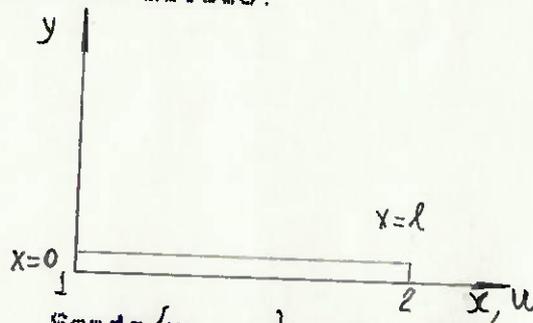
Para pratos e cascas, como é o caso a ser estudado e analisado (roda), com formas e sistemas de cargas complexas onde a análise por métodos tradicionais é muito difícil, ou virtualmente impossível, o método descrito no presente capítulo tem sido particularmente utilizado. Para estruturas deste tipo, é prático representar suas formas com um grande número de pequenas formas, conhecido como elementos finitos.

Elementos finitos tomam muitas e variadas formas, dependendo da forma que eles são supostos representar.

DERIVAÇÃO DA MATRIZ DE RIGIDEZ:

* Aproximação do trabalho virtual:

Durante o processo de descrição do método, aplicaremos num elemento de vareta plano da figura a seguir. É esperado que isto irá ajudar a obter um melhor entendimento do método.



Seja $\{u(x, y)\}$ um vetor representando a função deslocamento do elemento.

Para a vareta plana, será conveniente assumir a seguinte função deslocamento:

$$u = a_1 + a_2 \cdot x = \{u(x, y)\} \quad (2.1)$$

onde a_1 e a_2 são constantes.

Como há dois valores limites para o deslocamento, chamado u_1 (em $x=0$) e u_2 (em $x=l$), a função deslocamento u podem somente incluir as duas constantes a_1 e a_2 desconhecidas.

É necessário assumir o mesmo número de constantes a como há grau de liberdade nos nós para o elemento. Sendo que o número correto de equações simultâneas podem ser obtidas para determinados a 's em termos dos deslocamentos nodais, $\{u_i\}$.

Na forma matricial, (2.1) aparece como:

$$\begin{aligned} [u(x, y)] &= \begin{bmatrix} 1 & x \end{bmatrix} \begin{bmatrix} a_1 \\ a_2 \end{bmatrix} \\ &= [K(x, y)] \cdot [a] \end{aligned} \quad (2.2)$$

Como $\{a_i\}$ é desconhecido, é necessário obter isto em termos de deslocamentos nodais, como segue:

$$\begin{aligned} a &= 0, u = u_1 \\ &= \\ a &= 1, u = u_2 \end{aligned} \quad (2.3)$$

Substituindo (2.3) em (2.1), obtém-se:

$$\begin{aligned} u_1 &= a_1 \\ u_2 &= a_1 + a_2 \cdot l \end{aligned}$$

Reescrevendo (2.4) na forma matricial:

$$\begin{bmatrix} u_1 \\ u_2 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 1 & l \end{bmatrix} \begin{bmatrix} a_1 \\ a_2 \end{bmatrix} \quad (2.4)$$

$$\{u_i\} = [c] \cdot \{a_i\} \quad (2.5)$$

onde:

u_i - vetor de deslocamento nodal
 c - uma matriz de constantes c é sempre quadrada e a sua ordem é a mesma do grau de liberdade do elemento e do número de coeficientes polinomiais "a" desconhecidos.

Neste caso os coeficientes :

$$[c] = \begin{bmatrix} 1 & 0 \\ 1 & l \end{bmatrix} \quad (2.6)$$

De (2.5) a incógnita a_i pode ser obtida como segue:

$$\{a_i\} = [c]^{-1} \cdot \{u_i\} \quad (2.7)$$

Neste caso,

$$[c] = \begin{bmatrix} 1 & 0 \\ -1 & l \end{bmatrix} \quad (2.8)$$

Será necessário obter uma expressão para deslocamento em termos da matriz abaixo. Agora, para a vareta plana:

$$\epsilon = \frac{du}{dx} = \frac{d\{u(x,y)\}}{dx} = a_2$$

que na forma matricial aparece como:

$$\begin{aligned} \{e\} &= \begin{bmatrix} 0 & 1 \end{bmatrix} \begin{bmatrix} u_1 \\ u_2 \end{bmatrix} \\ &= [B_{\langle x, y \rangle}] \cdot [u_1] \end{aligned} \quad (2.9)$$

onde

$B_{\langle x, y \rangle}$ - Matriz relativa a um vetor de deslocamento e vetor desconhecido u_1 .

Neste caso:

$$[B_{\langle x, y \rangle}] = \begin{bmatrix} 0 & 1 \end{bmatrix} \quad (2.10)$$

Substituindo (2.7) em (2.9):

$$\{e\} = [B_{\langle x, y \rangle}] \cdot [C] \cdot \{u_1\} \quad (2.11)$$

Agora, para tensão uniaxial:

$$\sigma = E \cdot e$$

ou em forma matricial, para um sistema de tensão de duas e três dimensões:

$$\{s\} = [D] \cdot \{e\} \quad (2.12)$$

onde:

$$\begin{aligned} \{s\} &- \text{vetor de tensão interna.} \\ [D] &- \text{matriz de material constante.} \\ &\text{Neste caso } D = E \text{ (Módulo de Young)} \end{aligned} \quad (2.13)$$

Substituindo (2.11) em (2.12):

$$\{s\} = [D][B_{(x,y,z)}][\bar{c}]^T \{u_d\}$$

agora:

trabalho interno virtual = e.s.d(vol)
 $\{\bar{e}\}$ - vetor de deslocamento virtual

Em substituição:

$$\begin{aligned} \text{T.I.V.} &= u_d \cdot c \cdot B_{(x,y,z)} \cdot D \cdot B_{(x,y,z)} \cdot c \cdot u_d \cdot d(\text{vol}) \\ &= u_d \cdot c \cdot B_{(x,y,z)} \cdot D \cdot B_{(x,y,z)} \cdot c \cdot u_d \cdot d(\text{vol}) \end{aligned} \quad (2.14)$$

onde:

$$\begin{aligned} \{u_d\} &\text{- vetor de deslocamento virtual} \\ \text{Trab. externo virtual} &= u_d \cdot P_d \end{aligned} \quad (2.15)$$

Substituindo (2.14) e (2.15), a seguinte relação é obtida

$$\{P_d\} = [K] \{u_d\}$$

A matriz de rigidez elementar pode ser expressa na forma:

$$[K] = [\bar{c}]^T [k] [\bar{c}] \quad (2.16)$$

onde:

$$[k] = \int [B_{(x,y,z)}]^T [D] [B_{(x,y,z)}] \cdot d(\text{vol}) \quad (2.17)$$

Para a vareta elementar, $[k]$ é obtido por substituição de (2.10) e (2.13) em (2.17). Como segue:

$$\begin{aligned} [k] &= \int_0^l A \begin{bmatrix} 0 & 1 \end{bmatrix} \cdot E \begin{bmatrix} 0 & 1 \end{bmatrix} \cdot dx \\ &= A \cdot l \begin{bmatrix} 0 & 0 \\ 0 & E \end{bmatrix} \end{aligned} \quad (2.18)$$

onde A - área da vareta da seção.

Substituindo (2.8) e (2.18) em (2.16), o seguinte é obtido para a matriz de rigidez elementar para a vareta:

$$\begin{aligned}
 [K] &= \begin{bmatrix} 1 & -1 \\ 0 & 1 \end{bmatrix} A \cdot l \cdot \begin{bmatrix} 0 & 0 \\ 0 & E \end{bmatrix} \begin{bmatrix} 1 & 0 \\ -1 & 1 \end{bmatrix} \\
 &= \frac{A \cdot E}{l} \begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix}
 \end{aligned}$$

PROBLEMAS DE PLANO DE TENSÃO E DEFORMAÇÃO:

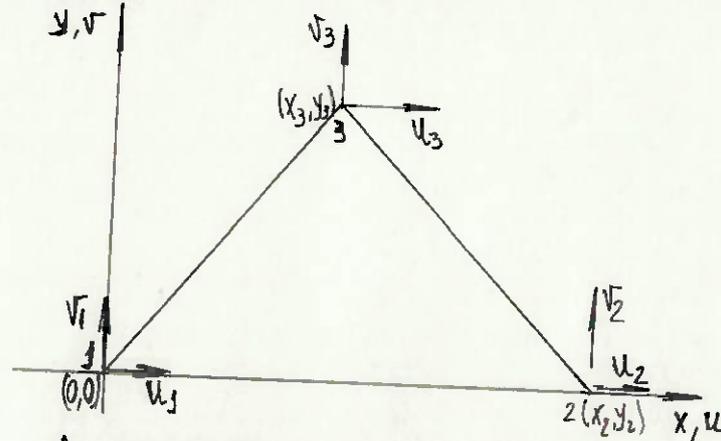
Plano de tensão é um sistema bidimensional, onde as tensões atuam no plano da placa. A deformação resultante, devido ao sistema de tensão bidimensional será tridimensional, onde o deslocamento fora do plano será causado pelo efeito Poisson do plano de tensão.

Plano de deslocamento é um sistema de deslocamento bidimensional e sistema de tensão de três dimensões. Em geral, as duas tensões principais estarão no plano, e a terceira, chamada de tensão fora dele.

ELEMENTO TRIANGULAR NO PLANO:

Primeiro, o princípio do trabalho virtual é usado para derivar a matriz de rigidez para um prato triangular plano.

Considere um elemento plano triangular da fig. abaixo. Esse elemento é definido pelos pontos nodais situados ao canto.



A seguinte configuração de deslocamento é assumida e deve ser notada que as seis constantes a_1 a a_6 correspondem aos seis graus de liberdade. (é necessário assumir o mesmo número de constantes e do número de graus de liberdade por elemento, uma vez que o número de equações a serem resolvidas será o mesmo número de incógnitas a , isto é, $[C]$ deve ser quadrada.

$$\begin{aligned} u &= a_1 + a_2 x + a_3 y \\ v &= a_4 + a_5 x + a_6 y \end{aligned} \quad (2.19)$$

Colocando-se (2.19) na forma matricial:

$$\begin{bmatrix} u \\ v \end{bmatrix} = [u_{(x,y)}] = \begin{bmatrix} 1 & x & y & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & x & y \end{bmatrix} [a_1 \ a_2 \ \dots \ a_6] \quad (2.20)$$

Comparando (2.20) com (2.2), podemos observar que:

$$[M_{(x,y)}] = \begin{bmatrix} 1 & x & y & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & x & y \end{bmatrix} \quad (2.21)$$

onde:

$$[A] = \begin{bmatrix} 1 & 0 & 0 \\ 1 & x_2 & 0 \\ 1 & x_3 & y_3 \end{bmatrix}$$

temos que:

$$[A]^{-1} = \begin{bmatrix} x_2 y_3 & 0 & 0 & 0 \\ -y_3 & y_3 & 0 & -1 \\ x_{23} & -x_3 & x_2 & x_2 y_3 \end{bmatrix}$$

onde:

$$x_{23} = x_3 - x_2$$

e, portanto:

$$[C]^{-1} = \frac{1}{x_2 y_3} \cdot \begin{bmatrix} x_2 y_3 & 0 & 0 & 0 & 0 & 0 \\ 0 & x_2 y_3 & 0 & 0 & 0 & 0 \\ -y_3 & 0 & y_3 & 0 & 0 & 0 \\ 0 & -y_3 & 0 & y_3 & 0 & 0 \\ x_{23} & 0 & -x_3 & 0 & x_2 & 0 \\ 0 & x_{23} & 0 & -x_3 & 0 & x_2 \end{bmatrix}$$

Para obtermos $[B_{(x,y)}]$ é necessário considerar os componentes de deslocamento. As três componentes de deslocamento em um sistema de duas dimensões são dadas por:

$$e_x = \frac{du}{dx} \text{ - deslocamento direto em } x$$

$$e_y = \frac{dy}{dy} \text{ - deslocamento direto em } y$$

$$g_{xy} = \frac{du}{dy} + \frac{dy}{dx} \text{ - desloc. no plano } X-Y$$

Na forma matricial, estes componentes de deslocamento são dados por:

$$\begin{bmatrix} e_x \\ e_y \\ g_{xy} \end{bmatrix} = \begin{bmatrix} d/dx & 0 \\ 0 & d/dy \\ d/dy & d/dx \end{bmatrix} \begin{bmatrix} u \\ v \end{bmatrix} \quad (2.26)$$

da equação de (2.19):

$$\begin{aligned} e_x &= a_{22} \\ e_y &= a_{33} \\ g_{xy} &= a_{23} + a_{32} \end{aligned}$$

Em que quando substituído na equação (2.26) aparecerá:

$$\begin{bmatrix} \varepsilon_x \\ \varepsilon_y \\ \gamma_{xy} \end{bmatrix} = \begin{bmatrix} 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 & 1 & 0 \end{bmatrix} \begin{bmatrix} \sigma_x \\ \sigma_y \\ \tau_{xy} \\ \sigma_z \\ \tau_{yz} \\ \tau_{zx} \end{bmatrix} \quad (2.27)$$

Comparando (2.27) com (2.9):

$$[D_{x,y,z}] = \begin{bmatrix} 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 & 1 & 0 \end{bmatrix} \quad (2.28)$$

Para obter D.

Pode ser mostrado que a relação tensão-deformação para o plano de tensão é dado por:

$$\begin{aligned} \varepsilon_x &= \frac{\sigma_x}{E} - \frac{\nu \sigma_y}{E} \\ \varepsilon_y &= \frac{\sigma_y}{E} - \frac{\nu \sigma_x}{E} \\ \tau_{xy} &= \frac{2(1+\nu)\tau_{xy}}{E} = \frac{\tau_{xy}}{G} \end{aligned}$$

E pode ser escrita na forma:

$$\begin{aligned} \sigma_x &= \frac{E}{(1-\nu^2)} (\varepsilon_x + \nu \varepsilon_y) \\ \sigma_y &= \frac{E}{(1-\nu^2)} (\varepsilon_y + \nu \varepsilon_x) \\ \tau_{xy} &= \frac{E}{(1-\nu^2)} \left(\frac{1-\nu}{2} \right) \gamma_{xy} \end{aligned}$$

Que na forma matricial estas equações aparecem como:

$$\begin{bmatrix} \sigma_x \\ \sigma_y \\ \tau_{xy} \end{bmatrix} = \frac{E}{(1-\nu^2)} \begin{bmatrix} 1 & \nu & 0 \\ \nu & 1 & 0 \\ 0 & 0 & (1-\nu)/2 \end{bmatrix} \begin{bmatrix} \varepsilon_x \\ \varepsilon_y \\ \gamma_{xy} \end{bmatrix} \quad (2.29)$$

Comparando (2.29) com (2.12) pode-se observar:

$$[D] = \frac{E}{(1-\nu^2)} \begin{bmatrix} 1 & \nu & 0 \\ \nu & 1 & 0 \\ 0 & 0 & (1-\nu)/2 \end{bmatrix} \quad (2.30)$$

Para que o plano de deslocamento, entretanto, (2.30) não é usada porque a relação tensão-deformação é diferente. Neste caso, o deslocamento na direcção perpendicular ao plano do prato (X-Y), chamado e_z , é zero.

$$\begin{aligned} e_z &= 0 = s_x/E - \nu \cdot s_y/E - \nu \cdot s_z/E \\ s_x &= \nu \cdot s_y + \nu \cdot s_z \end{aligned}$$

As outras relações tensão-deformação são:

$$\begin{aligned} e_x &= s_x/E - \nu \cdot s_y/E - \nu \cdot s_z/E \\ e_y &= s_y/E - \nu \cdot s_x/E - \nu \cdot s_z/E \\ g_{xy} &= t_{xy}/G = 2 \cdot (1+\nu) \cdot t_{xy}/E \end{aligned}$$

Usando um processo semelhante ao adotado para o plano de tensão, pode-se mostrar que a matriz de constantes elásticas é dada por:

$$[D] = \frac{E \cdot (1-\nu)}{(1+\nu)(1-2\nu)} \begin{bmatrix} 1 & \nu/(1-\nu) & 0 \\ \nu/(1-\nu) & 1 & 0 \\ 0 & 0 & (1-2\nu)/2(1-\nu) \end{bmatrix} \quad (2.31)$$

Em geral:

$$[D] = E^* = \begin{bmatrix} 1 & u & 0 \\ u & 1 & 0 \\ 0 & 0 & g \end{bmatrix} \quad (2.32)$$

Onde para o plano de tensão:

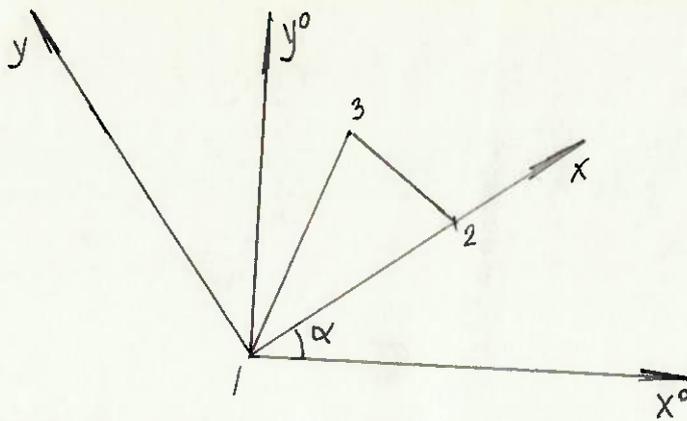
$$\begin{aligned} E^* &= \frac{E}{(1-\nu^2)} \\ u &= \nu \\ g &= (1-\nu)/2 \end{aligned}$$

e para o plano de deformação:

$$\begin{aligned} E^* &= E(1-\nu)/(1+\nu)(1-2\nu) \\ u &= \nu/(1-\nu) \\ g &= (1-2\nu)/2(1-\nu) \end{aligned}$$

De (2.28) e (2.32):

$$[k^*] = \frac{E^* \cdot A \cdot h}{2} \begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & g & 0 & g & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & g & 0 & g & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \end{bmatrix}$$



ELEMENTOS QUADRILÁTEROS NO PLANO:

Este texto irá apresentar elementos quadriláteros isoparamétricos com quatro e oito nós, junto com a análise do computador de alguns problemas de plano de tensão e deformação. Utilizam-se esses elementos para representar o contorno curvo, e devido aos triângulos de tensão constante não serem sofisticados para representar e modelar matematicamente a distribuição de tensão das áreas de variação de tensão.

Estas deficiências foram sanadas pela introdução de elementos mais sofisticados, como um maior número de triângulos e quadriláteros, onde tensão e deformação é permitida à sua variação através do elemento.

ELEMENTO ISOPARAMÉTRICO:

Elemento isoparamétrico é aquele em que a função deslocamento e geométrico podem ambos serem descritos pela mesma matriz de função forma.

Por exemplo, para um elemento bidimensional,

$$\begin{bmatrix} u \\ v \end{bmatrix} = \begin{bmatrix} u_1 \\ v_1 \end{bmatrix} = [N] \cdot \{u_1\} \quad (3.1)$$

$$\begin{bmatrix} x \\ y \end{bmatrix} = [N] \begin{bmatrix} x_1 \\ y_1 \end{bmatrix} \quad (3.2)$$

onde:

$[N]$ - matriz de função forma, que é geralmente expressa em coordenadas normais.

$\{u_1\}$ - vetor deslocamento nodal em coordenadas globais.

$\begin{bmatrix} x_1 \\ y_1 \end{bmatrix}$ - vetor de coordenada nodal.

NN - número de nós.

ELEMENTOS QUADRILÁTEROS DE QUATRO NÓS:

Assumindo a função deslocamento sendo:

$$\begin{aligned} u^e &= a_1 + a_2 \cdot x^e + a_3 \cdot y^e + a_4 \cdot x^e \cdot y^e \\ v^e &= a_5 + a_6 \cdot x^e + a_7 \cdot y^e + a_8 \cdot x^e \cdot y^e \end{aligned}$$

Ela poderá ser expressa na seguinte equação:

$$\begin{bmatrix} u^e \\ v^e \end{bmatrix} = \begin{bmatrix} N_1 & 0 & N_2 & 0 & N_3 & 0 & N_4 & 0 \\ 0 & N_1 & 0 & N_2 & 0 & N_3 & 0 & N_4 \end{bmatrix} \begin{bmatrix} u_1^e & v_1^e & \dots & u_4^e & v_4^e \end{bmatrix} \\ = [N] \cdot \{u_1^e\}$$

similarmente para $\begin{bmatrix} x^e & y^e \end{bmatrix}^t$, onde:

$[N]$ - matriz da função forma.

$\{u_1^e\}$ - vetor de deslocamento nodal.

Os deslocamentos nodais são u^e e v^e , e estão na direção de x^e e y^e .

e - de i para j.

n - de j para k.

Valores de e e n para os nós como seguem:

Nó 1	$e = -1$	$n = -1$
Nó 2	$e = 1$	$n = -1$
Nó 3	$e = 1$	$n = 1$
Nó 4	$e = -1$	$n = 1$

Os elementos da matriz função forma N são dados por:

$$\begin{aligned} N_1 &= (1 - e)(1 - n)/4 \\ N_2 &= (1 + e)(1 - n)/4 \\ N_3 &= (1 + e)(1 + n)/4 \\ N_4 &= (1 - e)(1 + n)/4 \end{aligned}$$

A matriz de rigidez é dada por:

$$\begin{aligned} K^e &= \int B^t \cdot D \cdot B \cdot dx \cdot dy \\ &= \int B^t \cdot D \cdot B \cdot \det(J) \cdot de \cdot dn \end{aligned}$$

onde:

$$[B] = [B_1 \ B_2 \ B_3 \ B_4]$$

$$[B_i] = \begin{bmatrix} \frac{dN_i}{dx^e} & 0 \\ 0 & \frac{dN_i}{dy^e} \\ \frac{dN_i}{dy^e} & \frac{dN_i}{dx^e} \end{bmatrix}$$

$$[J] = \begin{bmatrix} \frac{dN_1}{de} & \frac{dN_2}{de} & \frac{dN_3}{de} & \frac{dN_4}{de} \\ \frac{dN_1}{dn} & \frac{dN_2}{dn} & \frac{dN_3}{dn} & \frac{dN_4}{dn} \end{bmatrix} \quad \begin{bmatrix} x_1^e & y_1^e \\ x_2^e & y_2^e \\ x_3^e & y_3^e \\ x_4^e & y_4^e \end{bmatrix}$$

x_i^e e y_i^e são coordenadas do nó i .

$$\frac{dN_{1a}}{de} = -(i - n)/4$$

$$\frac{dN_{1a}}{dn} = -(i - e)/4$$

$$\frac{dN_{2a}}{de} = +(i - n)/4$$

$$\frac{dN_{2a}}{dn} = -(i + e)/4$$

$$\frac{dN_{3a}}{de} = +(i + n)/4$$

$$\frac{dN_{3a}}{dn} = +(i + e)/4$$

$$\frac{dN_{4a}}{de} = -(i + n)/4$$

$$\frac{dN_{4a}}{dn} = +(i - e)/4$$

$$[D] = E^{-1} \begin{bmatrix} 1 & u & 0 \\ u & 1 & 0 \\ 0 & 0 & g \end{bmatrix}$$

Onde os simbolos tem o mesmo significado que no tópico anterior.

ELEMENTO	e	n	s _x	s _y	t _{xy}
1	-1	-1	107.1	32.1	-4.13
1	-1	0	100	8.6	-4.13
1	-1	1	92.1	-15.0	-4.13
1	0	-1	107.1	32.1	0
1	0	0	100	8.6	0

b) Plano de deformação.

Nº	deslocamento nodal	
	u ^o	v ^o
1	0	0
2	0	0
3	2.47E-3	3.84E-4
4	2.47E-3	-3.84E-4

tensão (MN/m²)

ELEMENTO	e	n	s _x	s _y	t _{xy}
1	-1	-1	115.4	49.4	-10
1	-1	0	100	13.6	-10
1	-1	1	84.6	-22.2	-10
1	0	-1	115.4	49.4	0
1	0	0	100	13.6	0

ANÁLISE ESTRUTURAL DE ELEMENTO FINITO

- O CONTATO ENTRE O USUÁRIO E O COMPUTADOR:

O SAP (Structural Analysis Programme) possibilita o engenheiro analisar estruturas através de programas de elementos finitos em microcomputadores.

Podemos analisar vigas, placas e sólidos das mais variadas formas e tamanhos, com as mais diversas formas de condições de carregamento, condições térmicas, análise não linear, etc.

O Software SAP90 cria arquivos (enquanto o programa executa os dados) com os dados resultantes de força e momento, deslocamento (linear e rotacional), além de erros obtidos no processamento.

O SAPLOT acompanha o SAP, analisando a saída (resultados). Esta saída poderá ser plotada em estrutura normal, com ou sem carregamento, deslocamento, saída com estrutura deformada, gráfico da tensão interna, etc.

Para um aprofundamento, uma leitura detalhada sobre os programas de análise estrutural é fundamental. O leitor deve seguir as ref. bibliográficas 2, 3, 4 e 5 (no final deste trabalho).

A COLOCAÇÃO DOS DADOS NO SAP90

A leitura de dados no SAP90 foi feita através de um arquivo em TURBO-PASCAL 5.5.

Neste arquivo, foi colado em formato padronizado para a leitura, com colocações de condições de carga, coordenadas dos pontos nodais, pontos a serem engastados (RESTRAINTS), os elementos finitos (JOINT QUADRILATERAL) e as forças (LOADS).

Para uma compreensão do leitor não habituado com o SAP90, recomenda-se o manual (ver ref. bibliográfica).

CALCULO DOS ESFORÇOS

Utilizaremos como base de estudo para análise simples de tensão, uma roda de aço 5J x 13H2 que se aplicam em alguns carros da Volkswagen (Gol, Voyage, Saveiro e Parati).

obs: Qualquer informação mais detalhada deste (roda n.2607) ou outro modelo de roda poderá ser obtida pelo leitor através do fabricante.

Lemmerz - Borlem S.A. Empreendimentos industriais.
R. Barão do Rio Branco, 20.
Rodovia Presidente Dutra.
Guarulhos - S.Paulo.

Para o cálculo, utilizaremos o que pede o fabricante, ou seja, determinada pela prescrição de teste da Volkswagen.

Sob momento fletor rotativo ou alternado deverão ser atingidos os seguintes valores mínimos:

-Teste rápido :

Momento de flexão - 265 Kg.m

Peso no eixo - 303.7 Kg

RPM - 260

Torque no parafuso - 9 Kg.m

Ciclo mínimo - 20000

-Teste normal :

Momento de flexão - 153 Kg.m

Ciclo mínimo - 400000

Os demais valores são iguais ao teste anterior.

SOLUÇÃO QUADRILÁTERA COM QUATRO NÓS

(PROGRAMA DE COMPUTADOR)

Detalhe dos elementos:

Os pontos nodais definem cada elemento onde serão colocados em sentido dado como segue:

i, j, k, l

onde:

e - de i p/ j e l p/ k

n - de i p/ l e j p/ k

A seguinte notação é usada no resultado para a tensão:

σ_x - tensão direta na direção x° .

σ_y - tensão direta na direção y° .

τ_{xy} - tensão de cisalhamento no plano x° - y° .

Para demonstrar a capacidade do elemento, veja o exemplo abaixo.

EXEMPLO :

Determine o deslocamento e tensões nodais para o prato mostrado na fig. abaixo fixado nos nós 1 e 2, onde um elemento é adotado.

$E = 6,93 \times 10^4 \text{ MN/m}^2$.

$\nu = 0,3$.

$t = 2 \times 10^{-2} \text{ m}$.

Solução:

i=1 j=2 k=3 l=4

∴ e - 1 a 2

n - 2 a 3

resulta:

a) Plano de tensão.

Nó i	Deslocamento nodal	
	u_i°	v_i°
1	0	0
2	0	0
3	2,812E-3	3,09E-4
4	2,812E-3	3,09E-4

tensão (MN/m²)



STRUCTURAL ANALYSIS PROGRAMS

VERSION 5.03

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S Y S T E M D A T A

EXECUTION CODE - - - - -	0
NUMBER OF LOAD CONDITIONS - - - - -	1
STEADY STATE LOAD FREQUENCY - - - - -	.0000E+00
NUMBER OF EIGENVALUES - - - - -	0
EIGEN CONVERGENCE TOLERANCE - - - - -	.1000E-03
EIGEN CUTOFF TIME PERIOD - - - - -	.0000E+00

GENERATED JOINT COORDINATES

JOINT	X	Y	Z
1	21.100	19.600	35.200
2	26.600	11.500	35.200
3	29.500	.000	35.200
4	24.200	22.900	35.200
5	31.100	13.300	35.200
6	33.200	.000	35.200
10	29.100	28.400	38.700
12	37.200	15.700	38.700
14	40.400	.000	38.700
15	35.700	35.400	38.700
17	46.500	20.000	38.700
19	49.200	10.000	38.700
20	38.800	38.400	38.700
21	45.700	30.700	38.700
22	50.500	21.700	38.700
24	54.100	9.300	38.700
25	43.900	36.500	38.700
26	47.400	38.400	38.700
27	50.600	33.300	38.700
28	55.200	24.200	38.700
29	59.700	12.300	38.700
30	60.600	.000	38.700
31	57.900	7.000	38.700
32	48.500	42.900	38.700
33	49.000	48.800	37.100
34	53.200	43.800	37.100
35	58.200	38.300	37.100
36	63.800	27.200	37.100
37	67.900	14.000	37.100
38	70.000	.000	37.100
39	54.500	54.100	15.000
40	63.800	42.400	15.000
41	70.500	30.000	15.000
42	74.900	15.100	15.000
43	76.700	.000	15.000
44	62.700	62.100	1.000
45	73.900	49.100	1.000
46	81.800	34.900	1.000
47	87.000	17.700	1.000
48	89.000	.000	1.000
49	70.600	70.200	1.700
50	83.200	55.300	1.700
51	91.700	39.000	1.700
52	97.900	19.900	1.700
53	100.300	.000	1.700
55	86.500	57.900	7.700
56	95.900	41.000	7.700
57	101.600	20.900	7.700
59	77.000	76.100	12.600
60	79.500	73.000	12.600
62	85.400	64.900	12.600
63	92.500	55.300	12.600
64	99.100	42.000	12.600

GENERATED JOINT COORDINATES

JOINT	X	Y	Z
65	105.100	25.800	12.600
66	107.300	14.500	12.600
67	108.400	.000	12.600
68	108.500	5.800	13.000
69	111.700	5.100	14.200
70	111.300	.000	14.500
73	112.500	13.800	15.100
74	113.400	18.400	15.800
76	115.000	23.300	17.000
78	117.800	27.200	18.600
80	107.700	29.500	14.500
81	102.500	43.100	14.500
82	96.700	54.600	14.500
84	79.400	78.300	14.500
85	81.600	76.100	14.200
87	88.900	70.100	15.100
88	93.200	67.000	15.800
89	97.500	64.300	17.000
92	102.600	63.200	18.600
94	106.300	56.100	18.600
95	110.900	46.500	18.600
96	115.900	35.600	18.600
98	122.100	30.400	21.600
100	123.600	39.200	24.800
101	126.700	32.100	24.800
103	131.400	30.600	28.100
104	134.000	26.000	29.500
106	135.400	16.400	29.500
108	136.100	7.000	29.500
110	136.600	.000	29.500
111	140.300	.000	32.800
112	144.600	.000	45.600
114	144.200	11.600	45.600
115	143.900	16.600	45.600
116	143.200	21.900	45.600
118	141.700	31.000	45.600
119	140.200	36.400	45.600
121	134.100	55.100	45.600
122	129.200	65.400	45.600
125	122.000	77.700	45.600
127	116.900	85.500	45.600
129	110.200	93.400	45.600
131	102.400	101.800	45.600
132	99.500	98.400	32.800
134	106.400	90.900	32.800
136	112.500	82.800	32.800
138	118.300	74.700	32.800
140	125.200	63.400	32.800
141	133.300	43.500	32.800
143	137.100	29.300	32.800
145	139.000	19.200	32.800
147	140.000	10.000	32.800
149	96.400	95.500	29.500

GENERATED JOINT COORDINATES

JOINT	X	Y	Z
151	101.500	89.800	29.500
153	107.900	82.000	29.500
155	114.000	74.200	29.500
156	114.700	69.400	28.000
159	111.000	65.400	24.800
160	107.100	63.600	21.600
161	115.000	59.300	24.800
162	120.400	50.000	24.800
163	137.600	44.700	45.600
164	85.500	65.300	14.000
167	44.000	7.500	38.700
169	46.800	46.100	38.700
170	129.600	53.500	32.800
171	76.800	69.400	7.700
173	103.600	5.300	7.700
218	144.800	.000	60.500
318	143.900	15.900	60.500
418	141.700	30.000	60.500
518	134.600	53.300	60.500
618	124.900	73.200	60.500
718	113.000	90.500	60.500
818	102.600	102.200	60.500
904	24.200	22.900	38.700
905	31.100	13.300	38.700
906	33.200	.000	38.700
1001	19.600	21.100	35.200
1002	11.500	26.600	35.200
1003	.000	29.500	35.200
1004	22.900	24.200	35.200
1005	13.300	31.100	35.200
1006	.000	33.200	35.200
1010	28.400	29.100	38.700
1012	15.700	37.200	38.700
1014	.000	40.400	38.700
1015	35.400	35.700	38.700
1017	20.000	46.500	38.700
1019	10.000	49.200	38.700
1020	38.400	38.800	38.700
1021	30.700	45.700	38.700
1022	21.700	50.500	38.700
1024	9.300	54.100	38.700
1025	36.500	43.900	38.700
1026	38.400	47.400	38.700
1027	33.300	50.600	38.700
1028	24.200	55.200	38.700
1029	12.300	59.700	38.700
1030	.000	60.000	38.700
1031	7.000	57.900	38.700
1032	42.900	48.500	38.700
1033	48.800	49.000	37.100
1034	43.800	53.200	37.100
1035	38.300	58.200	37.100
1036	27.200	63.800	37.100

GENERATED JOINT COORDINATES

JOINT	X	Y	Z
1037	14.000	67.900	37.100
1038	.000	70.000	37.100
1039	54.100	54.500	15.000
1040	42.400	63.800	15.000
1041	30.000	70.500	15.000
1042	15.100	74.900	15.000
1043	.000	76.700	15.000
1044	62.100	62.700	1.000
1045	49.100	73.900	1.000
1046	34.900	81.800	1.000
1047	17.700	87.000	1.000
1048	.000	89.000	1.000
1049	70.200	70.600	1.700
1050	55.300	83.200	1.700
1051	39.000	91.700	1.700
1052	19.900	97.900	1.700
1053	.000	100.300	1.700
1055	57.900	86.500	7.700
1056	41.000	95.900	7.700
1057	20.900	101.600	7.700
1059	76.100	77.000	12.600
1060	73.000	79.500	12.600
1062	64.900	85.400	12.600
1063	55.300	92.500	12.600
1064	42.000	99.100	12.600
1065	25.800	105.100	12.600
1066	14.500	107.300	12.600
1067	.000	108.400	12.600
1068	5.800	108.500	13.000
1069	5.100	111.700	14.200
1070	.000	111.300	14.500
1073	13.800	112.500	15.100
1074	18.400	113.400	15.800
1076	23.300	115.000	17.000
1078	27.200	117.800	18.600
1080	29.500	107.700	14.500
1081	43.100	102.500	14.500
1082	54.600	96.700	14.500
1084	78.300	79.400	14.500
1085	76.100	81.600	14.200
1087	70.100	88.900	15.100
1088	67.000	93.200	15.800
1089	64.300	97.500	17.000
1092	63.200	102.600	18.600
1094	56.100	106.300	18.600
1095	46.500	110.900	18.600
1096	35.600	115.900	18.600
1098	30.400	122.100	21.600
1100	39.200	123.600	24.800
1101	32.100	126.700	24.800
1103	30.600	131.400	28.100
1104	26.000	134.000	29.500
1106	16.400	135.400	29.500

GENERATED JOINT COORDINATES

JOINT	X	Y	Z
1108	7.000	136.100	29.500
1110	.000	136.600	29.500
1111	.000	140.300	32.800
1112	.000	144.600	45.600
1114	11.600	144.200	45.600
1115	16.600	143.900	45.600
1116	21.900	143.200	45.600
1118	31.000	141.700	45.600
1119	36.400	140.200	45.600
1121	55.100	134.100	45.600
1122	65.400	129.200	45.600
1125	77.700	122.000	45.600
1126	81.700	119.700	45.600
1127	85.500	116.900	45.600
1129	93.400	110.200	45.600
1131	101.800	102.400	45.600
1132	98.400	99.500	32.800
1134	90.900	106.400	32.800
1136	82.800	112.500	32.800
1138	74.700	118.300	32.800
1140	63.400	125.200	32.800
1141	43.500	133.300	32.800
1143	29.300	137.100	32.800
1145	19.200	139.000	32.800
1147	10.000	140.000	32.800
1149	95.500	96.400	29.500
1151	89.800	101.500	29.500
1153	82.000	107.900	29.500
1155	74.200	114.000	29.500
1156	69.400	114.700	28.000
1159	65.400	111.000	24.800
1160	63.600	107.100	21.600
1161	59.300	115.000	24.800
1162	50.000	120.400	24.800
1163	44.700	137.600	45.600
1164	65.300	85.500	14.000
1167	7.500	44.000	38.700
1169	46.100	46.800	38.700
1170	53.500	129.600	32.800
1171	69.400	76.800	7.700
1173	5.300	103.600	7.700
1218	.000	144.800	60.500
1318	15.900	143.900	60.500
1418	30.000	141.700	60.500
1518	53.300	134.600	60.500
1618	73.200	124.900	60.500
1718	90.500	113.000	60.500
1818	102.200	102.600	60.500
1904	22.900	24.200	38.700
1905	13.300	31.100	38.700
1906	.000	33.200	38.700

R E S T R A I N T D A T A

JOINT	RX	RY	RZ	RXX	RYY	RZZ
3	1	1	1	0	0	0
6	1	1	1	0	0	0
14	1	1	1	0	0	0
30	1	1	1	0	0	0
38	1	1	1	0	0	0
43	1	1	1	0	0	0
48	1	1	1	0	0	0
53	1	1	1	0	0	0
67	1	1	1	0	0	0
70	1	1	1	0	0	0
110	1	1	1	0	0	0
111	1	1	1	0	0	0
112	1	1	1	0	0	0
218	1	1	1	0	0	0
318	1	1	1	0	0	0
418	1	1	1	0	0	0
518	1	1	1	0	0	0
618	1	1	1	0	0	0
718	1	1	1	0	0	0
818	1	1	1	0	0	0
906	1	1	1	0	0	0
1003	1	1	1	0	0	0
1006	1	1	1	0	0	0
1014	1	1	1	0	0	0
1030	1	1	1	0	0	0
1038	1	1	1	0	0	0
1043	1	1	1	0	0	0
1048	1	1	1	0	0	0
1053	1	1	1	0	0	0
1067	1	1	1	0	0	0
1070	1	1	1	0	0	0
1110	1	1	1	0	0	0
1111	1	1	1	0	0	0
1112	1	1	1	0	0	0
1218	1	1	1	0	0	0
1318	1	1	1	0	0	0
1418	1	1	1	0	0	0
1518	1	1	1	0	0	0
1618	1	1	1	0	0	0
1718	1	1	1	0	0	0
1818	1	1	1	0	0	0
1906	1	1	1	0	0	0

S H E L L C O N T R O L D A T A

NUMBER OF ELEMENT MATERIAL TYPES 1

LOAD COND	GRAVITATIONAL MULTIPLIERS			TEMPERATURE MULTIPLIERS	PRESSURE MULTIPLIERS
	X	Y	Z		
1	.000	.000	.000	.000	.000

M A T E R I A L P R O P E R T Y D A T A

MAT ID	MODULUS OF ELASTICITY	POISSONS RATIO	WEIGHT PER UNIT VOL	MASS PER UNIT VOL	THERMAL EXPANSION
1	.2100E+06	.3000E+00	.0000E+00	.0000E+00	.0000E+00

S H E L L E L E M E N T D A T A

ELT ID	JOINT I	JOINT J	JOINT K	JOINT L	ELT TYPE	MAT ID	MEMBRANE THICKNESS	BENDING THICKNESS	REF TEMP	LOC AXIS
1	4	5	1	2	0	1	.3600E+01	.3600E+01	.00	0
2	904	905	4	5	0	1	.3600E+01	.3600E+01	.00	0
3	5	6	2	3	0	1	.3600E+01	.3600E+01	.00	0
4	905	906	5	6	0	1	.3600E+01	.3600E+01	.00	0
5	10	12	904	905	0	1	.3600E+01	.3600E+01	.00	0
6	12	14	905	906	0	1	.3600E+01	.3600E+01	.00	0
7	12	167	14	14	0	1	.3600E+01	.3600E+01	.00	0
8	15	17	10	12	0	1	.3600E+01	.3600E+01	.00	0
9	17	19	12	167	0	1	.3600E+01	.3600E+01	.00	0
10	21	22	15	17	0	1	.3600E+01	.3600E+01	.00	0
11	22	24	17	19	0	1	.3600E+01	.3600E+01	.00	0
12	15	20	21	21	0	1	.3600E+01	.3600E+01	.00	0
13	20	25	21	21	0	1	.3600E+01	.3600E+01	.00	0
14	26	27	25	21	0	1	.3600E+01	.3600E+01	.00	0
15	27	28	21	22	0	1	.3600E+01	.3600E+01	.00	0
16	28	29	22	24	0	1	.3600E+01	.3600E+01	.00	0
17	29	31	24	24	0	1	.3600E+01	.3600E+01	.00	0
18	29	30	31	31	0	1	.3600E+01	.3600E+01	.00	0
19	33	34	169	32	0	1	.3600E+01	.3600E+01	.00	0
20	34	26	32	32	0	1	.3600E+01	.3600E+01	.00	0
21	34	35	26	27	0	1	.3600E+01	.3600E+01	.00	0
22	35	36	27	28	0	1	.3600E+01	.3600E+01	.00	0
23	36	37	28	29	0	1	.3600E+01	.3600E+01	.00	0
24	37	38	29	30	0	1	.3600E+01	.3600E+01	.00	0
25	39	34	33	33	0	1	.3600E+01	.3600E+01	.00	0
26	39	40	34	35	0	1	.3600E+01	.3600E+01	.00	0
27	40	41	35	36	0	1	.3600E+01	.3600E+01	.00	0
28	41	42	36	37	0	1	.3600E+01	.3600E+01	.00	0
29	42	43	37	38	0	1	.3600E+01	.3600E+01	.00	0
30	44	45	39	40	0	1	.3600E+01	.3600E+01	.00	0
31	45	46	40	41	0	1	.3600E+01	.3600E+01	.00	0
32	46	47	41	42	0	1	.3600E+01	.3600E+01	.00	0
33	47	48	42	43	0	1	.3600E+01	.3600E+01	.00	0
34	49	50	44	45	0	1	.3600E+01	.3600E+01	.00	0
35	50	51	45	46	0	1	.3600E+01	.3600E+01	.00	0
36	51	52	46	47	0	1	.3600E+01	.3600E+01	.00	0
37	52	53	47	48	0	1	.3600E+01	.3600E+01	.00	0
38	131	129	132	134	0	1	.3600E+01	.3600E+01	.00	0
39	132	134	149	151	0	1	.3600E+01	.3600E+01	.00	0
40	129	127	134	136	0	1	.3600E+01	.3600E+01	.00	0
41	134	136	151	153	0	1	.3600E+01	.3600E+01	.00	0
42	127	125	136	138	0	1	.3600E+01	.3600E+01	.00	0
43	136	138	153	155	0	1	.3600E+01	.3600E+01	.00	0
44	125	122	138	140	0	1	.3600E+01	.3600E+01	.00	0
45	138	140	155	156	0	1	.3600E+01	.3600E+01	.00	0
46	156	140	159	161	0	1	.3600E+01	.3600E+01	.00	0
47	159	161	160	94	0	1	.3600E+01	.3600E+01	.00	0
48	160	94	92	82	0	1	.3600E+01	.3600E+01	.00	0
49	92	82	89	63	0	1	.3600E+01	.3600E+01	.00	0
50	89	63	88	55	0	1	.3600E+01	.3600E+01	.00	0
51	88	55	87	164	0	1	.3600E+01	.3600E+01	.00	0
52	85	87	60	62	0	1	.3600E+01	.3600E+01	.00	0

S H E L L E L E M E N T D A T A

ELT ID	JOINT I	JOINT J	JOINT K	JOINT L	ELT TYPE	MAT ID	MEMBRANE THICKNESS	BENDING THICKNESS	REF TEMP	LOC AXIS
53	84	85	59	60	0	1	.3600E+01	.3600E+01	.00	0
54	59	60	49	171	0	1	.3600E+01	.3600E+01	.00	0
55	60	62	171	55	0	1	.3600E+01	.3600E+01	.00	0
56	171	55	49	50	0	1	.3600E+01	.3600E+01	.00	0
57	114	112	147	111	0	1	.3600E+01	.3600E+01	.00	0
58	147	111	108	110	0	1	.3600E+01	.3600E+01	.00	0
59	116	114	145	147	0	1	.3600E+01	.3600E+01	.00	0
60	145	147	106	108	0	1	.3600E+01	.3600E+01	.00	0
61	118	116	143	145	0	1	.3600E+01	.3600E+01	.00	0
62	143	145	104	106	0	1	.3600E+01	.3600E+01	.00	0
63	119	118	143	143	0	1	.3600E+01	.3600E+01	.00	0
64	163	119	141	103	0	1	.3600E+01	.3600E+01	.00	0
65	141	103	100	101	0	1	.3600E+01	.3600E+01	.00	0
66	100	101	96	98	0	1	.3600E+01	.3600E+01	.00	0
67	96	98	80	78	0	1	.3600E+01	.3600E+01	.00	0
68	80	78	65	76	0	1	.3600E+01	.3600E+01	.00	0
69	76	74	65	57	0	1	.3600E+01	.3600E+01	.00	0
70	74	73	57	66	0	1	.3600E+01	.3600E+01	.00	0
71	73	69	66	68	0	1	.3600E+01	.3600E+01	.00	0
72	66	68	57	173	0	1	.3600E+01	.3600E+01	.00	0
73	69	70	68	67	0	1	.3600E+01	.3600E+01	.00	0
74	68	67	173	53	0	1	.3600E+01	.3600E+01	.00	0
75	57	173	52	53	0	1	.3600E+01	.3600E+01	.00	0
76	818	718	131	129	0	1	.3600E+01	.3600E+01	.00	0
77	718	127	129	129	0	1	.3600E+01	.3600E+01	.00	0
78	718	618	127	125	0	1	.3600E+01	.3600E+01	.00	0
79	618	122	125	125	0	1	.3600E+01	.3600E+01	.00	0
80	618	518	122	121	0	1	.3600E+01	.3600E+01	.00	0
81	518	163	121	121	0	1	.3600E+01	.3600E+01	.00	0
82	518	418	163	119	0	1	.3600E+01	.3600E+01	.00	0
83	418	118	119	119	0	1	.3600E+01	.3600E+01	.00	0
84	418	318	118	116	0	1	.3600E+01	.3600E+01	.00	0
85	318	115	116	116	0	1	.3600E+01	.3600E+01	.00	0
86	318	114	115	115	0	1	.3600E+01	.3600E+01	.00	0
87	318	218	114	112	0	1	.3600E+01	.3600E+01	.00	0
88	122	121	140	170	0	1	.3600E+01	.3600E+01	.00	0
89	121	163	170	141	0	1	.3600E+01	.3600E+01	.00	0
90	140	170	161	162	0	1	.3600E+01	.3600E+01	.00	0
91	170	141	162	100	0	1	.3600E+01	.3600E+01	.00	0
92	161	162	94	95	0	1	.3600E+01	.3600E+01	.00	0
93	162	100	95	96	0	1	.3600E+01	.3600E+01	.00	0
94	94	95	82	81	0	1	.3600E+01	.3600E+01	.00	0
95	95	96	81	80	0	1	.3600E+01	.3600E+01	.00	0
96	82	81	63	64	0	1	.3600E+01	.3600E+01	.00	0
97	81	80	64	65	0	1	.3600E+01	.3600E+01	.00	0
98	63	64	55	56	0	1	.3600E+01	.3600E+01	.00	0
99	64	65	56	57	0	1	.3600E+01	.3600E+01	.00	0
100	55	56	50	51	0	1	.3600E+01	.3600E+01	.00	0
101	56	57	51	52	0	1	.3600E+01	.3600E+01	.00	0
102	1005	1004	1002	1001	0	1	.3600E+01	.3600E+01	.00	0
103	1905	1904	1005	1004	0	1	.3600E+01	.3600E+01	.00	0
104	1006	1005	1003	1002	0	1	.3600E+01	.3600E+01	.00	0

S H E L L E L E M E N T D A T A

ELT ID	JOINT I	JOINT J	JOINT K	JOINT L	ELT TYPE	MAT ID	MEMBRANE THICKNESS	BENDING THICKNESS	REF TEMP	LOC AXIS
105	1005	1006	1905	1906	0	1	.3600E+01	.3600E+01	.00	0
106	1904	1905	1010	1012	0	1	.3600E+01	.3600E+01	.00	0
107	1905	1906	1012	1014	0	1	.3600E+01	.3600E+01	.00	0
108	1014	1167	1012	1012	0	1	.3600E+01	.3600E+01	.00	0
109	1010	1012	1015	1017	0	1	.3600E+01	.3600E+01	.00	0
110	1012	1167	1017	1019	0	1	.3600E+01	.3600E+01	.00	0
111	1015	1017	1021	1022	0	1	.3600E+01	.3600E+01	.00	0
112	1017	1019	1022	1024	0	1	.3600E+01	.3600E+01	.00	0
113	1021	1020	1015	1015	0	1	.3600E+01	.3600E+01	.00	0
114	1021	1025	1020	1020	0	1	.3600E+01	.3600E+01	.00	0
115	1025	1021	1026	1027	0	1	.3600E+01	.3600E+01	.00	0
116	1021	1022	1027	1028	0	1	.3600E+01	.3600E+01	.00	0
117	1022	1024	1028	1029	0	1	.3600E+01	.3600E+01	.00	0
118	1024	1031	1029	1029	0	1	.3600E+01	.3600E+01	.00	0
119	1031	1030	1029	1029	0	1	.3600E+01	.3600E+01	.00	0
120	1169	1032	1033	1034	0	1	.3600E+01	.3600E+01	.00	0
121	1032	1026	1034	1034	0	1	.3600E+01	.3600E+01	.00	0
122	1026	1027	1034	1035	0	1	.3600E+01	.3600E+01	.00	0
123	1027	1028	1035	1036	0	1	.3600E+01	.3600E+01	.00	0
124	1028	1029	1036	1037	0	1	.3600E+01	.3600E+01	.00	0
125	1029	1030	1037	1038	0	1	.3600E+01	.3600E+01	.00	0
126	1033	1034	1039	1039	0	1	.3600E+01	.3600E+01	.00	0
127	1035	1036	1040	1041	0	1	.3600E+01	.3600E+01	.00	0
128	1036	1037	1041	1042	0	1	.3600E+01	.3600E+01	.00	0
129	1037	1038	1042	1043	0	1	.3600E+01	.3600E+01	.00	0
130	1039	1040	1044	1045	0	1	.3600E+01	.3600E+01	.00	0
131	1040	1041	1045	1046	0	1	.3600E+01	.3600E+01	.00	0
132	1041	1042	1046	1047	0	1	.3600E+01	.3600E+01	.00	0
133	1042	1043	1047	1048	0	1	.3600E+01	.3600E+01	.00	0
134	1044	1045	1049	1050	0	1	.3600E+01	.3600E+01	.00	0
135	1045	1046	1050	1051	0	1	.3600E+01	.3600E+01	.00	0
136	1046	1047	1051	1052	0	1	.3600E+01	.3600E+01	.00	0
137	1047	1048	1052	1053	0	1	.3600E+01	.3600E+01	.00	0
138	1132	1134	1131	1129	0	1	.3600E+01	.3600E+01	.00	0
139	1149	1151	1132	1134	0	1	.3600E+01	.3600E+01	.00	0
140	1134	1136	1129	1127	0	1	.3600E+01	.3600E+01	.00	0
141	1151	1153	1134	1136	0	1	.3600E+01	.3600E+01	.00	0
142	1136	1138	1127	1125	0	1	.3600E+01	.3600E+01	.00	0
143	1153	1155	1136	1138	0	1	.3600E+01	.3600E+01	.00	0
144	1138	1140	1125	1122	0	1	.3600E+01	.3600E+01	.00	0
145	1155	1156	1138	1140	0	1	.3600E+01	.3600E+01	.00	0
146	1159	1161	1156	1140	0	1	.3600E+01	.3600E+01	.00	0
147	1160	1094	1159	1161	0	1	.3600E+01	.3600E+01	.00	0
148	1092	1082	1160	1094	0	1	.3600E+01	.3600E+01	.00	0
149	1089	1063	1092	1082	0	1	.3600E+01	.3600E+01	.00	0
150	1088	1055	1089	1063	0	1	.3600E+01	.3600E+01	.00	0
151	1087	1164	1088	1055	0	1	.3600E+01	.3600E+01	.00	0
152	1060	1062	1085	1087	0	1	.3600E+01	.3600E+01	.00	0
153	1059	1060	1084	1085	0	1	.3600E+01	.3600E+01	.00	0
154	1049	1171	1059	1060	0	1	.3600E+01	.3600E+01	.00	0
155	1171	1055	1060	1062	0	1	.3600E+01	.3600E+01	.00	0
156	1049	1050	1171	1055	0	1	.3600E+01	.3600E+01	.00	0

S H E L L E L E M E N T D A T A

ELT ID	JOINT I	JOINT J	JOINT K	JOINT L	ELT TYPE	MAT ID	MEMBRANE THICKNESS	BENDING THICKNESS	REF TEMP	LOC AXIS
157	1147	1111	1114	1112	0	1	.3600E+01	.3600E+01	.00	0
158	1108	1110	1147	1111	0	1	.3600E+01	.3600E+01	.00	0
159	1145	1147	1116	1114	0	1	.3600E+01	.3600E+01	.00	0
160	1106	1108	1145	1147	0	1	.3600E+01	.3600E+01	.00	0
161	1143	1145	1118	1116	0	1	.3600E+01	.3600E+01	.00	0
162	1104	1106	1143	1145	0	1	.3600E+01	.3600E+01	.00	0
163	1104	1143	1103	1103	0	1	.3600E+01	.3600E+01	.00	0
164	1141	1103	1163	1119	0	1	.3600E+01	.3600E+01	.00	0
165	1100	1101	1141	1103	0	1	.3600E+01	.3600E+01	.00	0
166	1096	1098	1100	1101	0	1	.3600E+01	.3600E+01	.00	0
167	1080	1078	1096	1098	0	1	.3600E+01	.3600E+01	.00	0
168	1065	1076	1080	1078	0	1	.3600E+01	.3600E+01	.00	0
169	1065	1057	1076	1074	0	1	.3600E+01	.3600E+01	.00	0
170	1057	1066	1074	1073	0	1	.3600E+01	.3600E+01	.00	0
171	1066	1068	1073	1069	0	1	.3600E+01	.3600E+01	.00	0
172	1057	1173	1066	1068	0	1	.3600E+01	.3600E+01	.00	0
173	1068	1067	1069	1070	0	1	.3600E+01	.3600E+01	.00	0
174	1173	1053	1068	1067	0	1	.3600E+01	.3600E+01	.00	0
175	1052	1053	1057	1173	0	1	.3600E+01	.3600E+01	.00	0
176	1131	1129	1818	1718	0	1	.3600E+01	.3600E+01	.00	0
177	1129	1127	1718	1718	0	1	.3600E+01	.3600E+01	.00	0
178	1127	1125	1718	1618	0	1	.3600E+01	.3600E+01	.00	0
179	1125	1122	1618	1618	0	1	.3600E+01	.3600E+01	.00	0
180	1122	1121	1618	1518	0	1	.3600E+01	.3600E+01	.00	0
181	1121	1163	1518	1518	0	1	.3600E+01	.3600E+01	.00	0
182	1163	1119	1518	1418	0	1	.3600E+01	.3600E+01	.00	0
183	1119	1118	1418	1418	0	1	.3600E+01	.3600E+01	.00	0
184	1118	1116	1418	1318	0	1	.3600E+01	.3600E+01	.00	0
185	1116	1115	1318	1318	0	1	.3600E+01	.3600E+01	.00	0
186	1115	1114	1318	1318	0	1	.3600E+01	.3600E+01	.00	0
187	1114	1112	1318	1218	0	1	.3600E+01	.3600E+01	.00	0
188	1140	1170	1122	1121	0	1	.3600E+01	.3600E+01	.00	0
189	1170	1141	1121	1163	0	1	.3600E+01	.3600E+01	.00	0
190	1161	1162	1140	1170	0	1	.3600E+01	.3600E+01	.00	0
191	1162	1100	1170	1141	0	1	.3600E+01	.3600E+01	.00	0
192	1094	1095	1161	1162	0	1	.3600E+01	.3600E+01	.00	0
193	1095	1096	1162	1100	0	1	.3600E+01	.3600E+01	.00	0
194	1082	1081	1094	1095	0	1	.3600E+01	.3600E+01	.00	0
195	1081	1080	1095	1096	0	1	.3600E+01	.3600E+01	.00	0
196	1063	1064	1082	1081	0	1	.3600E+01	.3600E+01	.00	0
197	1064	1065	1081	1080	0	1	.3600E+01	.3600E+01	.00	0
198	1055	1056	1063	1064	0	1	.3600E+01	.3600E+01	.00	0
199	1056	1057	1064	1065	0	1	.3600E+01	.3600E+01	.00	0
200	1050	1051	1055	1056	0	1	.3600E+01	.3600E+01	.00	0
201	1051	1052	1056	1057	0	1	.3600E+01	.3600E+01	.00	0
202	1034	1035	1039	1040	0	1	.3600E+01	.3600E+01	.00	0
203	1103	1143	1119	1119	0	1	.3600E+01	.3600E+01	.00	0
204	1119	1143	1118	1118	0	1	.3600E+01	.3600E+01	.00	0
205	119	143	103	103	0	1	.3600E+01	.3600E+01	.00	0
206	103	143	104	104	0	1	.3600E+01	.3600E+01	.00	0
207	1131	131	1132	132	0	1	.3600E+01	.3600E+01	.00	0
208	1132	132	1149	149	0	1	.3600E+01	.3600E+01	.00	0

S H E L L E L E M E N T D A T A

ELT ID	JOINT I	JOINT J	JOINT K	JOINT L	ELT TYPE	MAT ID	MEMBRANE THICKNESS	BENDING THICKNESS	REF TEMP	LOC AXIS
209	1084	84	1059	59	0	1	.3600E+01	.3600E+01	.00	0
210	1059	59	1049	49	0	1	.3600E+01	.3600E+01	.00	0
211	1049	49	1044	44	0	1	.3600E+01	.3600E+01	.00	0
212	1044	44	1039	39	0	1	.3600E+01	.3600E+01	.00	0
213	1039	39	1033	33	0	1	.3600E+01	.3600E+01	.00	0
214	1033	33	1169	169	0	1	.3600E+01	.3600E+01	.00	0
215	1020	20	1015	15	0	1	.3600E+01	.3600E+01	.00	0
216	1015	15	1010	10	0	1	.3600E+01	.3600E+01	.00	0
217	1010	10	1904	904	0	1	.3600E+01	.3600E+01	.00	0
218	1904	904	1004	4	0	1	.3600E+01	.3600E+01	.00	0
219	1004	4	1001	1	0	1	.3600E+01	.3600E+01	.00	0

TOTAL WEIGHTS AND MASSES

PROP	WEIGHT	MASS
1	.0000	.0000
TOTAL	.0000	.0000

JOINT LOADS

JOINT	LOAD	FX	FY	FZ	MX	MY	MZ
19	1	.293E+02	.000E+00	.000E+00	.000E+00	-.331E+00	.000E+00
24	1	.293E+02	.000E+00	.000E+00	.000E+00	-.331E+00	.000E+00
31	1	.293E+02	.000E+00	.000E+00	.000E+00	-.331E+00	.000E+00
1031	1	.219E+02	.000E+00	.000E+00	.000E+00	-.331E+00	.000E+00
1024	1	.219E+02	.000E+00	.000E+00	.000E+00	-.331E+00	.000E+00
1019	1	.219E+02	.000E+00	.000E+00	.000E+00	-.331E+00	.000E+00
1167	1	.219E+02	.000E+00	.000E+00	.000E+00	-.331E+00	.000E+00
167	1	.000E+00	.000E+00	.000E+00	.000E+00	-.331E+00	.000E+00
131	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
129	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
127	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
125	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
122	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
121	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
163	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
119	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
118	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
116	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
114	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1131	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1129	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1127	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1125	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1122	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1121	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1163	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1119	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1118	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1116	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1114	1	-.175E+02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00

EQUILIBRIUM EQUATION NUMBERS

JOINT	X	Y	Z	XX	YY	ZZ
1	19	20	21	22	23	24
2	4	5	6	7	8	9
3	0	0	0	1	2	3
4	25	26	27	28	29	30
5	13	14	15	16	17	18
6	0	0	0	10	11	12
10	109	110	111	112	113	114
12	103	104	105	106	107	108
14	0	0	0	94	95	96
15	145	146	147	148	149	150
17	139	140	141	142	143	144
19	133	134	135	136	137	138
20	151	152	153	154	155	156
21	181	182	183	184	185	186
22	187	188	189	190	191	192
24	193	194	195	196	197	198
25	175	176	177	178	179	180
26	262	263	264	265	266	267
27	256	257	258	259	260	261
28	250	251	252	253	254	255
29	244	245	246	247	248	249
30	0	0	0	241	242	243
31	235	236	237	238	239	240
32	316	317	318	319	320	321
33	373	374	375	376	377	378
34	322	323	324	325	326	327
35	310	311	312	313	314	315
36	304	305	306	307	308	309
37	298	299	300	301	302	303
38	0	0	0	295	296	297
39	406	407	408	409	410	411
40	400	401	402	403	404	405
41	394	395	396	397	398	399
42	388	389	390	391	392	393
43	0	0	0	385	386	387
44	460	461	462	463	464	465
45	454	455	456	457	458	459
46	448	449	450	451	452	453
47	442	443	444	445	446	447
48	0	0	0	439	440	441
49	640	641	642	643	644	645
50	505	506	507	508	509	510
51	499	500	501	502	503	504
52	493	494	495	496	497	498
53	0	0	0	511	512	513
55	694	695	696	697	698	699
56	562	563	564	565	566	567
57	556	557	558	559	560	561
59	676	677	678	679	680	681
60	664	665	666	667	668	669
62	652	653	654	655	656	657
63	706	707	708	709	710	711
64	580	581	582	583	584	585

EQUILIBRIUM EQUATION NUMBERS

JOINT	X	Y	Z	XX	YY	ZZ
65	574	575	576	577	578	579
66	544	545	546	547	548	549
67	0	0	0	523	524	525
68	532	533	534	535	536	537
69	526	527	528	529	530	531
70	0	0	0	520	521	522
73	538	539	540	541	542	543
74	550	551	552	553	554	555
76	568	569	570	571	572	573
78	586	587	588	589	590	591
80	592	593	594	595	596	597
81	598	599	600	601	602	603
82	718	719	720	721	722	723
84	670	671	672	673	674	675
85	658	659	660	661	662	663
87	688	689	690	691	692	693
88	700	701	702	703	704	705
89	712	713	714	715	716	717
92	724	725	726	727	728	729
94	730	731	732	733	734	735
95	616	617	618	619	620	621
96	610	611	612	613	614	615
98	604	605	606	607	608	609
100	628	629	630	631	632	633
101	622	623	624	625	626	627
103	1267	1268	1269	1270	1271	1272
104	1306	1307	1308	1309	1310	1311
106	1357	1358	1359	1360	1361	1362
108	1384	1385	1386	1387	1388	1389
110	0	0	0	1381	1382	1383
111	0	0	0	1378	1379	1380
112	0	0	0	1369	1370	1371
114	1363	1364	1365	1366	1367	1368
115	1333	1334	1335	1336	1337	1338
116	1345	1346	1347	1348	1349	1350
118	1294	1295	1296	1297	1298	1299
119	1279	1280	1281	1282	1283	1284
121	1198	1199	1200	1201	1202	1203
122	1192	1193	1194	1195	1196	1197
125	1183	1184	1185	1186	1187	1188
127	1177	1178	1179	1180	1181	1182
129	1168	1169	1170	1171	1172	1173
131	1162	1163	1164	1165	1166	1167
132	1111	1112	1113	1114	1115	1116
134	1105	1106	1107	1108	1109	1110
136	1099	1100	1101	1102	1103	1104
138	1093	1094	1095	1096	1097	1098
140	1087	1088	1089	1090	1091	1092
141	1075	1076	1077	1078	1079	1080
143	1300	1301	1302	1303	1304	1305
145	1351	1352	1353	1354	1355	1356
147	1372	1373	1374	1375	1376	1377
149	979	980	981	982	983	984

EQUILIBRIUM			EQUATION			NUMBERS		
JOINT	X	Y	Z	XX	YY	ZZ		
151	943	944	945	946	947	948		
153	907	908	909	910	911	912		
155	871	872	873	874	875	876		
156	754	755	756	757	758	759		
159	748	749	750	751	752	753		
160	736	737	738	739	740	741		
161	742	743	744	745	746	747		
162	634	635	636	637	638	639		
163	1207	1208	1209	1210	1211	1212		
164	682	683	684	685	686	687		
167	97	98	99	100	101	102		
169	355	356	357	358	359	360		
170	1081	1082	1083	1084	1085	1086		
171	646	647	648	649	650	651		
173	514	515	516	517	518	519		
218	0	0	0	1342	1343	1344		
318	0	0	0	1339	1340	1341		
418	0	0	0	1291	1292	1293		
518	0	0	0	1204	1205	1206		
618	0	0	0	1189	1190	1191		
718	0	0	0	1174	1175	1176		
818	0	0	0	1159	1160	1161		
904	40	41	42	43	44	45		
905	34	35	36	37	38	39		
906	0	0	0	31	32	33		
1001	46	47	48	49	50	51		
1002	64	65	66	67	68	69		
1003	0	0	0	70	71	72		
1004	52	53	54	55	56	57		
1005	73	74	75	76	77	78		
1006	0	0	0	79	80	81		
1010	115	116	117	118	119	120		
1012	121	122	123	124	125	126		
1014	0	0	0	91	92	93		
1015	157	158	159	160	161	162		
1017	163	164	165	166	167	168		
1019	169	170	171	172	173	174		
1020	199	200	201	202	203	204		
1021	211	212	213	214	215	216		
1022	217	218	219	220	221	222		
1024	223	224	225	226	227	228		
1025	205	206	207	208	209	210		
1026	289	290	291	292	293	294		
1027	283	284	285	286	287	288		
1028	277	278	279	280	281	282		
1029	271	272	273	274	275	276		
1030	0	0	0	268	269	270		
1031	229	230	231	232	233	234		
1032	349	350	351	352	353	354		
1033	379	380	381	382	383	384		
1034	367	368	369	370	371	372		
1035	343	344	345	346	347	348		
1036	337	338	339	340	341	342		

EQUILIBRIUM EQUATION NUMBERS

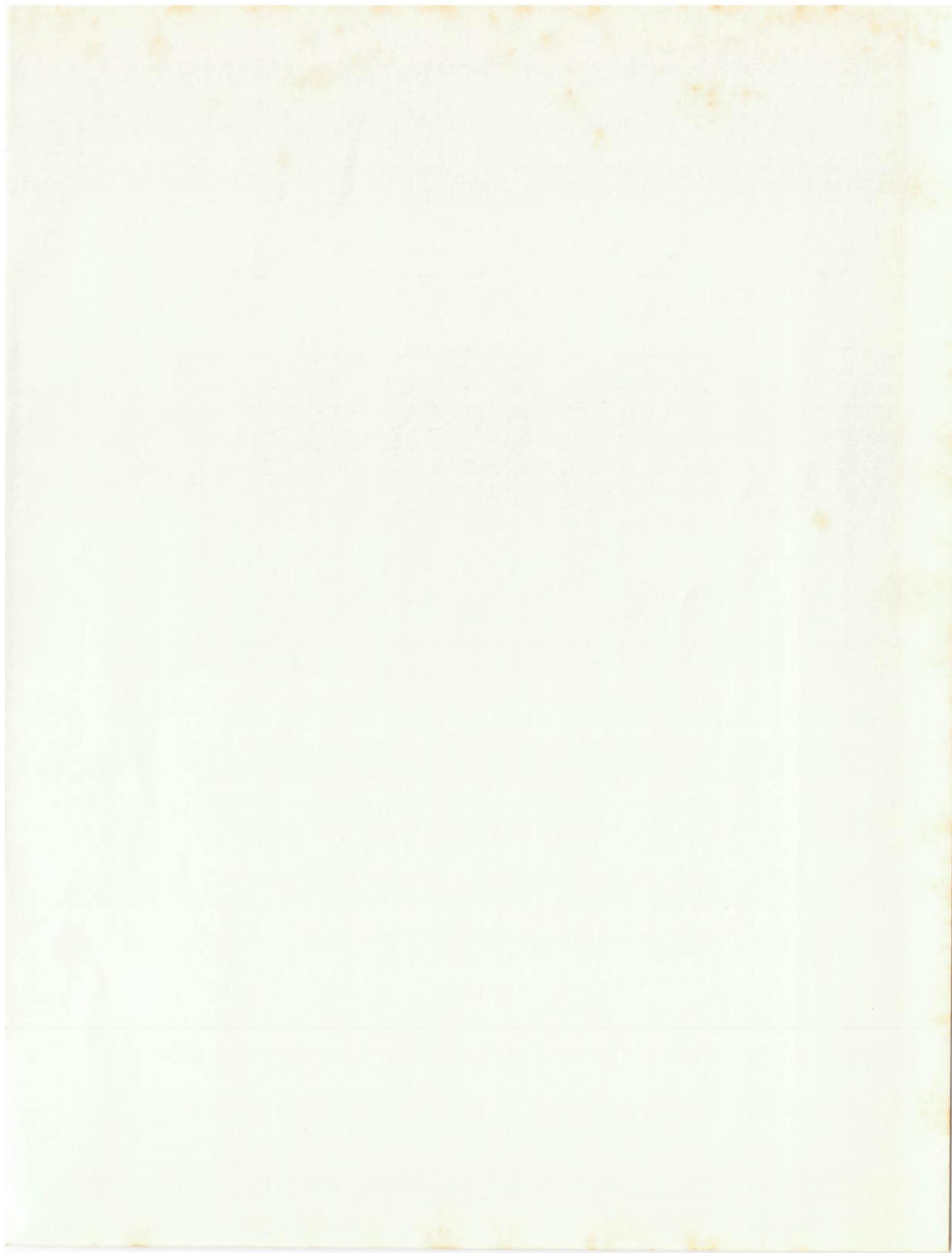
JOINT	X	Y	Z	XX	YY	ZZ
1037	331	332	333	334	335	336
1038	0	0	0	328	329	330
1039	412	413	414	415	416	417
1040	418	419	420	421	422	423
1041	424	425	426	427	428	429
1042	430	431	432	433	434	435
1043	0	0	0	436	437	438
1044	466	467	468	469	470	471
1045	472	473	474	475	476	477
1046	478	479	480	481	482	483
1047	484	485	486	487	488	489
1048	0	0	0	490	491	492
1049	772	773	774	775	776	777
1050	778	779	780	781	782	783
1051	784	785	786	787	788	789
1052	790	791	792	793	794	795
1053	0	0	0	832	833	834
1055	883	884	885	886	887	888
1056	889	890	891	892	893	894
1057	895	896	897	898	899	900
1059	766	767	768	769	770	771
1060	802	803	804	805	806	807
1062	808	809	810	811	812	813
1063	919	920	921	922	923	924
1064	925	926	927	928	929	930
1065	931	932	933	934	935	936
1066	859	860	861	862	863	864
1067	0	0	0	841	842	843
1068	847	848	849	850	851	852
1069	853	854	855	856	857	858
1070	0	0	0	844	845	846
1073	865	866	867	868	869	870
1074	901	902	903	904	905	906
1076	937	938	939	940	941	942
1078	973	974	975	976	977	978
1080	967	968	969	970	971	972
1081	961	962	963	964	965	966
1082	955	956	957	958	959	960
1084	760	761	762	763	764	765
1085	814	815	816	817	818	819
1087	820	821	822	823	824	825
1088	877	878	879	880	881	882
1089	913	914	915	916	917	918
1092	949	950	951	952	953	954
1094	991	992	993	994	995	996
1095	997	998	999	1000	1001	1002
1096	1003	1004	1005	1006	1007	1008
1098	1009	1010	1011	1012	1013	1014
1100	1039	1040	1041	1042	1043	1044
1101	1045	1046	1047	1048	1049	1050
1103	1273	1274	1275	1276	1277	1278
1104	1321	1322	1323	1324	1325	1326
1106	1402	1403	1404	1405	1406	1407

EQUILIBRIUM EQUATION NUMBERS						
JOINT	X	Y	Z	XX	YY	ZZ
1108	1429	1430	1431	1432	1433	1434
1110	0	0	0	1435	1436	1437
1111	0	0	0	1438	1439	1440
1112	0	0	0	1420	1421	1422
1114	1423	1424	1425	1426	1427	1428
1115	1390	1391	1392	1393	1394	1395
1116	1396	1397	1398	1399	1400	1401
1118	1315	1316	1317	1318	1319	1320
1119	1285	1286	1287	1288	1289	1290
1121	1252	1253	1254	1255	1256	1257
1122	1243	1244	1245	1246	1247	1248
1125	1237	1238	1239	1240	1241	1242
1126	1447	1448	1449	1450	1451	1452
1127	1228	1229	1230	1231	1232	1233
1129	1222	1223	1224	1225	1226	1227
1131	1213	1214	1215	1216	1217	1218
1132	1117	1118	1119	1120	1121	1122
1134	1123	1124	1125	1126	1127	1128
1136	1129	1130	1131	1132	1133	1134
1138	1135	1136	1137	1138	1139	1140
1140	1141	1142	1143	1144	1145	1146
1141	1153	1154	1155	1156	1157	1158
1143	1327	1328	1329	1330	1331	1332
1145	1408	1409	1410	1411	1412	1413
1147	1441	1442	1443	1444	1445	1446
1149	1015	1016	1017	1018	1019	1020
1151	1051	1052	1053	1054	1055	1056
1153	1063	1064	1065	1066	1067	1068
1155	1069	1070	1071	1072	1073	1074
1156	1057	1058	1059	1060	1061	1062
1159	1021	1022	1023	1024	1025	1026
1160	985	986	987	988	989	990
1161	1027	1028	1029	1030	1031	1032
1162	1033	1034	1035	1036	1037	1038
1163	1258	1259	1260	1261	1262	1263
1164	826	827	828	829	830	831
1167	127	128	129	130	131	132
1169	361	362	363	364	365	366
1170	1147	1148	1149	1150	1151	1152
1171	796	797	798	799	800	801
1173	835	836	837	838	839	840
1218	0	0	0	1414	1415	1416
1318	0	0	0	1417	1418	1419
1418	0	0	0	1312	1313	1314
1518	0	0	0	1264	1265	1266
1618	0	0	0	1249	1250	1251
1718	0	0	0	1234	1235	1236
1818	0	0	0	1219	1220	1221
1904	58	59	60	61	62	63
1905	82	83	84	85	86	87
1906	0	0	0	88	89	90

O U T P U T F I L E S C R E A T E D B Y P R O G R A M

INPUT DATA ECHO	rodaq.SAP
SOLUTION ERRORS AND WARNINGS	rodaq.ERR
DISPLACEMENTS AND REACTIONS	rodaq.SOL
ELEMENT FORCES	rodaq.FEF
SHELL ELEMENT FORCES	rodaq.F4F







STRUCTURAL ANALYSIS PROGRAMS

VERSION 5.03

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JOINT DISPLACEMENTS

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.6887E-04	.2729E-05	.1354E-05	-.1493E-05	.4349E-05	.5399E-05
2	.5811E-04	.1939E-04	-.3613E-05	-.1701E-05	.3555E-05	-.2752E-05
3	.0000E+00	.0000E+00	.0000E+00	-.6036E-06	.2124E-07	-.2652E-05
4	.5960E-04	.1027E-04	-.1540E-04	-.2097E-06	.4193E-05	.3017E-05
5	.7165E-04	-.1196E-05	-.2443E-04	-.4184E-05	.3712E-05	-.4504E-05
6	.0000E+00	.0000E+00	.0000E+00	-.8266E-06	.8300E-08	-.1537E-05
10	.7621E-04	.3131E-06	-.3150E-04	-.4464E-06	.1834E-05	-.1287E-05
12	.1033E-03	-.7027E-05	-.2425E-04	-.1736E-05	-.2952E-05	-.1536E-05
14	.0000E+00	.0000E+00	.0000E+00	-.7000E-06	-.8872E-06	-.1454E-04
15	.7153E-04	-.1916E-05	-.4113E-04	-.2540E-06	.5701E-06	-.5374E-06
17	.1044E-03	-.4623E-05	-.4317E-07	-.3617E-05	-.3567E-05	-.2742E-06
19	.1792E-03	.4811E-06	.6093E-04	-.5779E-05	-.7683E-05	.1587E-04
20	.7051E-04	.2565E-06	-.4361E-04	-.4569E-06	.3669E-06	-.1491E-05
21	.8093E-04	.2978E-05	-.3253E-04	-.2102E-05	-.8452E-06	.2616E-06
22	.1036E-03	.1162E-04	.4876E-05	-.4910E-05	-.2327E-05	.2004E-05
24	.1979E-03	.3611E-04	.9741E-04	-.7215E-05	-.4874E-05	.1702E-04
25	.7085E-04	.2111E-05	-.4196E-04	-.1325E-05	-.2281E-06	-.3558E-06
26	.6416E-04	.9932E-05	-.4378E-04	-.1046E-05	.1570E-06	.2623E-05
27	.7412E-04	.1529E-04	-.3586E-04	-.1993E-05	-.1149E-07	.1964E-05
28	.9947E-04	.2822E-04	-.1149E-05	-.5615E-05	-.9989E-06	.4072E-05
29	.1528E-03	.5288E-04	.8106E-04	-.6843E-05	.3953E-05	.7289E-05
30	.0000E+00	.0000E+00	.0000E+00	.2154E-04	.5898E-05	-.2195E-04
31	.1508E-03	.4988E-04	.9687E-04	.7131E-06	.3729E-05	-.7640E-05
32	.5716E-04	.1672E-04	-.4872E-04	-.2539E-06	.9709E-06	.5478E-06
33	.5487E-04	.1984E-04	-.5128E-04	-.6794E-06	.1958E-05	-.9283E-06
34	.5422E-04	.2113E-04	-.5360E-04	-.1077E-05	.8091E-06	.6294E-06
35	.6111E-04	.3155E-04	-.4929E-04	-.2033E-05	.8894E-06	.2211E-05
36	.9160E-04	.4867E-04	-.2085E-04	-.4470E-05	.2101E-05	.4851E-05
37	.1174E-03	.2587E-04	.1223E-04	-.1790E-05	.9101E-05	-.3174E-05
38	.0000E+00	.0000E+00	.0000E+00	.1023E-05	-.2768E-05	-.1404E-04
39	-.9446E-05	-.3855E-05	-.7235E-04	-.2575E-05	.3625E-05	-.1820E-06
40	.4402E-07	-.4754E-05	-.7425E-04	-.3794E-05	.4678E-05	.9472E-06
41	.1164E-04	-.1730E-05	-.5404E-04	-.2745E-05	.5540E-05	.2097E-06
42	.7382E-05	-.1121E-06	-.2036E-04	-.3417E-05	.3281E-05	-.7080E-07
43	.0000E+00	.0000E+00	.0000E+00	-.5041E-05	-.2813E-07	-.1729E-05
44	-.9834E-04	-.4712E-04	-.1505E-03	-.4923E-05	.8913E-05	-.1491E-05
45	-.1155E-03	-.6167E-04	-.1879E-03	-.6436E-05	.1098E-04	-.6610E-06
46	-.1081E-03	-.6688E-04	-.1798E-03	-.8314E-05	.1023E-04	.1321E-05
47	-.6949E-04	-.5164E-04	-.1079E-03	-.8614E-05	.7120E-05	.2539E-05
48	.0000E+00	.0000E+00	.0000E+00	-.2435E-05	.3504E-06	.2356E-05
49	-.8969E-04	-.4027E-04	-.2822E-03	-.6515E-05	.1207E-04	-.8247E-06
50	-.1120E-03	-.5199E-04	-.3414E-03	-.5697E-05	.1215E-04	.1372E-06
51	-.1074E-03	-.5448E-04	-.3029E-03	-.5574E-05	.6425E-05	.1457E-05
52	-.6198E-04	-.4434E-04	-.1672E-03	-.9649E-05	-.2670E-05	.3376E-05
53	.0000E+00	.0000E+00	.0000E+00	-.7945E-05	-.1239E-05	.4328E-05
55	-.5060E-04	-.7895E-05	-.3957E-03	-.8381E-05	.9524E-05	-.2548E-05
56	-.8646E-04	-.1940E-04	-.3362E-03	-.7693E-05	.2557E-05	-.2016E-05
57	-.9070E-04	-.1471E-04	-.1670E-03	-.9160E-05	-.3649E-05	.9816E-06
59	.3605E-04	.4214E-04	-.3996E-03	-.7507E-05	.1176E-04	-.1448E-05
60	.3201E-04	.3575E-04	-.4085E-03	-.6371E-05	.1234E-04	-.2099E-05
62	.2755E-04	.2699E-04	-.4275E-03	-.6447E-05	.1254E-04	-.7003E-06

JOINT DISPLACEMENTS

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
63	-.2495E-04	.2226E-04	-.4271E-03	-.9363E-05	.8018E-05	-.3428E-05
64	-.6123E-04	.1317E-04	-.3624E-03	-.1244E-04	.7279E-05	-.2553E-05
65	-.9755E-04	.5880E-05	-.2218E-03	-.1087E-04	.4595E-05	.2900E-05
66	-.9164E-04	.1568E-04	-.8550E-04	-.1142E-04	.4896E-05	.1031E-05
67	.0000E+00	.0000E+00	.0000E+00	-.3043E-05	.1487E-05	.9540E-05
68	-.4394E-04	.1311E-04	-.1461E-04	-.5914E-05	-.1228E-05	.7464E-05
69	-.4682E-04	.3600E-04	-.1133E-04	-.6560E-05	-.1613E-05	.1018E-04
70	.0000E+00	.0000E+00	.0000E+00	.5924E-05	-.2943E-06	.3380E-05
73	-.7570E-04	.4448E-04	-.1037E-03	-.1680E-04	.6122E-05	.5881E-05
74	-.7490E-04	.3829E-04	-.1830E-03	-.1979E-04	-.2347E-06	-.6109E-08
76	-.5633E-04	.3075E-04	-.2976E-03	-.2000E-04	.2113E-04	.1294E-06
78	-.3343E-04	.2545E-04	-.4252E-03	-.1031E-04	.1824E-04	-.4519E-05
80	-.7828E-04	.1468E-04	-.3011E-03	-.1659E-04	.1359E-04	-.2040E-05
81	-.4342E-04	.1993E-04	-.4116E-03	-.1144E-04	.1142E-04	-.1821E-05
82	-.1194E-04	.3020E-04	-.4648E-03	-.9616E-05	.1156E-04	-.1240E-05
84	.6167E-04	.5128E-04	-.4441E-03	-.6885E-05	.1215E-04	-.2430E-05
85	.5474E-04	.4410E-04	-.4558E-03	-.5626E-05	.1329E-04	-.4299E-05
87	.5550E-04	.4808E-04	-.5087E-03	-.6914E-05	.1294E-04	-.4607E-05
88	.3611E-04	.4561E-04	-.5340E-03	-.4960E-05	.8157E-05	-.3134E-05
89	.3726E-04	.4957E-04	-.5527E-03	-.9933E-05	.1076E-04	-.3298E-05
92	.4108E-04	.4438E-04	-.5840E-03	-.8062E-05	.4035E-05	-.2785E-05
94	.2137E-04	.3411E-04	-.5689E-03	-.4881E-05	.3548E-05	-.1909E-05
95	.5740E-05	.2855E-04	-.5414E-03	-.4890E-05	.6242E-05	-.1755E-05
96	-.1490E-04	.2687E-04	-.5048E-03	-.7733E-05	.8150E-05	-.2625E-05
98	-.2924E-04	.1396E-04	-.4986E-03	.1509E-05	-.3377E-05	-.4844E-05
100	-.6052E-04	-.5264E-05	-.4691E-03	.4793E-05	-.2150E-04	-.5496E-05
101	-.9886E-04	-.2408E-04	-.4382E-03	.8717E-05	-.2685E-04	-.8047E-05
103	-.2699E-03	-.9803E-04	-.2834E-03	.1536E-04	-.5155E-04	-.1464E-04
104	-.3334E-03	-.1186E-03	-.1913E-03	.7577E-05	-.3399E-04	-.2886E-05
106	-.2330E-03	-.1350E-03	-.1492E-03	-.1042E-05	-.2525E-04	.8716E-05
108	-.9876E-04	-.1066E-03	-.8069E-04	-.3125E-05	-.1244E-04	.2431E-05
110	.0000E+00	.0000E+00	.0000E+00	.1717E-04	.6195E-06	-.1926E-04
111	.0000E+00	.0000E+00	.0000E+00	.1391E-04	-.1526E-05	.9250E-05
112	.0000E+00	.0000E+00	.0000E+00	.1011E-04	.2552E-05	.3764E-04
114	-.4238E-03	-.2252E-04	.2556E-04	.9590E-05	-.1459E-05	.3137E-04
115	-.5605E-03	-.5369E-04	.1375E-04	.3358E-05	.3362E-04	.2066E-04
116	-.6517E-03	-.8424E-04	.2106E-04	.4627E-05	.5310E-05	.1122E-04
118	-.7611E-03	-.1430E-03	.1584E-04	.1848E-05	.1643E-04	.1540E-04
119	-.8161E-03	-.1860E-03	.2507E-04	-.6284E-06	.1519E-04	.1647E-05
121	-.6315E-03	-.2416E-03	-.7024E-05	-.7322E-05	.4739E-05	-.6819E-05
122	-.6023E-03	-.2755E-03	-.1139E-04	-.2644E-05	.2719E-05	.2955E-05
125	-.6705E-03	-.3744E-03	-.7113E-05	-.8411E-05	.7287E-05	.8010E-05
127	-.7363E-03	-.4613E-03	-.6320E-05	-.1322E-04	.1769E-04	.1358E-04
129	-.8170E-03	-.5870E-03	.1284E-04	-.1986E-04	.2057E-04	.1147E-04
131	-.8300E-03	-.6799E-03	.1828E-04	-.2882E-04	.1253E-04	-.7198E-07
132	-.8133E-03	-.6557E-03	.1029E-04	.1034E-04	-.1172E-04	-.5423E-05
134	-.7835E-03	-.5868E-03	-.7333E-05	.1467E-04	-.1169E-04	.1746E-04
136	-.6036E-03	-.4024E-03	-.7146E-04	.2353E-04	-.1840E-04	.2938E-04
138	-.3837E-03	-.2114E-03	-.1227E-03	.2842E-04	-.3271E-04	.2446E-04
140	-.2712E-03	-.1284E-03	-.1415E-03	.1740E-04	-.3740E-04	.2723E-05
141	-.3326E-03	-.1363E-03	-.1144E-03	.8871E-05	-.4323E-04	-.5903E-05

JOINT DISPLACEMENTS

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
143	-.4687E-03	-.1075E-03	-.7387E-04	.1084E-04	-.3016E-04	.1352E-05
145	-.3691E-03	-.8681E-04	-.5662E-04	.9692E-05	-.2833E-04	.1247E-04
147	-.1900E-03	-.4605E-04	-.2602E-04	.9010E-05	-.1735E-04	.1499E-04
149	-.7862E-03	-.6057E-03	-.5005E-04	.1465E-04	-.5368E-05	-.1335E-04
151	-.7310E-03	-.6075E-03	-.7224E-04	.1580E-04	-.8236E-05	.1405E-04
153	-.5230E-03	-.4658E-03	-.1690E-03	.2487E-04	-.1452E-04	.3562E-04
155	-.2749E-03	-.2222E-03	-.2797E-03	.2800E-04	-.3346E-04	.3189E-04
156	-.1401E-03	-.1045E-03	-.3698E-03	.2193E-04	-.3185E-04	.1036E-04
159	-.3219E-04	-.1246E-04	-.5173E-03	.9374E-05	-.2229E-04	-.2063E-05
160	.2833E-04	.2893E-04	-.5785E-03	.2478E-05	-.1003E-04	-.3646E-05
161	-.2875E-04	-.1695E-04	-.5019E-03	.1178E-04	-.1889E-04	.9140E-06
162	-.2928E-04	-.3680E-05	-.4769E-03	.7583E-05	-.1960E-04	-.2156E-05
163	-.7445E-03	-.2322E-03	.2343E-04	-.2930E-05	.1452E-05	-.1083E-04
164	.1607E-04	.4774E-04	-.4457E-03	-.7632E-05	.8528E-05	-.1007E-06
167	.8787E-04	-.1648E-04	.2854E-04	-.1754E-05	-.7487E-05	-.9732E-05
169	.5727E-04	.2018E-04	-.4689E-04	-.2073E-06	.1319E-05	-.1669E-05
170	-.2825E-03	-.1180E-03	-.1430E-03	.1419E-04	-.4148E-04	-.1039E-05
171	-.2393E-04	.1569E-05	-.3514E-03	-.6996E-05	.1141E-04	-.1419E-06
173	-.3482E-04	-.4975E-05	-.2067E-04	-.3994E-05	-.3883E-05	.6080E-05
218	.0000E+00	.0000E+00	.0000E+00	.8125E-05	.1693E-05	.6115E-06
318	.0000E+00	.0000E+00	.0000E+00	-.2893E-06	.5071E-04	-.4905E-06
418	.0000E+00	.0000E+00	.0000E+00	-.1176E-04	.6828E-04	.7715E-05
518	.0000E+00	.0000E+00	.0000E+00	-.2694E-04	.5823E-04	-.8061E-05
618	.0000E+00	.0000E+00	.0000E+00	-.3479E-04	.5406E-04	.5014E-06
718	.0000E+00	.0000E+00	.0000E+00	-.5196E-04	.6377E-04	-.1921E-05
818	.0000E+00	.0000E+00	.0000E+00	-.6167E-04	.7166E-04	.7112E-05
904	.7843E-04	.2686E-05	-.1693E-04	.6458E-06	.3803E-05	.2193E-05
905	.8508E-04	.1283E-04	-.2314E-04	-.3390E-05	.2789E-05	-.5516E-06
906	.0000E+00	.0000E+00	.0000E+00	-.4948E-06	.3191E-06	-.1284E-04
1001	.6201E-04	.5610E-06	.5718E-05	-.1230E-05	.3958E-05	.3626E-05
1002	.3339E-04	-.3226E-05	.2082E-04	-.3157E-05	.1130E-05	.5526E-06
1003	.0000E+00	.0000E+00	.0000E+00	-.1029E-06	-.2090E-05	-.4774E-06
1004	.5412E-04	.6818E-05	-.9949E-05	.4862E-07	.4242E-05	.3663E-05
1005	.3120E-04	-.5260E-05	.3577E-05	-.3587E-05	.2299E-05	.1014E-05
1006	.0000E+00	.0000E+00	.0000E+00	-.9145E-08	-.5816E-06	-.7603E-06
1010	.7209E-04	.1747E-05	-.3046E-04	-.5087E-06	.2026E-05	.3000E-05
1012	.5678E-04	-.8633E-05	-.1288E-04	-.4882E-06	.1333E-05	.3218E-05
1014	.0000E+00	.0000E+00	.0000E+00	.2603E-07	.7740E-06	.1160E-04
1015	.7036E-04	-.4109E-06	-.4102E-04	-.3059E-06	.7506E-06	.6844E-05
1017	.8190E-04	-.2863E-05	-.1543E-04	.9511E-06	.1362E-05	.6684E-05
1019	.1255E-03	.4944E-05	-.3054E-05	.6604E-06	.8206E-06	.1608E-05
1020	.7112E-04	.2827E-06	-.4359E-04	-.3552E-06	.5149E-06	.6508E-05
1021	.7536E-04	.4293E-05	-.3241E-04	.8518E-06	.1493E-05	.6550E-05
1022	.8240E-04	.3910E-05	-.1367E-04	.9959E-06	.1202E-05	.4391E-05
1024	.1210E-03	-.3063E-05	.7003E-07	.3422E-06	.3536E-06	.7644E-05
1025	.7271E-04	.4773E-05	-.4038E-04	.5591E-06	.9286E-06	.6203E-05
1026	.6946E-04	.1328E-04	-.3939E-04	.9161E-06	.9214E-06	.3999E-05
1027	.6969E-04	.9241E-05	-.3182E-04	.9896E-06	.1340E-05	.3277E-05
1028	.7685E-04	.1137E-04	-.1264E-04	.1157E-05	.2233E-05	.2381E-05
1029	.6806E-04	.1302E-04	-.4391E-06	-.5024E-06	.9997E-08	.3156E-05
1030	.0000E+00	.0000E+00	.0000E+00	.7680E-07	-.5649E-08	-.1219E-04

JOINT DISPLACEMENTS

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1031	.7510E-04	-.1279E-04	.2193E-06	-.2280E-06	-.6590E-07	.7319E-06
1032	.6214E-04	.2118E-04	-.4185E-04	.2360E-06	.1274E-05	.1217E-05
1033	.5528E-04	.1979E-04	-.5101E-04	-.5419E-06	.1966E-05	-.8599E-06
1034	.5812E-04	.2179E-04	-.4282E-04	-.4163E-07	.1612E-05	.7681E-08
1035	.5734E-04	.2011E-04	-.3487E-04	-.2800E-06	.1935E-05	.5395E-06
1036	.5292E-04	.2082E-04	-.1445E-04	-.1007E-06	.2186E-05	-.5619E-06
1037	.2650E-04	-.4458E-06	-.3844E-05	-.7136E-06	.1281E-05	.2464E-05
1038	.0000E+00	.0000E+00	.0000E+00	-.2082E-06	-.8942E-06	.8984E-06
1039	-.9388E-05	-.3754E-05	-.7189E-04	-.2399E-05	.3487E-05	-.2782E-06
1040	-.7159E-05	.6462E-05	-.4710E-04	-.1132E-05	.2846E-05	-.1145E-05
1041	-.2685E-05	.1450E-04	-.1993E-04	-.6939E-06	.1337E-05	.1994E-06
1042	.7721E-06	.8573E-05	.1198E-05	.6503E-06	.1207E-05	.7990E-06
1043	.0000E+00	.0000E+00	.0000E+00	.5379E-06	.3351E-05	.1350E-05
1044	-.9721E-04	-.4636E-04	-.1482E-03	-.4943E-05	.8804E-05	-.1586E-05
1045	-.7104E-04	-.3204E-04	-.1076E-03	-.4968E-05	.6532E-05	-.1029E-05
1046	-.5180E-04	-.2597E-04	-.7644E-04	-.6139E-05	.5465E-05	-.7013E-06
1047	-.3169E-04	-.2143E-04	-.4164E-04	-.5208E-05	.3683E-05	-.5115E-06
1048	.0000E+00	.0000E+00	.0000E+00	-.3101E-06	-.3003E-07	-.3475E-06
1049	-.8928E-04	-.4002E-04	-.2800E-03	-.6523E-05	.1199E-04	-.7910E-06
1050	-.6096E-04	-.2523E-04	-.2131E-03	-.8234E-05	.8179E-05	-.1044E-05
1051	-.4602E-04	-.2046E-04	-.1635E-03	-.6106E-05	.4283E-05	-.1097E-05
1052	-.3445E-04	-.1258E-04	-.8764E-04	.3917E-06	.4818E-05	-.1322E-05
1053	.0000E+00	.0000E+00	.0000E+00	.6927E-06	.3517E-05	-.2261E-05
1055	-.7607E-05	.3054E-04	-.2602E-03	-.8782E-05	.8589E-05	.2672E-06
1056	-.1995E-04	.9805E-05	-.1933E-03	-.3220E-05	.6863E-05	.2399E-05
1057	-.1951E-04	-.2470E-04	-.8685E-04	.2732E-05	.5801E-05	.7342E-06
1059	.3726E-04	.4411E-04	-.3954E-03	-.7499E-05	.1135E-04	-.1376E-05
1060	.4218E-04	.5063E-04	-.3765E-03	-.6873E-05	.1235E-04	-.2811E-05
1062	.4594E-04	.5190E-04	-.3280E-03	-.6699E-05	.1142E-04	-.1438E-05
1063	.2407E-04	.7472E-04	-.2865E-03	-.7276E-05	.9421E-05	.9146E-06
1064	.3789E-06	.2886E-04	-.2115E-03	-.2338E-05	.9665E-05	.2790E-05
1065	-.1708E-04	-.2826E-04	-.1089E-03	.9512E-06	.5822E-05	-.6393E-06
1066	-.9049E-05	-.4398E-04	-.3509E-04	-.9689E-06	.6113E-05	.2753E-06
1067	.0000E+00	.0000E+00	.0000E+00	-.1430E-06	.3836E-05	-.7203E-05
1068	-.2616E-05	-.2271E-04	-.3920E-05	.7653E-06	.2703E-05	-.4719E-05
1069	.8758E-05	-.2211E-04	-.9415E-06	.1213E-05	.3155E-05	-.7261E-05
1070	.0000E+00	.0000E+00	.0000E+00	-.2299E-06	-.5783E-06	-.7422E-05
1073	-.1894E-05	-.3757E-04	-.3720E-04	-.2242E-05	.6931E-05	-.3076E-05
1074	-.1418E-04	-.3820E-04	-.6925E-04	.5755E-05	.8997E-05	.9331E-06
1076	-.3120E-04	-.2773E-04	-.1118E-03	-.6669E-05	.8294E-05	.1155E-05
1078	-.5060E-04	-.1479E-04	-.1552E-03	-.3228E-05	.4209E-05	.4199E-05
1080	-.2088E-04	-.1634E-04	-.1382E-03	-.2328E-05	.8939E-05	.1394E-05
1081	-.4674E-05	.3966E-04	-.2322E-03	-.2566E-05	.9129E-05	.2005E-05
1082	.2331E-04	.8681E-04	-.3066E-03	-.4358E-05	.9257E-05	.9895E-06
1084	.6362E-04	.5408E-04	-.4388E-03	-.6714E-05	.1209E-04	-.2546E-05
1085	.6273E-04	.5778E-04	-.4277E-03	-.5526E-05	.1362E-04	-.5375E-05
1087	.5845E-04	.8026E-04	-.4039E-03	-.4614E-05	.1078E-04	-.4376E-05
1088	.5205E-04	.1262E-03	-.3904E-03	-.9934E-05	.1536E-04	.4135E-05
1089	.3616E-04	.1320E-03	-.3842E-03	-.4249E-06	.6633E-05	.2281E-05
1092	.1411E-04	.1421E-03	-.3767E-03	-.1208E-06	.7047E-05	.4803E-05
1094	-.7511E-05	.1084E-03	-.3373E-03	.2300E-05	.6388E-05	.3941E-05

JOINT DISPLACEMENTS

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1095	-.3269E-04	.6527E-04	-.2701E-03	.2049E-05	.6259E-05	.4244E-05
1096	-.4861E-04	.2012E-04	-.1992E-03	.8421E-06	.5296E-05	.3544E-05
1098	-.7582E-04	-.1087E-04	-.1674E-03	.5042E-05	.5625E-06	.5403E-05
1100	-.8992E-04	-.1106E-05	-.1623E-03	.1155E-04	.7776E-06	.3045E-05
1101	-.1023E-03	-.2875E-04	-.1315E-03	.1034E-04	-.7782E-06	.4489E-05
1103	-.1219E-03	-.6394E-04	-.7316E-04	.1519E-04	-.2488E-05	-.2864E-05
1104	-.1042E-03	-.5070E-04	-.5286E-04	.7257E-05	-.7181E-06	-.7550E-05
1106	-.6647E-04	.1779E-05	-.5574E-04	.5527E-05	-.1391E-05	-.1674E-05
1108	-.3383E-04	.8609E-05	-.3132E-04	.2349E-05	-.6269E-06	.7158E-05
1110	.0000E+00	.0000E+00	.0000E+00	-.4501E-06	-.8141E-05	.1867E-04
1111	.0000E+00	.0000E+00	.0000E+00	.6252E-06	-.9640E-05	.5313E-05
1112	.0000E+00	.0000E+00	.0000E+00	-.7683E-06	-.5052E-06	-.5022E-05
1114	-.4432E-04	-.3577E-04	-.1195E-05	.2200E-05	-.5855E-06	-.3820E-05
1115	-.5251E-04	-.6049E-04	-.1976E-05	-.4867E-05	-.1484E-06	-.6170E-05
1116	-.7384E-04	-.9201E-04	-.1270E-05	.5578E-06	.1581E-05	-.6517E-05
1118	-.1119E-03	-.1602E-03	.5390E-05	-.3107E-05	.2299E-05	-.1006E-04
1119	-.1367E-03	-.1998E-03	.1275E-04	-.7176E-05	.5019E-05	-.5171E-05
1121	-.1792E-03	-.1996E-03	-.5474E-06	-.5959E-06	.5410E-05	-.1174E-05
1122	-.2122E-03	-.2210E-03	-.6365E-05	.1865E-05	.2556E-05	-.4975E-05
1125	-.3100E-03	-.3282E-03	-.5722E-05	.2098E-06	.4900E-05	-.1421E-04
1126	.000000	.000000	.000000	.000000	.000000	.000000
1127	-.4189E-03	-.4400E-03	-.7798E-05	-.9667E-05	.9666E-05	-.1973E-04
1129	-.5936E-03	-.5907E-03	.7071E-05	-.1686E-04	.1836E-04	-.2460E-04
1131	-.7995E-03	-.7061E-03	.9770E-05	-.1135E-04	.3042E-04	-.1461E-04
1132	-.7872E-03	-.6646E-03	.1126E-04	.1271E-04	-.9648E-05	-.1036E-04
1134	-.6301E-03	-.5313E-03	-.2003E-04	.1050E-04	-.1321E-04	-.2836E-04
1136	-.3958E-03	-.2898E-03	-.7238E-04	.1556E-04	-.1885E-04	-.3341E-04
1138	-.2068E-03	-.7404E-04	-.1007E-03	.2484E-04	-.1866E-04	-.1948E-04
1140	-.1522E-03	-.1917E-04	-.8362E-04	.2224E-04	-.5898E-05	.5687E-07
1141	-.1476E-03	-.8946E-04	-.2963E-04	.1287E-04	.1702E-05	.2189E-05
1143	-.8635E-04	-.9296E-04	-.2640E-04	.5572E-05	.1033E-05	-.8341E-05
1145	-.6023E-04	-.2448E-04	-.3007E-04	.6798E-05	-.9460E-07	-.6821E-05
1147	-.3511E-04	.2770E-05	-.2552E-04	.2607E-05	.3846E-06	.3734E-06
1149	-.7802E-03	-.5978E-03	-.5037E-04	.6347E-05	-.1390E-04	-.4245E-05
1151	-.7062E-03	-.4718E-03	-.7712E-04	.8069E-05	-.1421E-04	-.2829E-04
1153	-.4984E-03	-.2138E-03	-.1593E-03	.1480E-04	-.1851E-04	-.4192E-04
1155	-.2336E-03	.7477E-05	-.2225E-03	.2730E-04	-.1672E-04	-.2776E-04
1156	-.1272E-03	.8802E-04	-.2607E-03	.2268E-04	-.9490E-05	-.3023E-05
1159	-.4500E-04	.1280E-03	-.3318E-03	.1337E-04	-.6550E-07	.8371E-05
1160	-.9677E-05	.1474E-03	-.3628E-03	.5494E-05	.1869E-05	.7704E-05
1161	-.7272E-04	.9431E-04	-.2877E-03	.1316E-04	-.2116E-05	.4205E-05
1162	-.8280E-04	.5176E-04	-.2142E-03	.1179E-04	.1503E-05	.4516E-05
1163	-.1614E-03	-.2037E-03	.9990E-05	.1128E-05	.3326E-05	-.3547E-06
1164	.5264E-04	.1081E-03	-.3185E-03	-.1042E-04	.1009E-04	.9802E-05
1167	.8413E-04	.6833E-05	-.4130E-05	.3362E-06	.3785E-06	.8034E-06
1169	.5795E-04	.2050E-04	-.4566E-04	-.8911E-07	.1675E-05	-.9358E-06
1170	-.1457E-03	-.5280E-04	-.6027E-04	.1883E-04	-.2739E-05	.8869E-06
1171	-.1503E-04	.8919E-05	-.3148E-03	-.8765E-05	.1129E-04	-.3298E-06
1173	-.1014E-04	-.1796E-04	-.8347E-05	.2184E-05	.2548E-05	-.3546E-05
1218	.0000E+00	.0000E+00	.0000E+00	-.3267E-06	.3384E-05	.6281E-06
1318	.0000E+00	.0000E+00	.0000E+00	-.5835E-05	.1177E-05	.1886E-06

JOINT DISPLACEMENTS

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1418	.0000E+00	.0000E+00	.0000E+00	-.1453E-04	.4211E-05	-.1499E-05
1518	.0000E+00	.0000E+00	.0000E+00	-.1901E-04	.1263E-04	.2020E-05
1618	.0000E+00	.0000E+00	.0000E+00	-.2606E-04	.2058E-04	-.2768E-05
1718	.0000E+00	.0000E+00	.0000E+00	-.4571E-04	.4056E-04	.1791E-05
1818	.0000E+00	.0000E+00	.0000E+00	-.7047E-04	.6094E-04	-.7560E-05
1904	.7266E-04	.2955E-05	-.1175E-04	-.1558E-06	.3824E-05	.2000E-05
1905	.4015E-04	.7768E-05	.1228E-05	-.3699E-05	.1302E-05	-.7200E-06
1906	.0000E+00	.0000E+00	.0000E+00	-.1057E-06	-.6107E-06	.2790E-05

REACTIONS AND APPLIED FORCES

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	.0000	.0000	.0000	.0000	.0000	.0000
2	.0000	.0000	.0000	.0000	.0000	.0000
3	-.8376	-6.0967	-.7497	.0000	.0000	.0000
4	.0000	.0000	.0000	.0000	.0000	.0000
5	.0000	.0000	.0000	.0000	.0000	.0000
6	-3.0942	7.0699	1.2780	.0000	.0000	.0000
10	.0000	.0000	.0000	.0000	.0000	.0000
12	.0000	.0000	.0000	.0000	.0000	.0000
14	-10.5909	10.2765	-.3158	.0000	.0000	.0000
15	.0000E+00	.0000E+00	.5347E-11	.1025E-11	.0000E+00	.0000E+00
17	.0000	.0000	.0000	.0000	.0000	.0000
19	29.3000	.0000	.0000	.0000	-.3310	.0000
20	.0000	.0000	.0000	.0000	.0000	.0000
21	.0000	.0000	.0000	.0000	.0000	.0000
22	.0000	.0000	.0000	.0000	.0000	.0000
24	29.3000	.0000	.0000	.0000	-.3310	.0000
25	.0000	.0000	.0000	.0000	.0000	.0000
26	.0000	.0000	.0000	.0000	.0000	.0000
27	.0000	.0000	.0000	.0000	.0000	.0000
28	.0000	.0000	.0000	.0000	.0000	.0000
29	.0000	.0000	.0000	.0000	.0000	.0000
30	-22.0239	-28.2147	-.0867	.0000	.0000	.0000
31	29.3000	.0000	.0000	.0000	-.3310	.0000
32	.0000	.0000	.0000	.0000	.0000	.0000
33	-.7953E-11	.1200E-10	.4744E-11	.0000E+00	.0000E+00	.3164E-11
34	.0000	.0000	.0000	.0000	.0000	.0000
35	.0000	.0000	.0000	.0000	.0000	.0000
36	.0000	.0000	.0000	.0000	.0000	.0000
37	.0000	.0000	.0000	.0000	.0000	.0000
38	-18.1808	7.2626	8.8178	.0000	.0000	.0000
39	.0000E+00	.6186E-11	.3870E-11	.0000E+00	.0000E+00	.0000E+00
40	.0000	.0000	.0000	.0000	.0000	.0000
41	.0000	.0000	.0000	.0000	.0000	.0000
42	.0000	.0000	.0000	.0000	.0000	.0000
43	-.0635	3.5849	.6921	.0000	.0000	.0000
44	.0000E+00	.0000E+00	-.1495E-11	-.1139E-11	.0000E+00	.0000E+00
45	.0000	.0000	.0000	.0000	.0000	.0000
46	.0000	.0000	.0000	.0000	.0000	.0000
47	.0000	.0000	.0000	.0000	.0000	.0000
48	7.0273	32.2952	5.5465	.0000	.0000	.0000
49	.7366E-11	-.1796E-11	-.2212E-10	-.1608E-11	-.3323E-11	-.1140E-11
50	.0000	.0000	.0000	.0000	.0000	.0000
51	.0000	.0000	.0000	.0000	.0000	.0000
52	.0000	.0000	.0000	.0000	.0000	.0000
53	5.7590	23.1625	10.8760	.0000	.0000	.0000
55	.0000	.0000	.0000	.0000	.0000	.0000
56	.0000	.0000	.0000	.0000	.0000	.0000
57	.0000	.0000	.0000	.0000	.0000	.0000
59	.0000E+00	.0000E+00	-.2494E-11	.0000E+00	-.1736E-11	.0000E+00
60	.0000	.0000	.0000	.0000	.0000	.0000
62	.0000	.0000	.0000	.0000	.0000	.0000

REACTIONS AND APPLIED FORCES

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
63	.0000	.0000	.0000	.0000	.0000	.0000
64	.0000	.0000	.0000	.0000	.0000	.0000
65	.0000	.0000	.0000	.0000	.0000	.0000
66	.0000	.0000	.0000	.0000	.0000	.0000
67	7.3213	-7.2403	6.8684	.0000	.0000	.0000
68	.0000	.0000	.0000	.0000	.0000	.0000
69	.0000	.0000	.0000	.0000	.0000	.0000
70	5.3532	-10.1043	3.4737	.0000	.0000	.0000
73	.0000	.0000	.0000	.0000	.0000	.0000
74	.0000	.0000	.0000	.0000	.0000	.0000
76	.0000	.0000	.0000	.0000	.0000	.0000
78	.0000	.0000	.0000	.0000	.0000	.0000
80	.0000	.0000	.0000	.0000	.0000	.0000
81	.0000	.0000	.0000	.0000	.0000	.0000
82	.0000	.0000	.0000	.0000	.0000	.0000
84	.0000E+00	.0000E+00	-.1104E-11	.0000E+00	.0000E+00	.0000E+00
85	.0000	.0000	.0000	.0000	.0000	.0000
87	.0000	.0000	.0000	.0000	.0000	.0000
88	.0000	.0000	.0000	.0000	.0000	.0000
89	.0000	.0000	.0000	.0000	.0000	.0000
92	.0000	.0000	.0000	.0000	.0000	.0000
94	.0000	.0000	.0000	.0000	.0000	.0000
95	.0000	.0000	.0000	.0000	.0000	.0000
96	.0000	.0000	.0000	.0000	.0000	.0000
98	.0000	.0000	.0000	.0000	.0000	.0000
100	.0000	.0000	.0000	.0000	.0000	.0000
101	.0000	.0000	.0000	.0000	.0000	.0000
103	.0000	.0000	.0000	.0000	.0000	.0000
104	.0000	.0000	.0000	.0000	.0000	.0000
106	.0000	.0000	.0000	.0000	.0000	.0000
108	.0000	.0000	.0000	.0000	.0000	.0000
110	10.5308	28.6903	14.5829	.0000	.0000	.0000
111	2.5807	23.5549	15.2371	.0000	.0000	.0000
112	7.3969	-1.8372	6.0867	.0000	.0000	.0000
114	-17.5000	.0000	.0000	.0000	.0000	.0000
115	.0000	.0000	.0000	.0000	.0000	.0000
116	-17.5000	.0000	.0000	.0000	.0000	.0000
118	-17.5000	.0000	.0000	.0000	.0000	.0000
119	-17.5000	.0000	.0000	.0000	.0000	.0000
121	-17.5000	.0000	.0000	.0000	.0000	.0000
122	-17.5000	.0000	.0000	.0000	.0000	.0000
125	-17.5000	.0000	.0000	.0000	.0000	.0000
127	-17.5000	.0000	.0000	.0000	.0000	.0000
129	-17.5000	.0000	.0000	.0000	.0000	.0000
131	-17.5000	.0000	.0000	.0000	.0000	.0000
132	-.2988E-11	-.2356E-11	.0000E+00	.1609E-11	.0000E+00	.0000E+00
134	.0000	.0000	.0000	.0000	.0000	.0000
136	.0000	.0000	.0000	.0000	.0000	.0000
138	.0000	.0000	.0000	.0000	.0000	.0000
140	.0000	.0000	.0000	.0000	.0000	.0000
141	.0000	.0000	.0000	.0000	.0000	.0000

REACTIONS AND APPLIED FORCES

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
143	.0000	.0000	.0000	.0000	.0000	.0000
145	.0000	.0000	.0000	.0000	.0000	.0000
147	.0000	.0000	.0000	.0000	.0000	.0000
149	.0000	.0000	.0000	.0000	.0000	.0000
151	.0000	.0000	.0000	.0000	.0000	.0000
153	.0000	.0000	.0000	.0000	.0000	.0000
155	.0000	.0000	.0000	.0000	.0000	.0000
156	.0000	.0000	.0000	.0000	.0000	.0000
159	.0000	.0000	.0000	.0000	.0000	.0000
160	.0000	.0000	.0000	.0000	.0000	.0000
161	.0000	.0000	.0000	.0000	.0000	.0000
162	.0000	.0000	.0000	.0000	.0000	.0000
163	-17.5000	.0000	.0000	.0000	.0000	.0000
164	.0000	.0000	.0000	.0000	.0000	.0000
167	.0000	.0000	.0000	.0000	-.3310	.0000
169	.0000	.0000	.0000	.0000	.0000	.0000
170	.0000	.0000	.0000	.0000	.0000	.0000
171	.0000	.0000	.0000	.0000	.0000	.0000
173	.0000	.0000	.0000	.0000	.0000	.0000
218	-2.1353	8.2651	-6.4793	.0000	.0000	.0000
318	3.5748	8.5711	-15.1681	.0000	.0000	.0000
418	11.3957	-3.6321	-21.9766	.0000	.0000	.0000
518	16.0685	-13.6716	-7.5673	.0000	.0000	.0000
618	14.6213	-9.3961	6.4700	.0000	.0000	.0000
718	23.0664	-15.8458	1.9116	.0000	.0000	.0000
818	15.2957	-10.4454	-17.4250	.0000	.0000	.0000
904	.0000	.0000	.0000	.0000	.0000	.0000
905	.0000	.0000	.0000	.0000	.0000	.0000
906	-11.8581	-17.2321	-.4345	.0000	.0000	.0000
1001	.0000	.0000	.0000	.0000	.0000	.0000
1002	.0000	.0000	.0000	.0000	.0000	.0000
1003	-4.5331	-.7057	-.8815	.0000	.0000	.0000
1004	.0000	.0000	.0000	.0000	.0000	.0000
1005	.0000	.0000	.0000	.0000	.0000	.0000
1006	-9.3821	2.9105	-1.3311	.0000	.0000	.0000
1010	.0000	.0000	.0000	.0000	.0000	.0000
1012	.0000	.0000	.0000	.0000	.0000	.0000
1014	-26.4986	-1.7916	.3043	.0000	.0000	.0000
1015	.0000E+00	.0000E+00	-.3807E-11	.0000E+00	.0000E+00	.0000E+00
1017	.0000	.0000	.0000	.0000	.0000	.0000
1019	21.9000	.0000	.0000	.0000	-.3310	.0000
1020	.0000E+00	.0000E+00	-.1478E-11	.0000E+00	.0000E+00	.0000E+00
1021	.0000	.0000	.0000	.0000	.0000	.0000
1022	.0000	.0000	.0000	.0000	.0000	.0000
1024	21.9000	.0000	.0000	.0000	-.3310	.0000
1025	.0000	.0000	.0000	.0000	.0000	.0000
1026	.0000	.0000	.0000	.0000	.0000	.0000
1027	.0000	.0000	.0000	.0000	.0000	.0000
1028	.0000	.0000	.0000	.0000	.0000	.0000
1029	.0000	.0000	.0000	.0000	.0000	.0000
1030	-25.0728	.8421	.7439	.0000	.0000	.0000

REACTIONS AND APPLIED FORCES

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1031	21.9000	.0000	.0000	.0000	-.3310	.0000
1032	.0000	.0000	.0000	.0000	.0000	.0000
1033	-.1903E-10	-.1186E-10	.1173E-10	.0000E+00	.0000E+00	.0000E+00
1034	.0000	.0000	.0000	.0000	.0000	.0000
1035	.0000	.0000	.0000	.0000	.0000	.0000
1036	.0000	.0000	.0000	.0000	.0000	.0000
1037	.0000	.0000	.0000	.0000	.0000	.0000
1038	-16.8108	12.2740	-.1958	.0000	.0000	.0000
1039	.2789E-11	-.3047E-11	-.1449E-11	.0000E+00	.0000E+00	.0000E+00
1040	.0000	.0000	.0000	.0000	.0000	.0000
1041	.0000	.0000	.0000	.0000	.0000	.0000
1042	.0000	.0000	.0000	.0000	.0000	.0000
1043	.9816	2.7326	-6.0519	.0000	.0000	.0000
1044	.1019E-11	.1500E-11	.0000E+00	.0000E+00	.0000E+00	.1448E-11
1045	.0000	.0000	.0000	.0000	.0000	.0000
1046	.0000	.0000	.0000	.0000	.0000	.0000
1047	.0000	.0000	.0000	.0000	.0000	.0000
1048	17.4355	3.7785	2.3494	.0000	.0000	.0000
1049	-.6674E-11	-.3023E-11	-.1258E-09	-.2474E-11	-.4032E-11	.0000E+00
1050	.0000	.0000	.0000	.0000	.0000	.0000
1051	.0000	.0000	.0000	.0000	.0000	.0000
1052	.0000	.0000	.0000	.0000	.0000	.0000
1053	18.5228	1.3953	6.9808	.0000	.0000	.0000
1055	.0000	.0000	.0000	.0000	.0000	.0000
1056	.0000	.0000	.0000	.0000	.0000	.0000
1057	.0000	.0000	.0000	.0000	.0000	.0000
1059	-.3166E-11	-.1030E-11	.5106E-11	-.1279E-11	.0000E+00	-.1460E-11
1060	.0000	.0000	.0000	.0000	.0000	.0000
1062	.0000	.0000	.0000	.0000	.0000	.0000
1063	.0000	.0000	.0000	.0000	.0000	.0000
1064	.0000	.0000	.0000	.0000	.0000	.0000
1065	.0000	.0000	.0000	.0000	.0000	.0000
1066	.0000	.0000	.0000	.0000	.0000	.0000
1067	2.4265	3.1305	2.8400	.0000	.0000	.0000
1068	.0000	.0000	.0000	.0000	.0000	.0000
1069	.0000	.0000	.0000	.0000	.0000	.0000
1070	-2.8674	2.0391	.9646	.0000	.0000	.0000
1073	.0000	.0000	.0000	.0000	.0000	.0000
1074	.0000	.0000	.0000	.0000	.0000	.0000
1076	.0000	.0000	.0000	.0000	.0000	.0000
1078	.0000	.0000	.0000	.0000	.0000	.0000
1080	.0000	.0000	.0000	.0000	.0000	.0000
1081	.0000	.0000	.0000	.0000	.0000	.0000
1082	.0000	.0000	.0000	.0000	.0000	.0000
1084	.0000	.0000	.0000	.0000	.0000	.0000
1085	.0000	.0000	.0000	.0000	.0000	.0000
1087	.0000	.0000	.0000	.0000	.0000	.0000
1088	.0000	.0000	.0000	.0000	.0000	.0000
1089	.0000	.0000	.0000	.0000	.0000	.0000
1092	.0000	.0000	.0000	.0000	.0000	.0000
1094	.0000	.0000	.0000	.0000	.0000	.0000

REACTIONS AND APPLIED FORCES

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1095	.0000	.0000	.0000	.0000	.0000	.0000
1096	.0000	.0000	.0000	.0000	.0000	.0000
1098	.0000	.0000	.0000	.0000	.0000	.0000
1100	.0000	.0000	.0000	.0000	.0000	.0000
1101	.0000	.0000	.0000	.0000	.0000	.0000
1103	.0000	.0000	.0000	.0000	.0000	.0000
1104	.0000	.0000	.0000	.0000	.0000	.0000
1106	.0000	.0000	.0000	.0000	.0000	.0000
1108	.0000	.0000	.0000	.0000	.0000	.0000
1110	7.3875	1.3807	2.4632	.0000	.0000	.0000
1111	23.3582	.3738	8.2397	.0000	.0000	.0000
1112	22.0516	-2.0078	-2.3387	.0000	.0000	.0000
1114	-17.5000	.0000	.0000	.0000	.0000	.0000
1115	.0000	.0000	.0000	.0000	.0000	.0000
1116	-17.5000	.0000	.0000	.0000	.0000	.0000
1118	-17.5000	.0000	.0000	.0000	.0000	.0000
1119	-17.5000	.0000	.0000	.0000	.0000	.0000
1121	-17.5000	.0000	.0000	.0000	.0000	.0000
1122	-17.5000	.0000	.0000	.0000	.0000	.0000
1125	-17.5000	.0000	.0000	.0000	.0000	.0000
1126	.0000	.0000	.0000	.0000	.0000	.0000
1127	-17.5000	.0000	.0000	.0000	.0000	.0000
1129	-17.5000	.0000	.0000	.0000	.0000	.0000
1131	-17.5000	.0000	.0000	.0000	.0000	.0000
1132	-.1295E-11	-.2006E-11	.1139E-11	-.1023E-11	.0000E+00	.0000E+00
1134	.0000	.0000	.0000	.0000	.0000	.0000
1136	.0000	.0000	.0000	.0000	.0000	.0000
1138	.0000	.0000	.0000	.0000	.0000	.0000
1140	.0000	.0000	.0000	.0000	.0000	.0000
1141	.0000	.0000	.0000	.0000	.0000	.0000
1143	.0000	.0000	.0000	.0000	.0000	.0000
1145	.0000	.0000	.0000	.0000	.0000	.0000
1147	.0000	.0000	.0000	.0000	.0000	.0000
1149	.0000	.0000	.0000	.0000	.0000	.0000
1151	.0000	.0000	.0000	.0000	.0000	.0000
1153	.0000	.0000	.0000	.0000	.0000	.0000
1155	.0000	.0000	.0000	.0000	.0000	.0000
1156	.0000	.0000	.0000	.0000	.0000	.0000
1159	.0000	.0000	.0000	.0000	.0000	.0000
1160	.0000	.0000	.0000	.0000	.0000	.0000
1161	.0000	.0000	.0000	.0000	.0000	.0000
1162	.0000	.0000	.0000	.0000	.0000	.0000
1163	-17.5000	.0000	.0000	.0000	.0000	.0000
1164	.0000	.0000	.0000	.0000	.0000	.0000
1167	21.9000	.0000	.0000	.0000	-.3310	.0000
1169	.0000	.0000	.0000	.0000	.0000	.0000
1170	.0000	.0000	.0000	.0000	.0000	.0000
1171	.0000	.0000	.0000	.0000	.0000	.0000
1173	.0000	.0000	.0000	.0000	.0000	.0000
1218	9.2809	-.6774	-8.3834	.0000	.0000	.0000
1318	13.4148	-1.8129	-11.6344	.0000	.0000	.0000

REACTIONS AND APPLIED FORCES

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1418	30.2432	-5.1766	-9.8493	.0000	.0000	.0000
1518	35.7737	-10.5461	-4.6760	.0000	.0000	.0000
1618	35.9720	-16.4424	2.4349	.0000	.0000	.0000
1718	24.6423	-12.6527	-.2855	.0000	.0000	.0000
1818	8.8428	-.2174	6.1895	.0000	.0000	.0000
1904	.0000	.0000	.0000	.0000	.0000	.0000
1905	.0000	.0000	.0000	.0000	.0000	.0000
1906	-16.8757	-7.8434	.4794	.0000	.0000	.0000
TOTAL	.7642E-10	-.5784E-10	.9337E-10	-.1241E-10	-.2648E+01	-.1838E-10





STRUCTURAL ANALYSIS PROGRAMS

VERSION 5.03

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S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID		-----					
LOAD		-----					
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1		-----					
4	1	-.132	-2.525	-.172	1.093	-.194	-.689
5	1	2.765	-1.733	.109	-.758	.439	-.863
1	2	-1.129	.714	.076	.395	.311	.777
2	2	-1.504	3.543	-.013	.419	-.070	.775
2		-----					
LOAD		-----					
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1		-----					
904	1	1.892	-1.701	-1.179	1.376	-3.312	-.080
905	1	2.887	-.357	1.366	3.914	-4.149	-.819
4	1	-2.831	2.728	-.141	-1.236	-.334	.754
5	1	-1.948	-.670	-.045	1.419	.179	-1.781
3		-----					
LOAD		-----					
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1		-----					
5	1	1.573	3.675	.094	-1.126	1.396	2.992
6	1	-2.240	5.965	.643	.142	1.025	-2.217
2	1	1.504	-3.543	.013	-.419	.070	-.775
3	1	-.838	-6.097	-.750	.000	.000	.000
4		-----					
LOAD		-----					
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1		-----					
905	1	2.814	.027	.069	1.538	-5.770	3.056
906	1	.430	.139	-.547	-.097	-2.359	-1.894
5	1	-2.390	-1.272	-.158	.465	-2.014	-.349
6	1	-.854	1.105	.636	-.142	-1.025	2.217
5		-----					
LOAD		-----					
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1		-----					
10	1	-.942	-4.574	.153	1.491	-1.450	-5.958
12	1	8.413	-5.932	.618	.255	-2.857	-.263
904	1	-6.389	4.105	.029	-1.165	3.413	3.927
905	1	-1.082	6.401	-.800	-4.648	4.160	2.293
6		-----					
LOAD		-----					
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1		-----					
12	1	14.138	6.562	.523	.460	-2.311	50.674
14	1	2.769	16.880	.000	.488	-2.379	-48.037
905	1	-4.619	-6.071	-.635	-.804	5.759	-4.530
906	1	-12.288	-17.371	.112	.097	2.359	1.894

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID		7 -----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
12		-5.835	-3.873	-.401	1.226	2.405	-27.313
167		19.194	10.477	.717	.180	-.919	-20.724
14		-17.193	-12.231	.000	.000	.000	51.452
14		3.834	5.627	-.316	-.488	2.379	-3.415

ELEMENT ID		8 -----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
15		-1.459	1.052	.066	.510	.461	-2.515
17		6.994	-4.433	.536	-1.662	.410	3.660
10		-6.885	5.348	.098	-.905	2.066	5.045
12		1.350	-1.967	-.699	-2.783	1.158	-6.190

ELEMENT ID		9 -----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
17		2.282	8.939	-.189	.837	1.487	13.822
19		34.979	-3.672	.946	-1.173	1.043	-17.638
12		-18.067	5.210	-.040	.842	1.605	-16.908
167		-19.194	-10.477	-.717	-.180	.588	20.724

ELEMENT ID		10 -----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
21		-.714	2.394	-.075	.017	.617	4.952
22		2.203	.603	.205	-.930	.806	-2.443
15		-.705	1.412	.061	.271	-.119	-.370
17		-.784	-4.409	-.192	.149	-1.088	-2.139

ELEMENT ID		11 -----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
22		5.633	2.152	.088	-.565	3.217	5.200
24		8.539	-5.726	1.014	-.046	4.471	-7.495
17		-8.493	-.097	-.156	.677	-.810	-15.342
19		-5.679	3.672	-.946	1.173	-1.374	17.638

ELEMENT ID		12 -----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
15		-.132	.219	-.130	.069	.567	1.956
20		-.594	.437	.045	.298	.265	-2.597
21		1.400	1.182	.000	.000	.000	-1.040
21		-.673	-1.838	.085	-.101	.156	1.681

S H E L L E L E M E N T J O I N T F O R C E S							
ELEMENT ID 13 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	20	.366	.390	-.005	.131	.130	1.012
	25	-.921	-.092	-.013	.053	-.024	-.050
	21	.366	-.010	.000	.000	.000	-1.083
	21	.190	-.288	.017	-.074	-.051	.121
ELEMENT ID 14 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	26	-.224	.992	.136	.013	.282	.203
	27	-.780	.014	-.039	-.444	.025	.938
	25	.921	.092	.013	-.053	.024	.050
	21	.083	-1.098	-.110	-.536	-.313	-1.191
ELEMENT ID 15 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	27	.491	1.506	-.002	.406	.312	1.676
	28	1.763	.521	-.299	-.865	-.410	-.547
	21	-.651	-.342	.082	.694	-.409	-3.439
	22	-1.602	-1.686	.219	-.205	-1.296	2.310
ELEMENT ID 16 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	28	3.485	-1.525	.132	-.716	3.623	-4.795
	29	-.784	-5.339	.483	-.305	7.772	3.205
	22	-6.233	-1.069	-.512	1.700	-2.728	-5.067
	24	3.533	7.933	-.104	2.248	-3.972	6.656
ELEMENT ID 17 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	29	-7.533	-4.418	1.652	-5.038	3.350	-3.494
	31	-9.695	6.624	-.741	.581	3.913	2.655
	24	9.779	-11.785	.000	.000	.000	-7.426
	24	7.449	9.579	-.911	-2.203	-.830	8.264
ELEMENT ID 18 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	29	-21.224	4.021	-.386	-.891	1.703	-55.500
	30	-17.772	2.603	-.356	1.026	.886	58.155
	31	19.195	-1.227	.000	.000	.000	-17.544
	31	19.801	-5.397	.741	-.581	-4.244	14.889

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 19 -----							
LOAD							
COND JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
1							
33	.193	.998	-.194	-.238	.580	.321	
34	-.217	.280	.183	-.476	.173	.261	
169	.301	.147	.106	-.062	.033	-.162	
32	-.277	-1.425	-.094	-.627	-.242	-.079	

ELEMENT ID 20 -----							
LOAD							
COND JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
1							
34	-.041	-.077	-.102	.099	-.497	.390	
26	-.236	-1.348	.008	-.489	-.294	-.601	
32	.477	1.095	-.075	.185	-.045	.519	
32	-.200	.331	.169	.441	.287	-.440	

ELEMENT ID 21 -----							
LOAD							
COND JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
1							
34	.282	.796	-.096	.297	.209	-.407	
35	-.742	.086	.024	-.365	-.162	.063	
26	.460	.356	-.144	.476	.012	.398	
27	.001	-1.238	.216	-.197	-.400	-.046	

ELEMENT ID 22 -----							
LOAD							
COND JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
1							
35	-.075	.265	.249	-.138	.666	-1.075	
36	.127	-.047	-.106	-.922	.635	2.228	
27	.289	-.283	-.175	.235	.062	-2.569	
28	-.340	.065	.032	-1.121	-.639	1.666	

ELEMENT ID 23 -----							
LOAD							
COND JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
1							
36	-.108	-.718	.154	-1.647	-.020	-8.482	
37	.287	-6.251	-1.000	3.328	-.175	2.025	
28	-4.907	.938	.135	2.701	-2.574	3.676	
29	4.728	6.031	.712	4.572	-5.125	1.695	

ELEMENT ID 24 -----							
LOAD							
COND JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)	
1							
37	-3.577	17.920	-1.444	-4.206	-.837	-2.675	
38	-16.984	13.194	3.636	4.273	2.378	6.754	
29	24.813	-.295	-2.461	1.661	-7.700	54.094	
30	-4.252	-30.818	.269	-1.026	-.886	-58.155	

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 25 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	39	-.363	.342	.088	-2.953	-2.628	-1.431
	34	-.491	-.625	1.605	-1.631	-2.102	.879
	33	.269	.464	-1.463	4.328	3.635	1.949
	33	.585	-.181	-.230	.305	.341	-.100

ELEMENT ID 26 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	39	-1.625	2.936	-1.785	-1.319	.233	-1.653
	40	.815	-1.413	1.224	2.812	4.478	1.257
	34	.467	-.374	-1.589	1.711	2.218	-1.123
	35	.342	-1.149	2.151	-4.915	-3.409	-1.329

ELEMENT ID 27 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	40	-1.180	5.267	-3.870	-7.091	-.905	-1.584
	41	-.102	-1.608	2.887	9.954	7.814	3.179
	35	.476	.797	-2.424	5.417	2.905	2.342
	36	.807	-4.456	3.407	-11.502	-5.234	-1.646

ELEMENT ID 28 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	41	.697	5.964	-6.988	-14.758	-2.759	-3.235
	42	-1.329	1.026	3.270	14.541	5.304	2.566
	36	-.825	5.222	-3.455	14.071	4.619	7.901
	37	1.458	-12.211	7.173	-14.502	-2.258	-9.719

ELEMENT ID 29 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	42	.284	3.622	-3.478	-8.400	-1.297	.781
	43	-.919	1.766	3.025	-3.060	-.462	-2.899
	37	1.832	.543	-4.729	15.380	3.269	10.368
	38	-1.197	-5.931	5.182	-4.273	-2.378	-6.754

ELEMENT ID 30 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	44	-.434	4.229	-2.366	-3.826	1.285	.026
	45	-1.098	-.100	.875	1.150	4.978	3.141
	39	.413	.663	-1.263	1.388	-.979	.956
	40	1.118	-4.791	2.755	-.983	-3.538	-3.369

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
31			1						
45				-.304	4.764	-2.190	-5.263	-.293	-3.289
46				1.426	-1.497	-.939	-.348	1.426	1.007
40				-.753	.938	-.109	5.263	-.035	3.697
41				-.369	-4.205	3.237	2.377	-2.713	-2.566

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
32			1						
46				.770	.370	-1.157	.293	1.673	2.276
47				1.342	.778	-1.755	-10.727	-1.940	-7.762
41				-.226	-.150	.864	2.427	-2.341	2.622
42				-1.886	-.998	2.049	6.534	-.850	5.603

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
33			1						
47				-.100	-7.792	.022	13.013	2.647	10.492
48				-3.686	9.624	4.151	-1.649	1.640	-6.634
42				2.931	-3.650	-1.840	-12.675	-3.157	-8.949
43				.855	1.819	-2.333	3.060	.462	2.899

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
34			1						
49				-.250	4.842	.011	-.505	-.116	2.440
50				-5.201	2.205	-.703	.756	-1.139	1.391
44				5.106	-2.178	.339	2.133	-2.765	-4.559
45				.344	-4.869	.353	2.278	-2.527	.685

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
35			1						
50				-.788	2.833	-.881	4.704	-3.196	-5.347
51				-.911	-.728	-.597	2.009	-6.197	6.860
45				1.057	.205	.962	1.834	-2.158	-.537
46				.642	-2.309	.516	-.315	-2.003	-.923

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
36			1						
51				-2.893	-5.139	-1.662	6.128	-9.900	-9.565
52				4.225	-5.393	-.741	-.505	-13.447	8.604
46				-2.839	3.436	1.580	.370	-1.096	-2.360
47				1.506	7.096	.823	-3.504	-.591	2.990

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 37 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
52		-7.855	-20.787	-1.916	2.757	-9.842	-3.348
53		-.111	-1.803	-.389	.598	-6.095	2.694
47		-2.748	-.082	.910	1.217	-.116	-5.720
48		10.713	22.672	1.396	1.649	-1.640	6.634

ELEMENT ID 38 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
131		17.865	-25.926	-.970	-81.934	-23.938	-.677
129		-21.416	20.404	-1.298	15.453	63.201	-7.456
132		18.624	-17.702	-.370	42.191	37.803	-41.408
134		-15.074	23.225	2.639	-29.799	-30.120	27.032

ELEMENT ID 39 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
132		.943	-1.199	.126	-2.603	1.217	-6.051
134		-.876	.214	-.094	-.500	.670	6.169
149		-1.888	1.322	-.437	-1.240	-.704	-5.674
151		1.821	-.337	.406	2.606	.113	5.239

ELEMENT ID 40 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
129		13.945	-24.071	-4.553	-67.692	-9.208	-1.396
127		-15.235	15.976	1.811	17.037	56.430	-13.702
134		12.571	-16.980	-1.716	36.424	26.845	-30.997
136		-11.281	25.076	4.459	-32.118	-28.640	25.366

ELEMENT ID 41 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
134		3.379	-6.458	-.828	-6.126	2.605	-2.205
136		-1.035	1.835	2.212	2.412	4.708	-.670
151		-1.821	.337	-.406	-2.606	-.113	-5.239
153		-.523	4.286	-.978	-.170	-.920	7.182

ELEMENT ID 42 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
127		10.614	-22.417	-5.775	-55.326	-.701	9.280
125		-12.539	12.967	.812	9.151	44.646	-10.455
136		7.857	-13.881	-2.279	33.203	23.265	-24.030
138		-5.932	23.331	7.241	-29.598	-18.262	5.986

SHELL ELEMENT JOINT FORCES

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
43			1						
	136			4.459	-13.030	-4.392	-3.496	.667	-.666
	138			-.323	1.056	2.651	.810	2.200	-3.956
	153			.523	-4.286	.978	.170	.920	-7.182
	155			-4.659	16.260	.763	-8.183	-5.416	3.837

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
44			1						
	125			5.465	-17.995	-.319	-56.440	22.866	5.079
	122			-12.246	13.110	.723	4.509	56.937	-8.187
	138			9.959	-8.450	-.280	22.375	20.593	-5.672
	140			-3.179	13.334	-.123	-26.679	-7.759	6.653

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
45			1						
	138			-3.704	-15.938	-9.612	6.413	-4.530	3.643
	140			-4.048	7.300	.682	6.897	4.803	-18.385
	155			4.659	-16.260	-.763	8.183	5.416	-3.837
	156			3.093	24.898	9.693	-28.648	-2.375	14.943

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
46			1						
	156			-3.093	-24.898	-9.693	28.648	2.375	-14.943
	140			-4.743	.226	-2.973	-1.875	-7.652	4.187
	159			6.417	5.779	4.881	-7.769	3.478	7.877
	161			1.419	18.892	7.785	-16.556	2.702	4.675

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
47			1						
	159			-6.417	-5.779	-4.881	7.769	-3.478	-7.877
	161			-1.740	-.809	-2.452	-.771	-9.668	3.262
	160			4.431	2.113	1.952	-1.892	4.058	4.989
	94			3.727	4.476	5.381	-1.020	3.659	.120

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
48			1						
	160			-4.431	-2.113	-1.952	1.892	-4.058	-4.989
	94			-1.992	1.650	-2.598	-3.580	-6.586	-1.704
	92			3.668	-.315	1.494	-1.831	1.406	5.909
	82			2.755	.778	3.056	2.612	-2.601	-2.547

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 49		-----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1						
	92	-3.668	.315	-1.494	1.831	-1.406	-5.909
	82	-3.258	1.858	-1.801	-2.619	-.265	5.966
	89	3.303	-1.345	1.292	-3.001	-.705	5.689
	63	3.624	-.827	2.003	2.204	-.150	-6.974

ELEMENT ID 50		-----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1						
	89	-3.303	1.345	-1.292	3.001	.705	-5.689
	63	-3.039	1.186	-1.313	-5.137	.546	6.588
	88	2.677	-1.929	.745	-1.467	-.505	5.161
	55	3.665	-.603	1.861	4.382	6.072	-3.931

ELEMENT ID 51		-----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1						
	88	-2.677	1.929	-.745	1.467	.505	-5.161
	55	-.083	-.701	-.192	.582	-1.932	1.263
	87	2.759	-1.228	.937	-.165	-.052	3.228
	164	.000	.000	.000	.000	.000	.000

ELEMENT ID 52		-----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1						
	85	.217	.298	.239	-.539	-.333	-.025
	87	-2.759	1.228	-.937	.165	.052	-3.228
	60	2.084	-.461	.813	-.656	-1.625	2.333
	62	.459	-1.066	-.116	.180	-.530	-.009

ELEMENT ID 53		-----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1						
	84	-.350	.524	-.032	.072	.056	-.386
	85	-.217	-.298	-.239	.539	.333	.025
	59	.209	.584	.211	-.458	-.539	.778
	60	.357	-.809	.060	.620	.134	-.155

ELEMENT ID 54		-----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1						
	59	.889	2.042	2.395	.098	-.081	-1.214
	60	-1.436	.232	-1.192	.154	.360	-.361
	49	1.225	-.195	1.195	1.524	.850	-1.660
	171	-.678	-2.080	-2.398	-2.173	-1.242	2.755

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 55 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
60		-1.005	1.038	.319	-.118	1.131	-1.818
62		-.459	1.066	.116	-.180	.530	.009
171		2.142	-1.739	.559	1.216	.918	-2.399
55		-.678	-.365	-.994	-2.665	-3.187	2.030

ELEMENT ID 56 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
171		-1.464	3.818	1.839	.957	.324	-.357
55		-5.380	3.505	-2.643	.039	-.475	-.958
49		4.148	-3.190	1.660	-2.075	-1.630	1.847
50		2.697	-4.133	-.856	1.226	1.448	-.680

ELEMENT ID 57 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
114		-8.926	-18.557	-17.704	-15.175	13.201	-4.467
112		3.916	-5.724	6.539	-.725	8.129	.733
147		-1.314	.780	-9.809	11.127	2.423	-11.332
111		6.324	23.502	20.974	-2.578	2.388	-4.399

ELEMENT ID 58 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
147		-6.334	-22.337	-6.361	5.042	-4.371	1.820
111		-3.744	.053	-5.737	2.578	-2.388	4.399
108		-.453	-6.406	-2.485	-.150	-1.596	-.187
110		10.531	28.690	14.583	.000	.000	.000

ELEMENT ID 59 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
116		-4.446	-25.168	-12.415	-30.278	18.908	-7.690
114		-1.527	9.635	1.615	16.944	23.902	6.082
145		.483	-7.167	-4.621	22.949	2.204	-23.447
147		5.490	22.701	15.421	-20.772	3.115	7.045

ELEMENT ID 60 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
145		-2.248	-7.811	-2.592	2.138	-3.447	.926
147		2.158	-1.143	.749	4.603	-1.168	2.467
106		-.363	2.548	-.643	-1.030	-.829	.949
108		.453	6.406	2.485	.150	1.596	.187

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
61			1						
	118			-1.160	-24.665	-7.038	-39.548	25.921	7.055
	116			-6.824	17.767	-2.244	22.792	34.480	1.405
	143			6.313	-10.252	1.181	27.558	10.459	-18.064
	145			1.671	17.150	8.100	-21.919	.669	13.747

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
62			1						
	143			-1.427	2.198	.645	.735	3.592	-4.454
	145			.094	-2.172	-.888	-3.168	.574	8.774
	104			.969	2.522	-.399	-.507	-2.139	-4.594
	106			.363	-2.548	.643	1.030	.829	-.949

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
63			1						
	119			2.319	-24.257	2.980	-58.462	-.981	-7.951
	118			-7.058	23.314	-7.723	34.368	29.216	-8.431
	143			7.028	-17.129	5.729	50.898	14.138	-20.169
	143			-2.289	18.072	-.985	-47.208	-8.088	9.091

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
64			1						
	163			1.532	-18.255	-2.039	-39.510	30.129	-.656
	119			-13.817	23.927	-9.505	38.087	39.328	3.328
	141			12.682	-8.566	11.058	15.745	15.723	-1.710
	103			-.397	2.894	.486	-14.093	-5.077	22.995

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
65			1						
	141			-5.842	-1.692	-6.010	18.653	-6.897	-11.377
	103			-10.309	-.473	-5.726	-8.402	-18.659	9.779
	100			6.340	-.355	5.047	-4.855	8.404	16.271
	101			9.811	2.520	6.689	3.601	15.686	-8.510

ELEMENT ID	LOAD	COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
66			1						
	100			-6.224	-6.842	-5.974	10.081	-5.878	-4.006
	101			-9.811	-2.520	-6.689	-3.601	-15.686	8.510
	96			6.146	2.189	5.954	-10.182	5.910	8.077
	98			9.888	7.173	6.709	.162	8.758	-16.640

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 67 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	96	-5.246	-11.009	-6.105	17.106	-6.122	-3.878
	98	-9.888	-7.173	-6.709	-.162	-8.758	16.640
	80	5.911	5.721	5.356	-5.914	-7.566	15.425
	78	9.223	12.460	7.458	4.427	4.996	-22.591

ELEMENT ID 68 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	80	-5.034	-9.927	-4.496	7.860	3.912	-23.490
	78	-9.223	-12.460	-7.458	-4.427	-4.996	22.591
	65	7.038	9.204	4.793	-5.738	-5.254	23.295
	76	7.219	13.183	7.161	11.665	3.970	-18.435

ELEMENT ID 69 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	76	-7.219	-13.183	-7.161	-11.665	-3.970	18.435
	74	6.965	11.500	6.289	16.007	.278	-19.168
	65	-7.362	-7.486	-4.895	7.442	12.637	-25.093
	57	7.615	9.169	5.766	-21.025	-1.030	22.169

ELEMENT ID 70 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	74	-6.965	-11.500	-6.289	-16.007	-.278	19.168
	73	.658	3.482	1.269	3.867	-2.242	-.200
	57	-2.201	-.651	-1.167	5.784	-5.115	-6.635
	66	8.508	8.669	6.187	14.336	-7.619	-5.714

ELEMENT ID 71 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	73	-.658	-3.482	-1.269	-3.867	2.242	.200
	69	-.106	-2.117	-.078	2.029	.003	1.340
	66	-2.344	3.110	.132	-3.421	-2.871	-.737
	68	3.108	2.489	1.215	3.111	-4.288	-1.955

ELEMENT ID 72 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	66	-6.164	-11.779	-6.319	-10.915	10.491	6.450
	68	4.176	-8.758	3.765	-3.029	3.647	5.489
	57	-2.733	6.622	-3.154	6.223	-1.020	-4.616
	173	4.721	13.914	5.708	9.039	-3.674	-4.845

SHELL ELEMENT JOINT FORCES

ELEMENT ID 73		-----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	69	.106	2.117	.078	-2.029	-.003	-1.340
	70	5.353	-10.104	3.474	.000	.000	.000
	68	-4.093	7.916	-1.685	-.455	.200	-1.076
	67	-1.366	.072	-1.866	-.783	1.263	.741

ELEMENT ID 74		-----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	68	-3.191	-1.647	-3.294	.374	.441	-2.458
	67	8.687	-7.312	8.735	.783	-1.263	-.741
	173	-8.898	3.333	-10.453	5.049	4.094	-5.415
	53	3.401	5.626	5.013	-10.014	.724	4.685

ELEMENT ID 75		-----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	57	-5.159	-16.873	-8.263	6.230	5.268	-6.127
	173	4.176	-17.247	4.745	-14.087	-.420	10.260
	52	-1.485	14.781	-2.735	-4.315	7.159	2.318
	53	2.468	19.339	6.252	9.416	5.371	-7.378

ELEMENT ID 76		-----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	818	15.296	-10.445	-17.425	.000	.000	.000
	718	4.272	-2.106	11.210	37.478	33.818	4.143
	131	-1.029	-5.144	-7.556	27.949	-36.821	-14.974
	129	-18.540	17.696	13.772	-3.124	-65.805	10.789

ELEMENT ID 77		-----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	718	7.606	-1.948	-2.531	-12.837	-29.228	-1.654
	127	-16.117	15.976	10.451	1.712	-34.645	7.315
	129	14.041	-16.853	-11.041	42.885	36.371	-.980
	129	-5.531	2.825	3.121	12.478	-24.559	-.958

ELEMENT ID 78		-----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	718	11.187	-11.791	-6.767	-24.641	-4.589	-2.489
	618	.323	2.562	8.154	36.789	30.856	2.340
	127	3.238	-9.534	-6.487	36.576	-21.084	-2.893
	125	-14.749	18.764	5.100	-12.341	-59.060	7.867

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID	79	-----					
LOAD							
COND JOINT	1	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
618		7.878	-.956	.635	-10.746	-28.548	3.176
122		-12.200	14.693	4.959	-1.265	-43.993	10.946
125		9.495	-16.400	-5.871	41.197	24.115	-.735
125		-5.172	2.663	.278	18.433	-32.568	-1.755

ELEMENT ID	80	-----					
LOAD							
COND JOINT	1	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
618		6.420	-11.002	-2.318	-26.043	-2.309	-5.516
518		2.335	5.232	5.174	36.901	21.546	-4.926
122		3.382	-11.922	-6.840	41.068	-34.750	-5.723
121		-12.137	17.692	3.985	-16.162	-57.504	.755

ELEMENT ID	81	-----					
LOAD							
COND JOINT	1	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
518		6.406	-2.422	-5.378	-9.989	-20.101	10.083
163		-10.135	19.816	7.029	-14.552	-36.481	13.907
121		7.246	-21.361	-8.084	49.312	16.595	.350
121		-3.517	3.968	6.434	.077	-34.387	1.370

ELEMENT ID	82	-----					
LOAD							
COND JOINT	1	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
518		7.328	-16.482	-7.363	-26.912	-1.445	-5.157
418		.676	11.242	-2.805	43.611	18.558	2.727
163		4.806	-20.782	.335	35.081	-44.313	-12.500
119		-12.810	26.022	9.832	-26.166	-55.903	11.147

ELEMENT ID	83	-----					
LOAD							
COND JOINT	1	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
418		2.832	-.170	-6.284	-10.181	-11.131	-5.247
118		-9.751	23.693	10.521	-37.544	-29.187	7.181
119		7.083	-24.736	-11.369	61.140	16.983	1.140
119		-.164	1.212	7.132	-3.151	-13.562	-3.902

ELEMENT ID	84	-----					
LOAD							
COND JOINT	1	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
418		7.888	-14.704	-12.888	-33.430	-7.427	2.520
318		-2.121	13.343	-5.582	25.012	.613	8.408
118		.468	-22.343	4.240	42.724	-25.949	-5.806
116		-6.236	23.704	14.230	-22.270	-44.105	10.847

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID		85 -----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
	1						
	318	.628	.597	-4.031	-2.777	.449	-7.257
	115	-.634	15.706	3.602	-25.588	-1.139	-.014
	116	2.143	-16.010	-4.562	32.372	4.276	.201
	116	-2.136	-.294	4.991	-2.617	-13.558	-4.763

ELEMENT ID		86 -----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
	1						
	318	1.217	-2.078	-3.775	-8.203	-3.416	-2.488
	114	-1.851	17.784	7.378	-16.430	-13.776	5.534
	115	1.113	-18.142	-8.604	29.672	1.780	.084
	115	-.479	2.435	5.002	-4.083	-.641	-.069

ELEMENT ID		87 -----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
	1						
	318	3.851	-3.291	-1.779	-14.032	2.355	1.337
	218	-2.135	8.265	-6.479	.000	.000	.000
	114	-5.196	-8.861	8.711	14.661	-23.327	-7.149
	112	3.480	3.887	-.452	.725	-8.129	-.733

ELEMENT ID		88 -----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
	1						
	122	3.564	-15.881	1.159	-44.312	21.806	2.964
	121	-12.466	16.332	-3.961	10.284	47.324	-9.287
	140	10.933	-12.469	3.685	24.794	18.146	-9.768
	170	-2.031	12.018	-.883	-28.930	-7.831	12.089

ELEMENT ID		89 -----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
	1						
	121	3.374	-16.630	1.626	-43.511	27.972	6.812
	163	-13.703	19.221	-5.325	18.981	50.665	-.750
	170	10.254	-12.609	4.971	22.982	14.766	-8.875
	141	.075	10.017	-1.273	-27.470	-1.179	12.051

ELEMENT ID		90 -----					
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
	1						
	140	1.037	-8.391	-1.271	-3.138	-7.538	17.312
	170	-5.684	5.096	-1.699	.946	-4.308	-7.319
	161	4.331	-5.509	.624	7.117	15.492	-10.179
	162	.317	8.805	2.346	-14.115	8.433	-1.892

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 91 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	170	-2.539	-4.505	-2.389	5.003	-2.627	4.105
	141	-6.914	.240	-3.776	-6.928	-7.647	1.036
	162	4.424	-2.144	2.111	-.129	15.814	4.508
	100	5.029	6.408	4.054	-4.457	12.373	-10.072
ELEMENT ID 92 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	161	-4.010	-12.574	-5.957	10.210	-8.526	2.242
	162	-1.571	2.053	-.672	3.010	-12.233	-4.799
	94	2.543	.393	1.067	-2.673	11.384	4.856
	95	3.038	10.127	5.561	-7.423	8.263	-.853
ELEMENT ID 93 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	162	-3.170	-8.715	-3.785	11.235	-12.014	2.183
	100	-5.146	.789	-3.126	-.769	-14.898	-2.193
	95	3.349	-1.571	1.907	-4.562	12.510	6.195
	96	4.966	9.497	5.005	-10.064	15.320	-8.563
ELEMENT ID 94 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	94	-4.278	-6.519	-3.850	7.273	-8.456	-3.272
	95	-2.500	.150	-2.792	1.921	-10.683	2.244
	82	3.533	-.052	2.023	-1.715	-1.606	7.173
	81	3.245	6.421	4.619	2.690	-1.289	-6.424
ELEMENT ID 95 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	95	-3.887	-8.706	-4.676	10.064	-10.090	-7.586
	96	-5.867	-.677	-4.854	3.141	-15.108	4.364
	81	5.000	.278	3.933	-3.034	-6.570	14.169
	80	4.754	9.105	5.596	6.960	-3.459	-9.964
ELEMENT ID 96 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	82	-3.029	-2.583	-3.279	1.723	4.472	-10.593
	81	-3.948	-1.527	-3.337	-5.959	-.262	9.246
	63	3.101	-.074	2.875	-3.660	-9.215	8.576
	64	3.876	4.184	3.740	6.828	-4.191	-9.991

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 97 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	81	-4.296	-5.172	-5.216	6.304	8.121	-16.992
	80	-5.631	-4.900	-6.457	-8.906	7.113	18.028
	64	4.983	3.037	5.122	-6.493	-18.704	20.772
	65	4.944	7.035	6.550	21.101	-11.626	-18.725

ELEMENT ID 98 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	63	-3.687	-.286	-3.565	6.593	8.819	-8.190
	64	-4.725	.037	-3.279	-12.361	3.346	7.610
	55	4.461	-1.850	3.482	-9.634	-6.189	8.192
	56	3.950	2.099	3.362	9.594	4.135	-8.140

ELEMENT ID 99 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	64	-4.135	-7.258	-5.583	12.026	19.549	-18.390
	65	-4.621	-8.753	-6.448	-22.805	4.244	20.523
	56	3.358	5.151	3.759	-19.113	-9.764	15.674
	57	5.397	10.859	8.272	25.284	-1.167	-18.332

ELEMENT ID 100 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	55	-1.985	.015	-1.514	7.296	5.710	-6.596
	56	-4.097	-.070	-2.726	-9.586	-4.213	7.015
	50	3.292	-.905	2.439	-6.686	2.887	4.636
	51	2.789	.960	1.801	2.948	7.794	-4.407

ELEMENT ID 101 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	56	-3.211	-7.180	-4.395	19.105	9.841	-14.549
	57	-2.919	-9.127	-1.456	-22.496	3.064	13.541
	51	1.015	4.907	.459	-11.086	8.304	7.112
	52	5.116	11.400	5.392	2.063	16.130	-7.574

ELEMENT ID 102 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1005	-.972	.684	.146	-1.578	.133	-1.312
	1004	3.579	-1.286	.098	.141	.681	.828
	1002	-4.108	1.564	-.040	-.319	-1.296	1.533
	1001	1.500	-.962	-.204	.211	.211	-1.049

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ELEMENT ID 103 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1905	.380	1.633	-.621	2.788	-.326	-.399
	1904	4.176	-2.973	1.004	-.533	-1.488	.171
	1005	-4.106	1.014	-.706	1.535	-1.581	-.387
	1004	-.450	.326	.322	.677	.185	.315

ELEMENT ID 104 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1006	-3.755	2.355	.634	-1.158	.394	.485
	1005	4.180	-.085	.207	-1.723	1.530	1.048
	1003	-4.533	-.706	-.881	.000	.000	.000
	1002	4.108	-1.564	.040	.319	1.296	-1.533

ELEMENT ID 105 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1005	.897	-1.612	.352	1.767	-.081	.651
	1006	-5.627	.556	-1.965	1.158	-.394	-.485
	1905	6.080	.497	.819	1.879	-.605	-.759
	1906	-1.351	.559	.794	1.353	.108	.769

ELEMENT ID 106 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1904	.363	1.013	.121	.029	.852	-3.256
	1905	-11.436	2.194	-.070	-1.738	.472	2.713
	1010	8.630	-.543	-.092	1.039	-.755	-2.679
	1012	2.442	-2.664	.040	1.078	-.693	3.222

ELEMENT ID 107 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1905	4.975	-4.324	-.128	-2.929	.458	-1.554
	1906	-15.525	-8.403	-.314	-1.353	-.108	-.769
	1012	13.011	5.184	.104	.982	-.216	-14.914
	1014	-2.462	7.543	.339	.175	-.216	17.237

ELEMENT ID 108 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1014	-24.037	-9.335	-.035	-.175	.216	-17.237
	1167	24.007	7.208	.035	.330	-.153	15.604
	1012	-16.060	7.220	.000	.000	.000	23.460
	1012	16.089	-5.093	-.000	-.283	.193	-21.826

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 109 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1010	-1.283	.018	-.104	-1.296	.607	4.253
	1012	-8.879	-5.260	-.104	-1.165	.562	-9.990
	1015	4.139	2.431	.047	-.055	-.616	-16.814
	1017	6.023	2.811	.162	.238	-.255	22.551
ELEMENT ID 110 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1012	-6.604	.613	-.039	-.612	.154	20.048
	1167	-2.107	-7.208	-.035	-.330	-.178	-15.604
	1017	-1.737	7.339	-.002	.218	.023	-15.869
	1019	10.449	-.744	.076	.068	-.153	11.424
ELEMENT ID 111 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1015	-1.244	-2.859	-.035	-.538	-.151	14.437
	1017	.914	-5.444	-.078	-.455	.103	-14.413
	1021	-.457	5.208	-.045	.092	-.518	-4.281
	1022	.788	3.096	.158	-.147	-.190	4.258
ELEMENT ID 112 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1017	-5.200	-4.706	-.082	-.001	.129	7.731
	1019	11.451	.744	-.076	-.068	-.178	-11.424
	1022	-7.876	4.967	.069	-.198	.166	-2.451
	1024	1.624	-1.005	.089	-.482	-.193	6.144
ELEMENT ID 113 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1021	.102	.331	.078	-.090	-.087	.980
	1020	.522	1.352	-.076	-.239	-.377	-3.280
	1015	-.457	-1.391	.000	.000	.000	2.355
	1015	-.168	-.292	-.003	-.218	-.130	-.055
ELEMENT ID 114 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1021	.130	-1.130	-.022	.006	.237	-2.075
	1025	.238	3.570	.002	.292	-.100	-2.783
	1020	.075	-3.304	.000	.000	.000	4.858
	1020	-.442	.864	.020	-.153	.032	.001

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 115 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1025	-.238	-3.570	-.002	-.292	.100	2.783
	1021	.615	-.709	-.023	.041	.470	-1.244
	1026	-.276	1.773	.182	.178	.053	-2.169
	1027	-.101	2.505	-.156	.526	.357	.630

ELEMENT ID 116 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1021	-.389	-3.700	.012	-.048	-.103	6.620
	1022	3.064	-2.908	.026	.043	-.197	-4.928
	1027	-2.619	1.992	-.032	.068	-.181	-4.629
	1028	-.056	4.616	-.007	.033	.208	2.936

ELEMENT ID 117 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1022	4.024	-5.155	-.253	.302	.221	3.121
	1024	16.027	2.877	-.084	.185	-.371	-.988
	1028	-10.152	-2.018	.249	-.767	1.043	7.952
	1029	-9.900	4.295	.088	-1.395	-.061	-10.086

ELEMENT ID 118 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1024	4.248	-1.871	-.006	.298	.233	-5.156
	1031	-5.905	3.565	.002	-.103	-.209	.610
	1029	3.757	-1.199	.000	.000	.000	6.229
	1029	-2.101	-.494	.004	-.224	-.016	-1.683

ELEMENT ID 119 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1031	27.805	-3.565	-.002	.103	-.122	-.610
	1030	-16.126	6.041	.019	-.008	-.066	5.436
	1029	12.944	3.563	.000	.000	.000	3.105
	1029	-24.622	-6.039	-.017	-.103	-.031	-7.930

ELEMENT ID 120 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1169	-.375	-.090	-.084	.135	.111	.048
	1032	1.548	.057	-.371	-.224	-.830	-.081
	1033	-1.284	.064	.257	-.518	.362	.032
	1034	.111	-.031	.198	-.646	-.096	.457

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 121 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1032	-1.548	-.057	.371	.224	.830	.081
	1026	1.365	.055	-.223	.082	.006	-.851
	1034	-.282	-.388	.114	.044	-.180	-.505
	1034	.466	.390	-.261	.092	.515	.896

ELEMENT ID 122 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1026	-1.088	-1.828	.042	-.261	-.059	3.021
	1027	2.308	-.006	-.146	-.389	-.392	-.117
	1034	-1.747	.509	.208	-1.005	.065	-2.536
	1035	.528	1.325	-.104	-.899	.314	-.062

ELEMENT ID 123 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1027	.411	-4.491	.334	-.205	.216	4.115
	1028	5.245	.879	-.509	-.063	-.479	-.807
	1035	-3.128	-.284	.530	-1.379	.613	-.810
	1036	-2.529	3.896	-.356	-1.128	.046	-2.339

ELEMENT ID 124 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1028	4.963	-3.478	.267	.797	-.773	-10.082
	1029	5.229	7.810	-1.485	2.111	1.003	12.313
	1036	-3.117	-3.324	.996	-.086	3.669	9.026
	1037	-7.075	-1.008	.222	-.596	-1.814	-11.752

ELEMENT ID 125 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1029	14.694	-7.936	1.410	-.389	-.895	-1.948
	1030	-8.947	-5.198	.725	.008	.066	-5.436
	1037	6.135	1.656	-.446	-.138	2.565	9.925
	1038	-11.882	11.479	-1.689	.345	.170	-2.871

ELEMENT ID 126 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1033	.267	-1.347	1.595	-3.635	-4.816	-2.295
	1034	.128	1.035	-1.581	5.929	6.584	5.198
	1039	1.442	-2.128	2.037	3.798	4.522	2.036
	1039	-1.836	2.441	-2.050	-6.199	-7.069	-3.010

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 127 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1035	2.825	-1.875	1.296	-2.743	-5.765	-1.629
	1036	-1.098	1.321	-2.233	4.001	7.772	2.811
	1040	.134	-.850	1.667	3.585	6.854	2.528
	1041	-1.862	1.405	-.731	-4.942	-9.353	-2.201

ELEMENT ID 128 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1036	6.743	-1.892	1.593	-2.787	-11.487	-9.498
	1037	-5.504	1.374	-1.268	4.222	16.178	3.107
	1041	.615	-.364	.654	3.262	11.605	1.776
	1042	-1.855	.882	-.980	-4.462	-13.272	-4.580

ELEMENT ID 129 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1037	6.443	-2.022	1.491	-3.488	-16.929	-1.280
	1038	-4.929	.795	1.494	-.345	-.170	2.871
	1042	-.358	-.259	.667	1.596	14.564	6.286
	1043	-1.156	1.486	-3.652	-.536	.026	1.318

ELEMENT ID 130 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1039	.917	-2.737	1.722	.634	-.556	.119
	1040	2.427	-.100	-1.978	-2.292	-4.425	-3.096
	1044	-4.237	1.282	2.024	-1.486	2.662	.343
	1045	.893	1.555	-1.768	-.478	3.681	4.144

ELEMENT ID 131 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1040	-.477	-1.141	1.157	3.426	3.179	2.716
	1041	3.117	-.559	-1.080	-2.765	-9.460	-5.256
	1045	-5.020	1.257	1.637	-3.754	-.930	-4.464
	1046	2.380	.443	-1.714	.836	7.463	7.999

ELEMENT ID 132 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1041	-1.871	-.481	1.156	4.444	7.208	5.681
	1042	3.492	-.992	-.139	-.612	-11.461	-8.367
	1046	-5.220	1.182	.544	-5.122	-6.151	-9.178
	1047	3.598	.292	-1.562	.888	11.650	10.635

SHELL ELEMENT JOINT FORCES

ELEMENT ID 133 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1042	-1.280	.369	.451	3.478	10.169	6.661
	1043	2.138	1.247	-2.400	.536	-.026	-1.318
	1047	-6.212	-.042	.326	-2.829	-11.178	-10.058
	1048	5.353	-1.574	1.622	-1.066	1.610	4.047

ELEMENT ID 134 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1044	-.480	-3.269	.010	2.920	-1.433	3.065
	1045	6.406	-2.373	-.022	1.559	-2.377	-5.827
	1049	-6.473	2.646	-.365	-1.094	2.432	-4.773
	1050	.548	2.995	.378	-4.044	.286	7.456

ELEMENT ID 135 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1045	-2.279	-.440	.153	2.673	-.374	6.147
	1046	4.374	-1.165	.196	2.073	-.711	-5.649
	1050	-3.603	1.684	-.169	-.579	1.633	-5.924
	1051	1.508	-.079	-.180	.186	-1.088	5.528

ELEMENT ID 136 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1046	-1.535	-.459	.973	2.213	-.602	6.827
	1047	5.878	-.499	.511	1.576	1.033	-6.401
	1051	-4.612	-.267	-1.006	4.835	-2.466	-2.342
	1052	.269	1.226	-.478	7.049	-.659	2.053

ELEMENT ID 137 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1047	-3.264	.249	.725	.365	-1.506	5.825
	1048	12.082	5.353	.727	1.066	-1.610	-4.047
	1052	-11.742	-3.468	-1.285	6.141	-2.183	-2.330
	1053	2.924	-2.134	-.167	3.280	-1.279	.222

ELEMENT ID 138 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1132	-16.515	16.825	-.514	-36.769	-40.649	40.261
	1134	25.539	-15.447	5.428	29.471	31.131	-23.036
	1131	-30.842	20.233	-5.379	26.420	83.162	-.950
	1129	21.818	-21.611	.465	-63.584	-19.465	11.261

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 139 -----
LOAD
COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
1
1149 .520 -2.178 -1.025 .682 1.212 6.036
1151 1.217 .602 .484 1.017 -.609 -5.426
1132 -2.220 1.500 .600 .003 3.728 5.764
1134 .482 .076 -.058 -.244 .655 -2.794

ELEMENT ID 140 -----
LOAD
COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
1
1134 -16.711 10.812 -4.052 -28.422 -37.439 26.752
1136 24.409 -11.397 4.491 25.189 31.027 -18.281
1129 -21.818 13.337 -3.226 14.014 63.499 -5.726
1127 14.120 -12.751 2.787 -47.685 -18.040 16.984

ELEMENT ID 141 -----
LOAD
COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
1
1151 -1.217 -.602 -.484 -1.017 .609 5.426
1153 7.179 -3.204 -.669 2.582 3.061 -7.321
1134 -9.310 4.560 -1.317 -.804 5.652 -.921
1136 3.348 -.753 2.469 -4.628 -3.165 4.688

ELEMENT ID 142 -----
LOAD
COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
1
1136 -12.335 6.569 -2.566 -22.758 -29.770 17.059
1138 20.341 -5.591 6.608 13.613 26.774 1.733
1127 -18.863 8.780 -4.599 5.145 45.864 -12.022
1125 10.857 -9.758 .557 -31.905 -9.174 12.589

ELEMENT ID 143 -----
LOAD
COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
1
1153 -7.179 3.204 .669 -2.582 -3.061 7.321
1155 19.426 -7.710 1.911 5.808 11.366 -3.477
1136 -15.423 5.581 -4.394 2.197 1.909 -3.465
1138 3.176 -1.076 1.814 -.869 -1.464 7.749

ELEMENT ID 144 -----
LOAD
COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
1
1138 -7.980 9.115 -.418 -19.857 -21.566 .811
1140 9.180 -4.508 -.982 5.996 20.180 -5.315
1125 -11.673 3.822 1.455 -9.409 40.732 -10.259
1122 10.472 -8.429 -.055 -33.707 -8.017 8.268

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 145 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1155	-19.426	7.710	-1.911	-5.808	-11.366	3.477
	1156	25.933	-.534	8.989	1.447	27.074	-14.621
	1138	-15.536	-2.448	-8.004	7.112	-3.743	-10.292
	1140	9.029	-4.728	.927	-7.885	-8.752	21.514

ELEMENT ID 146 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1159	4.199	2.457	2.739	-1.997	3.562	-4.487
	1161	19.963	-1.178	7.164	3.300	17.044	-14.224
	1156	-25.933	.534	-8.989	-1.447	-27.074	14.621
	1140	1.771	-1.813	-.915	4.940	-2.541	.196

ELEMENT ID 147 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1160	1.594	-2.224	-1.296	-4.323	-2.296	2.638
	1094	3.814	1.216	2.781	-.121	2.980	-4.823
	1159	-4.199	-2.457	-2.739	1.997	-3.562	4.487
	1161	-1.209	3.465	1.254	5.022	.444	-2.835

ELEMENT ID 148 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1092	2.277	-6.268	-2.508	-2.534	-4.359	9.355
	1082	1.424	-1.740	-.122	.025	3.407	-7.951
	1160	-1.594	2.224	1.296	4.323	2.296	-2.638
	1094	-2.107	5.785	1.335	.506	1.368	3.079

ELEMENT ID 149 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1089	2.893	-6.924	-2.744	-3.621	-6.289	8.072
	1063	1.252	-3.833	-.720	1.195	3.444	-9.988
	1092	-2.277	6.268	2.508	2.534	4.359	-9.355
	1082	-1.868	4.488	.956	-.063	-2.587	10.831

ELEMENT ID 150 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1088	3.782	-5.879	-1.479	-3.747	-3.914	9.080
	1055	.424	-4.755	-2.429	5.932	6.104	-7.943
	1089	-2.893	6.924	2.744	3.621	6.289	-8.072
	1063	-1.314	3.710	1.164	1.887	-4.699	11.400

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 151 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1087	3.024	-5.813	-1.439	-1.886	-.677	5.825
	1164	.000	.000	.000	.000	.000	.000
	1088	-3.782	5.879	1.479	3.747	3.914	-9.080
	1055	.758	-.065	-.041	-3.722	.931	2.600

ELEMENT ID 152 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1060	1.246	-4.332	-1.240	-2.092	-.589	3.292
	1062	.899	-.069	.176	-.907	.258	.812
	1085	.879	-1.412	-.375	-.389	-.952	1.120
	1087	-3.024	5.813	1.439	1.886	.677	-5.825

ELEMENT ID 153 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1059	.292	-1.311	-.232	-.194	-.009	.425
	1060	.175	.522	-.202	-.251	.545	.652
	1084	.412	-.624	.060	-.231	-.106	.418
	1085	-.879	1.412	.375	.389	.952	-1.120

ELEMENT ID 154 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1049	-.216	-1.359	-1.431	1.932	1.544	-1.301
	1171	2.524	.116	2.152	-2.458	-4.616	3.383
	1059	-1.206	-1.538	-2.452	1.061	1.293	-1.182
	1060	-1.103	2.781	1.732	.647	.458	-1.398

ELEMENT ID 155 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1171	1.190	-1.912	-.275	.336	.437	-1.647
	1055	.028	.814	.741	-2.446	-2.568	2.652
	1060	-.319	1.029	-.290	1.696	-.413	-2.546
	1062	-.899	.069	-.176	.907	-.258	-.812

ELEMENT ID 156 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1049	1.477	-2.647	-1.005	-.173	-3.481	3.680
	1050	3.896	-3.725	.183	3.595	-.802	-1.646
	1171	-3.714	1.796	-1.877	2.123	4.180	-1.737
	1055	-1.659	4.576	2.698	-.895	-2.081	1.602

SHELL ELEMENT JOINT FORCES

ELEMENT ID 157 -----						
LOAD						
COND JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1						
1147	-9.990	.494	-1.714	-1.549	-26.160	7.502
1111	15.661	2.147	9.348	.195	8.530	-3.685
1114	-17.321	-1.150	-4.945	-.072	34.258	-13.121
1112	11.650	-1.492	-2.689	-2.050	-18.542	3.239

ELEMENT ID 158 -----						
LOAD						
COND JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1						
1108	-5.988	-.331	-1.262	.059	-1.500	1.191
1110	7.387	1.381	2.463	.000	.000	.000
1147	-9.097	.724	-.093	.459	4.884	-9.251
1111	7.697	-1.773	-1.108	-.195	-8.530	3.685

ELEMENT ID 159 -----						
LOAD						
COND JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1						
1145	-9.008	-.154	-3.856	-3.511	-21.626	6.500
1147	14.163	-.127	2.801	.883	24.509	-3.270
1116	-14.414	-.479	-2.794	-.686	26.615	-8.191
1114	9.259	.759	3.849	-4.177	-26.082	12.627

ELEMENT ID 160 -----						
LOAD						
COND JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1						
1106	-4.864	.123	-.621	-.555	-2.372	.714
1108	5.988	.331	1.262	-.059	1.500	-1.191
1145	-6.048	.637	.354	1.325	3.308	-5.129
1147	4.923	-1.091	-.994	.206	-3.234	5.018

ELEMENT ID 161 -----						
LOAD						
COND JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1						
1143	-5.294	.166	-4.400	-7.229	-18.452	7.878
1145	12.288	.190	4.601	1.115	18.086	-3.787
1118	-15.319	-.446	-4.246	-3.587	24.570	-6.728
1116	8.326	.091	4.046	-8.736	-18.315	9.649

ELEMENT ID 162 -----						
LOAD						
COND JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1						
1104	-4.074	1.054	.064	.092	-.668	3.115
1106	4.864	-.123	.621	.555	2.372	-.714
1143	-3.558	-.258	.413	-1.449	3.534	-.101
1145	2.768	-.673	-1.098	1.071	.233	2.416

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 163 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
	1						
	1104	4.074	-1.054	-.064	-.092	.668	-3.115
	1143	-1.219	.737	.468	-1.049	2.373	-2.080
	1103	1.185	-.603	-.303	-.029	-.134	.154
	1103	-4.040	.920	-.101	.665	-3.146	4.739

ELEMENT ID 164 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
	1						
	1141	-7.761	3.106	-.394	-.003	-21.014	7.093
	1103	6.462	-1.238	.901	7.024	18.806	-25.072
	1163	-9.330	.745	-1.234	-6.709	20.174	.473
	1119	10.629	-2.613	.727	-16.385	-22.495	3.032

ELEMENT ID 165 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
	1						
	1100	-.437	-.047	-.956	-4.213	-2.577	6.349
	1101	1.451	-.317	.004	-2.776	-.141	.648
	1141	-2.612	-.570	-.344	-1.003	6.288	-4.878
	1103	1.599	.934	1.296	-.264	-.603	-2.254

ELEMENT ID 166 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
	1						
	1096	1.770	-.441	.383	-1.741	5.059	-3.893
	1098	4.307	2.957	2.282	-3.662	-1.921	8.150
	1100	-4.627	-2.833	-2.660	2.282	.050	-1.513
	1101	-1.451	.317	-.004	2.776	.141	-.648

ELEMENT ID 167 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
	1						
	1080	3.854	1.570	2.178	4.568	4.595	-11.836
	1078	8.947	5.415	3.898	-2.652	-5.197	15.709
	1096	-8.494	-4.028	-3.794	3.723	-6.760	2.655
	1098	-4.307	-2.957	-2.282	3.662	1.921	-8.150

ELEMENT ID 168 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
	1						
	1065	6.471	3.571	2.673	3.067	5.274	-16.251
	1076	10.276	4.839	4.086	-3.282	-8.516	14.144
	1080	-7.800	-2.996	-2.861	-2.833	-4.925	16.403
	1078	-8.947	-5.415	-3.898	2.652	5.197	-15.709

SHELL ELEMENT JOINT FORCES

ELEMENT ID 169 -----

LOAD

COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1065	-6.738	-3.684	-3.230	-8.188	-5.076	17.758
	1057	6.460	4.127	3.636	1.368	16.625	-16.450
	1076	-10.276	-4.839	-4.086	3.282	8.516	-14.144
	1074	10.555	4.396	3.680	-1.285	-11.808	16.751

ELEMENT ID 170 -----

LOAD

COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1057	-2.068	-1.098	-.451	2.889	-7.263	9.067
	1066	8.114	4.652	3.498	3.999	-6.674	1.264
	1074	-10.555	-4.396	-3.680	1.285	11.808	-16.751
	1073	4.508	.842	.634	1.833	-3.183	2.030

ELEMENT ID 171 -----

LOAD

COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1066	-.134	-1.148	-.171	1.244	1.090	2.896
	1068	4.004	1.943	.683	1.718	-1.303	.245
	1073	-4.508	-.842	-.634	-1.833	3.183	-2.030
	1069	.639	.046	.121	-.441	-.962	-.186

ELEMENT ID 172 -----

LOAD

COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1057	1.780	-.675	-1.545	-.621	-3.817	1.950
	1173	8.615	2.601	3.411	1.354	-3.662	1.143
	1066	-7.980	-3.504	-3.327	-5.242	5.585	-4.160
	1068	-2.415	1.577	1.461	-2.241	-.190	-1.879

ELEMENT ID 173 -----

LOAD

COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1068	1.313	-2.027	-.337	.396	.340	2.238
	1067	2.193	.034	-.507	-.211	2.072	-.724
	1069	-.639	-.046	-.121	.441	.962	.186
	1070	-2.867	2.039	.965	.000	.000	.000

ELEMENT ID 174 -----

LOAD

COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1173	-.974	-3.489	-4.475	-2.019	-4.955	6.225
	1053	3.643	1.886	2.936	.099	7.768	-4.311
	1068	-2.902	-1.494	-1.807	.127	1.153	-.604
	1067	.233	3.096	3.347	.211	-2.072	.724

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 175 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1052	5.353	.205	-.500	-5.203	2.106	-2.284
	1053	11.956	1.643	4.212	-3.379	-6.489	4.089
	1057	-9.668	-2.736	-4.775	-1.675	-4.499	3.320
	1173	-7.641	.888	1.064	.666	8.617	-7.368

ELEMENT ID 176 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1131	-20.460	12.270	15.526	31.445	-32.399	13.928
	1129	1.505	-3.197	-9.289	46.140	-14.388	-12.839
	1818	8.843	-.217	6.189	.000	.000	.000
	1718	10.112	-8.855	-12.426	-9.832	-14.714	-7.226

ELEMENT ID 177 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1129	-19.006	11.471	12.050	3.429	-29.647	7.305
	1127	10.881	-8.922	-10.680	53.473	33.814	.158
	1718	-8.109	7.108	10.091	15.616	18.413	-.421
	1718	16.233	-9.656	-11.461	-34.418	-54.487	10.718

ELEMENT ID 178 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1127	-23.638	12.893	12.492	-10.933	-61.639	-5.119
	1125	-.041	-.921	-13.906	23.726	-16.905	-8.252
	1718	6.406	-1.249	13.511	28.634	50.787	-3.071
	1618	17.272	-10.724	-12.097	.566	-.245	-3.408

ELEMENT ID 179 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1125	-16.644	6.857	11.895	17.588	-14.654	5.922
	1122	4.783	-3.642	-12.518	46.147	43.168	-1.655
	1618	-3.791	2.442	12.508	1.615	2.758	-.049
	1618	15.651	-5.656	-11.885	-24.023	-55.294	5.325

ELEMENT ID 180 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1122	-23.978	10.064	11.235	-5.176	-61.710	-3.217
	1121	-3.380	.256	-12.284	20.604	-1.987	-2.696
	1618	6.839	-2.505	13.908	21.842	52.780	-1.868
	1518	20.518	-7.816	-12.860	-1.607	-6.096	.210

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 181 -----
LOAD
COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
1
1121 -15.040 4.161 13.551 8.659 -11.180 .642
1163 6.520 -2.905 -10.960 24.170 46.239 -4.862
1518 -5.027 1.613 11.066 4.143 12.310 .087
1518 13.547 -2.869 -13.657 -15.632 -54.512 -1.254

ELEMENT ID 182 -----
LOAD
COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
1
1163 -23.782 6.478 13.651 -.386 -53.445 .641
1119 -2.891 -.192 -9.629 7.631 -14.650 -5.955
1518 6.736 -1.475 10.775 13.097 48.298 .957
1418 19.937 -4.811 -14.798 4.024 12.473 -1.259

ELEMENT ID 183 -----
LOAD
COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
1
1119 -10.001 1.303 13.999 3.527 8.434 8.442
1118 4.629 -.276 -11.975 8.549 12.992 -3.430
1418 -.204 -.172 12.280 -1.850 -6.660 -.124
1418 5.577 -.855 -14.304 -4.348 -16.529 2.063

ELEMENT ID 184 -----
LOAD
COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
1
1118 -17.181 1.566 12.850 4.640 -15.882 .018
1116 .873 -.136 -8.645 7.974 -1.100 -2.605
1418 4.934 .662 6.973 2.174 10.716 -.680
1318 11.375 -2.092 -11.178 1.458 3.757 -2.565

ELEMENT ID 185 -----
LOAD
COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
1
1116 -12.285 .524 7.393 1.448 -7.199 1.148
1115 9.543 -.355 -6.156 2.054 17.949 2.656
1318 -2.210 .244 7.730 1.162 8.798 .055
1318 4.952 -.412 -8.967 -1.942 -19.943 1.850

ELEMENT ID 186 -----
LOAD
COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
1
1115 -9.543 .355 6.156 -2.054 -17.949 -2.656
1114 7.594 -.268 -5.671 3.126 27.412 2.585
1318 -7.521 .434 6.139 1.102 18.375 .052
1318 9.469 -.521 -6.624 -1.758 -27.865 .899

SHELL ELEMENT JOINT FORCES

ELEMENT ID 187 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1114	-17.032	.658	6.767	1.123	-35.588	-2.091
	1112	10.401	-.516	.350	2.050	18.542	-3.239
	1318	-2.650	.535	1.266	-.022	16.877	-.290
	1218	9.281	-.677	-8.383	.000	.000	.000

ELEMENT ID 188 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1140	-9.209	7.547	1.529	-11.450	-18.843	6.019
	1170	8.259	-3.519	-.654	6.821	18.033	-9.981
	1122	-8.778	2.007	1.337	-7.264	26.560	-3.396
	1121	9.728	-6.035	-2.212	-22.451	-10.390	6.217

ELEMENT ID 189 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1170	-7.749	4.754	.399	-7.221	-17.061	6.817
	1141	7.465	-2.054	.113	3.541	16.042	-6.816
	1121	-8.808	1.619	.945	-6.813	23.558	-4.163
	1163	9.092	-4.318	-1.458	-17.075	-12.968	3.747

ELEMENT ID 190 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1161	-6.384	-.047	-2.978	-12.590	-12.530	18.581
	1162	10.744	-2.057	2.526	-.476	12.766	-7.357
	1140	-10.772	3.502	-.559	8.399	9.956	-22.414
	1170	6.412	-1.398	1.012	-1.207	-6.966	11.346

ELEMENT ID 191 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1162	-2.636	-.359	-2.052	-7.341	-6.850	7.917
	1100	6.650	.678	2.183	-2.366	3.997	-5.604
	1170	-6.923	.163	-.757	1.607	5.994	-8.183
	1141	2.908	-.481	.625	-2.535	-1.317	4.602

ELEMENT ID 192 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1094	2.628	-4.640	-1.917	-4.326	.157	-1.009
	1095	9.495	2.692	4.739	-2.272	4.333	-3.499
	1161	-12.370	-2.240	-5.440	4.268	-4.958	-1.522
	1162	.247	4.188	2.618	3.022	-3.238	4.126

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 193 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1095	1.129	-3.366	-2.054	-6.866	.154	.211
	1096	8.812	2.935	3.714	-6.936	3.865	2.517
	1162	-8.354	-1.771	-3.092	4.795	-2.678	-4.686
	1100	-1.586	2.203	1.433	4.296	-1.469	.768

ELEMENT ID 194 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1082	2.752	-3.046	-.422	-1.275	1.412	-4.331
	1081	4.261	2.199	2.293	-1.197	.303	2.116
	1094	-4.335	-2.361	-2.198	3.941	-4.505	2.754
	1095	-2.678	3.209	.327	5.166	-.767	-.654

ELEMENT ID 195 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1081	2.316	-1.478	.424	1.189	2.176	-5.966
	1080	7.718	2.479	2.891	.102	-2.439	2.548
	1095	-7.946	-2.535	-3.012	3.973	-3.720	3.942
	1096	-2.088	1.534	-.302	4.954	-2.164	-1.279

ELEMENT ID 196 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1063	1.669	-1.285	-.281	-2.557	1.370	-1.479
	1064	3.045	.872	.785	-1.712	.345	1.695
	1082	-2.308	.299	-.413	1.313	-2.232	1.450
	1081	-2.406	.114	-.092	1.207	.440	-2.129

ELEMENT ID 197 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1064	3.007	.172	2.019	6.437	2.791	-7.691
	1065	4.936	1.715	2.814	4.041	-8.431	7.368
	1081	-4.172	-.835	-2.625	-1.200	-2.920	5.980
	1080	-3.771	-1.053	-2.208	-1.837	2.769	-7.116

ELEMENT ID 198 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1055	.978	-1.796	-.774	.042	-.639	1.172
	1056	2.523	.675	1.106	-.773	.037	.620
	1063	-1.608	1.408	-.163	-.526	-.115	.067
	1064	-1.893	-.287	-.169	-.540	2.292	-1.129

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 199 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1056	2.386	.217	1.214	1.468	7.081	-5.364
	1057	6.442	2.143	3.677	-1.695	-8.867	7.051
	1064	-4.159	-.758	-2.634	-4.185	-5.428	7.124
	1065	-4.669	-1.602	-2.257	1.081	8.232	-8.875

ELEMENT ID 200 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1050	-.840	-.954	-.392	1.028	-1.117	.114
	1051	2.263	.020	1.101	-.078	.381	-1.041
	1055	-.529	1.227	-.196	1.089	-1.748	-.083
	1056	-.893	-.292	-.513	1.372	-.102	.111

ELEMENT ID 201 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1051	.842	.327	.085	-4.943	3.173	-2.145
	1052	6.120	2.036	2.264	-7.986	.737	2.561
	1056	-4.017	-.600	-1.807	-2.068	-7.016	4.632
	1057	-2.945	-1.763	-.542	-.265	7.821	-4.937

ELEMENT ID 202 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1034	1.325	-1.515	1.323	-4.414	-6.889	-3.510
	1035	-.225	.834	-1.723	5.021	4.838	2.501
	1039	.984	-1.410	1.246	5.022	6.855	3.268
	1040	-2.083	2.092	-.846	-4.719	-5.608	-2.148

ELEMENT ID 203 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1103	-5.205	-.013	-1.793	-7.396	-14.922	22.433
	1143	7.952	-1.367	3.296	12.375	3.271	-5.521
	1119	-9.855	4.932	-7.387	16.537	14.163	-12.603
	1119	7.108	-3.553	5.884	-10.009	-5.381	7.566

ELEMENT ID 204 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1119	-12.491	.122	-3.594	-1.301	19.927	-.483
	1143	2.119	.722	.223	-2.649	9.274	-.176
	1118	-1.851	.246	-.677	.176	.634	-.251
	1118	12.223	-1.090	4.047	-9.779	-22.314	10.392

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 205 -----
 LOAD
 COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 1
 119 - .111 -2.169 .930 -11.449 14.135 -3.762
 143 -8.724 5.615 -5.477 -35.471 -22.923 34.797
 103 5.808 2.859 10.278 22.791 26.610 -20.280
 103 3.027 -6.305 -5.731 - .311 1.663 -12.654

ELEMENT ID 206 -----
 LOAD
 COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 1
 103 1.871 1.025 .693 .014 -4.537 .160
 143 - .901 1.497 -1.092 3.488 2.822 -1.200
 104 .142 -1.807 - .212 - .443 - .095 .511
 104 -1.112 - .715 .611 .950 2.234 4.084

ELEMENT ID 207 -----
 LOAD
 COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 1
 1131 33.802 -32.503 -10.147 -57.865 -50.763 -12.979
 131 -34.337 31.070 8.526 53.985 60.759 15.650
 1132 11.623 -10.640 - .254 39.781 40.114 -47.038
 132 -11.088 12.072 1.876 -42.355 -41.592 48.561

ELEMENT ID 208 -----
 LOAD
 COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 1
 1132 7.112 -7.685 .168 -3.015 -3.192 1.014
 132 -8.480 6.829 -1.631 2.767 2.572 -1.103
 1149 - .520 2.178 1.025 - .682 -1.212 -6.036
 149 1.888 -1.322 .437 1.240 .704 5.674

ELEMENT ID 209 -----
 LOAD
 COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 1
 1084 - .412 .624 - .060 .231 .106 - .418
 84 .350 - .524 .032 - .072 - .056 .386
 1059 - .690 .218 1.005 - .562 - .743 .019
 59 .752 - .319 - .977 - .184 - .095 - .555

ELEMENT ID 210 -----
 LOAD
 COND JOINT F(X) F(Y) F(Z) M(X) M(Y) M(Z)
 1
 1059 1.604 2.631 1.680 - .304 - .541 .738
 59 -1.849 -2.308 -1.629 .544 .715 .991
 1049 2.600 .986 1.546 .358 .447 - .736
 49 -2.355 -1.309 -1.596 .493 .244 .740

S H E L L E L E M E N T J O I N T F O R C E S

ELEMENT ID 211 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1049	2.611	.373	1.255	-1.023	-.942	3.130
	49	-2.769	-.149	-1.269	.563	.652	-3.367
	1044	2.912	.197	-.854	-.241	-.436	-3.248
	44	-2.754	-.421	.867	.978	.740	3.497
ELEMENT ID 212 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1044	1.805	1.790	-1.180	-1.193	-.793	-.160
	44	-1.918	-1.630	1.160	.716	.740	1.036
	1039	1.770	3.021	-.324	.551	.313	1.125
	39	-1.657	-3.181	.344	-1.316	-1.167	-.143
ELEMENT ID 213 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1039	-3.276	.814	-2.630	-3.805	-4.066	-3.538
	39	3.232	-.760	2.616	4.200	4.540	2.271
	1033	.650	1.256	-1.630	4.137	4.421	2.145
	33	-.605	-1.310	1.644	-4.287	-4.582	-2.019
ELEMENT ID 214 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1033	.368	.028	-.221	.017	.034	.118
	33	-.442	.029	.243	-.108	.026	-.151
	1169	.375	.090	.084	-.135	-.111	-.048
	169	-.301	-.147	-.106	.062	-.033	.162
ELEMENT ID 215 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1020	-.155	1.087	.055	.392	.346	-1.578
	20	.229	-.827	-.040	-.428	-.395	1.585
	1015	-2.154	2.868	-.268	.361	.468	1.578
	15	2.080	-3.129	.252	-.312	-.313	-1.585
ELEMENT ID 216 -----							
LOAD							
COND	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1							
	1015	-.116	-.756	.259	.450	.429	-1.501
	15	.216	.447	-.250	-.538	-.597	2.513
	1010	-3.904	.356	.647	.211	.294	1.556
	10	3.804	-.046	-.656	-.714	-.600	-2.569

HELL ELEMENT JOINT FORCES

ELEMENT ID 217 -----

LOAD	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1010	-3.442	.169	-.451	.046	-.145	-3.130
	10	4.023	-.728	.405	.128	-.016	3.482
	1904	-3.465	.662	-.063	-.207	-.205	3.202
	904	2.884	-.103	.109	.684	.541	-3.554

ELEMENT ID 218 -----

LOAD	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1904	-1.075	1.298	-1.062	.711	.842	-.118
	904	1.613	-2.301	1.042	-.895	-.642	-.292
	1004	-2.104	.846	-1.013	-.955	-.621	-.030
	4	1.566	.157	1.033	.325	1.235	-.905

ELEMENT ID 219 -----

LOAD	JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1	1004	-1.025	.114	.592	.137	-.246	-1.113
	4	1.396	-.361	-.720	-.182	-.707	.841
	1001	-1.500	.962	.204	-.211	-.211	1.049
	1	1.129	-.714	-.076	-.395	-.311	-.777



STRUCTURAL ANALYSIS PROGRAMS

VERSION 5.03

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SHELL ELEMENT FORCES

MEMBRANE FORCES ARE IN FORCE PER UNIT LENGTH
BENDING MOMENTS ARE IN MOMENTS PER UNIT LENGTH

ELEMENT ID		1 -----						
LOAD COND		1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE		
4	1.2077E+00	6.2990E-01	-8.4704E-01	1.8137E+00	2.3841E-02	-35.58		
5	1.2402E+00	7.1935E-01	-6.6595E-01	1.6948E+00	2.6472E-01	-34.32		
1	-1.7129E+00	-6.0338E-01	1.6288E-02	-6.0314E-01	-1.7131E+00	89.16		
2	-1.4268E+00	3.1832E-01	-2.4216E-01	3.5130E-01	-1.4597E+00	-82.24		
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE		
4	-2.5931E-01	-3.7702E-01	-1.2189E-01	-1.8281E-01	-4.5352E-01	-32.11		
5	-2.3893E-01	3.4043E-01	3.5229E-02	3.4256E-01	-2.4106E-01	86.53		
1	-2.7094E-01	-8.0814E-02	-1.8948E-02	-7.8944E-02	-2.7281E-01	-84.36		
2	1.8667E-01	1.6314E-01	1.7486E-01	3.5016E-01	-3.5365E-04	43.07		

ELEMENT ID		2 -----						
LOAD COND		1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE		
904	-4.1476E-01	-4.5471E-01	-7.7714E-01	3.4266E-01	-1.2121E+00	-44.26		
905	-2.1395E-01	2.1467E-01	-1.3002E-01	2.5103E-01	-2.5031E-01	-74.38		
4	1.0397E+00	-1.8364E-02	-6.2455E-01	1.3292E+00	-3.0783E-01	-24.87		
5	1.2405E+00	6.5102E-01	2.2562E-02	1.2414E+00	6.5016E-01	2.19		
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE		
904	-2.0101E-01	-2.2680E-01	3.3250E-02	-1.7824E-01	-2.4956E-01	34.40		
905	-6.4227E-01	-1.3204E+00	-3.9533E-01	-4.6052E-01	-1.5021E+00	-24.69		
4	-1.8388E-01	-2.6934E-01	2.2698E-02	-1.7823E-01	-2.7499E-01	13.99		
5	-8.4319E-01	3.0874E-01	-4.0588E-01	4.3738E-01	-9.7183E-01	-72.41		

ELEMENT ID		3 -----						
LOAD COND		1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE		
5	-5.8885E-01	4.8135E-01	3.3630E-01	5.7826E-01	-6.8575E-01	73.93		
6	-6.9347E-01	4.3843E-01	1.1693E+00	1.1715E+00	-1.4266E+00	57.91		
2	5.7196E-01	7.8472E-01	3.5477E-01	1.0487E+00	3.0796E-01	53.35		
3	7.3802E-01	9.1786E-01	1.3645E+00	2.1954E+00	-5.3951E-01	46.89		
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE		
5	3.7787E-01	3.4919E-01	2.4977E-01	6.1372E-01	1.1335E-01	43.36		
6	4.6069E-02	9.1185E-02	1.1588E-01	1.8669E-01	-4.9433E-02	50.51		
2	1.8207E-01	-5.1562E-02	2.2491E-01	3.1869E-01	-1.8818E-01	31.28		
3	-1.2694E-01	2.4777E-03	1.1196E-01	6.7088E-02	-1.9155E-01	60.01		

ELEMENT ID		4 -----						
LOAD COND		1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE		
905	5.4934E-02	2.9534E-01	2.4165E-02	2.9774E-01	5.2529E-02	84.32		
906	-3.6997E-02	-1.1099E-02	-1.9471E-01	1.7109E-01	-2.1919E-01	-46.90		
5	-6.7046E-01	7.7718E-02	1.4400E-01	1.0448E-01	-6.9722E-01	79.47		
6	-7.6240E-01	-2.2872E-01	-7.4876E-02	-2.1841E-01	-7.7270E-01	-82.16		

SHELL ELEMENT FORCES

ELEMENT ID		4 -----						
LOAD COND		1 -----						
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE		
905	-1.0592E+00	-1.4167E+00	-2.8721E-01	-8.9964E-01	-1.5762E+00	-29.05		
906	-7.9857E-01	1.9058E-01	1.0813E+00	8.8503E-01	-1.4930E+00	57.29		
5	-4.8764E-01	4.6925E-01	-2.5709E-01	5.3395E-01	-5.5234E-01	-75.87		
6	9.8347E-01	-1.5999E-02	1.1114E+00	1.7023E+00	-7.3485E-01	32.89		

ELEMENT ID		5 -----						
LOAD COND		1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE		
10	1.3031E+00	6.5509E-01	-1.0377E+00	2.0662E+00	-1.0805E-01	-36.33		
12	1.3216E+00	6.0325E-01	-1.5751E+00	2.5780E+00	-6.5314E-01	-38.58		
904	-3.9403E-01	-3.3910E-01	-1.7192E-01	-1.9246E-01	-5.4067E-01	-49.54		
905	-1.8478E-01	5.7469E-01	-9.6478E-01	1.2318E+00	-8.4187E-01	-55.74		
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE		
10	-5.7357E-02	-3.0070E-01	1.4613E-01	1.1122E-02	-3.6918E-01	25.11		
12	-5.4310E-01	-3.3125E-01	7.5290E-02	-3.0722E-01	-5.6714E-01	72.30		
904	-4.0625E-01	-9.7351E-02	1.0124E-01	-6.7130E-02	-4.3647E-01	73.38		
905	-5.7756E-01	-1.4484E+00	6.7600E-02	-5.7234E-01	-1.4536E+00	4.41		

ELEMENT ID		6 -----						
LOAD COND		1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE		
12	-9.0503E-01	1.5118E+00	-1.1263E+00	1.9553E+00	-1.3485E+00	-68.51		
14	-6.8580E-01	1.4462E+00	3.3978E+00	3.9413E+00	-3.1809E+00	53.71		
905	5.4020E-01	1.7418E+00	-8.3194E-01	2.1672E+00	1.1480E-01	-62.92		
906	3.0247E-01	1.9313E+00	3.8540E+00	5.0560E+00	-2.8222E+00	50.97		
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE		
12	2.7915E-02	-2.0830E-01	-3.4719E-02	3.2912E-02	-2.1329E-01	-8.19		
14	-5.4850E-02	-3.6066E-01	-2.8122E-03	-5.4824E-02	-3.6069E-01	-.53		
905	-2.8472E-01	-1.4000E+00	2.3977E-03	-2.8471E-01	-1.4000E+00	.12		
906	2.0680E-01	1.5511E-01	8.4346E-02	2.6917E-01	9.2736E-02	36.48		

ELEMENT ID		7 -----						
LOAD COND		1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE		
12	-4.4357E-01	2.7447E+00	-5.2874E-01	2.8301E+00	-5.2897E-01	-80.83		
167	-4.4357E-01	2.7447E+00	-5.2874E-01	2.8301E+00	-5.2897E-01	-80.83		
14	-4.4357E-01	2.7447E+00	-5.2874E-01	2.8301E+00	-5.2897E-01	-80.83		
14	-4.4357E-01	2.7447E+00	-5.2874E-01	2.8301E+00	-5.2897E-01	-80.83		
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE		
12	-3.7741E-01	-1.3532E+00	5.3824E-01	-1.3884E-01	-1.5918E+00	23.90		
167	-3.7741E-01	-1.3532E+00	5.3824E-01	-1.3884E-01	-1.5918E+00	23.90		
14	-3.7741E-01	-1.3532E+00	5.3824E-01	-1.3884E-01	-1.5918E+00	23.90		
14	-3.7741E-01	-1.3532E+00	5.3824E-01	-1.3884E-01	-1.5918E+00	23.90		

ELEMENT ID		8 -----						
LOAD COND		1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE		
15	8.2897E-01	-1.5420E-02	-3.0253E-01	9.2617E-01	-1.1262E-01	-17.81		
17	9.4618E-01	3.5213E-01	-1.6298E-01	9.8796E-01	3.1036E-01	-14.38		
10	1.1439E+00	2.2303E-01	-5.6826E-01	1.4148E+00	-4.7923E-02	-25.49		
12	1.1599E+00	3.1293E-01	-3.9690E-01	1.3168E+00	1.5602E-01	-21.57		

SHELL ELEMENT FORCES

ELEMENT ID 8 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
15	-1.9162E-01	-1.3293E-01	5.9869E-02	-9.5600E-02	-2.2895E-01	58.06	
17	-2.1517E-01	2.4272E-01	5.4627E-02	2.4915E-01	-2.2160E-01	83.29	
10	-1.9828E-02	-1.8869E-01	8.3383E-02	1.4405E-02	-2.2293E-01	22.32	
12	-5.4969E-01	-3.4501E-01	1.1438E-01	-2.9387E-01	-6.0083E-01	65.91	

ELEMENT ID 9 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
17	9.1180E-01	5.0044E-01	5.9600E-01	1.3364E+00	7.5625E-02	35.48	
19	6.2468E+00	1.3386E+01	-2.9216E+00	1.4429E+01	5.2035E+00	-70.35	
12	-7.0477E-01	-1.5994E-01	-8.3505E-01	4.4601E-01	-1.3107E+00	-54.03	
167	1.5019E+00	1.2005E+01	-2.4739E+00	1.2559E+01	9.4831E-01	-77.39	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
17	-2.1670E-01	2.2047E-01	1.1263E-01	2.4778E-01	-2.4402E-01	76.37	
19	-3.2351E-01	4.9225E-01	2.1640E-01	5.4610E-01	-3.7736E-01	76.03	
12	-3.5698E-01	-3.1859E-01	1.7385E-01	-1.6288E-01	-5.1269E-01	48.15	
167	5.1830E-02	-8.4680E-02	3.0663E-01	2.9771E-01	-3.3056E-01	38.73	

ELEMENT ID 10 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
21	3.1599E-01	1.5899E-01	-1.9552E-01	4.4818E-01	2.6797E-02	-34.06	
22	5.4633E-01	1.3095E+00	3.3022E-01	1.4326E+00	4.2328E-01	69.56	
15	7.0511E-01	-4.7832E-01	-2.4432E-02	7.0561E-01	-4.7883E-01	-1.18	
17	1.3235E+00	1.4898E+00	2.5643E-01	1.6762E+00	1.1371E+00	53.98	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
21	-1.7838E-01	-3.8073E-02	-2.5838E-02	-3.3466E-02	-1.8298E-01	-79.89	
22	-2.3283E-01	3.4971E-01	-2.0817E-02	3.5045E-01	-2.3357E-01	-87.96	
15	-1.5213E-01	-2.9038E-02	1.0468E-01	3.0852E-02	-2.1202E-01	60.23	
17	-2.3214E-01	1.7868E-01	5.1898E-02	1.8514E-01	-2.3860E-01	82.91	

ELEMENT ID 11 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
22	3.8564E-01	6.4455E-01	1.3826E+00	1.9038E+00	-8.7360E-01	47.67	
24	5.1328E-02	-2.0131E-01	-2.3134E+00	2.2418E+00	-2.3918E+00	-43.44	
17	1.3544E+00	1.0587E+00	9.7090E-01	2.1886E+00	2.2445E-01	40.67	
19	1.0345E+00	-3.2277E-01	-2.5025E+00	2.9488E+00	-2.2371E+00	-37.41	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
22	-2.1828E-01	3.0963E-01	1.3252E-01	3.4103E-01	-2.4968E-01	76.67	
24	2.1796E-01	9.0958E-01	4.1067E-02	9.1201E-01	2.1553E-01	86.61	
17	-1.6634E-01	1.1051E-01	1.7320E-01	1.9380E-01	-2.4964E-01	64.32	
19	-1.9216E-01	3.8291E-01	1.3092E-01	4.1131E-01	-2.2056E-01	77.76	

ELEMENT ID 12 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
15	-1.7783E-01	3.8233E-01	7.9082E-02	3.9328E-01	-1.8879E-01	82.12	
20	-1.7783E-01	3.8233E-01	7.9082E-02	3.9328E-01	-1.8879E-01	82.12	
21	-1.7783E-01	3.8233E-01	7.9082E-02	3.9328E-01	-1.8879E-01	82.12	
21	-1.7783E-01	3.8233E-01	7.9082E-02	3.9328E-01	-1.8879E-01	82.12	

SHELL ELEMENT FORCES

ELEMENT ID	12 -----						ANGLE
LOAD COND	1 -----						
JOINT	M11	M22	M12	Mmax	Mmin		
15	-2.8439E-02	-1.8800E-01	-1.3566E-02	-2.7294E-02	-1.8915E-01	-4.83	
20	-2.8439E-02	-1.8800E-01	-1.3566E-02	-2.7294E-02	-1.8915E-01	-4.83	
21	-2.8439E-02	-1.8800E-01	-1.3566E-02	-2.7294E-02	-1.8915E-01	-4.83	
21	-2.8439E-02	-1.8800E-01	-1.3566E-02	-2.7294E-02	-1.8915E-01	-4.83	

ELEMENT ID	13 -----						ANGLE
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin		
20	1.6213E-01	6.6035E-02	1.9138E-01	3.1141E-01	-8.3237E-02	37.95	
25	1.6213E-01	6.6035E-02	1.9138E-01	3.1141E-01	-8.3237E-02	37.95	
21	1.6213E-01	6.6035E-02	1.9138E-01	3.1141E-01	-8.3237E-02	37.95	
21	1.6213E-01	6.6035E-02	1.9138E-01	3.1141E-01	-8.3237E-02	37.95	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
20	-1.2418E-01	-1.5957E-01	1.0604E-01	-3.4372E-02	-2.4938E-01	40.26	
25	-1.2418E-01	-1.5957E-01	1.0604E-01	-3.4372E-02	-2.4938E-01	40.26	
21	-1.2418E-01	-1.5957E-01	1.0604E-01	-3.4372E-02	-2.4938E-01	40.26	
21	-1.2418E-01	-1.5957E-01	1.0604E-01	-3.4372E-02	-2.4938E-01	40.26	

ELEMENT ID	14 -----						ANGLE
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin		
26	1.3138E-01	-4.5535E-01	4.7972E-01	4.0032E-01	-7.2429E-01	29.28	
27	2.6490E-01	-3.2447E-02	5.1854E-01	6.5566E-01	-4.2321E-01	37.00	
25	2.0109E-01	-3.3887E-01	-6.6804E-02	2.0923E-01	-3.4701E-01	-6.95	
21	3.1732E-01	7.1021E-02	-6.5581E-02	3.3369E-01	5.4648E-02	-14.02	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
26	-1.6340E-01	9.2386E-02	-2.8186E-02	9.5455E-02	-1.6647E-01	-83.79	
27	-5.8678E-02	7.1859E-02	-3.4895E-02	8.0601E-02	-6.7421E-02	-75.93	
25	6.9431E-02	-2.8392E-02	-1.2552E-02	7.1016E-02	-2.9977E-02	-7.20	
21	-3.1162E-01	2.9332E-02	-2.1354E-02	3.0664E-02	-3.1296E-01	-86.43	

ELEMENT ID	15 -----						ANGLE
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin		
27	-3.7613E-02	-5.5256E-02	4.8028E-01	4.3393E-01	-5.2680E-01	44.47	
28	1.8087E-01	6.3620E-01	8.9996E-02	6.5334E-01	1.6373E-01	79.22	
21	2.4000E-01	3.7802E-02	5.4200E-02	2.5361E-01	2.4190E-02	14.10	
22	4.3453E-01	7.2306E-01	-3.3082E-01	9.3970E-01	2.1789E-01	-56.78	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
27	-1.7856E-01	3.1294E-02	-5.0987E-02	4.3027E-02	-1.9029E-01	-77.04	
28	-4.0130E-01	-7.1972E-03	-2.3478E-02	-5.8035E-03	-4.0269E-01	-86.60	
21	-1.4972E-01	7.3843E-02	-2.5793E-02	7.6780E-02	-1.5265E-01	-83.50	
22	-2.5564E-01	2.7198E-01	4.9912E-03	2.7202E-01	-2.5568E-01	89.46	

ELEMENT ID	16 -----						ANGLE
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin		
28	-8.7723E-02	4.0574E-01	3.9837E-01	6.2760E-01	-3.0958E-01	60.89	
29	-1.4908E+00	-3.5193E+00	-1.8354E+00	-4.0806E-01	-4.6021E+00	-30.54	
22	2.1429E-01	3.8756E-01	6.2648E-01	9.3336E-01	-3.3151E-01	48.94	
24	-7.0969E-01	-3.4436E+00	-1.5302E+00	-2.4779E-02	-4.1285E+00	-24.11	

SHELL ELEMENT FORCES

ELEMENT ID	-----					
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
28	-4.0365E-01	4.2483E-02	-8.2060E-02	5.7098E-02	-4.1827E-01	-79.90
29	9.5646E-01	1.6753E+00	-2.8158E-01	1.7725E+00	8.5930E-01	-70.96
22	-2.4481E-01	2.6036E-01	7.7601E-02	2.7201E-01	-2.5646E-01	81.46
24	2.1711E-01	8.6589E-01	-1.4125E-01	8.9531E-01	1.8769E-01	-78.24

ELEMENT ID	-----					
LOAD COND	-----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
29	-3.7622E+00	-6.8806E+00	-5.8010E-01	-3.6578E+00	-6.9850E+00	-10.20
31	-3.7622E+00	-6.8806E+00	-5.8010E-01	-3.6578E+00	-6.9850E+00	-10.20
24	-3.7622E+00	-6.8806E+00	-5.8010E-01	-3.6578E+00	-6.9850E+00	-10.20
24	-3.7622E+00	-6.8806E+00	-5.8010E-01	-3.6578E+00	-6.9850E+00	-10.20
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
29	2.0685E+00	3.0008E+00	-3.6988E-01	3.1297E+00	1.9396E+00	-70.78
31	2.0685E+00	3.0008E+00	-3.6988E-01	3.1297E+00	1.9396E+00	-70.78
24	2.0685E+00	3.0008E+00	-3.6988E-01	3.1297E+00	1.9396E+00	-70.78
24	2.0685E+00	3.0008E+00	-3.6988E-01	3.1297E+00	1.9396E+00	-70.78

ELEMENT ID	-----					
LOAD COND	-----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
29	-3.3784E-01	-6.3122E+00	1.3882E+00	-3.1017E-02	-6.6190E+00	12.46
30	-3.3784E-01	-6.3122E+00	1.3882E+00	-3.1017E-02	-6.6190E+00	12.46
31	-3.3784E-01	-6.3122E+00	1.3882E+00	-3.1017E-02	-6.6190E+00	12.46
31	-3.3784E-01	-6.3122E+00	1.3882E+00	-3.1017E-02	-6.6190E+00	12.46
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
29	2.0255E+00	8.0582E-01	-6.5039E-01	2.3072E+00	5.2408E-01	-23.42
30	2.0255E+00	8.0582E-01	-6.5039E-01	2.3072E+00	5.2408E-01	-23.42
31	2.0255E+00	8.0582E-01	-6.5039E-01	2.3072E+00	5.2408E-01	-23.42
31	2.0255E+00	8.0582E-01	-6.5039E-01	2.3072E+00	5.2408E-01	-23.42

ELEMENT ID	-----					
LOAD COND	-----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
33	-1.6371E-01	-1.8502E-01	2.9671E-01	1.2254E-01	-4.7127E-01	43.97
34	-1.4425E-01	9.2494E-03	8.6451E-02	4.8104E-02	-1.8310E-01	65.80
169	5.2974E-01	-1.8387E-02	3.0168E-01	6.6326E-01	-1.5191E-01	23.87
32	6.3675E-01	2.9636E-01	2.4953E-01	7.6859E-01	1.6451E-01	27.85
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
33	-9.4340E-02	1.5017E-01	7.7816E-02	1.7284E-01	-1.1700E-01	73.76
34	-2.0777E-01	8.2714E-02	4.3210E-02	8.9006E-02	-2.1406E-01	81.72
169	1.6954E-02	1.3468E-01	5.1470E-02	1.5401E-01	-2.3748E-03	69.42
32	-5.0061E-01	-1.1686E-01	-1.1805E-02	-1.1650E-01	-5.0097E-01	-88.24

ELEMENT ID	-----					
LOAD COND	-----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
34	4.0285E-01	2.3874E-01	-2.9831E-01	6.3019E-01	1.1405E-02	-37.31
26	4.0285E-01	2.3874E-01	-2.9831E-01	6.3019E-01	1.1405E-02	-37.31
32	4.0285E-01	2.3874E-01	-2.9831E-01	6.3019E-01	1.1405E-02	-37.31
32	4.0285E-01	2.3874E-01	-2.9831E-01	6.3019E-01	1.1405E-02	-37.31

SHELL ELEMENT FORCES

ELEMENT ID	-----						
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
34	-1.7998E-01	-4.1082E-01	3.3545E-01	5.9347E-02	-6.5015E-01	35.51	
26	-1.7998E-01	-4.1082E-01	3.3545E-01	5.9347E-02	-6.5015E-01	35.51	
32	-1.7998E-01	-4.1082E-01	3.3545E-01	5.9347E-02	-6.5015E-01	35.51	
32	-1.7998E-01	-4.1082E-01	3.3545E-01	5.9347E-02	-6.5015E-01	35.51	

ELEMENT ID	-----						
LOAD COND	-----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
34	-2.6406E-01	1.2093E-01	7.3767E-02	1.3458E-01	-2.7771E-01	79.52	
35	-3.1368E-01	-4.4183E-02	6.8793E-02	-2.7638E-02	-3.3023E-01	76.48	
26	9.3460E-02	1.8968E-01	2.2723E-01	3.7384E-01	-9.0702E-02	50.98	
27	6.2049E-02	1.0240E-01	2.5093E-01	3.3397E-01	-1.6951E-01	47.30	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
34	-1.5238E-01	-5.4613E-02	-5.3567E-02	-3.0977E-02	-1.7601E-01	-66.19	
35	-7.8091E-02	4.2544E-02	-4.4801E-02	5.7361E-02	-9.2909E-02	-71.70	
26	-4.6100E-02	1.1632E-01	-5.1409E-02	1.3122E-01	-6.1004E-02	-73.83	
27	-9.5399E-02	2.5883E-02	-4.4466E-02	4.0439E-02	-1.0995E-01	-71.87	

ELEMENT ID	-----						
LOAD COND	-----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
35	-1.2541E-01	-1.0197E-01	3.4227E-01	2.2878E-01	-4.5616E-01	45.98	
36	-4.6947E-02	1.5802E-01	-1.6579E-01	2.5044E-01	-1.3937E-01	-60.86	
27	-1.4002E-02	-2.2904E-02	1.8316E-01	1.6476E-01	-2.0167E-01	44.30	
28	3.0901E-02	1.2862E-01	-3.1667E-01	4.0018E-01	-2.4066E-01	-49.39	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
35	-9.0714E-02	5.9684E-02	-6.1473E-02	8.1613E-02	-1.1264E-01	-70.37	
36	-1.1149E-01	1.7027E-01	-1.4132E-01	2.2894E-01	-1.7016E-01	-67.46	
27	-1.8920E-01	2.5610E-02	-2.5490E-02	2.8593E-02	-1.9219E-01	-83.32	
28	-4.2976E-01	4.1667E-02	-1.2116E-01	7.0983E-02	-4.5908E-01	-76.40	

ELEMENT ID	-----						
LOAD COND	-----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
36	1.8840E+00	7.9372E-01	-4.2047E-01	2.0273E+00	6.5040E-01	-18.82	
37	9.5505E-01	-2.4311E+00	-9.0890E-01	1.1836E+00	-2.6597E+00	-14.11	
28	-2.0451E-01	1.6103E-01	1.5942E-02	1.6173E-01	-2.0520E-01	87.51	
29	-1.1895E+00	-2.9562E+00	-6.3712E-01	-9.8373E-01	-3.1620E+00	-17.90	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
36	5.8513E-02	2.8458E-01	-2.0284E-01	4.0376E-01	-6.0666E-02	-59.56	
37	6.4143E-01	-4.5584E-01	-3.4980E-01	7.4025E-01	-5.5467E-01	-16.04	
28	-3.5246E-01	8.3223E-02	-1.8320E-01	1.5002E-01	-4.1926E-01	-69.97	
29	7.5348E-01	1.4223E+00	-4.4959E-01	1.6482E+00	5.2756E-01	-63.32	

ELEMENT ID	-----						
LOAD COND	-----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
37	-3.2876E-01	-2.1817E+00	-1.2981E+00	3.3957E-01	-2.8500E+00	-27.24	
38	1.3683E+00	1.7216E+00	4.5680E+00	6.1163E+00	-3.0264E+00	46.11	
29	1.9423E+00	-1.9134E+00	4.0227E-01	1.9838E+00	-1.9549E+00	5.89	
30	2.6803E+00	2.6018E+00	6.2777E+00	8.9189E+00	-3.6368E+00	44.82	

SHELL ELEMENT FORCES

ELEMENT ID 24 -----							
LOAD COND 1 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
37	3.0949E-01	-3.6576E-01	-5.6722E-02	3.1423E-01	-3.7049E-01	-4.77	
38	1.7187E-01	5.6023E-01	9.8162E-01	1.3667E+00	-6.3459E-01	50.59	
29	2.8127E+00	2.1126E+00	-3.0661E-01	2.9280E+00	1.9973E+00	-20.61	
30	1.8838E+00	-9.2817E-01	9.3625E-01	2.1670E+00	-1.2114E+00	16.83	

ELEMENT ID 25 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
39	3.9449E-02	-1.2101E-01	-1.2328E-01	1.0631E-01	-1.8787E-01	-28.47	
34	3.9449E-02	-1.2101E-01	-1.2328E-01	1.0631E-01	-1.8787E-01	-28.47	
33	3.9449E-02	-1.2101E-01	-1.2328E-01	1.0631E-01	-1.8787E-01	-28.47	
33	3.9449E-02	-1.2101E-01	-1.2328E-01	1.0631E-01	-1.8787E-01	-28.47	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
39	-1.0915E-02	-2.4459E-01	1.6295E-01	7.2753E-02	-3.2826E-01	27.18	
34	-1.0915E-02	-2.4459E-01	1.6295E-01	7.2753E-02	-3.2826E-01	27.18	
33	-1.0915E-02	-2.4459E-01	1.6295E-01	7.2753E-02	-3.2826E-01	27.18	
33	-1.0915E-02	-2.4459E-01	1.6295E-01	7.2753E-02	-3.2826E-01	27.18	

ELEMENT ID 26 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
39	3.3963E-01	2.5563E-02	1.8771E-01	4.2733E-01	-6.2138E-02	25.04	
40	3.9879E-01	2.1854E-01	1.1600E-01	4.5556E-01	1.6177E-01	26.08	
34	-3.6409E-01	-1.8445E-01	2.6108E-01	1.8353E-03	-5.5037E-01	54.49	
35	-3.1262E-01	5.1182E-03	1.1139E-01	4.0280E-02	-3.4778E-01	72.48	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
39	-4.0608E-02	1.3216E-01	-3.6547E-02	1.3958E-01	-4.8021E-02	-78.53	
40	4.9172E-02	3.1577E-01	-5.6405E-02	3.2721E-01	3.7729E-02	-78.53	
34	-2.9763E-01	3.2733E-02	-5.3593E-03	3.2820E-02	-2.9772E-01	-89.07	
35	-8.2976E-02	-4.4129E-02	-4.9334E-02	-1.0532E-02	-1.1657E-01	-55.75	

ELEMENT ID 27 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
40	1.8057E-01	9.4361E-02	4.2237E-01	5.6204E-01	-2.8710E-01	42.09	
41	1.9840E-01	1.5725E-01	3.2289E-01	5.0137E-01	-1.4573E-01	43.18	
35	-9.5250E-02	3.1579E-02	2.5522E-01	2.3115E-01	-2.9482E-01	51.98	
36	-8.5443E-02	6.0070E-02	1.4855E-01	1.5272E-01	-1.7809E-01	58.05	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
40	-4.0840E-02	2.7374E-01	-1.8095E-02	2.7478E-01	-4.1877E-02	-86.72	
41	3.4860E-01	3.2771E-01	-7.7558E-02	4.1641E-01	2.5990E-01	-41.17	
35	7.7745E-02	3.8893E-02	-7.5902E-02	1.3667E-01	-2.0030E-02	-37.82	
36	-5.2757E-01	-2.2800E-01	-1.3180E-01	-1.7827E-01	-5.7730E-01	-69.33	

ELEMENT ID 28 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
41	-1.3141E-01	1.6160E-02	2.6277E-01	2.1531E-01	-3.3056E-01	52.84	
42	-1.6532E-01	-9.1360E-02	5.7678E-01	4.4963E-01	-7.0631E-01	46.83	
36	1.7817E+00	5.8195E-01	3.3975E-01	1.8712E+00	4.9242E-01	14.76	
37	1.7582E+00	4.9641E-01	7.0319E-01	2.0720E+00	1.8258E-01	24.05	

SHELL ELEMENT FORCES

ELEMENT ID 28 -----							
LOAD COND 1 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
41	1.1833E-01	2.6337E-01	-2.9862E-02	2.6928E-01	1.1242E-01	-78.81	
42	3.6393E-04	1.7773E-01	8.6502E-02	2.1293E-01	-3.4837E-02	67.86	
36	2.7735E-01	5.9248E-02	-2.0980E-01	4.0475E-01	-6.8154E-02	-31.27	
37	7.0887E-01	-3.3450E-01	-6.3062E-02	7.1266E-01	-3.3830E-01	-3.45	

ELEMENT ID 29 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
42	-9.2679E-02	-1.4266E-01	-2.8559E-01	1.6901E-01	-4.0435E-01	-42.50	
43	-5.0170E-02	2.8034E-02	4.8781E-01	4.7831E-01	-5.0044E-01	47.29	
37	4.4331E-01	8.2616E-03	2.6264E-01	5.6681E-01	-1.1524E-01	25.18	
38	5.2721E-01	2.5642E-01	1.0456E+00	1.4461E+00	-6.6247E-01	41.31	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
42	2.2991E-01	1.7416E-01	1.1333E-01	3.1874E-01	8.5328E-02	38.09	
43	-9.9409E-02	-7.9776E-02	2.4752E-01	1.5813E-01	-3.3731E-01	46.14	
37	5.5062E-01	-3.3661E-01	3.1545E-01	6.5134E-01	-4.3733E-01	17.71	
38	7.5791E-01	5.5988E-01	4.5878E-01	1.1282E+00	1.8955E-01	38.91	

ELEMENT ID 30 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
44	4.8072E-03	6.2330E-03	3.2584E-01	3.3136E-01	-3.2032E-01	45.06	
45	4.7090E-02	1.5420E-01	2.5797E-01	3.6412E-01	-1.6283E-01	50.86	
39	3.6264E-01	1.2248E-01	2.5222E-01	5.2191E-01	-3.6785E-02	32.27	
40	4.0226E-01	2.4826E-01	1.9828E-01	5.3797E-01	1.1255E-01	34.39	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
44	1.3724E-01	3.7877E-01	-7.9368E-02	4.0251E-01	1.1349E-01	-73.34	
45	2.3413E-02	3.3508E-01	-9.1142E-02	3.5978E-01	-1.2828E-03	-74.84	
39	-1.2804E-02	1.7254E-01	-6.9647E-02	1.9579E-01	-3.6058E-02	-71.54	
40	2.7108E-02	2.4343E-01	-7.7251E-02	2.6819E-01	2.3539E-03	-72.23	

ELEMENT ID 31 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
45	4.4980E-01	2.2085E-01	5.4550E-02	4.6213E-01	2.0852E-01	12.74	
46	4.8155E-01	3.3032E-01	-5.7630E-02	5.0100E-01	3.1086E-01	-18.66	
40	1.7967E-01	9.3141E-02	3.8683E-01	5.2565E-01	-2.5283E-01	41.81	
41	2.4671E-01	3.1201E-01	2.6388E-01	5.4525E-01	1.3473E-02	48.53	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
45	1.4169E-01	3.6143E-01	-3.3483E-02	3.6642E-01	1.3670E-01	-81.53	
46	-2.8918E-01	8.8492E-02	3.4353E-02	9.1591E-02	-2.9228E-01	84.85	
40	-1.3325E-01	2.4285E-01	-3.1175E-02	2.4542E-01	-1.3581E-01	-85.29	
41	5.4665E-01	5.8306E-01	4.3280E-02	6.1181E-01	5.1790E-01	56.41	

ELEMENT ID 32 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
46	-7.2105E-02	2.4220E-01	-3.3456E-01	4.5468E-01	-2.8459E-01	-57.58	
47	-4.8678E-02	3.1717E-01	-1.5189E-01	3.7201E-01	-1.0352E-01	-70.15	
41	-1.0063E-01	1.1612E-01	2.4198E-01	2.7288E-01	-2.5740E-01	57.06	
42	-1.4835E-02	4.0573E-01	4.2480E-01	6.6944E-01	-2.7855E-01	58.17	

SHELL ELEMENT FORCES

ELEMENT ID 32 -----							
LOAD COND 1 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
46	1.8703E-01	1.7870E-01	1.0102E-01	2.8397E-01	8.1762E-02	43.82	
47	-2.5096E-01	1.1918E-01	1.2197E-01	1.5576E-01	-2.8754E-01	73.31	
41	6.5590E-02	4.1373E-01	1.0386E-01	4.4236E-01	3.6957E-02	74.59	
42	7.8405E-02	2.9347E-01	1.1472E-01	3.4318E-01	2.8695E-02	66.57	

ELEMENT ID 33 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
47	-1.9189E+00	-2.4878E-01	2.0059E-01	-2.2502E-01	-1.9427E+00	83.25	
48	-1.9875E+00	-4.7122E-01	5.7415E-01	-2.7835E-01	-2.1804E+00	71.43	
42	8.4186E-02	4.4211E-01	-3.8550E-01	6.8816E-01	-1.6187E-01	-57.45	
43	-4.4514E-02	4.2260E-03	8.4415E-02	6.7718E-02	-1.0801E-01	53.05	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
47	-3.8008E-01	-1.3438E-02	2.2356E-01	9.2349E-02	-4.8587E-01	64.68	
48	8.2535E-01	3.7835E-01	1.7186E-01	8.8379E-01	3.1991E-01	18.78	
42	5.9116E-01	4.3075E-01	1.3969E-01	6.7203E-01	3.4988E-01	30.07	
43	-5.4306E-01	-2.4821E-01	7.6184E-02	-2.2969E-01	-5.6158E-01	76.34	

ELEMENT ID 34 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
49	-2.2763E-01	-3.2062E-02	6.4107E-01	5.1864E-01	-7.7833E-01	49.34	
50	-2.1361E-01	9.9711E-03	5.1439E-01	4.2458E-01	-6.2821E-01	51.13	
44	2.3530E-02	8.9689E-02	4.3891E-01	4.9677E-01	-3.8355E-01	47.16	
45	-6.0805E-04	1.3859E-02	3.2939E-01	3.3610E-01	-3.2285E-01	45.63	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
49	3.2584E-02	1.5878E-01	-2.0088E-02	1.6190E-01	2.9463E-02	-81.17	
50	-1.1309E-02	-2.9368E-01	-1.2256E-02	-1.0778E-02	-2.9421E-01	-2.48	
44	1.2267E-01	3.9416E-01	-6.7208E-02	4.0989E-01	1.0694E-01	-76.83	
45	1.3111E-01	3.7818E-01	-9.8682E-02	4.1276E-01	9.6533E-02	-70.69	

ELEMENT ID 35 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
50	1.1700E-01	-1.5597E-01	4.1187E-01	4.1441E-01	-4.5338E-01	35.83	
51	1.3271E-01	-1.4742E-01	1.2094E-02	1.3324E-01	-1.4794E-01	2.47	
45	3.7688E-01	-4.7203E-02	2.7855E-01	5.1491E-01	-1.8523E-01	26.36	
46	3.4146E-01	-1.1766E-01	-1.0551E-01	3.6455E-01	-1.4075E-01	-12.34	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
50	-6.3463E-01	-4.7955E-01	5.7695E-02	-4.6044E-01	-6.5374E-01	71.68	
51	1.7997E-02	-8.3390E-01	1.0501E-01	3.0750E-02	-8.4666E-01	6.92	
45	2.7651E-01	4.5131E-01	-3.2581E-02	4.5719E-01	2.7063E-01	-79.78	
46	-3.1537E-01	5.7870E-02	-5.3095E-02	6.5276E-02	-3.2278E-01	-82.06	

ELEMENT ID 36 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
51	1.2561E-01	-1.1930E-01	-1.4202E-01	1.9068E-01	-1.8437E-01	-24.62	
52	1.9533E-01	1.7159E-01	-8.4681E-01	1.0304E+00	-6.6344E-01	-44.60	
46	-1.9411E-01	-1.9072E-01	-2.3848E-01	4.6065E-02	-4.3090E-01	-45.20	
47	-1.0080E-01	5.3045E-02	-9.6585E-01	9.4503E-01	-9.9278E-01	-47.28	

S H E L L E L E M E N T F O R C E S

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ELEMENT ID      36 -----
JOINT           M11           M22           M12           Mmax           Mmin           ANGLE
51 -6.0815E-01 -1.0598E+00  6.2532E-02 -5.9965E-01 -1.0683E+00   7.74
52 -6.6287E-01 -1.4275E+00  2.3593E-01 -5.9594E-01 -1.4944E+00  15.84
46  4.7944E-01  3.0363E-01  1.2210E-02  4.8028E-01  3.0278E-01   3.95
47 -5.6032E-01 -2.2619E-01  1.1411E-01 -1.9094E-01 -5.9557E-01  72.83

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ELEMENT ID      37 -----
LOAD COND      1 -----
JOINT           S11           S22           S12           Fmax           Fmin           ANGLE
52 -1.3607E+00  8.6490E-02 -6.4491E-01  3.3217E-01 -1.6064E+00  -69.15
53 -1.6172E+00 -7.5893E-01 -9.6352E-01 -1.3331E-01 -2.2428E+00  -57.00
47 -1.8020E+00  1.0353E-01 -1.3257E+00  7.8336E-01 -2.4818E+00  -62.85
48 -2.1699E+00 -1.1349E+00 -1.6755E+00  1.0121E-01 -3.4060E+00  -53.58
JOINT           M11           M22           M12           Mmax           Mmin           ANGLE
52 -1.8713E-01 -1.3670E+00  1.2045E-02 -1.8701E-01 -1.3671E+00   .58
53 -1.5554E-01 -3.0125E-01  1.4009E-01 -7.0497E-02 -3.8630E-01  31.26
47 -3.8963E-02 -1.3674E-01  2.0999E-01  1.2775E-01 -3.0345E-01  38.45
48  5.8197E-01  3.2701E-01  2.9917E-01  7.7969E-01  1.2929E-01  33.46

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ELEMENT ID      38 -----
LOAD COND      1 -----
JOINT           S11           S22           S12           Fmax           Fmin           ANGLE
131 -4.3500E+00 -1.4542E+00  2.6897E-01 -1.4294E+00 -4.3748E+00   84.74
129 -4.0587E+00 -4.8889E-01  1.1908E+00 -1.2815E-01 -4.4195E+00   73.15
132 -2.4711E+00 -7.0596E-01 -1.5775E+00  2.1907E-01 -3.3962E+00  -59.61
134 -2.3305E+00 -2.3025E-01 -5.9647E-01 -7.2676E-02 -2.4881E+00  -75.20
JOINT           M11           M22           M12           Mmax           Mmin           ANGLE
131  4.4825E+00  7.2493E+00 -3.1857E-03  7.2493E+00  4.4825E+00  -89.93
129  1.6754E+00  6.2207E+00  9.9456E-02  6.2229E+00  1.6732E+00   88.75
132  2.2468E+00  1.1082E-01 -1.4632E-02  2.2469E+00  1.1072E-01   - .39
134  1.5469E+00  4.3374E-01  3.3778E-01  1.6414E+00  3.3926E-01  15.63

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ELEMENT ID      39 -----
LOAD COND      1 -----
JOINT           S11           S22           S12           Fmax           Fmin           ANGLE
132 -2.7431E+00 -1.6586E+00  1.6942E+00 -4.2200E-01 -3.9797E+00   53.87
134 -2.7619E+00 -1.6258E+00 -6.3969E-01 -1.3384E+00 -3.0493E+00  -65.80
149  3.8838E+00  3.7986E-01 -5.3969E-02  3.8846E+00  3.7903E-01   - .88
151  3.2346E+00 -1.8520E+00 -1.2990E+00  3.5472E+00 -2.1646E+00  -13.53
JOINT           M11           M22           M12           Mmax           Mmin           ANGLE
132  1.8595E+00  5.4828E-01  1.4636E-01  1.8757E+00  5.3214E-01   6.29
134  1.1236E+00  5.8808E-01  2.0828E-01  1.1950E+00  5.1661E-01  18.94
149  1.5574E+00 -7.5982E-02  1.7614E-01  1.5762E+00 -9.4760E-02   6.09
151  1.7871E+00 -1.8694E-03  5.2904E-01  1.9318E+00 -1.4661E-01  15.30

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ELEMENT ID      40 -----
LOAD COND      1 -----
JOINT           S11           S22           S12           Fmax           Fmin           ANGLE
129 -3.4294E+00 -6.3858E-01 -3.3791E-01 -5.9825E-01 -3.4698E+00  -83.19
127 -3.3912E+00 -5.3018E-01 -1.1882E-01 -5.2525E-01 -3.3961E+00  -87.63
134 -3.0280E+00 -5.6729E-01 -9.4200E-01 -2.4808E-01 -3.3472E+00  -71.28
136 -3.0106E+00 -4.8959E-01 -7.2153E-01 -2.9769E-01 -3.2025E+00  -75.11

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SHELL ELEMENT FORCES

ELEMENT ID	40 -----					
LOAD COND	1 -----					
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
129	3.0858E+00	6.5852E+00	3.7753E-01	6.6255E+00	3.0455E+00	83.91
127	1.3674E+00	6.5493E+00	5.4194E-01	6.6054E+00	1.3113E+00	84.09
134	1.9870E+00	6.0622E-01	5.7778E-01	2.1969E+00	3.9635E-01	19.96
136	1.3737E-01	2.6828E-02	7.7438E-01	8.5845E-01	-6.9425E-01	42.96

ELEMENT ID	41 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
134	-3.4908E+00	-2.0899E+00	-9.8507E-01	-1.5816E+00	-3.9991E+00	-62.71
136	-3.3636E+00	-1.6826E+00	-1.1060E+00	-1.1340E+00	-3.9122E+00	-63.62
151	1.6852E+00	2.1695E-02	2.4611E-01	1.7209E+00	-1.3952E-02	8.24
153	1.8222E+00	4.8679E-01	1.8860E-01	1.8483E+00	4.6066E-01	7.89
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
134	1.5938E+00	9.1184E-01	4.9022E-01	1.8500E+00	6.5567E-01	27.59
136	4.3153E-01	8.1705E-01	6.3459E-01	1.2875E+00	-3.8930E-02	53.45
151	1.7737E+00	1.7037E-01	6.5558E-01	2.0076E+00	-6.3557E-02	19.64
153	7.2140E-01	-4.4948E-01	9.6339E-01	1.2633E+00	-9.9137E-01	29.36

ELEMENT ID	42 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
127	-3.1015E+00	-4.8453E-01	-1.1385E-01	-4.7959E-01	-3.1065E+00	-87.51
125	-3.3692E+00	-1.3784E+00	-1.3648E-01	-1.3691E+00	-3.3785E+00	-86.10
136	-2.1943E+00	-2.6701E-01	-1.2190E+00	3.2319E-01	-2.7845E+00	-64.16
138	-2.4186E+00	-1.0120E+00	-1.2612E+00	-2.7126E-01	-3.1593E+00	-59.57
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
127	2.0640E+00	6.6620E+00	7.5952E-01	6.7842E+00	1.9418E+00	80.86
125	8.8358E-01	6.6597E+00	8.2340E-01	6.7747E+00	7.6850E-01	82.04
136	3.1569E-01	7.4121E-02	8.9818E-01	1.1012E+00	-7.1136E-01	41.17
138	-1.4021E+00	-4.3722E-01	8.5807E-01	6.4748E-02	-1.9040E+00	59.67

ELEMENT ID	43 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
136	-2.5153E+00	-1.6905E+00	-1.2703E+00	-7.6730E-01	-3.4385E+00	-53.99
138	-2.3518E+00	-1.2952E+00	-2.3407E+00	5.7607E-01	-4.2230E+00	-51.36
153	-3.1505E+00	-4.0441E-01	-1.4935E-03	-4.0440E-01	-3.1505E+00	-89.97
155	-3.0392E+00	1.2151E-01	-1.0968E+00	4.6482E-01	-3.3825E+00	-72.62
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
136	-3.6958E-02	7.7839E-01	6.9578E-01	1.1771E+00	-4.3570E-01	60.18
138	-7.6489E-01	2.8336E-01	5.7721E-01	5.3890E-01	-1.0204E+00	66.12
153	1.5449E+00	-2.7111E-02	1.2556E+00	2.2403E+00	-7.2247E-01	28.98
155	-3.1023E+00	-1.8700E-01	3.0186E-01	-1.5608E-01	-3.1332E+00	84.15

ELEMENT ID	44 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
125	-2.9990E+00	-1.0717E+00	-3.8133E-01	-9.9899E-01	-3.0717E+00	-79.21
122	-2.8972E+00	-7.1123E-01	4.1669E-01	-6.3450E-01	-2.9739E+00	79.57
138	-7.9752E-01	-3.9287E-01	-5.6166E-01	1.7994E-03	-1.1922E+00	-54.91
140	-6.8985E-01	-5.8110E-02	2.9440E-01	5.7810E-02	-8.0577E-01	68.51

SHELL ELEMENT FORCES

ELEMENT ID	44 -----						
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
125	2.9317E+00	7.1905E+00	6.3339E-01	7.2828E+00	2.8395E+00	81.72	
122	6.9064E-01	6.3760E+00	6.7337E-02	6.3768E+00	6.8984E-01	89.32	
138	-2.7965E+00	-7.9161E-01	3.9442E-01	-7.1681E-01	-2.8713E+00	79.26	
140	-7.5461E-01	-1.0001E+00	-4.3587E-02	-7.4710E-01	-1.0076E+00	-9.78	

ELEMENT ID	45 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
138	-5.4328E-01	1.1249E+00	-4.3130E-01	1.2298E+00	-6.4819E-01	-76.33	
140	-1.6988E-01	1.0466E+00	6.7368E-01	1.3460E+00	-4.6926E-01	66.04	
155	-9.4129E+00	-2.3902E+00	-2.6423E+00	-1.5071E+00	-1.0296E+01	-71.52	
156	-9.0362E+00	-4.9147E+00	-3.4121E+00	-2.9893E+00	-1.0962E+01	-60.57	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
138	-2.3734E+00	-9.8747E-01	1.5769E-01	-9.6975E-01	-2.3912E+00	83.59	
140	-1.0086E+00	-1.1083E+00	1.5690E-01	-8.9383E-01	-1.2231E+00	36.19	
155	-1.6996E+00	-2.3156E-01	1.2084E-01	-2.2168E-01	-1.7095E+00	85.33	
156	-3.9047E+00	-1.8825E+00	-1.4194E+00	-1.1509E+00	-4.6364E+00	-62.73	

ELEMENT ID	46 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
156	-3.5408E+00	-7.5250E+00	-1.7249E+00	-2.8978E+00	-8.1679E+00	-20.44	
140	-7.5598E-01	-3.7166E-01	-5.3975E-02	-3.6422E-01	-7.6341E-01	-82.16	
159	1.4953E-01	-5.8789E+00	-2.9649E-01	1.6407E-01	-5.8934E+00	-2.81	
161	5.5879E-01	-2.1563E-01	8.7694E-02	5.6860E-01	-2.2544E-01	6.38	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
156	-1.1010E+00	-2.1507E+00	-5.4774E-01	-8.6724E-01	-2.3844E+00	-23.11	
140	-1.4049E+00	-1.1481E+00	-1.6613E-01	-1.0665E+00	-1.4865E+00	-63.85	
159	3.7432E-01	-2.7478E+00	4.0330E-01	4.2557E-01	-2.7991E+00	7.24	
161	-6.8035E-01	-1.5994E+00	5.1289E-01	-4.5125E-01	-1.8285E+00	24.07	

ELEMENT ID	47 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
159	-9.5904E-01	-2.6857E+00	-1.1421E+00	-3.9065E-01	-3.2541E+00	-26.46	
161	-4.9390E-01	-7.6514E-01	-9.4752E-01	3.2766E-01	-1.5867E+00	-40.93	
160	-1.0394E+00	-3.3264E+00	-3.4897E-01	-9.8733E-01	-3.3785E+00	-8.49	
94	-1.5747E-01	-7.6554E-01	-7.9911E-01	3.9349E-01	-1.3165E+00	-34.58	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
159	-3.6906E-02	-1.6819E+00	-9.0522E-01	3.6367E-01	-2.0825E+00	-23.87	
161	-9.3816E-01	-1.8875E+00	-7.1001E-01	-5.5876E-01	-2.2669E+00	-28.12	
160	-5.8505E-01	-1.9520E+00	-6.8854E-01	-2.9837E-01	-2.2387E+00	-22.61	
94	-7.3939E-01	-1.8622E+00	-7.7777E-01	-3.4158E-01	-2.2600E+00	-27.09	

ELEMENT ID	48 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
160	-1.3224E+00	-5.7099E-01	-5.7473E-01	-2.6006E-01	-1.6333E+00	-61.59	
94	-1.1010E+00	-3.1530E-01	-3.4100E-01	-1.8794E-01	-1.2283E+00	-69.52	
92	-3.1778E-01	-9.0287E-01	-5.2100E-01	-1.2808E-02	-1.2078E+00	-30.34	
82	-3.9140E-01	-7.0679E-01	-2.6024E-01	-2.4481E-01	-8.5338E-01	-29.39	

S H E L L E L E M E N T F O R C E S

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ELEMENT ID 48 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
160 -2.2123E+00 -1.6851E+00 -1.2025E+00 -7.1766E-01 -3.1797E+00 -51.18
94  -1.6257E+00 -9.0315E-01 -5.2172E-01 -6.2984E-01 -1.8990E+00 -62.35
92  -1.6073E-02 -1.0960E+00 -1.1783E+00 7.4005E-01 -1.8521E+00 -32.69
82  -3.1270E-01 5.4967E-01 -1.8276E-01 5.8681E-01 -3.4984E-01 -78.52

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ELEMENT ID 49 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
92  -5.3874E-01 -7.5938E-01 -8.9466E-02 -5.0702E-01 -7.9110E-01 -19.52
82  -7.0109E-01 -1.2418E+00 8.9192E-02 -6.8676E-01 -1.2561E+00 9.13
89  -8.7123E-02 -1.2275E-01 -5.6500E-01 4.6035E-01 -6.7021E-01 -44.10
63  -1.7262E-01 -4.6093E-01 -4.1407E-01 1.2166E-01 -7.5522E-01 -35.40
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
92  -4.5128E-01 -7.3716E-01 -4.7336E-01 -9.9746E-02 -1.0887E+00 -36.60
82  -3.7601E-01 5.1383E-01 1.2952E-02 5.1402E-01 -3.7620E-01 89.17
89  3.5675E-01 -5.3277E-01 -3.8229E-01 4.9847E-01 -6.7449E-01 -20.34
63  3.6928E-02 9.1753E-01 3.2953E-01 1.0272E+00 -7.2730E-02 71.59

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ELEMENT ID 50 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
89  -1.1184E-01 -9.1095E-01 2.1380E-01 -5.8235E-02 -9.6455E-01 14.08
63  -2.3660E-01 -9.1486E-01 -2.4541E-01 -1.5712E-01 -9.9434E-01 -17.95
88  -3.9149E-01 -8.7576E-01 -1.2434E-01 -3.6143E-01 -9.0582E-01 -13.59
55  -1.6621E-01 -4.5744E-01 -5.9874E-01 3.0437E-01 -9.2802E-01 -38.17
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
89  7.7270E-01 2.7553E-01 3.2391E-01 9.3242E-01 1.1581E-01 26.25
63  -3.1958E-01 -1.5990E-01 1.5382E-01 -6.6436E-02 -4.1304E-01 58.72
88  -6.8766E-01 -4.3308E-01 3.4262E-01 -1.9487E-01 -9.2588E-01 55.19
55  -6.7613E-03 -4.9864E-01 -3.6154E-02 -4.1181E-03 -5.0128E-01 -4.18

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ELEMENT ID 51 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
88  -9.2329E-01 -2.8896E+00 -3.1447E-01 -8.7423E-01 -2.9387E+00 -8.87
55  -3.5804E-01 -9.6362E-01 -4.9692E-01 -7.8933E-02 -1.2427E+00 -29.32
87  9.3009E-01 -2.5149E+00 6.4783E-01 1.0479E+00 -2.6327E+00 10.31
164 2.4723E+00 2.9847E+00 1.2405E+00 3.9952E+00 1.4618E+00 50.83
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
88  -1.1780E+00 -1.0766E+00 -2.0945E-01 -9.1179E-01 -1.3428E+00 -51.80
55  4.5645E-01 1.3275E-01 2.0972E-01 5.5951E-01 2.9686E-02 26.17
87  1.1161E+00 4.8590E-01 -1.5304E-01 1.1513E+00 4.5070E-01 -12.95
164 -7.7487E-01 -2.4115E-01 -2.2429E-01 -1.5941E-01 -8.5661E-01 -69.98

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ELEMENT ID 52 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
85  -7.1160E-01 -1.5257E-01 -2.6524E-01 -4.6752E-02 -8.1741E-01 -68.25
87  -5.8857E-01 -9.1041E-02 2.4361E-02 -8.9851E-02 -5.8976E-01 87.20
60  6.3495E-02 -3.3902E-01 5.3151E-01 4.3057E-01 -7.0610E-01 34.63
62  -4.6414E-02 -3.5999E-01 8.3277E-01 6.4420E-01 -1.0506E+00 39.67

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SHELL ELEMENT FORCES

ELEMENT ID	52 -----					
LOAD COND	1 -----					
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
85	3.0032E-01	2.8729E-02	-9.6131E-02	3.3090E-01	-1.8536E-03	-17.65
87	-4.6881E-01	1.8715E-02	1.2507E-01	4.8926E-02	-4.9902E-01	76.42
60	1.1637E-01	2.4193E-01	-2.5950E-02	2.4708E-01	1.1121E-01	-78.77
62	5.5334E-02	5.1234E-02	6.2262E-02	1.1558E-01	-9.0117E-03	44.06

ELEMENT ID	53 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
84	2.7440E-01	-5.0205E-02	-4.2293E-01	5.6510E-01	-3.4090E-01	-34.50
85	2.9213E-01	-1.3460E-01	1.4289E-01	3.3556E-01	-1.7803E-01	16.91
59	4.4630E-01	-4.6735E-02	9.3884E-02	4.6357E-01	-6.4007E-02	10.42
60	2.8290E-01	-4.8025E-01	6.5729E-01	6.6135E-01	-8.5869E-01	29.93
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
84	5.4541E-02	9.3979E-02	-7.2487E-03	9.5269E-02	5.3251E-02	-79.91
85	2.6753E-01	-1.8345E-01	-6.2660E-02	2.7608E-01	-1.9200E-01	-7.76
59	1.7358E-01	-9.9363E-02	7.0726E-03	1.7376E-01	-9.9546E-02	1.48
60	2.4444E-01	3.6916E-01	3.3804E-02	3.7773E-01	2.3587E-01	75.77

ELEMENT ID	54 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
59	-1.1385E-02	6.7760E-01	2.2646E-01	7.4537E-01	-7.9155E-02	73.34
60	-1.2916E-01	4.2615E-01	3.1734E-01	5.7015E-01	-2.7316E-01	65.59
49	-1.0091E-01	7.6191E-01	2.4470E-01	8.2648E-01	-1.6548E-01	75.22
171	-2.0489E-01	2.8973E-01	2.3713E-01	3.8505E-01	-3.0021E-01	68.10
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
59	1.0367E-01	1.6829E-01	3.9993E-02	1.8739E-01	8.4566E-02	64.47
60	5.1433E-02	2.0768E-01	-7.6879E-02	2.3916E-01	1.9949E-02	-67.73
49	6.3108E-02	9.4750E-02	5.2053E-02	1.3333E-01	2.4525E-02	53.45
171	9.9502E-03	-1.1973E-02	6.7283E-02	6.7158E-02	-6.9181E-02	40.37

ELEMENT ID	55 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
60	3.0495E-01	-8.7770E-02	1.6001E-01	3.6189E-01	-1.4471E-01	19.59
62	1.0502E+00	2.1719E+00	-8.3055E-01	2.6132E+00	6.0888E-01	-62.01
171	-6.8440E-01	-6.9736E-01	9.0752E-01	2.1666E-01	-1.5984E+00	44.80
55	-5.7447E-01	-2.2811E-01	2.4376E-01	-1.0227E-01	-7.0030E-01	62.70
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
60	2.8077E-01	2.4797E-01	2.8587E-02	2.9733E-01	2.3141E-01	30.08
62	2.2348E-02	1.0636E-01	-2.2232E-01	2.9061E-01	-1.6190E-01	-50.35
171	1.2109E-01	-4.4617E-02	3.4521E-02	1.2800E-01	-5.1521E-02	11.31
55	-4.7363E-01	5.1087E-02	5.4475E-02	5.6683E-02	-4.7923E-01	84.14

ELEMENT ID	56 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
171	-3.0687E-01	6.4772E-01	6.8213E-01	1.0030E+00	-6.6211E-01	62.49
55	-5.7775E-01	-2.5440E-01	9.1016E-01	5.0833E-01	-1.3405E+00	50.04
49	-2.2430E-01	-4.6763E-02	3.1248E-01	1.8931E-01	-4.6037E-01	52.93
50	-2.6503E-01	-1.8297E-01	4.7220E-01	2.4998E-01	-6.9798E-01	47.48

SHELL ELEMENT FORCES

ELEMENT ID 56 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
171	9.5312E-02	-1.2993E-02	4.0523E-02	1.0880E-01	-2.6477E-02	18.40	
55	-4.8077E-01	-8.5230E-02	1.9382E-01	-6.0923E-03	-5.5991E-01	67.79	
49	-1.6311E-01	-1.8823E-02	-4.4422E-02	-6.2435E-03	-1.7569E-01	-74.19	
50	2.4197E-01	-4.6481E-02	1.9657E-01	3.4155E-01	-1.4606E-01	26.87	

ELEMENT ID 57 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
114	-8.3999E-01	-1.0798E+00	-1.2529E+00	2.9874E-01	-2.2185E+00	-42.27	
112	-5.7700E-01	-2.0367E-01	-1.1607E+00	7.8527E-01	-1.5659E+00	-49.57	
147	-3.4110E+00	-1.2468E+00	-3.2901E+00	1.1346E+00	-5.7924E+00	-54.10	
111	-3.3663E+00	-1.0979E+00	-3.3134E+00	1.2700E+00	-5.7342E+00	-54.45	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
114	1.1937E+00	3.2141E+00	-4.0881E-01	3.2937E+00	1.1141E+00	-78.98	
112	8.2742E-01	6.4168E-01	-7.0541E-01	1.4460E+00	2.3053E-02	-41.25	
147	6.4552E-01	-5.7284E-01	-9.7267E-01	1.1840E+00	-1.1114E+00	-28.97	
111	-1.5332E+00	-3.6162E-01	-1.0963E+00	2.9559E-01	-2.1904E+00	-59.06	

ELEMENT ID 58 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
147	-2.3149E+00	2.4436E+00	-1.4845E+00	2.8687E+00	-2.7401E+00	-74.02	
111	-3.3969E+00	-1.0110E+00	-1.1700E-01	-1.0053E+00	-3.4026E+00	-87.20	
108	-8.9749E+00	6.4773E+00	-4.1492E+00	7.5209E+00	-1.0019E+01	-75.88	
110	-1.2148E+01	-4.0363E+00	-4.6048E+00	-1.9557E+00	-1.4228E+01	-65.69	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
147	-3.1536E+00	-1.1074E+00	-9.5491E-01	-7.3100E-01	-3.5300E+00	-68.49	
111	2.8433E+00	-3.9032E-01	-1.4279E+00	3.3835E+00	-9.3060E-01	-20.73	
108	1.1336E+00	2.6042E-01	-1.8016E+00	2.5507E+00	-1.1567E+00	-38.19	
110	-6.5439E-01	2.9983E-01	-1.5643E+00	1.4582E+00	-1.8127E+00	-53.48	

ELEMENT ID 59 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
116	-3.2600E+00	-1.2649E+00	-8.7193E-01	-9.3754E-01	-3.5873E+00	-69.42	
114	-3.4762E+00	-1.9877E+00	-1.0011E+00	-1.4845E+00	-3.9794E+00	-63.32	
145	-1.8593E+00	-3.6031E-01	-2.0627E+00	1.0849E+00	-3.3044E+00	-54.98	
147	-2.1538E+00	-1.3405E+00	-2.1580E+00	4.4882E-01	-3.9431E+00	-50.34	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
116	2.5391E+00	5.2109E+00	3.5319E-01	5.2568E+00	2.4932E+00	82.60	
114	3.3550E+00	3.6800E+00	-1.7406E-01	3.7556E+00	3.2793E+00	-66.52	
145	1.5158E+00	1.6893E-01	-5.8846E-01	1.7366E+00	-5.1953E-02	-20.57	
147	-1.3658E+00	-1.1459E+00	-7.7406E-01	-4.7406E-01	-2.0377E+00	-49.04	

ELEMENT ID 60 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
145	-1.6812E+00	2.1416E-01	-1.3901E+00	9.4892E-01	-2.4160E+00	-62.14	
147	-1.3593E+00	1.2215E+00	-8.1163E-01	1.4555E+00	-1.5933E+00	-73.92	
106	-1.5397E+00	-3.8757E-01	-9.4066E-01	1.3941E-01	-2.0667E+00	-60.74	
108	-1.2614E+00	6.0525E-01	-3.6505E-01	6.7410E-01	-1.3303E+00	-79.32	

SHELL ELEMENT FORCES

ELEMENT ID	60 -----					
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
145	-2.3615E+00	-1.2552E+00	-7.0679E-01	-9.1087E-01	-2.7059E+00	-64.02
147	2.2673E+00	5.8984E-02	-1.8588E+00	3.3251E+00	-9.9890E-01	-29.64
106	1.2185E+00	6.0474E-01	-1.1992E+00	2.1495E+00	-3.2625E-01	-37.82
108	-2.0358E+00	-7.7032E-01	-1.0597E+00	-1.6880E-01	-2.6373E+00	-60.42

ELEMENT ID	61 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
118	-3.9250E+00	-2.0373E+00	-5.1840E-01	-1.9043E+00	-4.0580E+00	-75.61
116	-3.8951E+00	-1.9176E+00	4.7236E-02	-1.9165E+00	-3.8963E+00	88.63
143	-4.2696E-01	-8.9153E-01	-1.1774E+00	5.4081E-01	-1.8593E+00	-39.42
145	-3.4672E-01	-6.3915E-01	-7.0627E-01	2.2831E-01	-1.2142E+00	-39.15
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
118	8.0007E-01	7.9893E+00	2.3946E-01	7.9973E+00	7.9211E-01	88.09
116	2.4559E+00	5.0148E+00	4.8240E-01	5.1028E+00	2.3680E+00	79.67
143	4.9143E-01	-1.9896E+00	-5.1007E-01	5.9220E-01	-2.0903E+00	-11.18
145	4.6726E-01	-1.7409E-01	-1.9883E-01	5.2390E-01	-2.3073E-01	-15.90

ELEMENT ID	62 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
143	-5.3041E-01	-1.5188E+00	1.0285E+00	1.1651E-01	-2.1657E+00	32.17
145	-4.7272E-01	-1.1472E+00	-3.3967E-01	-3.3131E-01	-1.2886E+00	-22.60
104	2.3434E+00	-2.3312E-01	2.0109E-01	2.3590E+00	-2.4872E-01	4.44
106	2.4826E+00	5.7934E-02	-1.0495E+00	2.8738E+00	-3.3323E-01	-20.44
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
143	-3.7851E-01	1.5065E+00	-1.0422E-02	1.5066E+00	-3.7856E-01	-89.68
145	1.6557E+00	-6.5136E-01	-1.0574E+00	2.0670E+00	-1.0627E+00	-21.26
104	1.4142E+00	4.1547E-01	-1.1820E+00	2.1980E+00	-3.6833E-01	-33.55
106	-9.1534E-01	-1.9906E-01	-7.2829E-01	2.5439E-01	-1.3688E+00	-58.09

ELEMENT ID	63 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
119	-3.0865E+00	-2.0289E+00	5.6318E-02	-2.0259E+00	-3.0895E+00	86.96
118	-3.0865E+00	-2.0289E+00	5.6318E-02	-2.0259E+00	-3.0895E+00	86.96
143	-3.0865E+00	-2.0289E+00	5.6318E-02	-2.0259E+00	-3.0895E+00	86.96
143	-3.0865E+00	-2.0289E+00	5.6318E-02	-2.0259E+00	-3.0895E+00	86.96
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
119	3.5195E-01	3.0135E+00	-4.2835E-01	3.0807E+00	2.8470E-01	-81.08
118	3.5195E-01	3.0135E+00	-4.2835E-01	3.0807E+00	2.8470E-01	-81.08
143	3.5195E-01	3.0135E+00	-4.2835E-01	3.0807E+00	2.8470E-01	-81.08
143	3.5195E-01	3.0135E+00	-4.2835E-01	3.0807E+00	2.8470E-01	-81.08

ELEMENT ID	64 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
163	-6.2250E+00	-3.5745E+00	8.4293E-01	-3.3291E+00	-6.4704E+00	73.77
119	-4.3068E+00	-3.4143E+00	3.0269E+00	-8.0100E-01	-6.9201E+00	49.19
141	1.2400E+00	-4.0903E-03	-1.6223E+00	2.3555E+00	-1.1195E+00	-34.51
103	1.2849E-01	1.7959E-01	6.4694E-01	8.0149E-01	-4.9341E-01	46.13

SHELL ELEMENT FORCES

ELEMENT ID 64 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
163	2.1610E+00	7.3432E+00	1.3501E+00	7.6739E+00	1.8303E+00	76.24	
119	5.2131E+00	7.9228E+00	1.0455E-01	7.9268E+00	5.2090E+00	87.79	
141	-2.6493E+00	-2.5986E+00	4.0280E-01	-2.2204E+00	-3.0276E+00	46.80	
103	1.8139E+00	-7.9431E-02	-4.9140E-01	1.9338E+00	-1.9938E-01	-13.72	

ELEMENT ID 65 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
141	1.2186E+00	-4.9598E-01	-1.0775E+00	1.7382E+00	-1.0156E+00	-25.75	
103	-7.3346E-01	-3.9670E+00	6.8828E-01	-5.9306E-01	-4.1074E+00	11.53	
100	-8.9219E-01	-1.0381E+00	-8.1927E-01	-1.4263E-01	-1.7877E+00	-42.46	
101	-4.9400E-01	-4.2909E+00	-2.0036E-01	-4.8345E-01	-4.3014E+00	-3.01	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
141	-2.8143E+00	-1.4291E+00	5.5389E-01	-1.2349E+00	-3.0085E+00	70.68	
103	1.4572E+00	-2.7210E+00	6.5485E-01	1.5574E+00	-2.8213E+00	8.70	
100	-5.9531E-01	-2.4187E+00	-4.7630E-01	-4.7839E-01	-2.5357E+00	-13.79	
101	-1.5433E+00	-4.3775E+00	-5.6590E-01	-1.4345E+00	-4.4863E+00	-10.88	

ELEMENT ID 66 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
100	-2.2870E-01	-1.8850E+00	4.4168E-02	-2.2753E-01	-1.8862E+00	1.53	
101	-1.8224E+00	-3.8632E+00	1.4591E+00	-1.0623E+00	-4.6233E+00	27.52	
96	-6.0756E-01	-2.0924E+00	-1.1560E-01	-5.9862E-01	-2.1013E+00	-4.43	
98	-2.6393E-02	-3.8027E+00	1.2033E+00	3.2443E-01	-4.1535E+00	16.25	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
100	-9.3457E-01	-2.1671E+00	8.1132E-01	-5.3201E-01	-2.5697E+00	26.39	
101	-1.7868E+00	-3.1410E+00	1.0426E+00	-1.2207E+00	-3.7070E+00	28.50	
96	-1.1247E+00	-2.6949E+00	6.5290E-01	-8.8867E-01	-2.9309E+00	19.87	
98	-3.9672E-01	-3.4035E+00	8.9445E-01	-1.5076E-01	-3.6494E+00	15.38	

ELEMENT ID 67 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
96	-7.2453E-01	-2.1118E+00	2.2894E-01	-6.8772E-01	-2.1487E+00	9.13	
98	-2.2221E+00	-3.4841E+00	2.0003E+00	-7.5564E-01	-4.9506E+00	36.25	
80	-8.8521E-01	-2.0183E+00	2.6349E-01	-8.2693E-01	-2.0766E+00	12.47	
78	-6.2600E-02	-3.0095E+00	2.4432E+00	1.3171E+00	-4.3892E+00	29.45	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
96	-1.8180E+00	-1.9385E+00	6.7203E-01	-1.2035E+00	-2.5530E+00	42.44	
98	-2.2018E+00	-3.5493E+00	1.7830E+00	-9.6944E-01	-4.7816E+00	34.65	
80	6.6542E-02	9.6118E-01	-1.7222E-01	9.9318E-01	3.4536E-02	-79.47	
78	9.2059E-01	-1.6083E+00	9.5337E-01	1.2397E+00	-1.9274E+00	18.51	

ELEMENT ID 68 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
80	-1.4433E+00	-3.2085E+00	-1.5566E-01	-1.4297E+00	-3.2221E+00	-5.00	
78	-1.9129E+00	-4.8607E+00	1.2020E+00	-1.4849E+00	-5.2887E+00	19.60	
65	-3.6093E-01	-1.2799E+00	1.1296E+00	3.9908E-01	-2.0399E+00	33.93	
76	-8.9803E-01	-2.9841E+00	2.4831E+00	7.5220E-01	-4.6344E+00	33.61	

SHELL ELEMENT FORCES

ELEMENT ID 68 -----							
LOAD COND 1 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
80	2.3469E-01	1.1561E+00	-2.6217E-01	1.2255E+00	1.6531E-01	-75.18	
78	3.7765E-01	-1.5318E+00	5.0006E-01	5.0068E-01	-1.6549E+00	13.82	
65	6.2572E-01	2.1138E+00	-1.0193E+00	2.6317E+00	1.0780E-01	-63.06	
76	1.8201E+00	-8.8538E-01	1.3164E-01	1.8265E+00	-8.9177E-01	2.78	

ELEMENT ID 69 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
76	-4.0823E+00	-9.2707E-01	6.3658E-01	-8.0348E-01	-4.2059E+00	79.01	
74	-4.2052E+00	-7.7956E-01	4.0389E-01	-7.3259E-01	-4.2522E+00	83.37	
65	-2.4124E+00	2.9100E-01	-2.4366E-01	3.1279E-01	-2.4342E+00	-84.89	
57	-2.0791E+00	8.4660E-01	-6.5056E-01	9.8474E-01	-2.2172E+00	-78.01	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
76	3.4969E+00	1.9243E+00	1.3425E+00	4.2664E+00	1.1548E+00	29.82	
74	4.0891E-01	-2.5726E+00	5.6186E-01	5.1127E-01	-2.6750E+00	10.33	
65	6.2581E-01	-9.6060E-01	5.4911E-01	7.9733E-01	-1.1321E+00	17.35	
57	2.8694E-01	1.1219E+00	7.2886E-01	1.5444E+00	-1.3554E-01	59.90	

ELEMENT ID 70 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
74	-2.1049E+00	-2.0043E+00	-1.0512E+00	-1.0022E+00	-3.1070E+00	-46.37	
73	-1.9276E+00	-1.5445E+00	-1.2156E+00	-5.0543E-01	-2.9667E+00	-49.48	
57	4.8538E-01	-2.5720E+00	-7.8724E-01	6.7618E-01	-2.7628E+00	-13.62	
66	6.7695E-01	-1.3635E+00	-8.2237E-01	9.6713E-01	-1.6537E+00	-19.44	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
74	-8.3421E-01	-1.5494E+00	8.0624E-01	-3.0982E-01	-2.0738E+00	33.04	
73	1.1994E+00	2.8910E-01	4.6229E-01	1.3930E+00	9.5499E-02	22.72	
57	-7.5094E-01	2.9092E+00	-7.0085E-01	3.0388E+00	-8.8055E-01	-79.52	
66	1.6696E+00	1.8814E-01	3.1777E-02	1.6703E+00	1.8746E-01	1.23	

ELEMENT ID 71 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
73	-2.4233E-01	3.4134E-01	6.5704E-02	3.4865E-01	-2.4963E-01	83.66	
69	-8.3455E-01	-1.4882E+00	2.7492E-01	-7.3429E-01	-1.5884E+00	20.04	
66	5.8375E-01	5.2555E-02	-1.4800E+00	1.8218E+00	-1.1855E+00	-39.91	
68	-5.3662E-02	-2.2623E+00	-1.4283E+00	6.4744E-01	-2.9634E+00	-26.14	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
73	8.5265E-01	7.6593E-01	4.1734E-01	1.2289E+00	3.8971E-01	42.03	
69	1.2884E+00	-1.7648E-01	4.5153E-01	1.4164E+00	-3.0448E-01	15.83	
66	1.2951E+00	4.4885E-01	4.3025E-01	1.4754E+00	2.6852E-01	22.74	
68	6.0063E-01	9.4585E-01	1.9970E-01	1.0372E+00	5.0928E-01	65.42	

ELEMENT ID 72 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
66	1.1421E+00	4.1787E-01	-7.7076E-01	1.6316E+00	-7.1603E-02	-32.42	
68	9.7912E-01	1.0201E-01	-1.8120E+00	2.4049E+00	-1.3237E+00	-38.20	
57	-3.5909E-01	-1.0142E+00	-1.5636E+00	9.1086E-01	-2.2841E+00	-39.08	
173	-1.0844E-01	-2.5398E-01	-2.1826E+00	2.0026E+00	-2.3650E+00	-44.05	

SHELL ELEMENT FORCES

ELEMENT ID 72 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
66	2.3178E+00	3.6438E+00	3.2965E-01	3.7212E+00	2.2404E+00	76.78	
68	2.1028E-01	-5.4456E-02	2.6080E-01	3.7038E-01	-2.1455E-01	31.55	
57	-1.5403E-01	-9.5688E-02	4.6430E-01	3.4036E-01	-5.9008E-01	46.80	
173	1.1992E+00	1.1455E+00	2.5245E-02	1.2092E+00	1.1355E+00	21.61	

ELEMENT ID 73 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
69	4.5564E+00	-9.1786E-01	-1.8081E+00	5.0997E+00	-1.4612E+00	-16.72	
70	5.3789E+00	1.8331E+00	-2.4141E+00	6.6012E+00	6.1083E-01	-26.85	
68	9.9558E-01	-1.3880E+00	-5.6164E-01	1.1213E+00	-1.5137E+00	-12.62	
67	1.5711E+00	5.2591E-01	-9.0488E-01	2.0935E+00	3.5598E-03	-30.00	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
69	5.0623E-01	-7.4564E-01	-8.3325E-02	5.1175E-01	-7.5116E-01	-3.79	
70	2.1462E+00	1.0835E+00	-6.1223E-01	2.4255E+00	8.0418E-01	-24.52	
68	1.9805E+00	1.1960E+00	-1.6340E-01	2.0132E+00	1.1633E+00	-11.31	
67	-1.0943E+00	-1.4134E+00	-6.3866E-01	-5.9555E-01	-1.9121E+00	-37.99	

ELEMENT ID 74 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
68	5.2227E-01	2.0410E+00	-1.0377E+00	2.5675E+00	-4.2235E-03	-63.10	
67	-8.5116E-02	2.6730E+00	-1.4244E+00	3.2765E+00	-6.8863E-01	-67.04	
173	-3.6009E+00	-2.3911E-01	4.7457E-01	-1.7340E-01	-3.6666E+00	82.12	
53	-2.0105E+00	1.7990E+00	-8.3569E-01	1.9742E+00	-2.1858E+00	-78.16	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
68	5.2234E-01	5.7116E-01	-3.1070E-01	8.5841E-01	2.3510E-01	-47.25	
67	2.5728E-01	9.5260E-01	-2.5609E-02	9.5354E-01	2.5634E-01	-87.89	
173	-4.1539E-01	7.3077E-01	2.5230E-01	7.8385E-01	-4.6847E-01	78.12	
53	-5.7856E-01	-8.8137E-02	-1.4058E-01	-5.0700E-02	-6.1600E-01	-75.09	

ELEMENT ID 75 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
57	-3.9252E-01	-8.7137E-01	-1.9494E+00	1.3321E+00	-2.5960E+00	-41.50	
173	2.7311E-01	1.3663E+00	-2.9103E+00	3.7809E+00	-2.1415E+00	-50.32	
52	-1.8127E+00	-1.4565E+00	-1.1045E+00	-5.1587E-01	-2.7533E+00	-49.58	
53	-1.5528E+00	-6.0065E-01	-1.7822E+00	7.6797E-01	-2.9214E+00	-52.48	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
57	2.3716E-01	8.0001E-01	1.2345E-01	8.2590E-01	2.1127E-01	78.16	
173	6.9161E-01	-1.3824E-01	-3.1407E-01	7.9707E-01	-2.4370E-01	-18.56	
52	-2.6219E-01	-1.0448E+00	3.5725E-02	-2.6056E-01	-1.0465E+00	2.61	
53	-1.1837E-02	-3.6248E-01	-2.0350E-01	8.1451E-02	-4.5576E-01	-24.63	

ELEMENT ID 76 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
818	1.7324E-01	6.3379E-01	-3.3201E+00	3.7316E+00	-2.9245E+00	-46.98	
718	-1.2002E-01	-3.4251E-01	-2.4549E+00	2.2261E+00	-2.6887E+00	-43.70	
131	-4.1389E+00	-7.3820E-01	-5.3585E-01	-6.5576E-01	-4.2213E+00	-81.25	
129	-3.7641E+00	5.1033E-01	-9.2535E-02	5.1233E-01	-3.7661E+00	-88.76	

SHELL ELEMENT FORCES

ELEMENT ID	76 -----						
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
818	-1.3599E+00	-2.1375E-01	8.1900E-02	-2.0793E-01	-1.3658E+00	85.93	
718	3.6412E-01	2.3325E-02	8.9773E-01	1.1075E+00	-7.2003E-01	39.63	
131	3.5677E+00	8.0860E+00	-1.4561E-01	8.0907E+00	3.5630E+00	-88.16	
129	2.6075E+00	6.9147E+00	5.3211E-03	6.9147E+00	2.6075E+00	89.93	

ELEMENT ID	77 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
718	-1.7455E+00	-1.5294E+00	1.7468E+00	1.1263E-01	-3.3876E+00	46.77	
127	-1.7455E+00	-1.5294E+00	1.7468E+00	1.1263E-01	-3.3876E+00	46.77	
129	-1.7455E+00	-1.5294E+00	1.7468E+00	1.1263E-01	-3.3876E+00	46.77	
129	-1.7455E+00	-1.5294E+00	1.7468E+00	1.1263E-01	-3.3876E+00	46.77	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
718	4.7914E+00	1.2495E+00	2.0222E+00	5.7085E+00	3.3241E-01	24.40	
127	4.7914E+00	1.2495E+00	2.0222E+00	5.7085E+00	3.3241E-01	24.40	
129	4.7914E+00	1.2495E+00	2.0222E+00	5.7085E+00	3.3241E-01	24.40	
129	4.7914E+00	1.2495E+00	2.0222E+00	5.7085E+00	3.3241E-01	24.40	

ELEMENT ID	78 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
718	-1.1896E-01	-3.8567E-01	-1.0743E+00	8.3024E-01	-1.3349E+00	-41.46	
618	1.3233E-01	4.5230E-01	-7.9054E-01	1.0989E+00	-5.1425E-01	-50.72	
127	-3.3765E+00	-1.3463E+00	-6.0459E-01	-1.1799E+00	-3.5429E+00	-74.61	
125	-3.1357E+00	-5.4204E-01	-1.2158E+00	-6.1279E-02	-3.6164E+00	-68.42	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
718	4.4814E-01	6.8246E-01	1.5013E-01	7.5574E-01	3.7487E-01	63.98	
618	-2.0770E-01	-4.6634E-01	9.0989E-01	5.8202E-01	-1.2560E+00	40.96	
127	1.3567E+00	5.7060E+00	1.1622E+00	5.9971E+00	1.0656E+00	75.94	
125	1.5907E+00	7.3502E+00	-3.8129E-02	7.3504E+00	1.5905E+00	-89.62	

ELEMENT ID	79 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
618	-1.2314E+00	-1.0836E+00	1.4245E+00	2.6890E-01	-2.5838E+00	46.49	
122	-1.2314E+00	-1.0836E+00	1.4245E+00	2.6890E-01	-2.5838E+00	46.49	
125	-1.2314E+00	-1.0836E+00	1.4245E+00	2.6890E-01	-2.5838E+00	46.49	
125	-1.2314E+00	-1.0836E+00	1.4245E+00	2.6890E-01	-2.5838E+00	46.49	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
618	4.1444E+00	1.4330E+00	1.9429E+00	5.1578E+00	4.1953E-01	27.55	
122	4.1444E+00	1.4330E+00	1.9429E+00	5.1578E+00	4.1953E-01	27.55	
125	4.1444E+00	1.4330E+00	1.9429E+00	5.1578E+00	4.1953E-01	27.55	
125	4.1444E+00	1.4330E+00	1.9429E+00	5.1578E+00	4.1953E-01	27.55	

ELEMENT ID	80 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
618	1.8168E-02	9.0155E-02	-6.1936E-01	6.7457E-01	-5.6624E-01	-46.66	
518	-1.1479E-01	-3.5312E-01	-7.2433E-01	5.0011E-01	-9.6802E-01	-40.33	
122	-3.0093E+00	-5.0001E-01	-1.7033E-01	-4.8850E-01	-3.0208E+00	-86.13	
121	-3.2692E+00	-1.3652E+00	-1.0647E+00	-8.8900E-01	-3.7455E+00	-65.90	

SHELL ELEMENT FORCES

ELEMENT ID	80 -----						
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
618	6.8670E-01	6.4628E-01	-7.2736E-01	1.3941E+00	-6.1156E-02	-44.20	
518	-1.3318E+00	-6.3337E-01	1.2878E-01	-6.1038E-01	-1.3548E+00	79.88	
122	1.7272E+00	6.8451E+00	6.7446E-01	6.9325E+00	1.6398E+00	82.62	
121	9.4925E-01	6.6952E+00	-2.8492E-01	6.7093E+00	9.3516E-01	-87.17	

ELEMENT ID	81 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
518	-2.4097E+00	-1.6942E+00	1.2591E+00	-7.4298E-01	-3.3609E+00	52.93	
163	-2.4097E+00	-1.6942E+00	1.2591E+00	-7.4298E-01	-3.3609E+00	52.93	
121	-2.4097E+00	-1.6942E+00	1.2591E+00	-7.4298E-01	-3.3609E+00	52.93	
121	-2.4097E+00	-1.6942E+00	1.2591E+00	-7.4298E-01	-3.3609E+00	52.93	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
518	3.9436E+00	1.3469E+00	2.4492E+00	5.4174E+00	-1.2682E-01	31.04	
163	3.9436E+00	1.3469E+00	2.4492E+00	5.4174E+00	-1.2682E-01	31.04	
121	3.9436E+00	1.3469E+00	2.4492E+00	5.4174E+00	-1.2682E-01	31.04	
121	3.9436E+00	1.3469E+00	2.4492E+00	5.4174E+00	-1.2682E-01	31.04	

ELEMENT ID	82 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
518	1.5698E-01	5.2313E-01	-1.5769E+00	1.9275E+00	-1.2474E+00	-48.31	
418	-1.0743E-01	-3.5929E-01	6.9788E-01	4.7580E-01	-9.4252E-01	39.89	
163	-5.9238E+00	-7.9305E-01	-5.6134E-01	-7.3236E-01	-5.9845E+00	-83.83	
119	-6.4766E+00	-2.6359E+00	-5.8418E-01	-2.5490E+00	-6.5635E+00	-81.54	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
518	6.6390E-01	3.8830E-01	-1.0263E+00	1.5616E+00	-5.0944E-01	-41.18	
418	3.6603E-01	-3.7601E-01	4.5958E-01	5.8567E-01	-5.9565E-01	25.54	
163	2.6479E+00	8.1443E+00	2.0942E-01	8.1522E+00	2.6400E+00	87.82	
119	4.2308E+00	7.0827E+00	-7.8865E-01	7.2863E+00	4.0273E+00	-75.53	

ELEMENT ID	83 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
418	-2.2948E+00	-3.5537E+00	4.1401E-01	-2.1708E+00	-3.6777E+00	16.67	
118	-2.2948E+00	-3.5537E+00	4.1401E-01	-2.1708E+00	-3.6777E+00	16.67	
119	-2.2948E+00	-3.5537E+00	4.1401E-01	-2.1708E+00	-3.6777E+00	16.67	
119	-2.2948E+00	-3.5537E+00	4.1401E-01	-2.1708E+00	-3.6777E+00	16.67	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
418	5.6546E+00	3.4878E+00	9.3814E-01	6.0044E+00	3.1381E+00	20.45	
118	5.6546E+00	3.4878E+00	9.3814E-01	6.0044E+00	3.1381E+00	20.45	
119	5.6546E+00	3.4878E+00	9.3814E-01	6.0044E+00	3.1381E+00	20.45	
119	5.6546E+00	3.4878E+00	9.3814E-01	6.0044E+00	3.1381E+00	20.45	

ELEMENT ID	84 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
418	-4.4133E-01	-1.4408E+00	1.8847E-02	-4.4098E-01	-1.4412E+00	1.08	
318	-1.9652E-01	-6.2500E-01	6.0091E-01	2.2720E-01	-1.0487E+00	35.19	
118	-4.0914E+00	-2.6495E+00	-7.2448E-01	-2.3483E+00	-4.3925E+00	-67.43	
116	-4.0381E+00	-2.4720E+00	-5.7073E-01	-2.2861E+00	-4.2241E+00	-71.96	

SHELL ELEMENT FORCES

ELEMENT ID	84 -----						
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
418	-1.8050E+00	-3.4730E-01	6.1003E-01	-1.2571E-01	-2.0266E+00	70.04	
318	4.3339E-01	-1.0507E+00	1.4278E+00	1.3005E+00	-1.9178E+00	31.27	
118	1.1978E+00	6.1513E+00	4.6101E-01	6.1938E+00	1.1553E+00	84.73	
116	2.2139E+00	7.6957E+00	-2.1180E-02	7.6958E+00	2.2138E+00	-89.78	

ELEMENT ID	85 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
318	-1.6352E+00	-2.3959E+00	-7.9792E-02	-1.6269E+00	-2.4042E+00	-5.92	
115	-1.6352E+00	-2.3959E+00	-7.9792E-02	-1.6269E+00	-2.4042E+00	-5.92	
116	-1.6352E+00	-2.3959E+00	-7.9792E-02	-1.6269E+00	-2.4042E+00	-5.92	
116	-1.6352E+00	-2.3959E+00	-7.9792E-02	-1.6269E+00	-2.4042E+00	-5.92	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
318	3.4787E+00	1.6431E+00	3.2294E-01	3.5338E+00	1.5879E+00	9.69	
115	3.4787E+00	1.6431E+00	3.2294E-01	3.5338E+00	1.5879E+00	9.69	
116	3.4787E+00	1.6431E+00	3.2294E-01	3.5338E+00	1.5879E+00	9.69	
116	3.4787E+00	1.6431E+00	3.2294E-01	3.5338E+00	1.5879E+00	9.69	

ELEMENT ID	86 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
318	-2.3200E+00	-2.1486E+00	1.1495E+00	-1.0816E+00	-3.3870E+00	47.13	
114	-2.3200E+00	-2.1486E+00	1.1495E+00	-1.0816E+00	-3.3870E+00	47.13	
115	-2.3200E+00	-2.1486E+00	1.1495E+00	-1.0816E+00	-3.3870E+00	47.13	
115	-2.3200E+00	-2.1486E+00	1.1495E+00	-1.0816E+00	-3.3870E+00	47.13	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
318	2.9107E+00	1.2883E+00	1.1480E+00	3.5052E+00	6.9382E-01	27.38	
114	2.9107E+00	1.2883E+00	1.1480E+00	3.5052E+00	6.9382E-01	27.38	
115	2.9107E+00	1.2883E+00	1.1480E+00	3.5052E+00	6.9382E-01	27.38	
115	2.9107E+00	1.2883E+00	1.1480E+00	3.5052E+00	6.9382E-01	27.38	

ELEMENT ID	87 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
318	-4.8886E-01	-1.6314E+00	1.9843E-01	-4.5537E-01	-1.6649E+00	9.58	
218	5.4886E-03	1.6150E-02	1.0344E+00	1.0452E+00	-1.0236E+00	45.15	
114	-8.6945E-01	-1.2481E+00	-4.0807E-01	-6.0891E-01	-1.5086E+00	-32.56	
112	-5.3967E-01	-1.4849E-01	3.7260E-01	7.6735E-02	-7.6489E-01	58.85	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
318	-1.1355E-01	-4.8934E-01	1.3520E+00	1.0635E+00	-1.6664E+00	41.04	
218	2.6133E-01	5.9774E-01	1.7539E+00	2.1914E+00	-1.3324E+00	47.74	
114	3.2638E+00	6.5460E+00	7.0936E-01	6.6927E+00	3.1170E+00	78.31	
112	-6.5688E-01	-7.9874E-01	6.7288E-01	-5.1197E-02	-1.4044E+00	41.99	

ELEMENT ID	88 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
122	-3.1218E+00	-8.2238E-01	2.9777E-01	-7.8445E-01	-3.1597E+00	82.74	
121	-3.1562E+00	-9.4237E-01	4.4073E-01	-8.5786E-01	-3.2407E+00	79.14	
140	-1.0602E+00	-2.0397E-01	2.9266E-01	-1.1350E-01	-1.1506E+00	72.82	
170	-1.0985E+00	-3.2481E-01	4.6625E-01	-1.0581E-01	-1.3174E+00	64.84	

S H E L L E L E M E N T F O R C E S

ELEMENT ID	88 -----						
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
122	1.9920E+00	6.7432E+00	-7.5112E-02	6.7444E+00	1.9909E+00	-89.09	
121	6.4837E-01	6.9945E+00	-2.8254E-02	6.9947E+00	6.4824E-01	-89.75	
140	-1.0299E+00	-1.0541E+00	6.4234E-02	-9.7665E-01	-1.1074E+00	39.68	
170	-2.9621E-01	-7.9348E-01	2.4163E-01	-1.9814E-01	-8.9155E-01	22.09	

ELEMENT ID	89 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
121	-3.4120E+00	-1.0489E+00	-3.2115E-02	-1.0485E+00	-3.4124E+00	-89.22	
163	-3.5964E+00	-1.6193E+00	9.9514E-01	-1.2052E+00	-4.0105E+00	67.40	
170	-8.2367E-03	-2.8084E-02	8.8466E-02	7.0860E-02	-1.0718E-01	41.80	
141	-1.6028E-01	-5.8164E-01	1.1413E+00	7.8959E-01	-1.5315E+00	39.77	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
121	1.9058E+00	7.3357E+00	2.8190E-01	7.3502E+00	1.8912E+00	87.04	
163	2.1881E+00	7.6786E+00	1.5823E-01	7.6832E+00	2.1836E+00	88.35	
170	-1.2953E+00	-1.0867E+00	1.5825E-01	-1.0015E+00	-1.3805E+00	61.69	
141	-5.0369E-01	-1.6166E+00	1.0639E-01	-4.9361E-01	-1.6267E+00	5.41	

ELEMENT ID	90 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
140	-1.1514E+00	-4.2102E-01	4.2728E-01	-2.2412E-01	-1.3483E+00	65.26	
170	-1.2002E+00	-5.6550E-01	4.7928E-01	-3.0804E-01	-1.4577E+00	61.76	
161	-1.0744E+00	-5.9956E-01	-6.3596E-01	-1.5815E-01	-1.5158E+00	-55.24	
162	-1.1219E+00	-7.7692E-01	-5.8783E-01	-3.3681E-01	-1.5621E+00	-53.18	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
140	-4.3335E-01	-7.4025E-01	9.3429E-02	-4.0714E-01	-7.6645E-01	15.67	
170	-1.0148E+00	-1.0393E+00	8.8499E-02	-9.3767E-01	-1.1164E+00	41.06	
161	-1.0395E+00	-1.9945E+00	-2.4870E-02	-1.0389E+00	-1.9951E+00	-1.49	
162	-1.0680E+00	-2.4943E+00	1.4156E-03	-1.0680E+00	-2.4943E+00	.06	

ELEMENT ID	91 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
170	-9.3310E-02	-3.6359E-01	3.9661E-01	1.9055E-01	-6.4745E-01	35.59	
141	-5.1725E-01	-1.7738E+00	3.7071E-01	-4.1603E-01	-1.8750E+00	15.27	
162	-5.8350E-01	-4.2640E-01	-5.6308E-01	6.3590E-02	-1.0735E+00	-48.97	
100	-9.7135E-01	-1.7203E+00	-5.5632E-01	-6.7521E-01	-2.0164E+00	-28.03	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
170	-8.8063E-01	-1.0480E+00	2.5448E-03	-8.8059E-01	-1.0480E+00	.87	
141	-7.3998E-01	-5.9747E-01	1.0275E-01	-5.4368E-01	-7.9376E-01	62.37	
162	-1.0383E+00	-2.4756E+00	3.7362E-02	-1.0373E+00	-2.4766E+00	1.49	
100	-1.1830E+00	-2.6890E+00	9.1893E-02	-1.1774E+00	-2.6945E+00	3.48	

ELEMENT ID	92 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
161	-1.4697E+00	-1.8647E+00	-1.0406E+00	-6.0801E-01	-2.7264E+00	-39.63	
162	-1.0967E+00	-7.4402E-01	-6.0048E-01	-2.9452E-01	-1.5462E+00	-53.18	
94	-5.0947E-01	-1.4706E+00	-6.3984E-01	-1.8982E-01	-1.7902E+00	-26.55	
95	-2.1928E-01	-3.8003E-01	-2.2790E-01	-5.7990E-02	-5.4131E-01	-35.29	

SHELL ELEMENT FORCES

ELEMENT ID	92 -----						
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
161	-1.2473E+00	-2.4518E+00	-2.2911E-01	-1.2052E+00	-2.4939E+00	-10.41	
162	-9.7359E-01	-2.3475E+00	-4.6719E-02	-9.7200E-01	-2.3491E+00	-1.95	
94	-6.0398E-01	-2.2054E+00	-1.8761E-01	-5.8230E-01	-2.2271E+00	-6.59	
95	-5.0343E-01	-2.0990E+00	-1.2005E-02	-5.0334E-01	-2.0991E+00	-.43	

ELEMENT ID	93 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
162	-5.3785E-01	-4.1831E-01	-5.2437E-01	4.9686E-02	-1.0058E+00	-48.25	
100	-9.9760E-01	-1.9220E+00	-4.3787E-01	-8.2311E-01	-2.0965E+00	-21.73	
95	-6.2608E-01	-4.4069E-01	-3.0283E-01	-2.1668E-01	-8.5008E-01	-53.51	
96	-1.0769E+00	-1.9712E+00	-2.7741E-01	-9.9780E-01	-2.0503E+00	-15.91	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
162	-1.0275E+00	-2.3335E+00	1.9083E-02	-1.0272E+00	-2.3337E+00	.84	
100	-1.1524E+00	-2.7233E+00	1.0623E-01	-1.1452E+00	-2.7305E+00	3.85	
95	-7.8486E-01	-2.1452E+00	-1.6607E-01	-7.6488E-01	-2.1651E+00	-6.86	
96	-1.0341E+00	-2.9307E+00	-1.1345E-01	-1.0273E+00	-2.9375E+00	-3.41	

ELEMENT ID	94 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
94	-4.6632E-01	-1.1749E+00	-3.9351E-01	-2.9111E-01	-1.3501E+00	-24.00	
95	-3.7378E-01	-8.7207E-01	-4.5806E-01	-1.0150E-01	-1.1444E+00	-30.73	
82	-5.6971E-01	-9.1997E-01	-2.8541E-02	-5.6740E-01	-9.2228E-01	-4.63	
81	-5.5231E-01	-8.5847E-01	-7.6750E-02	-5.3415E-01	-8.7664E-01	-13.31	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
94	-4.9233E-01	-1.6925E+00	6.9090E-03	-4.9229E-01	-1.6926E+00	.33	
95	-4.5990E-01	-2.0654E+00	-1.3067E-01	-4.4933E-01	-2.0759E+00	-4.62	
82	-2.6662E-01	-9.0705E-02	-1.3621E-01	-1.6524E-02	-3.4080E-01	-61.43	
81	2.2945E-01	7.4236E-01	-1.5241E-01	7.8423E-01	1.8758E-01	-74.64	

ELEMENT ID	95 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
95	-7.5918E-01	-8.9347E-01	-5.3511E-01	-2.8702E-01	-1.3656E+00	-41.42	
96	-9.4626E-01	-1.4825E+00	-6.6400E-01	-4.9828E-01	-1.9305E+00	-34.01	
81	-6.3075E-01	-8.4490E-01	-1.0634E-01	-5.8692E-01	-8.8873E-01	-22.40	
80	-8.8726E-01	-1.7313E+00	-2.3244E-01	-8.2749E-01	-1.7911E+00	-14.42	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
95	-8.3175E-01	-2.1682E+00	-2.1308E-01	-7.9860E-01	-2.2014E+00	-8.84	
96	-8.1906E-01	-2.2794E+00	-3.7453E-01	-7.2861E-01	-2.3699E+00	-13.58	
81	3.0803E-01	8.0885E-01	-2.1349E-01	8.8751E-01	2.2938E-01	-69.78	
80	-2.3015E-01	8.0156E-01	-8.3304E-02	8.0824E-01	-2.3684E-01	-85.41	

ELEMENT ID	96 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
82	-4.7392E-01	-6.0951E-01	3.1238E-01	-2.2206E-01	-8.6137E-01	38.88	
81	-7.4334E-01	-1.4936E+00	-2.1805E-01	-6.8457E-01	-1.5524E+00	-15.08	
63	-6.6911E-01	-8.7874E-01	1.5711E-01	-5.8506E-01	-9.6279E-01	28.15	
64	-8.7505E-01	-1.5768E+00	-3.4920E-01	-7.3090E-01	-1.7210E+00	-22.43	

SHELL ELEMENT FORCES

ELEMENT ID	96 -----					
LOAD COND	1 -----					
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
82	-1.5725E-01	3.5791E-01	-1.9851E-01	4.2553E-01	-2.2487E-01	-71.19
81	1.6259E-01	4.1765E-01	-2.1552E-01	5.4055E-01	3.9691E-02	-60.31
63	8.9313E-01	1.1741E+00	-1.2289E-01	1.2202E+00	8.4696E-01	-69.41
64	-5.5632E-01	7.7804E-01	-2.8798E-01	8.3754E-01	-6.1582E-01	-78.33

ELEMENT ID	97 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
81	-8.3333E-01	-1.4556E+00	-2.6836E-01	-7.3359E-01	-1.5553E+00	-20.39
80	-8.7422E-01	-1.5625E+00	-9.3864E-01	-2.1863E-01	-2.2181E+00	-34.93
64	-6.6283E-01	-1.3573E+00	1.7442E-01	-6.2149E-01	-1.3986E+00	13.34
65	-9.3143E-01	-2.2788E+00	-5.3342E-01	-7.4582E-01	-2.4644E+00	-19.19
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
81	1.2457E-01	3.1233E-01	-2.6626E-01	5.0078E-01	-6.3877E-02	-54.71
80	2.8300E-02	1.5741E+00	2.0216E-01	1.6001E+00	2.3000E-03	82.67
64	4.0559E-01	1.2663E+00	-1.4342E-01	1.2896E+00	3.8232E-01	-80.79
65	1.1172E+00	2.8777E+00	4.4707E-01	2.9848E+00	1.0102E+00	76.54

ELEMENT ID	98 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
63	-3.9597E-01	3.6645E-02	6.3506E-01	4.9122E-01	-8.5055E-01	54.40
64	-5.3391E-01	-5.1521E-01	-2.6172E-02	-4.9677E-01	-5.5235E-01	-54.83
55	-3.9925E-01	-3.8268E-01	4.7206E-01	8.1171E-02	-8.6310E-01	45.50
56	-4.7241E-01	-5.5219E-01	-2.2786E-01	-2.8098E-01	-7.4363E-01	-40.04
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
63	5.6979E-01	3.2038E-01	1.2344E-01	6.2055E-01	2.6962E-01	22.35
64	-1.8778E-01	1.3968E+00	1.0024E-02	1.3968E+00	-1.8785E-01	89.64
55	1.4238E-01	-1.4458E-01	3.3143E-01	3.6005E-01	-3.6225E-01	33.30
56	-1.8977E-01	2.8167E-01	2.0630E-01	3.5919E-01	-2.6730E-01	69.40

ELEMENT ID	99 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
64	-3.4686E-01	-4.5919E-01	1.6281E-01	-2.3080E-01	-5.7525E-01	35.48
65	-9.1815E-01	-2.1378E+00	-7.9947E-01	-5.2247E-01	-2.5335E+00	-26.33
56	-3.0604E-01	-4.5515E-01	-4.6041E-01	8.5810E-02	-8.4700E-01	-40.40
57	-4.6677E-01	-1.1841E+00	-1.4341E+00	6.5286E-01	-2.3037E+00	-37.98
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
64	2.4559E-01	1.2946E+00	1.9738E-01	1.3305E+00	2.0968E-01	79.69
65	1.0832E+00	1.6786E+00	-5.5002E-02	1.6837E+00	1.0782E+00	-84.77
56	2.4307E-01	4.9784E-01	2.0651E-01	6.1310E-01	1.2781E-01	60.83
57	6.2096E-02	4.6310E-01	-9.0934E-02	4.8276E-01	4.2439E-02	-77.80

ELEMENT ID	100 -----					
LOAD COND	1 -----					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
55	-4.0111E-01	-3.8669E-01	5.1763E-01	1.2379E-01	-9.1158E-01	45.40
56	-4.9305E-01	-6.6980E-01	1.6916E-01	-3.9057E-01	-7.7227E-01	31.21
50	1.2603E-01	-1.2842E-01	1.1212E-01	1.6839E-01	-1.7077E-01	20.69
51	6.1971E-03	-5.5085E-01	-2.1177E-01	7.7559E-02	-6.2221E-01	-18.62

SHELL ELEMENT FORCES

ELEMENT ID 100 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
55	2.2375E-01	1.4262E-01	2.9112E-01	4.7712E-01	-1.1075E-01	41.03	
56	-2.3152E-01	1.3388E-01	3.0414E-01	3.0597E-01	-4.0362E-01	60.50	
50	-5.3717E-01	-5.1846E-01	2.7854E-01	-2.4912E-01	-8.0651E-01	45.96	
51	1.3138E-01	-6.6467E-01	3.0617E-01	2.3552E-01	-7.6880E-01	18.78	

ELEMENT ID 101 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
56	-3.8684E-01	-6.2878E-01	-7.5889E-02	-3.6501E-01	-6.5061E-01	-16.05	
57	-5.9083E-01	-1.4210E+00	-1.2976E+00	3.5642E-01	-2.3683E+00	-36.13	
51	1.0487E-02	-5.1388E-01	-7.0698E-02	1.9852E-02	-5.2324E-01	-7.55	
52	-2.6698E-01	-1.3233E+00	-1.2837E+00	5.9297E-01	-2.1833E+00	-33.82	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
56	1.5733E-01	1.4590E-01	2.8828E-01	4.3995E-01	-1.3672E-01	44.43	
57	2.9519E-01	1.2292E+00	1.5117E-01	1.2531E+00	2.7133E-01	81.03	
51	-3.9856E-01	-9.3242E-01	2.9601E-01	-2.6689E-01	-1.0641E+00	23.98	
52	-5.1171E-01	-1.5338E+00	2.0117E-01	-4.7353E-01	-1.5719E+00	10.74	

ELEMENT ID 102 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1005	6.8630E-01	-1.9367E-01	-1.4133E-01	7.0844E-01	-2.1581E-01	-8.90	
1004	6.8578E-01	-2.0424E-01	-2.2558E-01	7.3969E-01	-2.5815E-01	-13.44	
1002	1.7024E+00	1.6563E-01	-3.1258E-01	1.7636E+00	1.0448E-01	-11.07	
1001	1.6679E+00	4.1657E-02	-2.4266E-01	1.7033E+00	6.2196E-03	-8.31	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1005	1.8081E-01	4.1454E-01	1.3610E-02	4.1533E-01	1.8002E-01	86.68	
1004	4.2973E-01	-7.8909E-02	2.5116E-02	4.3097E-01	-8.0146E-02	2.82	
1002	6.6614E-01	1.6724E-01	-1.2556E-01	6.9596E-01	1.3742E-01	-13.36	
1001	-8.7724E-02	-1.1650E-01	-7.8581E-02	-2.2227E-02	-1.8200E-01	-39.81	

ELEMENT ID 103 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1905	1.8855E+00	5.8371E-02	-1.2408E-01	1.8939E+00	4.9983E-02	-3.87	
1904	1.9248E+00	1.8908E-01	-4.5364E-01	2.0362E+00	7.7671E-02	-13.80	
1005	6.4572E-01	-3.1357E-01	-3.0452E-01	7.3422E-01	-4.0208E-01	-16.21	
1004	6.8494E-01	-1.8286E-01	-6.3408E-01	1.0194E+00	-5.1729E-01	-27.81	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1905	2.2443E-01	-7.5485E-01	1.9292E-01	2.6106E-01	-7.9148E-01	10.75	
1904	4.5519E-03	2.6599E-01	1.8658E-01	3.6309E-01	-9.2540E-02	62.51	
1005	2.2500E-01	6.6078E-01	2.0387E-01	7.4128E-01	1.4450E-01	68.45	
1004	2.7336E-01	-2.1918E-01	1.9753E-01	3.4279E-01	-2.8861E-01	19.37	

ELEMENT ID 104 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1006	1.9288E+00	4.7730E-01	5.4872E-02	1.9309E+00	4.7523E-01	2.16	
1005	1.7961E+00	4.8608E-02	1.1687E-02	1.7962E+00	4.8530E-02	.38	
1003	2.3179E+00	6.3898E-01	-5.7297E-02	2.3199E+00	6.3703E-01	-1.95	
1002	2.1618E+00	1.2454E-01	-3.4867E-02	2.1624E+00	1.2394E-01	-.98	

SHELL ELEMENT FORCES

ELEMENT ID 104 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1006	-1.5042E-01	1.2135E-01	-1.9689E-01	2.2470E-01	-2.5377E-01	-62.31	
1005	5.5947E-01	4.4588E-01	-1.5038E-01	6.6343E-01	3.4192E-01	-34.66	
1003	-1.8591E-01	-2.9282E-02	-2.2517E-01	1.3081E-01	-3.4600E-01	-54.59	
1002	5.5369E-01	2.4684E-02	-1.0317E-01	5.7310E-01	5.2734E-03	-10.65	

ELEMENT ID 105 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1005	1.7846E+00	2.8101E-02	-4.5601E-01	1.8960E+00	-8.3227E-02	-13.72	
1006	1.9519E+00	5.8556E-01	-4.1619E-01	2.0687E+00	4.6877E-01	-15.68	
1905	2.2047E+00	1.5413E-01	-2.5322E-01	2.2355E+00	1.2332E-01	-6.94	
1906	2.3720E+00	7.1159E-01	-2.1341E-01	2.3990E+00	6.8460E-01	-7.21	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1005	2.6575E-01	3.4376E-01	6.2663E-02	3.7856E-01	2.3095E-01	60.95	
1006	8.1444E-02	9.6359E-02	-4.1145E-01	5.0042E-01	-3.2262E-01	-45.52	
1905	-3.2774E-01	-3.8313E-01	6.5821E-02	-2.8402E-01	-4.2684E-01	33.59	
1906	-2.4367E-01	-1.0263E-01	-4.0829E-01	2.4119E-01	-5.8749E-01	-49.90	

ELEMENT ID 106 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1904	1.8780E+00	-1.6335E-01	-6.9866E-01	2.0942E+00	-3.7957E-01	-17.20	
1905	2.1398E+00	4.3151E-01	-1.7365E+00	3.2208E+00	-6.4950E-01	-31.90	
1010	3.1481E-01	-1.4986E-01	-1.2916E-01	3.4830E-01	-1.8335E-01	-14.54	
1012	1.3741E-01	-5.8626E-01	-8.6579E-01	7.1394E-01	-1.1628E+00	-33.66	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1904	2.4872E-01	1.1022E-01	1.2626E-01	3.2347E-01	3.5468E-02	30.63	
1905	1.9636E-01	-5.1477E-01	-8.8344E-02	2.0717E-01	-5.2558E-01	-6.98	
1010	-2.6102E-02	-1.8627E-01	7.6113E-02	4.2974E-03	-2.1667E-01	21.77	
1012	-5.5493E-03	-1.2558E-01	-8.3866E-02	3.7564E-02	-1.6869E-01	-27.21	

ELEMENT ID 107 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1905	1.7210E+00	-1.2325E+00	-1.1145E+00	2.0943E+00	-1.6058E+00	-18.52	
1906	2.5471E+00	1.7634E+00	-2.2448E+00	4.4340E+00	-1.2345E-01	-40.05	
1012	2.7005E+00	1.6747E-01	1.0923E+00	3.1065E+00	-2.3848E-01	20.39	
1014	2.9799E+00	8.7919E-01	-1.5981E-01	2.9920E+00	8.6710E-01	-4.33	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1905	-8.0494E-02	-6.8230E-01	-1.0160E-01	-6.3805E-02	-6.9899E-01	-9.33	
1906	3.3139E-02	3.9232E-02	-1.5462E-01	1.9083E-01	-1.1846E-01	-45.56	
1012	2.4168E-02	-1.8986E-01	-4.9176E-02	3.4926E-02	-2.0062E-01	-12.34	
1014	-1.6837E-02	4.1852E-02	-7.0161E-02	8.8559E-02	-6.3543E-02	-56.35	

ELEMENT ID 108 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1014	4.3780E+00	-1.2040E+00	6.8807E-01	4.4616E+00	-1.2875E+00	6.92	
1167	4.3780E+00	-1.2040E+00	6.8807E-01	4.4616E+00	-1.2875E+00	6.92	
1012	4.3780E+00	-1.2040E+00	6.8807E-01	4.4616E+00	-1.2875E+00	6.92	
1012	4.3780E+00	-1.2040E+00	6.8807E-01	4.4616E+00	-1.2875E+00	6.92	

SHELL ELEMENT FORCES

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ELEMENT ID 108 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1014 -1.5150E-02 -1.1446E-01 -8.8131E-03 -1.4374E-02 -1.1523E-01 -5.03
1167 -1.5150E-02 -1.1446E-01 -8.8131E-03 -1.4374E-02 -1.1523E-01 -5.03
1012 -1.5150E-02 -1.1446E-01 -8.8131E-03 -1.4374E-02 -1.1523E-01 -5.03
1012 -1.5150E-02 -1.1446E-01 -8.8131E-03 -1.4374E-02 -1.1523E-01 -5.03

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ELEMENT ID 109 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1010 1.0567E-01 -6.9996E-01 -8.3060E-01 6.2598E-01 -1.2203E+00 -32.06
1012 8.8760E-01 2.0261E+00 -1.3740E+00 2.9442E+00 -3.0438E-02 -56.25
1015 -4.6779E-01 -7.6139E-03 5.6941E-01 3.7644E-01 -8.5184E-01 56.00
1017 -1.0359E-01 1.1296E+00 1.0750E-01 1.1389E+00 -1.1289E-01 85.06
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1010 -2.9846E-02 -1.8952E-01 3.2475E-02 -2.3494E-02 -1.9588E-01 11.07
1012 -8.4730E-03 -1.4448E-01 -4.0791E-02 2.8233E-03 -1.5577E-01 -15.48
1015 -1.4248E-01 -2.8610E-02 -9.9178E-04 -2.8602E-02 -1.4249E-01 -89.50
1017 1.9443E-02 -3.3773E-02 -3.5180E-02 3.6944E-02 -5.1274E-02 -26.45

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ELEMENT ID 110 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1012 -8.5956E-02 1.2385E+00 -7.7160E-01 1.5931E+00 -4.4055E-01 -65.32
1167 3.8576E-01 2.3402E+00 -1.1041E+00 2.8374E+00 -1.1144E-01 -65.76
1017 -2.9620E+00 2.6745E-01 1.4292E-01 2.7377E-01 -2.9683E+00 87.47
1019 -2.8058E+00 1.2946E+00 -3.8345E-02 1.2949E+00 -2.8061E+00 -89.46
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1012 -1.0237E-01 -1.7849E-01 -5.2435E-02 -7.5641E-02 -2.0522E-01 -27.01
1167 1.6365E-01 4.2020E-02 -5.8148E-02 1.8697E-01 1.8694E-02 -21.86
1017 6.0569E-02 -3.0751E-02 -2.8278E-02 6.8616E-02 -3.8798E-02 -15.89
1019 -4.6150E-03 -1.5640E-02 -2.7765E-02 1.8179E-02 -3.8434E-02 -39.39

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ELEMENT ID 111 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1015 -3.3546E-01 4.4553E-01 2.7784E-01 5.3429E-01 -4.2421E-01 72.28
1017 -2.7398E-01 7.9364E-01 6.5867E-01 1.1076E+00 -5.8799E-01 64.51
1021 2.7432E-02 1.7106E+00 7.5827E-03 1.7106E+00 2.7398E-02 89.74
1022 -1.1880E-01 9.6997E-01 3.5588E-01 1.0760E+00 -2.2480E-01 73.41
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1015 -1.6276E-01 -1.0063E-01 -1.3181E-02 -9.7952E-02 -1.6544E-01 -78.50
1017 2.0860E-02 -2.5178E-02 -4.8474E-03 2.1364E-02 -2.5683E-02 -5.95
1021 -1.0731E-01 -6.1429E-02 -3.8665E-03 -6.1106E-02 -1.0763E-01 -85.22
1022 1.2612E-01 3.1711E-02 -1.0529E-02 1.2728E-01 3.0551E-02 -6.29

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ELEMENT ID 112 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1017 -2.8119E+00 3.7120E-01 8.9803E-02 3.7373E-01 -2.8144E+00 88.39
1019 -3.8253E+00 -3.0929E+00 1.0276E+00 -2.3682E+00 -4.5500E+00 54.81
1022 -2.1065E+00 6.0849E-01 1.9803E-01 6.2286E-01 -2.1209E+00 85.85
1024 -3.2144E+00 -3.0248E+00 1.0275E+00 -2.0877E+00 -4.1515E+00 47.64

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HELL ELEMENT FORCES

ELEMENT ID 112 -----

JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
1017	7.9170E-02	-3.6893E-03	1.8740E-02	8.3211E-02	-7.7306E-03	12.17
1019	9.2090E-03	-2.0734E-02	2.9904E-02	2.7680E-02	-3.9205E-02	31.70
1022	1.4040E-02	3.3218E-03	1.9969E-02	2.9356E-02	-1.1994E-02	37.49
1024	1.4677E-01	1.1663E-01	3.6518E-02	1.7121E-01	9.2196E-02	33.79

ELEMENT ID 113 -----

LOAD COND 1 -----

JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
1021	4.9771E-02	2.9338E-01	1.3454E-01	3.5306E-01	-9.9111E-03	66.08
1020	4.9771E-02	2.9338E-01	1.3454E-01	3.5306E-01	-9.9111E-03	66.08
1015	4.9771E-02	2.9338E-01	1.3454E-01	3.5306E-01	-9.9111E-03	66.08
1015	4.9771E-02	2.9338E-01	1.3454E-01	3.5306E-01	-9.9111E-03	66.08

JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
1021	-1.6082E-01	-8.7249E-02	-4.0717E-02	-6.9162E-02	-1.7891E-01	-66.05
1020	-1.6082E-01	-8.7249E-02	-4.0717E-02	-6.9162E-02	-1.7891E-01	-66.05
1015	-1.6082E-01	-8.7249E-02	-4.0717E-02	-6.9162E-02	-1.7891E-01	-66.05
1015	-1.6082E-01	-8.7249E-02	-4.0717E-02	-6.9162E-02	-1.7891E-01	-66.05

ELEMENT ID 114 -----

LOAD COND 1 -----

JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
1021	-1.5360E-01	7.4089E-01	1.4191E-01	7.6287E-01	-1.7557E-01	81.20
1025	-1.5360E-01	7.4089E-01	1.4191E-01	7.6287E-01	-1.7557E-01	81.20
1020	-1.5360E-01	7.4089E-01	1.4191E-01	7.6287E-01	-1.7557E-01	81.20
1020	-1.5360E-01	7.4089E-01	1.4191E-01	7.6287E-01	-1.7557E-01	81.20

JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
1021	-1.6225E-01	-2.4963E-01	-4.5777E-02	-1.4266E-01	-2.6922E-01	-23.17
1025	-1.6225E-01	-2.4963E-01	-4.5777E-02	-1.4266E-01	-2.6922E-01	-23.17
1020	-1.6225E-01	-2.4963E-01	-4.5777E-02	-1.4266E-01	-2.6922E-01	-23.17
1020	-1.6225E-01	-2.4963E-01	-4.5777E-02	-1.4266E-01	-2.6922E-01	-23.17

ELEMENT ID 115 -----

LOAD COND 1 -----

JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
1025	3.8031E-01	1.4090E+00	9.4207E-01	1.9680E+00	-1.7868E-01	59.32
1021	5.7468E-02	3.7999E-01	8.5364E-01	1.0875E+00	-6.5000E-01	50.35
1026	8.3241E-02	1.1232E+00	-1.8610E-01	1.1555E+00	5.0942E-02	-80.15
1027	-1.9520E-01	1.4915E-01	-1.8170E-01	2.2730E-01	-2.7334E-01	-66.73

JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
1025	-9.0158E-02	-1.4582E-01	-2.0870E-02	-8.3202E-02	-1.5278E-01	-18.43
1021	-1.3848E-01	-3.0859E-02	1.9800E-03	-3.0822E-02	-1.3851E-01	88.95
1026	1.2227E-01	2.1777E-02	5.3890E-03	1.2256E-01	2.1489E-02	3.06
1027	-2.6922E-01	-1.4690E-01	9.5728E-04	-1.4689E-01	-2.6923E-01	89.55

ELEMENT ID 116 -----

LOAD COND 1 -----

JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
1021	-4.5851E-01	1.1033E-01	6.2545E-01	5.1299E-01	-8.6117E-01	57.23
1022	-3.6050E-01	4.8616E-01	1.1412E+00	1.2800E+00	-1.1544E+00	55.18
1027	-3.6879E-01	1.2113E-01	-7.5255E-02	1.3243E-01	-3.8009E-01	-81.46
1028	-2.3896E-01	5.0473E-01	4.4359E-01	7.1171E-01	-4.4594E-01	64.99

SHELL ELEMENT FORCES

ELEMENT ID	-----					
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
1021	-9.3019E-02	-1.8089E-02	-4.8957E-03	-1.7771E-02	-9.3337E-02	-86.28
1022	1.3334E-01	4.4879E-02	-6.5373E-02	1.6804E-01	1.0179E-02	-27.96
1027	5.4962E-03	-6.4894E-02	1.1705E-02	7.3915E-03	-6.6790E-02	9.20
1028	-1.5010E-01	5.2029E-02	-5.0248E-02	6.3831E-02	-1.6190E-01	-76.78

ELEMENT ID	-----					
LOAD COND	1					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
1022	-1.9989E+00	5.6507E-01	1.1903E+00	1.0325E+00	-2.4663E+00	68.56
1024	-2.2216E+00	-7.1020E-01	2.7408E+00	1.3772E+00	-4.3089E+00	52.71
1028	7.6900E-01	9.0146E-01	2.3694E-01	1.0812E+00	5.8921E-01	52.81
1029	1.9671E-01	-4.7126E-01	1.8060E+00	1.6993E+00	-1.9739E+00	39.76
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
1022	4.4476E-03	-1.3618E-02	-4.8932E-02	4.5173E-02	-5.4343E-02	-39.77
1024	1.4102E-01	7.7507E-02	4.9758E-02	1.6829E-01	5.0236E-02	28.73
1028	3.0554E-01	1.7390E-01	-2.6608E-02	3.1072E-01	1.6873E-01	-11.01
1029	1.4696E-01	2.0126E-01	4.9481E-02	2.3055E-01	1.1767E-01	59.38

ELEMENT ID	-----					
LOAD COND	1					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
1024	1.0297E+00	6.1243E-02	-9.7834E-01	1.6371E+00	-5.4615E-01	-31.83
1031	1.0297E+00	6.1243E-02	-9.7834E-01	1.6371E+00	-5.4615E-01	-31.83
1029	1.0297E+00	6.1243E-02	-9.7834E-01	1.6371E+00	-5.4615E-01	-31.83
1029	1.0297E+00	6.1243E-02	-9.7834E-01	1.6371E+00	-5.4615E-01	-31.83
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
1024	1.6709E-01	6.9242E-02	-8.1509E-03	1.6777E-01	6.8568E-02	-4.73
1031	1.6709E-01	6.9242E-02	-8.1509E-03	1.6777E-01	6.8568E-02	-4.73
1029	1.6709E-01	6.9242E-02	-8.1509E-03	1.6777E-01	6.8568E-02	-4.73
1029	1.6709E-01	6.9242E-02	-8.1509E-03	1.6777E-01	6.8568E-02	-4.73

ELEMENT ID	-----					
LOAD COND	1					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
1031	5.8689E+00	-2.6687E+00	2.3492E+00	6.4726E+00	-3.2724E+00	14.41
1030	5.8689E+00	-2.6687E+00	2.3492E+00	6.4726E+00	-3.2724E+00	14.41
1029	5.8689E+00	-2.6687E+00	2.3492E+00	6.4726E+00	-3.2724E+00	14.41
1029	5.8689E+00	-2.6687E+00	2.3492E+00	6.4726E+00	-3.2724E+00	14.41
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE
1031	-1.4995E-02	1.9467E-02	-4.0959E-02	4.6672E-02	-4.2199E-02	-56.41
1030	-1.4995E-02	1.9467E-02	-4.0959E-02	4.6672E-02	-4.2199E-02	-56.41
1029	-1.4995E-02	1.9467E-02	-4.0959E-02	4.6672E-02	-4.2199E-02	-56.41
1029	-1.4995E-02	1.9467E-02	-4.0959E-02	4.6672E-02	-4.2199E-02	-56.41

ELEMENT ID	-----					
LOAD COND	1					
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE
1169	-5.1501E-01	1.6971E-01	4.6812E-01	4.0730E-01	-7.5261E-01	63.09
1032	-7.3827E-01	-4.4387E-01	3.2188E-01	-2.3713E-01	-9.4501E-01	57.29
1033	-1.1331E-01	9.9661E-02	2.0714E-01	2.2609E-01	-2.3973E-01	58.60
1034	-8.0336E-02	6.2761E-02	-3.5854E-02	7.1242E-02	-8.8817E-02	-76.69

SHELL ELEMENT FORCES

ELEMENT ID 120 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1169	6.0785E-02	-7.2089E-02	-1.1493E-02	6.1771E-02	-7.3076E-02	-4.91	
1032	3.9463E-01	2.2210E-01	-1.4274E-01	4.7516E-01	1.4156E-01	-29.43	
1033	6.0040E-02	2.9364E-01	-5.3878E-02	3.0547E-01	4.8213E-02	-77.62	
1034	1.7899E-01	1.8610E-01	-8.6577E-02	2.6919E-01	9.5893E-02	-46.18	

ELEMENT ID 121 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1032	-3.7187E-01	5.9613E-02	-1.9730E-02	6.0513E-02	-3.7278E-01	-87.39	
1026	-3.7187E-01	5.9613E-02	-1.9730E-02	6.0513E-02	-3.7278E-01	-87.39	
1034	-3.7187E-01	5.9613E-02	-1.9730E-02	6.0513E-02	-3.7278E-01	-87.39	
1034	-3.7187E-01	5.9613E-02	-1.9730E-02	6.0513E-02	-3.7278E-01	-87.39	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1032	2.5732E-01	6.3268E-02	7.5552E-02	2.8326E-01	3.7321E-02	18.95	
1026	2.5732E-01	6.3268E-02	7.5552E-02	2.8326E-01	3.7321E-02	18.95	
1034	2.5732E-01	6.3268E-02	7.5552E-02	2.8326E-01	3.7321E-02	18.95	
1034	2.5732E-01	6.3268E-02	7.5552E-02	2.8326E-01	3.7321E-02	18.95	

ELEMENT ID 122 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1026	-7.1710E-02	8.5801E-02	7.7364E-01	7.8468E-01	-7.7059E-01	47.91	
1027	-7.5327E-02	4.5646E-02	8.0572E-01	7.9315E-01	-8.2283E-01	47.15	
1034	-6.7782E-02	-1.2070E-01	-1.1445E-01	2.3230E-02	-2.1171E-01	-38.49	
1035	3.9356E-02	2.5660E-01	-9.5058E-02	2.9232E-01	3.6363E-03	-69.41	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1026	-3.9557E-01	-4.4323E-02	-1.4313E-02	-4.3740E-02	-3.9616E-01	-87.67	
1027	2.3559E-01	1.6839E-02	-2.1752E-02	2.3774E-01	1.4697E-02	-5.62	
1034	1.5334E-01	2.1984E-01	-1.2433E-02	2.2209E-01	1.5109E-01	-79.75	
1035	5.0221E-03	2.9751E-01	5.4847E-03	2.9761E-01	4.9192E-03	88.93	

ELEMENT ID 123 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1027	-2.8645E-01	3.9130E-01	8.2203E-01	9.4156E-01	-8.3672E-01	56.20	
1028	-5.6509E-01	-5.3527E-01	1.4244E+00	8.7426E-01	-1.9746E+00	45.30	
1035	3.4635E-01	2.8943E-01	-1.4159E-01	4.6231E-01	1.7347E-01	-39.32	
1036	2.7636E-01	5.4475E-02	3.9833E-01	5.7891E-01	-2.4808E-01	37.22	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1027	-3.0699E-01	-1.3196E-01	-1.1551E-02	-1.3120E-01	-3.0775E-01	-86.24	
1028	1.4312E-01	1.2741E-01	4.9303E-03	1.4454E-01	1.2599E-01	16.06	
1035	1.1719E-01	3.2628E-01	-2.2509E-02	3.2868E-01	1.1480E-01	-83.93	
1036	-5.6186E-02	9.2564E-02	6.5539E-03	9.2852E-02	-5.6475E-02	87.48	

ELEMENT ID 124 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
028	5.0915E-01	2.7904E-01	1.2071E+00	1.6067E+00	-8.1851E-01	42.28	
029	-2.6221E-01	-2.3135E+00	1.1556E+00	2.5726E-01	-2.8330E+00	24.21	
036	1.1833E+00	4.6633E-01	1.5634E-01	1.2159E+00	4.3372E-01	11.78	
037	5.1806E-01	-1.7240E+00	2.4853E-02	5.1834E-01	-1.7242E+00	.64	

SHELL ELEMENT FORCES

ELEMENT ID 124 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1028	9.9425E-02	1.0328E-01	1.6068E-02	1.1754E-01	8.5170E-02	48.42	
1029	3.6328E-01	2.5183E-01	-3.4908E-02	3.7331E-01	2.4180E-01	-16.03	
1036	5.2000E-01	2.9028E-01	2.1520E-03	5.2002E-01	2.9026E-01	.54	
1037	-2.8474E-01	-1.1999E-01	-2.8640E-02	-1.1516E-01	-2.8958E-01	-80.41	

ELEMENT ID 125 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1029	3.6603E+00	-1.1174E+00	-1.0831E+00	3.8944E+00	-1.3514E+00	-12.19	
1030	4.5456E+00	1.3873E+00	-2.4290E-01	4.5642E+00	1.3687E+00	-4.37	
1037	8.6229E-01	-1.2973E+00	1.0661E+00	1.2999E+00	-1.7349E+00	22.32	
1038	1.0499E+00	-1.7382E-01	2.0492E+00	2.5767E+00	-1.7006E+00	36.69	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1029	2.5834E-01	1.4265E-01	-6.5708E-02	2.8804E-01	1.1295E-01	-24.32	
1030	-6.0555E-01	-1.5327E-01	1.1407E-01	-1.2613E-01	-6.3269E-01	76.62	
1037	-3.7838E-02	-2.5820E-02	-6.7889E-02	3.6326E-02	-9.9983E-02	-47.53	
1038	2.6021E-01	8.6438E-02	7.7096E-02	2.8948E-01	5.7165E-02	20.79	

ELEMENT ID 126 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1033	1.2853E-01	2.8831E-02	1.6174E-01	2.4792E-01	-9.0563E-02	36.44	
1034	1.2853E-01	2.8831E-02	1.6174E-01	2.4792E-01	-9.0563E-02	36.44	
1039	1.2853E-01	2.8831E-02	1.6174E-01	2.4792E-01	-9.0563E-02	36.44	
1039	1.2853E-01	2.8831E-02	1.6174E-01	2.4792E-01	-9.0563E-02	36.44	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1033	1.1711E-01	1.4189E-01	5.0534E-02	1.8153E-01	7.7468E-02	51.89	
1034	1.1711E-01	1.4189E-01	5.0534E-02	1.8153E-01	7.7468E-02	51.89	
1039	1.1711E-01	1.4189E-01	5.0534E-02	1.8153E-01	7.7468E-02	51.89	
1039	1.1711E-01	1.4189E-01	5.0534E-02	1.8153E-01	7.7468E-02	51.89	

ELEMENT ID 127 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1035	2.6021E-01	-4.0126E-04	1.9169E-01	3.6169E-01	-1.0189E-01	27.90	
1036	2.4608E-01	-4.9117E-02	2.3239E-01	3.7378E-01	-1.7682E-01	28.79	
1040	-4.2172E-02	-1.0837E-01	3.8790E-02	-2.4279E-02	-1.2626E-01	24.76	
1041	-4.8280E-02	-1.2705E-01	8.7046E-02	7.8766E-03	-1.8321E-01	32.83	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1035	5.5905E-03	6.8143E-02	-2.5223E-02	7.7046E-02	-3.3130E-03	-70.56	
1036	-1.3292E-01	7.8405E-03	1.4969E-02	9.4148E-03	-1.3450E-01	84.00	
1040	-1.7935E-02	8.2498E-03	-4.7822E-02	4.4740E-02	-5.4425E-02	-52.66	
1041	2.1734E-01	2.8504E-02	-1.2599E-02	2.1818E-01	2.7668E-02	-3.80	

ELEMENT ID 128 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1036	1.1162E+00	2.5565E-01	3.5421E-01	1.2432E+00	1.2861E-01	19.73	
1037	1.1103E+00	2.2857E-01	-2.9727E-02	1.1113E+00	2.2757E-01	-1.93	
1041	-2.9464E-01	-1.7913E-01	1.9912E-01	-2.9562E-02	-4.4421E-01	53.09	
1042	-2.9618E-01	-1.7816E-01	-1.4841E-01	-7.7455E-02	-3.9688E-01	-55.84	

SHELL ELEMENT FORCES

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ELEMENT ID 128 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1036  7.0634E-01  2.3810E-01  2.9211E-02  7.0816E-01  2.3628E-01  3.56
1037 -3.3652E-01 -2.6567E-01 -1.3421E-02 -2.6321E-01 -3.3898E-01 -79.63
1041 -5.4262E-02 -2.1420E-02 -1.3266E-02 -1.6731E-02 -5.8951E-02 -70.53
1042  1.3326E-01  1.1337E-01 -4.9292E-02  1.7360E-01  7.3032E-02 -39.30

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ELEMENT ID 129 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1037  1.4881E+00  3.3443E-01 -6.1696E-02  1.4914E+00  3.3114E-01 -3.05
1038  1.5410E+00  4.9802E-01 -3.7494E-01  1.6618E+00  3.7722E-01 -17.86
1042 -4.2457E-02 -1.1346E-01  5.6295E-01  4.8611E-01 -6.4202E-01  43.20
1043 -2.1826E-02 -3.3881E-02  2.7462E-01  2.4683E-01 -3.0254E-01  44.37
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1037 -6.5297E-01 -3.4545E-01 -4.1291E-02 -3.4000E-01 -6.5842E-01 -82.48
1038  4.8977E-01  1.3665E-01 -3.4861E-02  4.9318E-01  1.3324E-01 -5.58
1042  9.2643E-02  8.1349E-02 -1.3890E-02  1.0199E-01  7.2002E-02 -33.94
1043 -8.7529E-02 -2.7577E-02 -1.9414E-03 -2.7514E-02 -8.7592E-02 -88.15

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ELEMENT ID 130 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1039  2.8863E-01  1.5494E-01  2.0995E-01  4.4211E-01  1.4564E-03  36.17
1040  2.7616E-01  1.2139E-01  1.4186E-01  3.6037E-01  3.7185E-02  30.69
1044 -4.9084E-01 -5.4724E-02  3.7868E-01  1.6420E-01 -7.0976E-01  59.97
1045 -5.1848E-01 -1.5041E-01  3.4440E-01  5.6041E-02 -7.2493E-01  59.06
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1039 -4.8831E-02  1.2077E-01 -7.2821E-02  1.4774E-01 -7.5807E-02 -69.67
1040  5.0732E-02  2.0699E-01 -3.1990E-02  2.1329E-01  4.4437E-02 -78.87
1044  1.6377E-01  3.9021E-01 -7.3946E-02  4.1222E-01  1.4176E-01 -73.43
1045  2.0834E-01  3.5003E-01 -3.1585E-02  3.5676E-01  2.0162E-01 -77.99

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ELEMENT ID 131 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1040  2.5642E-02  9.4863E-02  1.3391E-01  1.9857E-01 -7.8062E-02  52.25
1041  6.0327E-02  2.1385E-01  4.4199E-02  2.2567E-01  4.8511E-02  75.03
1045 -6.7206E-01 -8.2712E-02  3.4295E-01  7.4772E-02 -8.2954E-01  65.34
1046 -6.5776E-01 -3.7042E-02  2.8175E-01  7.1770E-02 -7.6657E-01  68.88
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1040 -2.3557E-02  1.3962E-01 -3.7937E-02  1.4801E-01 -3.1946E-02 -77.53
1041  3.7713E-01  3.6722E-01 -5.4498E-02  4.2690E-01  3.1745E-01 -42.40
1045  2.9617E-01  3.9378E-01 -2.2009E-03  3.9383E-01  2.9612E-01 -88.71
1046  5.3198E-02  3.5738E-01 -1.0914E-02  3.5777E-01  5.2806E-02 -87.95

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ELEMENT ID 132 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1041 -1.9123E-01  1.6911E-01  1.0223E-01  1.9609E-01 -2.1821E-01  75.22
1042 -1.5593E-01  2.8948E-01 -3.4563E-02  2.9215E-01 -1.5860E-01 -85.59
1046 -7.4425E-01  3.5839E-02  2.4694E-01  1.0744E-01 -8.1585E-01  73.83
1047 -7.2536E-01  9.6888E-02  1.3577E-01  1.1873E-01 -7.4720E-01  80.86

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SHELL ELEMENT FORCES

ELEMENT ID 132 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1041	1.4022E-03	2.1367E-01	-6.4658E-02	2.3181E-01	-1.6742E-02	-74.33	
1042	2.1170E-01	4.0014E-01	-5.1554E-02	4.1332E-01	1.9852E-01	-75.66	
1046	3.3420E-01	4.3872E-01	-5.8543E-02	4.6493E-01	3.0798E-01	-65.88	
1047	-3.9493E-02	2.1175E-01	-4.8142E-02	2.2066E-01	-4.8402E-02	-79.52	

ELEMENT ID 133 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1042	1.2595E-01	4.6420E-01	5.7257E-01	8.9210E-01	-3.0195E-01	53.23	
1043	-2.2845E-02	-3.9475E-02	1.6520E-01	1.3425E-01	-1.9657E-01	43.56	
1047	-1.2477E+00	-5.0846E-02	-7.7703E-02	-4.5823E-02	-1.2528E+00	-86.30	
1048	-1.3264E+00	-3.0757E-01	-4.1986E-01	-1.5684E-01	-1.4771E+00	-70.25	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1042	4.7858E-01	4.7419E-01	-2.2239E-02	4.9873E-01	4.5404E-01	-42.18	
1043	-4.8120E-01	-1.3192E-01	3.6741E-02	-1.2810E-01	-4.8502E-01	84.06	
1047	-2.1404E-01	1.2552E-01	-1.3399E-01	1.7203E-01	-2.6054E-01	-70.86	
1048	5.1099E-01	1.9782E-01	-8.9665E-02	5.3484E-01	1.7396E-01	-14.90	

ELEMENT ID 134 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1044	-4.3420E-01	1.1005E-01	4.4252E-01	3.5742E-01	-6.8157E-01	60.80	
1045	-4.4059E-01	8.4800E-02	3.4885E-01	2.5880E-01	-6.1459E-01	63.49	
1049	-4.2111E-01	1.3691E-01	5.3884E-01	4.6469E-01	-7.4889E-01	58.69	
1050	-4.4727E-01	5.3206E-02	4.4470E-01	3.1324E-01	-7.0731E-01	59.68	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1044	2.6930E-01	4.0670E-01	-6.5467E-02	4.3289E-01	2.4310E-01	-68.19	
1045	8.8703E-02	2.4467E-01	-5.7509E-03	2.4488E-01	8.8492E-02	-87.89	
1049	1.0353E-01	1.6710E-01	-5.3308E-02	1.9738E-01	7.3250E-02	-60.40	
1050	4.1510E-01	4.4231E-01	-4.5962E-03	4.4307E-01	4.1435E-01	-80.67	

ELEMENT ID 135 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1045	-5.9594E-01	1.8898E-01	1.8418E-01	2.3005E-01	-6.3700E-01	77.43	
1046	-6.9993E-01	-1.5087E-01	2.4063E-01	-6.0344E-02	-7.9046E-01	69.38	
1050	-3.8461E-01	2.2395E-01	7.6095E-02	2.3332E-01	-3.9398E-01	82.98	
1051	-4.6534E-01	-4.9478E-02	1.1440E-01	-2.0086E-02	-4.9473E-01	75.59	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1045	3.6102E-01	3.3220E-01	2.3886E-02	3.7451E-01	3.1872E-01	29.45	
1046	-5.1341E-02	2.1495E-01	5.3911E-02	2.2545E-01	-6.1841E-02	78.98	
1050	6.5799E-02	3.1868E-01	-6.1474E-02	3.3283E-01	5.1646E-02	-77.04	
1051	1.6897E-01	-2.5445E-01	-5.5159E-02	1.7604E-01	-2.6152E-01	-7.30	

ELEMENT ID 136 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1046	-7.7195E-01	-7.3533E-02	1.6115E-01	-3.8144E-02	-8.0734E-01	77.61	
1047	-7.3668E-01	1.5159E-02	4.7333E-01	2.4369E-01	-9.6521E-01	64.23	
1051	-3.1535E-01	2.5851E-02	1.2041E-02	2.6276E-02	-3.1577E-01	87.98	
1052	-2.7002E-01	2.0021E-01	2.9215E-01	3.4011E-01	-4.0991E-01	64.41	

SHELL ELEMENT FORCES

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ELEMENT ID 136 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1046  3.9102E-01  3.6369E-01  8.7621E-03  3.9358E-01  3.6112E-01  16.34
1047 -1.5091E-01  1.2721E-02 -7.7022E-02  4.3271E-02 -1.8146E-01 -68.36
1051 -3.1950E-01 -4.2825E-01 -5.6997E-02 -2.9510E-01 -4.5265E-01 -23.17
1052 -2.5810E-01 -8.4113E-01 -1.8466E-01 -2.0453E-01 -8.9469E-01 -16.18

```

```

ELEMENT ID 137 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1047 -1.1787E+00  1.6160E-01  6.9611E-01  4.5773E-01 -1.4748E+00  66.96
1048 -1.4186E+00 -6.4039E-01  7.6234E-01 -1.7359E-01 -1.8854E+00  58.52
1052 -1.2271E+00  2.3094E-02  1.1930E-01  3.4376E-02 -1.2384E+00  84.60
1053 -1.3701E+00 -4.5127E-01  1.8781E-01 -4.1436E-01 -1.4070E+00  78.88
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1047 -7.4187E-02 -1.3608E-02 -1.5761E-01  1.1659E-01 -2.0439E-01 -50.44
1048  4.0885E-01  1.8702E-01 -2.0400E-01  5.3014E-01  6.5733E-02 -30.73
1052 -2.7589E-01 -9.1120E-01 -4.1214E-02 -2.7323E-01 -9.1386E-01 -3.70
1053  8.2713E-02 -9.3833E-02 -1.1340E-01  1.3814E-01 -1.4926E-01 -26.05

```

```

ELEMENT ID 138 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1132 -2.2358E+00 -1.1877E+00  2.3463E+00  6.9235E-01 -4.1159E+00  51.30
1134 -1.7977E+00  2.8585E-01  4.5186E-01  3.7963E-01 -1.8915E+00  78.28
1131 -5.4786E+00 -2.3341E+00  5.8951E-01 -2.2272E+00 -5.5855E+00  79.72
1129 -4.8946E+00 -3.9875E-01 -1.2014E+00 -9.7841E-02 -5.1955E+00 -75.94
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1132  2.2394E+00  1.7322E-01  4.8900E-02  2.2406E+00  1.7206E-01  1.36
1134  7.6967E-01  5.8880E-02 -2.1378E-01  8.2901E-01 -4.6524E-04 -15.51
1131  4.3126E+00  7.1861E+00 -1.3728E-01  7.1926E+00  4.3060E+00 -87.27
1129  1.4681E+00  5.6310E+00 -1.7121E-01  5.6381E+00  1.4611E+00 -87.65

```

```

ELEMENT ID 139 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1149  2.9289E+00  2.5753E-01  7.3869E-02  2.9310E+00  2.5549E-01  1.58
1151  2.3301E+00 -1.8005E+00  1.2059E+00  2.6563E+00 -2.1268E+00  15.14
1132 -2.2817E+00 -1.3417E+00 -1.1771E+00 -5.4424E-01 -3.0792E+00 -55.88
1134 -2.4396E+00 -1.7865E+00  8.1345E-01 -1.2365E+00 -2.9896E+00  55.94
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1149  1.3087E+00 -5.2951E-02 -1.8185E-01  1.3326E+00 -7.6819E-02 -7.48
1151  1.6121E+00 -6.2564E-02 -5.3163E-01  1.7666E+00 -2.1708E-01 -16.21
1132  2.4890E+00  6.2893E-01 -1.3853E-01  2.4993E+00  6.1867E-01 -4.24
1134  8.1405E-02  3.4007E-01 -4.9145E-02  3.4910E-01  7.2383E-02 -79.60

```

```

ELEMENT ID 140 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1134 -3.1297E+00 -2.8569E-01  1.3783E+00  2.7267E-01 -3.6880E+00  67.95
1136 -3.2251E+00 -5.7220E-01  1.0257E+00 -2.2188E-01 -3.5754E+00  71.14
1129 -2.6518E+00 -4.8209E-02  2.0817E-01 -3.1669E-02 -2.6683E+00  85.46
1127 -2.7113E+00 -2.7754E-01 -1.4532E-01 -2.6889E-01 -2.7199E+00 -86.60

```

SHELL ELEMENT FORCES

```

ELEMENT ID 140 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1134  1.5293E+00  3.5663E-01 -4.2728E-01  1.6684E+00  2.1746E-01 -18.04
1136 -6.9599E-01 -3.0059E-01 -6.0309E-01  1.3638E-01 -1.1330E+00 -54.08
1129  1.8781E+00  5.6555E+00 -4.6735E-01  5.7125E+00  1.8211E+00 -83.05
1127  6.8127E-01  4.8113E+00 -6.4334E-01  4.9092E+00  5.8338E-01 -81.35

```

```

ELEMENT ID 141 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1151  1.7785E-01 -1.8263E-01 -2.5672E-01  3.1129E-01 -3.1606E-01 -27.46
1153  6.1006E-01  1.2210E+00 -5.2236E-01  1.5207E+00  3.1041E-01 -60.16
1134 -3.8953E+00 -2.8628E+00  1.6815E+00 -1.6201E+00 -5.1380E+00  53.53
1136 -3.5333E+00 -1.6257E+00  1.4773E+00 -8.2104E-01 -4.3379E+00  61.42
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1151  1.0261E+00  9.3156E-04 -5.4871E-01  1.2644E+00 -2.3736E-01 -23.47
1153  1.6860E-01 -2.5763E-01 -6.7868E-01  6.6684E-01 -7.5587E-01 -36.28
1134  1.2575E+00  7.8654E-01 -4.3058E-01  1.5128E+00  5.3127E-01 -30.66
1136 -2.2570E-01  5.0375E-01 -4.0694E-01  6.8549E-01 -4.0744E-01 -65.93

```

```

ELEMENT ID 142 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1136 -2.2602E+00 -2.6547E-01  1.3438E+00  4.1066E-01 -2.9363E+00  63.29
1138 -2.4316E+00 -8.4494E-01  1.2206E+00 -1.8251E-01 -3.0940E+00  61.51
1127 -2.4957E+00 -2.7024E-01  5.4988E-03 -2.7023E-01 -2.4957E+00  89.86
1125 -2.7266E+00 -1.0313E+00 -1.2557E-01 -1.0220E+00 -2.7359E+00 -85.79
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1136 -4.0203E-01 -1.9360E-01 -6.1538E-01  3.2633E-01 -9.2196E-01 -49.81
1138 -2.3745E+00 -9.3085E-01 -3.9700E-01 -8.2888E-01 -2.4765E+00 -75.59
1127  1.3474E+00  4.8774E+00 -7.0195E-01  5.0119E+00  1.2130E+00 -79.16
1125  3.9341E-01  4.3172E+00 -5.4364E-01  4.3911E+00  3.1948E-01 -82.26

```

```

ELEMENT ID 143 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1153 -5.7052E+00 -4.6097E-01  1.5140E-01 -4.5661E-01 -5.7096E+00  88.35
1155 -5.5444E+00  2.0077E-01  1.0391E+00  3.8294E-01 -5.7266E+00  80.06
1136 -2.4826E+00 -1.4177E+00  1.4702E+00 -3.8651E-01 -3.5139E+00  54.95
1138 -2.3048E+00 -9.4103E-01  2.3011E+00  7.7715E-01 -4.0229E+00  53.25
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1153  4.5243E-01 -1.4372E-01 -7.4412E-01  9.5596E-01 -6.4725E-01 -34.09
1155 -3.1943E+00 -2.5056E-01  7.6218E-02 -2.4859E-01 -3.1963E+00  88.52
1136 -5.0943E-01  3.9383E-01 -3.9848E-01  5.4450E-01 -6.6009E-01 -69.29
1138 -1.6646E+00 -3.4618E-01 -1.9209E-01 -3.1876E-01 -1.6920E+00 -81.88

```

```

ELEMENT ID 144 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1138 -1.1191E+00 -3.8380E-01  3.9317E-01 -2.1317E-01 -1.2897E+00  66.54
1140 -1.0233E+00 -7.8418E-02 -1.0163E-01 -6.7611E-02 -1.0341E+00 -83.93
1125 -1.7918E+00 -6.4573E-01 -8.3599E-02 -6.3966E-01 -1.7979E+00 -85.85
1122 -1.6751E+00 -2.4412E-01 -5.6056E-01 -5.0676E-02 -1.8685E+00 -70.96

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SHELL ELEMENT FORCES

```

ELEMENT ID 144 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1138 -2.9858E+00 -1.0291E+00  2.3434E-02 -1.0288E+00 -2.9861E+00  89.31
1140 -1.4474E-01 -5.1233E-01  3.2819E-01  4.7618E-02 -7.0469E-01  30.38
1125  1.4565E+00  4.5679E+00 -2.6615E-01  4.5905E+00  1.4339E+00 -85.15
1122 -1.2240E-01  3.0522E+00  1.0782E-01  3.0559E+00 -1.2606E-01  88.06

```

```

ELEMENT ID 145 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1155 -1.1850E+01 -2.6540E+00  2.4171E+00 -2.0574E+00 -1.2447E+01  76.14
1156 -1.0680E+01 -4.5581E+00  3.8601E+00 -2.6926E+00 -1.2546E+01  64.21
1138 -6.6565E-01  1.5064E+00  1.2918E-01  1.5140E+00 -6.7330E-01  86.61
1140 -2.4098E-01  1.8322E+00 -7.9973E-01  2.1048E+00 -5.1362E-01 -71.18
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1155 -2.9232E+00 -4.7609E-01  4.0081E-01 -4.1212E-01 -2.9872E+00  80.93
1156 -3.3139E+00 -1.6178E+00  1.3708E+00 -8.5394E-01 -4.0778E+00  60.87
1138 -2.4292E+00 -1.1595E+00  7.1045E-02 -1.1556E+00 -2.4331E+00  86.81
1140 -7.2402E-01 -7.8679E-01  2.1508E-01 -5.3804E-01 -9.7277E-01  40.85

```

```

ELEMENT ID 146 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1159  6.4082E-01 -5.0621E+00  7.3504E-01  7.3404E-01 -5.1553E+00  7.23
1161  1.0904E+00  3.4523E-02  4.6359E-01  1.2651E+00 -1.4013E-01  20.64
1156 -3.4481E+00 -6.7429E+00  1.9969E+00 -2.5068E+00 -7.6843E+00  25.24
1140 -1.0737E+00 -2.8953E-01  7.3502E-01  1.5145E-01 -1.5147E+00  59.04
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1159  2.9511E-01 -1.7689E+00 -3.4209E-01  3.5033E-01 -1.8241E+00 -9.17
1161 -2.0860E-01 -5.8614E-01 -2.3142E-01 -9.8724E-02 -6.9602E-01 -25.40
1156 -8.5209E-01 -2.4195E+00  4.5161E-01 -7.3129E-01 -2.5403E+00  14.98
1140 -6.4821E-01 -1.0040E+00  1.6791E-01 -5.8148E-01 -1.0707E+00  21.67

```

```

ELEMENT ID 147 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1160 -1.2325E+00 -1.5599E+00 -1.3453E-01 -1.1843E+00 -1.6081E+00 -19.71
1094  4.1348E-01  5.9751E-01  1.1213E+00  1.6306E+00 -6.1957E-01  47.35
1159 -1.9510E-01 -7.5722E-01  5.9790E-01  1.8450E-01 -1.1368E+00  32.41
1161 -7.8835E-01  3.4483E-01  1.2142E+00  1.1181E+00 -1.5617E+00  57.51
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1160 -4.6839E-01 -1.5232E+00  3.1088E-02 -4.6747E-01 -1.5241E+00  1.69
1094 -3.3835E-01 -7.0250E-01  2.7356E-01 -1.9181E-01 -8.4904E-01  28.18
1159  4.1819E-01 -8.8067E-01  3.5379E-01  5.0831E-01 -9.7078E-01  14.29
1161 -4.1160E-01 -1.2047E+00  3.4860E-01 -2.8016E-01 -1.3361E+00  20.66

```

```

ELEMENT ID 148 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1092 -3.8381E-01  8.7097E-01 -8.2402E-01  1.2793E+00 -7.9210E-01 -63.64
1082  1.4419E-01  9.1187E-01  2.4325E-01  9.8246E-01  7.3602E-02  73.82
1160 -8.0074E-02  1.4219E+00 -5.3307E-01  1.5919E+00 -2.5003E-01 -72.32
1094 -6.7972E-01  1.1793E+00  2.5531E-01  1.2137E+00 -7.1415E-01  82.32

```

SHELL ELEMENT FORCES

```

ELEMENT ID 148 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1092  1.7860E-01 -7.2215E-01  6.1716E-01  4.9225E-01 -1.0358E+00  26.94
1082 -6.2985E-01 -2.4125E-01  9.1923E-02 -2.2061E-01 -6.5049E-01  77.34
1160 -6.9944E-01 -5.8383E-01  4.1962E-01 -2.1805E-01 -1.0652E+00  48.92
1094 -8.2056E-01 -7.6286E-01  2.1690E-01 -5.7290E-01 -1.0105E+00  48.79

```

```

ELEMENT ID 149 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1089  5.3863E-01  2.2578E+00 -5.1617E-01  2.4009E+00  3.9557E-01 -74.51
1063  1.5681E-02  6.9319E-01  2.7811E-02  6.9433E-01  1.4541E-02  87.65
1092  3.2649E-01  2.0819E+00 -6.4006E-01  2.2905E+00  1.1790E-01 -71.95
1082 -1.0506E-01  4.5925E-01 -1.2314E-01  4.8495E-01 -1.3076E-01 -78.21
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1089 -9.6607E-01 -2.3818E-01 -1.0000E-01 -2.2470E-01 -9.7956E-01 -82.32
1063 -6.7739E-02 -3.4592E-01  3.0267E-01  1.2627E-01 -5.3994E-01  32.66
1092  2.3641E-02 -2.5427E-01  9.5103E-02  5.3069E-02 -2.8370E-01  17.19
1082 -7.3666E-01 -4.4423E-01  1.0397E-01 -4.1103E-01 -7.6986E-01  72.29

```

```

ELEMENT ID 150 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1088  1.0601E+00  2.4161E+00 -6.5265E-02  2.4192E+00  1.0570E+00 -87.25
1055  4.0583E-01  4.1231E-01 -3.6955E-01  7.7864E-01  3.9500E-02 -45.25
1089  3.9057E-01  2.1406E+00 -3.1563E-01  2.1958E+00  3.3539E-01 -80.08
1063 -1.2853E-01  1.4402E-01 -5.4015E-01  5.6482E-01 -5.4933E-01 -52.08
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1088  1.7580E+00  7.8300E-01  9.1482E-01  2.3071E+00  2.3390E-01  30.97
1055 -5.8541E-01  2.5742E-02 -3.9401E-03  2.5767E-02 -5.8543E-01 -89.63
1089 -1.7000E+00 -1.3017E+00  8.7959E-01 -5.9897E-01 -2.4027E+00  51.38
1063  1.4302E-01 -2.0823E-01  2.4832E-01  2.7155E-01 -3.3676E-01  27.36

```

```

ELEMENT ID 151 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1087 -1.9466E+00  6.0536E+00  1.5056E+00  6.3276E+00 -2.2205E+00  79.69
1164 -5.4623E+00 -6.6500E+00  3.1805E+00 -2.8207E+00 -9.2916E+00  39.71
1088  2.2952E+00  6.8971E+00 -7.7484E-01  7.0241E+00  2.1682E+00 -80.69
1055  1.0311E+00  2.6626E+00 -8.3783E-01  3.0162E+00  6.7747E-01 -67.12
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1087 -1.5637E+00 -2.4702E+00 -4.2700E-01 -1.3942E+00 -2.6397E+00 -21.65
1164  1.3823E+00  1.6459E+00 -4.3644E-01  1.9700E+00  1.0582E+00 -53.40
1088  2.0912E+00  1.7789E+00 -1.9662E-01  2.1862E+00  1.6840E+00 -25.77
1055 -9.8547E-01 -2.7552E-01  4.4457E-01 -6.1592E-02 -1.1994E+00  64.30

```

```

ELEMENT ID 152 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1060 -2.5633E-02  3.8906E-02  4.0595E-01  4.1387E-01 -4.0059E-01  47.27
1062  2.8621E-01  2.2221E-01  1.1588E+00  1.4135E+00 -9.0506E-01  44.21
1085  1.9859E+00  2.4476E-01 -2.6617E-01  2.0257E+00  2.0498E-01 -8.50
1087  1.7251E+00  2.3909E-01  4.4430E-01  1.8478E+00  1.1639E-01  15.44

```

SHELL ELEMENT FORCES

```

ELEMENT ID 152 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1060 -1.2855E-01 -3.6135E-01 -7.4946E-02 -1.0651E-01 -3.8339E-01 -16.39
1062 -2.8122E-02 -9.2985E-02 -2.8954E-02 -1.7078E-02 -1.0403E-01 -20.88
1085 -9.4734E-02 1.2760E-01 -1.8854E-01 2.3531E-01 -2.0244E-01 -60.26
1087 1.7453E-01 -4.1638E-01 5.3039E-04 1.7453E-01 -4.1638E-01 .05

```

```

ELEMENT ID 153 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1059 5.2958E-02 5.5929E-03 7.0352E-02 1.0351E-01 -4.4956E-02 35.70
1060 2.7785E-01 5.7709E-01 9.7245E-01 1.4114E+00 -5.5642E-01 49.37
1084 5.9550E-01 1.0707E-01 -5.8406E-01 9.8435E-01 -2.8177E-01 -33.65
1085 5.6032E-01 2.2480E-01 3.4274E-01 7.7415E-01 1.0971E-02 31.96
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1059 -1.0806E-01 1.3180E-01 -1.8178E-02 1.3317E-01 -1.0943E-01 -85.69
1060 -1.8385E-01 -5.4742E-01 2.1707E-02 -1.8256E-01 -5.4871E-01 3.40
1084 8.9037E-02 -1.5370E-01 -1.9445E-03 8.9052E-02 -1.5372E-01 -.46
1085 -2.4127E-01 4.1731E-01 -1.0568E-01 4.3385E-01 -2.5781E-01 -81.10

```

```

ELEMENT ID 154 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1049 -2.5239E-01 -1.0228E+00 5.2590E-01 1.4286E-02 -1.2895E+00 26.89
1171 -3.5469E-01 -8.0636E-01 6.9983E-01 1.5484E-01 -1.3159E+00 36.06
1059 4.3064E-01 -1.5502E-01 7.6881E-02 4.4056E-01 -1.6495E-01 7.36
1060 7.5789E-01 -3.0430E-02 2.1422E-01 8.1234E-01 -8.4879E-02 14.26
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1049 1.7014E-01 1.7826E-01 5.1108E-02 2.2547E-01 1.2293E-01 47.27
1171 1.8088E-01 1.3496E-01 2.8183E-02 1.9427E-01 1.2157E-01 25.42
1059 -5.2316E-02 -1.3392E-01 -5.6427E-02 -2.3485E-02 -1.6275E-01 -27.06
1060 -8.6273E-02 -2.6191E-01 -1.8780E-01 3.3223E-02 -3.8141E-01 -32.47

```

```

ELEMENT ID 155 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1171 6.4694E-01 9.4036E-01 1.0792E+00 1.8828E+00 -2.9548E-01 48.87
1055 6.2906E-01 7.4845E-01 2.2248E-01 9.1911E-01 4.5841E-01 52.51
1060 -1.4467E-01 1.9304E-01 -8.9406E-02 2.1525E-01 -1.6688E-01 -76.05
1062 -1.1409E+00 -2.8754E+00 -1.2072E+00 -5.2171E-01 -3.4946E+00 -27.15
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1171 9.5356E-02 1.2481E-01 -1.3249E-02 1.2989E-01 9.0273E-02 -69.01
1055 -1.1233E-02 -1.5296E-01 -3.4896E-02 -3.1068E-03 -1.6109E-01 -13.11
1060 -6.6002E-01 -5.2395E-01 -7.8050E-03 -5.2350E-01 -6.6046E-01 -86.73
1062 4.4523E-01 1.5822E-01 5.4199E-02 4.5512E-01 1.4832E-01 10.35

```

```

ELEMENT ID 156 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1049 -4.8887E-01 -6.7999E-02 3.6893E-01 1.4629E-01 -7.0316E-01 59.85
1050 -3.3329E-01 4.5046E-01 3.1417E-01 5.6085E-01 -4.4368E-01 70.64
1171 2.5910E-01 -5.2289E-01 5.7061E-01 5.5982E-01 -8.2361E-01 27.79
1055 6.3178E-01 7.1883E-01 7.2330E-01 1.3999E+00 -4.9303E-02 46.72

```

SHELL ELEMENT FORCES

ELEMENT ID 156 -----							
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1049	2.3398E-01	2.5693E-01	-2.0055E-02	2.6856E-01	2.2235E-01	-59.89	
1050	1.7192E-01	3.9516E-01	-6.1986E-02	4.1122E-01	1.5586E-01	-75.48	
1171	1.6113E-01	2.3173E-01	-2.9555E-02	2.4247E-01	1.5039E-01	-70.03	
1055	-7.9144E-02	-2.1226E-01	-8.3032E-02	-3.9288E-02	-2.5212E-01	-25.64	

ELEMENT ID 157 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1147	-2.4953E+00	5.2632E-01	2.4257E+00	1.8732E+00	-3.8422E+00	60.96	
1111	-2.9262E+00	-8.9945E-01	8.1177E-01	-6.1440E-01	-3.2112E+00	70.65	
1114	-2.8603E+00	-1.9063E-01	2.6581E-01	-1.6442E-01	-2.8865E+00	84.37	
1112	-3.0654E+00	-8.8346E-01	-1.3407E+00	-2.4591E-01	-3.7029E+00	-64.57	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1147	-5.3024E-02	-2.3606E-01	1.6324E-01	4.2599E-02	-3.3168E-01	30.36	
1111	-2.4402E-01	5.5677E-02	2.1427E-01	1.6730E-01	-3.5565E-01	62.48	
1114	-4.3898E-01	1.7113E-01	1.4879E-01	2.0548E-01	-4.7333E-01	77.00	
1112	7.3896E-01	2.9347E-01	2.3884E-01	8.4280E-01	1.8963E-01	23.50	

ELEMENT ID 158 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1108	-2.6895E+00	3.8534E+00	2.6667E+00	4.8026E+00	-3.6387E+00	70.41	
1110	-4.0805E+00	-1.2122E+00	1.9905E-02	-1.2121E+00	-4.0806E+00	89.60	
1147	-2.4612E+00	6.9402E-01	6.1056E-01	8.0805E-01	-2.5752E+00	79.42	
1111	-2.9678E+00	-6.6487E-01	-2.3323E+00	7.8468E-01	-4.4173E+00	-58.14	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1108	5.2517E-01	-1.5544E-02	5.0718E-01	8.2955E-01	-3.1993E-01	30.97	
1110	-9.5114E-01	5.1673E-02	7.4142E-01	4.4532E-01	-1.3448E+00	62.04	
1147	-1.4513E+00	-8.4045E-02	-8.2380E-02	-7.9099E-02	-1.4562E+00	-86.56	
1111	2.1477E+00	-8.2504E-02	6.1772E-01	2.3073E+00	-2.4217E-01	14.49	

ELEMENT ID 159 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1145	-1.7680E+00	1.2090E-01	9.2377E-01	4.9756E-01	-2.1447E+00	67.82	
1147	-1.7758E+00	8.2605E-02	2.0729E-01	1.0545E-01	-1.7987E+00	83.71	
1116	-1.7110E+00	1.0600E-01	8.5381E-01	4.4424E-01	-2.0492E+00	68.39	
1114	-1.7214E+00	8.2395E-02	1.3515E-01	9.2466E-02	-1.7315E+00	85.74	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1145	-5.9802E-01	-5.0629E-02	1.1161E-01	-2.8745E-02	-6.1990E-01	78.91	
1147	-7.6004E-01	-4.6364E-01	2.3195E-01	-3.3658E-01	-8.8710E-01	61.29	
1116	4.2351E-01	8.0447E-01	-7.9138E-02	8.2025E-01	4.0772E-01	-78.72	
1114	-4.3388E-01	1.6197E-01	1.8446E-02	1.6254E-01	-4.3445E-01	88.23	

ELEMENT ID 160 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1106	-1.9144E+00	2.0359E+00	1.4085E+00	2.4866E+00	-2.3652E+00	72.25	
1108	-2.6025E+00	-1.2030E-01	1.7501E-01	-1.0803E-01	-2.6148E+00	85.99	
1145	-1.7509E+00	1.6957E-01	2.8327E-02	1.6999E-01	-1.7513E+00	89.16	
1147	-2.3528E+00	-1.9747E+00	-1.1669E+00	-9.8157E-01	-3.3459E+00	-49.60	

S H E L L E L E M E N T F O R C E S

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ELEMENT ID 160 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1106 -5.5034E-01  1.4730E-01  6.7422E-02  1.5375E-01 -5.5680E-01  84.53
1108 -5.1889E-01 -2.6861E-01  2.7473E-01 -9.1864E-02 -6.9564E-01  57.24
1145 -5.1911E-01 -5.1594E-01  2.8010E-01 -2.3742E-01 -7.9763E-01  45.16
1147 -3.8422E-01  2.6659E-01  2.1784E-01  3.3277E-01 -4.5041E-01  73.10

```

```

ELEMENT ID 161 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1143 -9.2282E-01  1.5422E-01  1.1162E+00  8.5502E-01 -1.6236E+00  57.88
1145 -9.3741E-01  8.3346E-02  4.2083E-01  2.3447E-01 -1.0885E+00  70.25
1118 -2.2299E+00 -2.5392E-01  9.9047E-01  1.5707E-01 -2.6409E+00  67.46
1116 -2.2669E+00 -3.5119E-01  2.5859E-01 -3.1689E-01 -2.3012E+00  82.45
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1143 -3.5205E-01 -1.0945E+00  3.3983E-02 -3.5050E-01 -1.0961E+00  2.62
1145 -1.8396E-01 -9.8417E-02 -3.9886E-02 -8.2705E-02 -1.9967E-01 -68.50
1118  6.7614E-01  2.2107E+00 -1.2195E-01  2.2203E+00  6.6651E-01 -85.48
1116 -4.0811E-01  6.3144E-01 -1.9161E-01  6.6563E-01 -4.4230E-01 -79.88

```

```

ELEMENT ID 162 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1104 -2.0073E+00  9.7204E-01  2.5941E-01  9.9446E-01 -2.0298E+00  85.06
1106 -2.2074E+00  2.9581E-01  3.2383E-01  3.3702E-01 -2.2486E+00  82.75
1143 -9.1171E-01  1.5896E-01 -2.3326E-01  2.0758E-01 -9.6032E-01 -78.23
1145 -1.0158E+00 -1.8881E-01 -2.3803E-01 -1.2519E-01 -1.0794E+00 -75.04
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1104  2.7033E-01  3.3487E-02  1.6321E-01  3.5355E-01 -4.9734E-02  27.02
1106 -7.8946E-01 -1.7130E-02  1.4453E-02 -1.6859E-02 -7.8973E-01  88.93
1143  7.8232E-01  9.4134E-01 -6.8772E-02  9.6696E-01  7.5670E-01 -69.57
1145 -7.8153E-01 -7.6596E-01  5.6334E-02 -7.1688E-01 -8.3062E-01  48.94

```

```

ELEMENT ID 163 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1104 -1.3047E-01 -7.3905E-01 -5.4491E-01  1.8935E-01 -1.0589E+00 -30.41
1143 -1.3047E-01 -7.3905E-01 -5.4491E-01  1.8935E-01 -1.0589E+00 -30.41
1103 -1.3047E-01 -7.3905E-01 -5.4491E-01  1.8935E-01 -1.0589E+00 -30.41
1103 -1.3047E-01 -7.3905E-01 -5.4491E-01  1.8935E-01 -1.0589E+00 -30.41
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1104  1.4063E+00  1.2749E+00  9.2677E-01  2.2697E+00  4.1153E-01  42.97
1143  1.4063E+00  1.2749E+00  9.2677E-01  2.2697E+00  4.1153E-01  42.97
1103  1.4063E+00  1.2749E+00  9.2677E-01  2.2697E+00  4.1153E-01  42.97
1103  1.4063E+00  1.2749E+00  9.2677E-01  2.2697E+00  4.1153E-01  42.97

```

```

ELEMENT ID 164 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1141 -1.0269E+00 -4.3784E-01 -4.4485E-03 -4.3781E-01 -1.0269E+00 -89.57
1103 -6.4659E-01  8.4976E-01  7.1501E-02  8.5317E-01 -6.5000E-01  87.27
1163 -2.0034E+00 -1.0081E+00 -4.5862E-01 -8.2901E-01 -2.1825E+00 -68.67
1119 -1.6994E+00 -1.7591E-01 -6.1533E-01  4.1585E-02 -1.9168E+00 -70.53

```

SHELL ELEMENT FORCES

```

ELEMENT ID 164 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1141 -4.9034E-01 -2.7194E-01  6.4421E-02 -2.5436E-01 -5.0793E-01  74.73
1103  1.5695E+00  5.2644E-01  2.5648E-01  1.6292E+00  4.6678E-01  13.09
1163  5.4161E-01  1.9007E+00 -2.2380E-02  1.9011E+00  5.4124E-01 -89.06
1119  1.3734E+00  2.4492E+00  1.1609E-02  2.4493E+00  1.3733E+00  89.38

```

```

ELEMENT ID 165 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1100 -5.9157E-01  4.1171E-01  5.4778E-01  6.5284E-01 -8.3270E-01  66.24
1101 -1.4167E-01  1.1246E+00  2.4435E-01  1.1701E+00 -1.8719E-01  79.45
1141 -1.0957E+00 -6.8005E-01 -2.8871E-01 -5.3214E-01 -1.2436E+00 -62.87
1103 -6.1072E-01  1.2232E+00 -2.7410E-01  1.2633E+00 -6.5080E-01 -81.68
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1100 -1.5070E-01 -6.4243E-01  2.8727E-01 -1.8445E-02 -7.7468E-01  24.72
1101 -6.6274E-01 -4.1132E-01  4.1753E-01 -1.0098E-01 -9.7307E-01  53.38
1141  2.7636E-01  7.9580E-01 -6.3042E-02  8.0334E-01  2.6882E-01 -83.18
1103  7.0406E-01 -4.1923E-01  1.4113E-01  7.2152E-01 -4.3670E-01  7.05

```

```

ELEMENT ID 166 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1096 -4.2489E-01 -1.3754E+00  8.3186E-01  5.7920E-02 -1.8582E+00  30.13
1098  5.9254E-01 -7.2900E-02 -1.4466E-01  6.2263E-01 -1.0299E-01 -11.75
1100  2.9340E-01 -1.0143E+00  5.7049E-01  5.0730E-01 -1.2282E+00  20.55
1101 -6.9335E-02 -2.8401E-01 -4.7542E-02 -5.9277E-02 -2.9407E-01 -11.94
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1096 -2.8429E-01 -1.1019E+00 -2.3618E-01 -2.2097E-01 -1.1652E+00 -15.01
1098 -2.6857E-01 -9.8718E-01 -2.6547E-01 -1.8114E-01 -1.0746E+00 -18.23
1100 -2.0349E-02 -6.4939E-01 -1.8363E-01  2.9331E-02 -6.9907E-01 -15.14
1101 -2.7416E-01 -5.5724E-01 -7.6593E-02 -2.5476E-01 -5.7663E-01 -14.21

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```

ELEMENT ID 167 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1080 -3.9443E-01 -1.5478E+00  1.4592E-01 -3.7625E-01 -1.5660E+00  7.10
1078  4.1819E-01 -1.0182E+00 -1.2000E+00  1.0985E+00 -1.6985E+00 -29.55
1096  2.0480E-01 -1.7254E+00  1.8811E-01  2.2296E-01 -1.7436E+00  5.51
1098 -4.3133E-01 -1.7201E+00 -7.8172E-01 -6.2650E-02 -2.0888E+00 -25.25
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1080  2.3251E-01  5.4498E-01 -5.6329E-02  5.5482E-01  2.2267E-01 -80.09
1078  2.0383E-01 -4.8918E-01 -4.5724E-01  4.3102E-01 -7.1638E-01 -26.42
1096 -4.9619E-01 -6.4586E-01 -3.9417E-01 -1.6982E-01 -9.7224E-01 -39.63
1098 -9.1112E-01 -1.0984E+00 -6.1392E-01 -3.8373E-01 -1.6258E+00 -40.66

```

```

ELEMENT ID 168 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1065 -2.1286E-01 -1.1961E+00 -3.2200E-01 -1.1679E-01 -1.2922E+00 -16.61
1076 -6.5955E-01 -2.6259E+00 -1.2531E+00 -4.9990E-02 -3.2355E+00 -25.94
1080 -4.2922E-01 -1.7183E+00  2.7651E-02 -4.2863E-01 -1.7189E+00  1.23
1078 -8.3591E-01 -3.1335E+00 -9.0336E-01 -5.2327E-01 -3.4461E+00 -19.09

```

S H E L L E L E M E N T F O R C E S

```

ELEMENT ID 168 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1065  1.3359E-01  1.0408E+00  4.1143E-01  1.1996E+00 -2.5212E-02  68.90
1076  1.0062E+00 -4.9051E-01 -3.4044E-01  1.0800E+00 -5.6431E-01 -12.23
1080  2.0977E-01  6.0733E-01  1.7975E-04  6.0733E-01  2.0977E-01  89.97
1078 -8.4003E-03 -4.4183E-01 -3.3138E-01  1.7083E-01 -6.2107E-01 -28.41

```

```

ELEMENT ID 169 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1065 -1.3993E+00  2.3956E-01  4.5604E-02  2.4083E-01 -1.4006E+00  88.41
1057 -1.3353E+00  2.7961E-01  1.6471E-01  2.9624E-01 -1.3519E+00  84.24
1076 -3.2224E+00 -7.5511E-01 -6.1556E-01 -6.1006E-01 -3.3674E+00 -76.74
1074 -3.2790E+00 -8.6855E-01 -5.7209E-01 -7.3967E-01 -3.4079E+00 -77.30
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1065  1.2409E-01 -6.9573E-01 -1.6735E-01  1.5693E-01 -7.2857E-01 -11.10
1057 -1.1990E-01  7.0906E-01 -3.0542E-01  8.0943E-01 -2.2028E-01 -71.81
1076  2.2450E+00  1.2564E+00 -6.5676E-01  2.5727E+00  9.2869E-01 -26.52
1074 -3.8774E-01 -2.0378E+00 -2.6339E-01 -3.4672E-01 -2.0789E+00 -8.85

```

```

ELEMENT ID 170 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1057  4.5267E-02 -1.0932E+00  4.0845E-01  1.7665E-01 -1.2246E+00  17.83
1066  8.2388E-02 -2.8669E-01  5.2858E-01  4.5771E-01 -6.6202E-01  35.38
1074 -1.8675E+00 -1.8916E+00  1.0484E+00 -8.3114E-01 -2.9280E+00  44.67
1073 -1.5852E+00 -1.4376E+00  1.2425E+00 -2.6672E-01 -2.7560E+00  46.70
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1057 -5.7015E-01  1.5630E+00  4.6054E-01  1.6582E+00 -6.6533E-01  78.32
1066  8.5623E-01  5.0501E-02  1.0982E-01  8.7093E-01  3.5800E-02  7.62
1074 -6.1503E-01 -1.7656E+00 -4.8859E-01 -4.3554E-01 -1.9451E+00 -20.17
1073  1.3937E+00  6.6478E-02 -1.9458E-01  1.4217E+00  3.8540E-02 -8.17

```

```

ELEMENT ID 171 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1066 -4.1182E-01  1.3230E-01  7.9928E-01  7.0455E-01 -9.8407E-01  54.40
1068 -7.9219E-01 -9.5060E-01  1.0075E+00  1.3921E-01 -1.8820E+00  42.75
1073 -1.3528E+00  1.5650E-01 -6.2271E-02  1.5907E-01 -1.3553E+00 -87.64
1069 -1.5184E+00 -6.0643E-01  8.0300E-02 -5.9941E-01 -1.5254E+00  85.01
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1066  1.0415E+00  2.9947E-01 -5.9461E-02  1.0463E+00  2.9473E-01 -4.55
1068  6.7347E-02  2.5277E-01 -1.6165E-02  2.5417E-01  6.5948E-02 -85.05
1073  4.2100E-01  5.7386E-01 -5.4242E-02  5.9115E-01  4.0371E-01 -72.32
1069  6.9810E-01 -5.8623E-02 -1.7465E-01  7.3647E-01 -9.6987E-02 -12.39

```

```

ELEMENT ID 172 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1057 -4.7557E-01 -3.4064E-01  6.9613E-01  2.9129E-01 -1.1075E+00  47.77
1173 -4.0444E-01 -1.4359E-01  1.0244E+00  7.5868E-01 -1.3067E+00  48.63
1066 -2.4715E-01 -1.3958E-01  5.7958E-01  3.8870E-01 -7.7543E-01  47.65
1068 -2.5999E-01 -9.6137E-02  9.7315E-01  7.9853E-01 -1.1547E+00  47.41

```

SHELL ELEMENT FORCES

ELEMENT ID 172 -----
 LOAD COND 1 -----
 JOINT M11 M22 M12 Mmax Mmin ANGLE
 1057 -1.7114E-01 -3.9644E-01 -2.7528E-01 1.3651E-02 -5.8123E-01 -33.87
 1173 7.8981E-01 6.2959E-01 3.5178E-02 7.9719E-01 6.2221E-01 11.85
 1066 1.5270E+00 1.9407E+00 -1.3145E-01 1.9789E+00 1.4887E+00 -73.78
 1068 1.1570E-01 -3.3286E-02 -4.9637E-02 1.3072E-01 -4.8309E-02 -16.84

ELEMENT ID 173 -----
 LOAD COND 1 -----
 JOINT S11 S22 S12 Fmax Fmin ANGLE
 1068 -6.1618E-01 -4.0436E-01 1.1473E-01 -3.5412E-01 -6.6641E-01 66.36
 1067 -4.9839E-01 -2.5434E-02 1.1578E+00 9.1975E-01 -1.4436E+00 50.77
 1069 1.0536E+00 9.9813E-02 1.4484E-02 1.0538E+00 9.9593E-02 .87
 1070 1.1598E+00 4.7107E-01 1.1748E+00 2.0396E+00 -4.0880E-01 36.83
 JOINT M11 M22 M12 Mmax Mmin ANGLE
 1068 1.3769E+00 7.1586E-01 7.2577E-02 1.3847E+00 7.0799E-01 6.19
 1067 -1.2744E+00 -4.4710E-01 3.9874E-01 -2.8620E-01 -1.4353E+00 68.03
 1069 -3.5880E-03 -5.7588E-01 1.3316E-01 2.5877E-02 -6.0535E-01 12.48
 1070 1.0553E+00 5.3618E-01 4.7931E-01 1.3408E+00 2.5065E-01 30.78

ELEMENT ID 174 -----
 LOAD COND 1 -----
 JOINT S11 S22 S12 Fmax Fmin ANGLE
 1173 -2.3086E+00 -1.6995E-01 -3.8826E-01 -1.0165E-01 -2.3769E+00 -80.02
 1053 -1.1084E+00 1.2970E+00 6.1527E-01 1.4453E+00 -1.2567E+00 76.45
 1068 -4.2424E-01 -5.8783E-02 -1.1327E-01 -2.6526E-02 -4.5650E-01 -74.10
 1067 -9.1092E-01 4.7205E-01 1.9653E-01 4.9944E-01 -9.3831E-01 82.07
 JOINT M11 M22 M12 Mmax Mmin ANGLE
 1173 -2.9569E-02 5.0786E-01 -3.3322E-02 5.0992E-01 -3.1627E-02 -86.47
 1053 -2.9481E-01 4.9519E-02 7.7214E-02 6.6041E-02 -3.1133E-01 77.92
 1068 1.5964E-01 2.7713E-01 1.3213E-01 3.6299E-01 7.3782E-02 56.99
 1067 6.5632E-02 3.9793E-01 1.7127E-02 3.9881E-01 6.4752E-02 87.06

ELEMENT ID 175 -----
 LOAD COND 1 -----
 JOINT S11 S22 S12 Fmax Fmin ANGLE
 1052 -1.4400E+00 -6.9264E-01 5.7457E-01 -3.8093E-01 -1.7517E+00 61.52
 1053 -1.3021E+00 -2.4131E-01 1.1268E+00 4.7374E-01 -2.0171E+00 57.60
 1057 -5.2688E-01 -3.9937E-01 6.9682E-01 2.3661E-01 -1.1629E+00 47.61
 1173 -3.4636E-01 2.1693E-01 1.4373E+00 1.4000E+00 -1.5294E+00 50.54
 JOINT M11 M22 M12 Mmax Mmin ANGLE
 1052 -3.8994E-01 -7.6664E-01 -1.0737E-01 -3.6148E-01 -7.9509E-01 -14.84
 1053 2.3277E-01 -1.5671E-01 1.3926E-01 2.7744E-01 -2.0138E-01 17.78
 1057 -6.2349E-03 1.4046E-01 -1.1718E-01 2.0536E-01 -7.1134E-02 -61.02
 1173 6.1890E-01 4.0640E-02 2.1886E-01 6.9240E-01 -3.2856E-02 18.56

ELEMENT ID 176 -----
 LOAD COND 1 -----
 JOINT S11 S22 S12 Fmax Fmin ANGLE
 1131 -4.9419E+00 -5.6436E-01 -2.8595E+00 8.4793E-01 -6.3542E+00 -63.72
 1129 -4.7074E+00 2.1799E-01 -2.5545E+00 1.3036E+00 -5.7930E+00 -66.98
 1818 3.0526E-01 1.0849E+00 -1.8812E-01 1.1279E+00 2.6224E-01 -77.12
 1718 -9.9424E-02 -2.6379E-01 -3.9733E-01 2.2413E-01 -5.8734E-01 -39.16

SHELL ELEMENT FORCES

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ELEMENT ID 176 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1131  3.1049E+00  7.8197E+00 -2.6310E-01  7.8343E+00  3.0902E+00  -86.82
1129  2.4663E+00  5.8929E+00 -4.1684E-01  5.9429E+00  2.4163E+00  -83.16
1818 -1.4888E+00 -3.1107E-01 -7.7597E-01  7.4180E-02 -1.8741E+00  -63.60
1718  2.4474E-01 -5.7359E-01 -1.5621E+00  1.4504E+00 -1.7792E+00  -37.66

```

```

ELEMENT ID 177 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1129 -2.0832E+00 -1.8263E-01 -1.4605E+00  6.0950E-01 -2.8753E+00  -61.53
1127 -2.0832E+00 -1.8263E-01 -1.4605E+00  6.0950E-01 -2.8753E+00  -61.53
1718 -2.0832E+00 -1.8263E-01 -1.4605E+00  6.0950E-01 -2.8753E+00  -61.53
1718 -2.0832E+00 -1.8263E-01 -1.4605E+00  6.0950E-01 -2.8753E+00  -61.53
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1129 -1.0003E+00  1.8617E+00 -1.1319E+00  2.2553E+00 -1.3939E+00  -70.83
1127 -1.0003E+00  1.8617E+00 -1.1319E+00  2.2553E+00 -1.3939E+00  -70.83
1718 -1.0003E+00  1.8617E+00 -1.1319E+00  2.2553E+00 -1.3939E+00  -70.83
1718 -1.0003E+00  1.8617E+00 -1.1319E+00  2.2553E+00 -1.3939E+00  -70.83

```

```

ELEMENT ID 178 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1127 -2.6259E+00 -6.4980E-01 -1.8459E+00  4.5586E-01 -3.7316E+00  -59.08
1125 -2.6562E+00 -7.4859E-01 -1.0960E+00 -2.4950E-01 -3.1553E+00  -65.52
1718 -1.1703E-01 -3.9841E-01 -1.9028E+00  1.6503E+00 -2.1658E+00  -42.89
1618  1.5850E-01  5.1999E-01 -1.8864E+00  2.2343E+00 -1.5558E+00  -47.74
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1127  5.2268E-01  4.2976E+00 -1.2628E+00  4.6811E+00  1.3922E-01  -73.11
1125  1.3139E+00  5.0278E+00 -2.1946E-01  5.0407E+00  1.3010E+00  -86.63
1718  9.8144E-02  1.9876E-01 -5.3583E-01  6.8664E-01 -3.8974E-01  -47.68
1618  1.5348E-01 -5.1462E-01 -1.0571E+00  9.2809E-01 -1.2892E+00  -36.23

```

```

ELEMENT ID 179 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1125 -1.2968E+00  1.1675E-01 -1.6572E+00  1.2116E+00 -2.3917E+00  -56.55
1122 -1.2968E+00  1.1675E-01 -1.6572E+00  1.2116E+00 -2.3917E+00  -56.55
1618 -1.2968E+00  1.1675E-01 -1.6572E+00  1.2116E+00 -2.3917E+00  -56.55
1618 -1.2968E+00  1.1675E-01 -1.6572E+00  1.2116E+00 -2.3917E+00  -56.55
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1125 -1.0440E+00  1.3401E+00 -6.0406E-01  1.4844E+00 -1.1884E+00  -76.56
1122 -1.0440E+00  1.3401E+00 -6.0406E-01  1.4844E+00 -1.1884E+00  -76.56
1618 -1.0440E+00  1.3401E+00 -6.0406E-01  1.4844E+00 -1.1884E+00  -76.56
1618 -1.0440E+00  1.3401E+00 -6.0406E-01  1.4844E+00 -1.1884E+00  -76.56

```

```

ELEMENT ID 180 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1122 -1.2932E+00  2.3633E-01 -1.6782E+00  1.3158E+00 -2.3727E+00  -57.25
1121 -1.6075E+00 -8.1061E-01 -1.2412E+00  9.4530E-02 -2.5127E+00  -53.90
1618 -4.3452E-02 -1.4759E-01 -1.8542E+00  1.7594E+00 -1.9505E+00  -44.20
518 -5.5601E-02 -1.8813E-01 -1.7952E+00  1.6746E+00 -1.9183E+00  -43.94

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SHELL ELEMENT FORCES

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ELEMENT ID 180 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1122  7.2432E-01  3.6279E+00 -3.6698E-01  3.6736E+00  6.7866E-01  -82.91
1121  6.4305E-01  2.7232E+00  1.0537E-01  2.7286E+00  6.3773E-01  87.11
1618 -2.7853E-01  5.0500E-02  8.3732E-02  7.0583E-02 -2.9861E-01  76.51
1518 -1.9134E-01 -4.1250E-01 -2.7421E-01 -6.2537E-03 -5.9759E-01  -34.02

```

```

ELEMENT ID 181 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1121 -1.0170E+00 -4.5055E-01 -1.5469E+00  8.3884E-01 -2.3063E+00  -50.19
1163 -1.0170E+00 -4.5055E-01 -1.5469E+00  8.3884E-01 -2.3063E+00  -50.19
1518 -1.0170E+00 -4.5055E-01 -1.5469E+00  8.3884E-01 -2.3063E+00  -50.19
1518 -1.0170E+00 -4.5055E-01 -1.5469E+00  8.3884E-01 -2.3063E+00  -50.19
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1121 -3.7082E-01  9.4999E-01 -1.7001E-01  9.7152E-01 -3.9236E-01  -82.78
1163 -3.7082E-01  9.4999E-01 -1.7001E-01  9.7152E-01 -3.9236E-01  -82.78
1518 -3.7082E-01  9.4999E-01 -1.7001E-01  9.7152E-01 -3.9236E-01  -82.78
1518 -3.7082E-01  9.4999E-01 -1.7001E-01  9.7152E-01 -3.9236E-01  -82.78

```

```

ELEMENT ID 182 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1163 -2.0488E+00 -3.5546E-01 -1.6311E+00  6.3558E-01 -3.0398E+00  -58.72
1119 -2.2860E+00 -1.1464E+00 -1.5390E+00 -7.5101E-02 -3.3573E+00  -55.16
1518  1.7101E-02  5.5475E-02 -1.3063E+00  1.3427E+00 -1.2701E+00  -45.42
1418 -1.0164E-01 -3.4066E-01 -1.9992E+00  1.7816E+00 -2.2239E+00  -43.29
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1163  4.6451E-01  3.0013E+00 -1.2166E-01  3.0071E+00  4.5869E-01  -87.26
1119  1.6812E+00  1.1523E+00  1.0521E-01  1.7014E+00  1.1322E+00  10.85
1518  1.2664E-01 -6.9644E-02  1.7479E-01  2.2895E-01 -1.7196E-01  30.34
1418  3.3517E-02 -1.4280E-01 -2.8473E-01  2.4343E-01 -3.5271E-01  -36.40

```

```

ELEMENT ID 183 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1119 -1.1604E+00 -6.4306E-01 -1.9335E+00  1.0489E+00 -2.8524E+00  -48.81
1118 -1.1604E+00 -6.4306E-01 -1.9335E+00  1.0489E+00 -2.8524E+00  -48.81
1418 -1.1604E+00 -6.4306E-01 -1.9335E+00  1.0489E+00 -2.8524E+00  -48.81
1418 -1.1604E+00 -6.4306E-01 -1.9335E+00  1.0489E+00 -2.8524E+00  -48.81
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1119  6.6100E-01  7.8679E-01 -3.5818E-01  1.0875E+00  3.6023E-01  -49.98
1118  6.6100E-01  7.8679E-01 -3.5818E-01  1.0875E+00  3.6023E-01  -49.98
1418  6.6100E-01  7.8679E-01 -3.5818E-01  1.0875E+00  3.6023E-01  -49.98
1418  6.6100E-01  7.8679E-01 -3.5818E-01  1.0875E+00  3.6023E-01  -49.98

```

```

ELEMENT ID 184 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1118 -2.4943E+00 -1.0884E+00 -1.8003E+00  1.4139E-01 -3.7240E+00  -55.66
1116 -2.2331E+00 -2.1819E-01 -1.2478E+00  3.7809E-01 -2.8294E+00  -64.46
1418 -1.3594E-01 -4.4803E-01 -1.4657E+00  1.1820E+00 -1.7659E+00  -41.96
1318  1.1871E-02  4.4779E-02 -1.1954E+00  1.2238E+00 -1.1671E+00  -45.39

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SHELL ELEMENT FORCES

```

ELEMENT ID 184 -----
LOAD COND 1 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1118 -1.0518E-01  1.3424E+00 -2.7610E-01  1.3933E+00 -1.5605E-01  -79.56
1116  2.8389E-01  1.3433E+00 -1.2837E-01  1.3587E+00  2.6856E-01  -83.19
1418 -3.7633E-01 -1.6185E-01 -3.8963E-01  1.3503E-01 -6.7321E-01  -52.69
1318  6.9576E-02 -2.0884E-01 -4.8348E-01  4.3349E-01 -5.7276E-01  -36.97

```

```

ELEMENT ID 185 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1116 -1.2081E+00 -2.9677E-01 -1.0881E+00  4.2716E-01 -1.9321E+00  -56.36
1115 -1.2081E+00 -2.9677E-01 -1.0881E+00  4.2716E-01 -1.9321E+00  -56.36
1318 -1.2081E+00 -2.9677E-01 -1.0881E+00  4.2716E-01 -1.9321E+00  -56.36
1318 -1.2081E+00 -2.9677E-01 -1.0881E+00  4.2716E-01 -1.9321E+00  -56.36
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1116 -4.2809E-01  2.4065E-01 -3.7391E-01  4.0789E-01 -5.9533E-01  -65.90
1115 -4.2809E-01  2.4065E-01 -3.7391E-01  4.0789E-01 -5.9533E-01  -65.90
1318 -4.2809E-01  2.4065E-01 -3.7391E-01  4.0789E-01 -5.9533E-01  -65.90
1318 -4.2809E-01  2.4065E-01 -3.7391E-01  4.0789E-01 -5.9533E-01  -65.90

```

```

ELEMENT ID 186 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1115 -1.0577E+00 -2.0195E-01 -8.0135E-01  2.7861E-01 -1.5382E+00  -59.05
1114 -1.0577E+00 -2.0195E-01 -8.0135E-01  2.7861E-01 -1.5382E+00  -59.05
1318 -1.0577E+00 -2.0195E-01 -8.0135E-01  2.7861E-01 -1.5382E+00  -59.05
1318 -1.0577E+00 -2.0195E-01 -8.0135E-01  2.7861E-01 -1.5382E+00  -59.05
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1115 -4.8442E-01  1.0870E-01 -1.2008E-01  1.3209E-01 -5.0781E-01  -78.98
1114 -4.8442E-01  1.0870E-01 -1.2008E-01  1.3209E-01 -5.0781E-01  -78.98
1318 -4.8442E-01  1.0870E-01 -1.2008E-01  1.3209E-01 -5.0781E-01  -78.98
1318 -4.8442E-01  1.0870E-01 -1.2008E-01  1.3209E-01 -5.0781E-01  -78.98

```

```

ELEMENT ID 187 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1114 -3.0171E+00 -6.6901E-01 -9.0670E-01 -3.5966E-01 -3.3265E+00  -71.16
1112 -3.0936E+00 -9.2443E-01  5.9983E-01 -7.6962E-01 -3.2484E+00  75.53
1318 -1.2134E-01 -3.9511E-01 -1.3847E+00  1.1333E+00 -1.6497E+00  -42.18
1218 -1.5640E-03  4.4802E-03 -1.9188E-01  1.9337E-01 -1.9045E-01  -45.45
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1114 -1.5747E-01  8.3192E-01 -9.1166E-02  8.4025E-01 -1.6580E-01  -84.78
1112  5.6153E-01 -4.8371E-02 -3.9220E-02  5.6404E-01 -5.0882E-02  -3.66
1318  1.1195E-01  2.3532E-02 -1.3772E-01  2.1238E-01 -7.6899E-02  -36.10
1218 -1.0354E-01  1.5759E-01 -2.2571E-01  2.8777E-01 -2.3373E-01  -60.02

```

```

ELEMENT ID 188 -----
LOAD COND 1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1140 -1.4495E+00 -2.2340E-01 -2.6398E-01 -1.6898E-01 -1.5039E+00  -78.35
1170 -1.4375E+00 -1.9047E-01 -7.7388E-02 -1.8569E-01 -1.4422E+00  -86.46
1122 -1.4353E+00 -2.2235E-01 -3.8024E-01 -1.1300E-01 -1.5446E+00  -73.96
1121 -1.4237E+00 -1.7685E-01 -1.9394E-01 -1.4738E-01 -1.4532E+00  -81.36

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SHELL ELEMENT FORCES

ELEMENT ID 188 -----
 LOAD COND 1 -----
 JOINT M11 M22 M12 Mmax Mmin ANGLE
 1140 -8.3132E-01 -6.2711E-01 2.4911E-01 -4.6000E-01 -9.9844E-01 56.14
 1170 4.5361E-01 4.3837E-04 1.5504E-01 5.0158E-01 -4.7529E-02 17.19
 1122 1.1423E+00 3.3820E+00 1.9994E-01 3.3997E+00 1.1246E+00 84.94
 1121 8.0351E-02 2.6600E+00 1.6499E-01 2.6705E+00 6.9841E-02 86.36

ELEMENT ID 189 -----
 LOAD COND 1 -----
 JOINT S11 S22 S12 Fmax Fmin ANGLE
 1170 -7.6946E-01 3.7190E-03 5.6662E-02 7.8494E-03 -7.7359E-01 85.83
 1141 -8.5207E-01 -2.7800E-01 -8.5860E-02 -2.6543E-01 -8.6464E-01 -81.67
 1121 -1.2977E+00 -1.5515E-01 -1.3293E-01 -1.3988E-01 -1.3129E+00 -83.45
 1163 -1.3806E+00 -4.2562E-01 -2.7216E-01 -3.5350E-01 -1.4527E+00 -75.16
 JOINT M11 M22 M12 Mmax Mmin ANGLE
 1170 -6.5136E-01 -2.3978E-01 2.4357E-01 -1.2670E-01 -7.6444E-01 65.10
 1141 1.7613E-01 -3.3270E-01 2.7332E-01 2.9512E-01 -4.5169E-01 23.53
 1121 1.0967E+00 2.8876E+00 -2.7238E-02 2.8880E+00 1.0963E+00 -89.13
 1163 2.8541E-01 1.8622E+00 2.3095E-02 1.8626E+00 2.8507E-01 89.16

ELEMENT ID 190 -----
 LOAD COND 1 -----
 JOINT S11 S22 S12 Fmax Fmin ANGLE
 1161 -9.3883E-01 1.6204E-01 9.4177E-01 7.0244E-01 -1.4792E+00 60.15
 1162 -1.0996E+00 -3.3955E-01 1.0411E+00 3.8877E-01 -1.8279E+00 55.03
 1140 -1.2963E+00 2.6033E-01 -1.3495E-01 2.7194E-01 -1.3079E+00 -85.08
 1170 -1.4226E+00 -1.9495E-01 -4.8830E-02 -1.9302E-01 -1.4245E+00 -87.73
 JOINT M11 M22 M12 Mmax Mmin ANGLE
 1161 -6.1965E-01 -8.5108E-01 1.4510E-01 -5.4977E-01 -9.2096E-01 25.71
 1162 -3.0343E-01 -1.0467E+00 1.5577E-01 -2.7210E-01 -1.0780E+00 11.37
 1140 -3.5048E-02 -5.6627E-01 1.5946E-01 9.1400E-03 -6.1046E-01 15.49
 1170 -4.3304E-01 -2.8526E-01 2.2221E-01 -1.2498E-01 -5.9333E-01 54.20

ELEMENT ID 191 -----
 LOAD COND 1 -----
 JOINT S11 S22 S12 Fmax Fmin ANGLE
 1162 -4.8137E-01 1.3131E-01 6.1382E-01 5.1098E-01 -8.6104E-01 58.26
 1100 -5.7420E-01 -1.9451E-01 6.8545E-01 3.2690E-01 -1.0956E+00 52.74
 1170 -7.9375E-01 -1.7573E-02 -2.2062E-02 -1.6947E-02 -7.9438E-01 -88.37
 1141 -9.2072E-01 -4.2462E-01 5.1469E-02 -4.1934E-01 -9.2601E-01 84.14
 JOINT M11 M22 M12 Mmax Mmin ANGLE
 1162 -4.7736E-01 -9.6670E-01 8.7141E-02 -4.6231E-01 -9.8176E-01 9.80
 1100 2.0846E-01 -6.8414E-01 1.0847E-02 2.0859E-01 -6.8427E-01 70
 1170 3.3449E-03 -1.9034E-01 3.0021E-01 2.2194E-01 -4.0894E-01 36.06
 1141 -2.9528E-01 5.7750E-01 1.5220E-01 6.0328E-01 -3.2106E-01 80.39

ELEMENT ID 192 -----
 LOAD COND 1 -----
 JOINT S11 S22 S12 Fmax Fmin ANGLE
 1094 2.7051E-01 -3.5829E-01 1.0323E+00 1.0353E+00 -1.1230E+00 36.53
 1095 3.9156E-01 1.5545E-01 6.5855E-01 9.4255E-01 -3.9554E-01 39.92
 1161 -1.3030E+00 -9.6005E-01 1.5380E+00 4.1605E-01 -2.6791E+00 48.18
 1162 -1.1092E+00 -4.2374E-01 1.1504E+00 4.3393E-01 -1.9669E+00 53.30

SHELL ELEMENT FORCES

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ELEMENT ID 192 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1094 -2.4132E-01 -7.5319E-01  6.4646E-02 -2.3328E-01 -7.6123E-01  7.09
1095 -2.7350E-01 -9.9210E-01 -2.7251E-02 -2.7247E-01 -9.9313E-01 -2.17
1161 -8.7861E-01 -1.6118E+00  1.5662E-01 -8.4656E-01 -1.6439E+00 11.57
1162 -1.6093E-01 -6.6480E-01  8.9141E-02 -1.4563E-01 -6.8011E-01  9.74

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ELEMENT ID 193 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1095 -3.6711E-01  1.0950E-01  8.4809E-01  7.5213E-01 -1.0097E+00 52.85
1096 -5.9463E-01 -6.1192E-01  9.3691E-01  3.3368E-01 -1.5402E+00 44.74
1162 -4.3423E-01  9.2052E-02  7.0255E-01  5.7912E-01 -9.2130E-01 55.27
1100 -6.4695E-01 -6.5581E-01  7.5982E-01  1.0845E-01 -1.4112E+00 44.83
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1095 -2.0850E-01 -8.8274E-01  5.5637E-02 -2.0394E-01 -8.8730E-01  4.69
1096 -2.0172E-01 -1.1418E+00  7.2455E-02 -1.9617E-01 -1.1474E+00  4.38
1162 -4.0339E-01 -7.8715E-01  8.7043E-03 -4.0319E-01 -7.8734E-01  1.30
1100  1.8450E-01 -6.6809E-01 -4.0429E-04  1.8450E-01 -6.6809E-01 -1.03

```

```

ELEMENT ID 194 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1082  2.3392E-01  6.6580E-02  3.2626E-01  4.8706E-01 -1.8657E-01 37.81
1081  1.3582E-01 -2.6832E-01  2.1847E-01  2.3134E-01 -3.6384E-01 23.62
1094  1.8746E-01 -4.1969E-01  9.5079E-01  8.8196E-01 -1.1142E+00 36.15
1095  2.0317E-01 -3.5853E-01  8.5074E-01  8.1822E-01 -9.7358E-01 35.87
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1082 -2.9877E-01 -3.6551E-01 -3.6616E-02 -2.8260E-01 -3.8168E-01 -23.83
1081  4.7365E-02 -3.5862E-02 -4.5069E-02  6.7094E-02 -5.5591E-02 -23.64
1094 -2.5058E-01 -9.3657E-01 -8.0177E-02 -2.4133E-01 -9.4582E-01 -6.58
1095 -2.9721E-01 -9.2242E-01 -2.1210E-02 -2.9649E-01 -9.2314E-01 -1.94

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ELEMENT ID 195 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1081 -3.4049E-01 -3.7004E-01  3.1772E-01 -3.7201E-02 -6.7333E-01 43.67
1080 -4.4257E-01 -7.1773E-01  3.4628E-01 -2.0753E-01 -9.5276E-01 34.17
1095 -4.9194E-01 -4.3245E-01  1.0421E+00  5.8030E-01 -1.5047E+00 45.82
1096 -4.4892E-01 -2.8362E-01  1.0596E+00  6.9655E-01 -1.4291E+00 47.23
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1081  5.9375E-02  1.4458E-02 -8.1035E-03  6.0792E-02  1.3040E-02 -9.92
1080  2.5198E-02  1.5089E-01 -1.5842E-02  1.5286E-01  2.3232E-02 -82.93
1095 -2.1487E-01 -9.4246E-01  2.5651E-02 -2.1397E-01 -9.4337E-01  2.02
1096 -1.1397E-01 -8.2084E-01  1.1652E-01 -9.5260E-02 -8.3956E-01  9.12

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ELEMENT ID 196 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1063  3.8617E-02 -2.3374E-02  4.0019E-01  4.0901E-01 -3.9377E-01 42.79
1064 -1.2773E-01 -5.7931E-01  4.6310E-01  1.6169E-01 -8.6873E-01 32.00
1082  3.4990E-01  4.3398E-01  1.3772E-01  5.3593E-01  2.4795E-01 53.49
1081  8.7280E-02 -4.3884E-01  2.3581E-01  1.7750E-01 -5.2906E-01 20.94

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SHELL ELEMENT FORCES

ELEMENT ID	196 -----						
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1063	-2.0113E-01	-5.7429E-01	-1.9545E-01	-1.1750E-01	-6.5792E-01	-23.17	
1064	-3.1959E-01	-5.0664E-02	-4.7976E-03	-5.0578E-02	-3.1967E-01	-88.98	
1082	-4.3044E-01	-5.1079E-01	-2.9816E-02	-4.2059E-01	-5.2064E-01	-18.29	
1081	1.4764E-01	3.0295E-02	2.0993E-02	1.5128E-01	2.6653E-02	9.84	

ELEMENT ID	197 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1064	-2.9697E-01	-4.9518E-01	3.2564E-01	-5.5690E-02	-7.3646E-01	36.54	
1065	-4.1692E-01	-9.0239E-01	5.2538E-01	-8.0912E-02	-1.2384E+00	32.60	
1081	-4.1705E-01	-5.3331E-01	3.4706E-01	-1.2329E-01	-8.2707E-01	40.25	
1080	-5.3029E-01	-9.0327E-01	5.1988E-01	-1.6447E-01	-1.2691E+00	35.13	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1064	2.4246E-01	3.4438E-01	-9.8929E-03	3.4533E-01	2.4151E-01	-84.51	
1065	5.5140E-01	1.1259E+00	-2.8067E-01	1.2403E+00	4.3704E-01	-67.83	
1081	-9.0035E-02	-2.7924E-01	5.8452E-02	-7.3434E-02	-2.9584E-01	15.86	
1080	2.2615E-01	5.9414E-01	-1.1951E-01	6.2955E-01	1.9074E-01	-73.50	

ELEMENT ID	198 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1055	4.7151E-02	1.2166E-01	4.1890E-01	5.0496E-01	-3.3615E-01	47.54	
1056	-9.8307E-02	-3.5360E-01	5.1112E-01	3.0086E-01	-7.5278E-01	37.99	
1063	4.2585E-01	1.3195E+00	-1.0737E-01	1.3322E+00	4.1313E-01	-83.24	
1064	-2.2127E-02	-1.8695E-01	-2.0710E-02	-1.9565E-02	-1.8951E-01	-7.05	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1055	4.9755E-02	2.4509E-01	-1.0659E-01	2.9200E-01	2.8527E-03	-66.25	
1056	-2.3751E-01	-2.2227E-01	-2.0499E-01	-2.4755E-02	-4.3502E-01	-46.06	
1063	-3.8627E-01	-2.0556E-01	-1.0556E-01	-1.5696E-01	-4.3486E-01	-65.28	
1064	1.0102E-01	3.7788E-01	-1.8747E-01	4.7249E-01	6.4088E-03	-63.22	

ELEMENT ID	199 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1056	-4.1138E-01	-3.0151E-01	3.9024E-01	3.7643E-02	-7.5053E-01	49.01	
1057	-4.8873E-01	-6.4883E-01	8.4115E-01	2.7617E-01	-1.4137E+00	42.28	
1064	-1.8580E-01	-2.2759E-01	-8.5593E-02	-1.1859E-01	-2.9480E-01	-38.14	
1065	-5.4012E-01	-1.2935E+00	4.0729E-01	-3.6202E-01	-1.4716E+00	23.62	
JOINT	M11	M22	M12	Mmax	Mmin	ANGLE	
1056	1.7790E-01	5.2110E-02	-2.0772E-01	3.3204E-01	-1.0203E-01	-36.58	
1057	-1.4958E-01	-1.4713E-01	-1.0564E-02	-1.3772E-01	-1.5899E-01	-48.30	
1064	-1.1690E-01	-2.6019E-02	-1.9775E-01	1.3145E-01	-2.7437E-01	-51.47	
1065	6.6085E-01	4.7726E-01	5.3177E-02	6.7514E-01	4.6297E-01	15.04	

ELEMENT ID	200 -----						
LOAD COND	1 -----						
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1050	-3.0478E-01	5.1104E-01	6.6913E-02	5.1649E-01	-3.1023E-01	85.34	
1051	-5.0295E-01	-1.6018E-01	2.1542E-01	-5.6282E-02	-6.0685E-01	64.25	
1055	2.1741E-01	6.3849E-01	-2.7918E-02	6.4033E-01	2.1557E-01	-86.22	
1056	2.5446E-02	7.0910E-03	1.0012E-01	1.1681E-01	-8.4272E-02	42.38	

SHELL ELEMENT FORCES

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ELEMENT ID 200 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1050 -8.5921E-03  3.4087E-01 -1.2517E-01  3.8108E-01 -4.8799E-02 -72.19
1051  1.6914E-01 -2.2230E-01 -2.7518E-01  3.1110E-01 -3.6426E-01 -27.29
1055 -1.0443E-01 -2.6277E-01 -1.3023E-01 -3.1199E-02 -3.3601E-01 -29.35
1056 -1.8677E-01 -5.3693E-02 -2.9520E-01  1.8237E-01 -4.2284E-01 -51.35

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ELEMENT ID 201 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1051 -3.3583E-01 -5.8517E-02  1.3754E-01 -1.8735E-03 -3.9247E-01  67.62
1052 -5.0873E-01 -5.8646E-01  6.4663E-01  1.0020E-01 -1.1954E+00  43.28
1056 -3.8724E-01 -1.1916E-01 -5.3015E-02 -1.0906E-01 -3.9734E-01 -79.21
1057 -5.1117E-01 -5.7887E-01  4.5354E-01 -9.0215E-02 -9.9982E-01  42.87
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1051 -3.4728E-01 -4.1630E-01 -2.9751E-01 -8.2286E-02 -6.8129E-01 -41.69
1052 -1.2886E-01 -8.7769E-01 -2.1073E-01 -7.3633E-02 -9.3292E-01 -14.69
1056  1.1571E-01 -1.3249E-01 -2.8643E-01  3.0377E-01 -3.2055E-01 -33.29
1057  3.2985E-02  4.0806E-01 -1.9904E-01  4.9399E-01 -5.2950E-02 -66.65

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ELEMENT ID 202 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1034 -6.2388E-02 -8.4003E-04  1.6358E-01  1.3484E-01 -1.9807E-01  50.33
1035 -1.0615E-01 -1.4296E-01  1.9573E-01  7.2033E-02 -3.2115E-01  42.31
1039  2.3124E-01 -1.1619E-02  7.2909E-02  2.5145E-01 -3.1825E-02  15.49
1040  2.2320E-01 -3.8107E-02  6.7546E-02  2.3963E-01 -5.4534E-02  13.67
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1034  1.1840E-01  1.9598E-01  1.4252E-02  1.9851E-01  1.1587E-01  79.91
1035  8.0407E-02  1.1546E-01 -6.3714E-03  1.1658E-01  7.9284E-02 -80.01
1039 -4.2872E-02  2.6647E-02 -3.3294E-02  4.0020E-02 -5.6245E-02 -68.12
1040 -5.6483E-02 -2.0405E-02 -5.1439E-02  1.6066E-02 -9.2954E-02 -54.66

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ELEMENT ID 203 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1103  2.0082E-01 -1.2603E+00  2.2500E-01  2.3469E-01 -1.2941E+00  8.56
1143  2.0082E-01 -1.2603E+00  2.2500E-01  2.3469E-01 -1.2941E+00  8.56
1119  2.0082E-01 -1.2603E+00  2.2500E-01  2.3469E-01 -1.2941E+00  8.56
1119  2.0082E-01 -1.2603E+00  2.2500E-01  2.3469E-01 -1.2941E+00  8.56
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1103  1.3926E+00  2.4864E+00 -9.2040E-01  3.0102E+00  8.6892E-01 -60.36
1143  1.3926E+00  2.4864E+00 -9.2040E-01  3.0102E+00  8.6892E-01 -60.36
1119  1.3926E+00  2.4864E+00 -9.2040E-01  3.0102E+00  8.6892E-01 -60.36
1119  1.3926E+00  2.4864E+00 -9.2040E-01  3.0102E+00  8.6892E-01 -60.36

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ELEMENT ID 204 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1119 -9.8914E-01 -1.0529E+00 -1.0211E+00  5.3539E-04 -2.0426E+00 -44.11
1143 -9.8914E-01 -1.0529E+00 -1.0211E+00  5.3539E-04 -2.0426E+00 -44.11
1118 -9.8914E-01 -1.0529E+00 -1.0211E+00  5.3539E-04 -2.0426E+00 -44.11
1118 -9.8914E-01 -1.0529E+00 -1.0211E+00  5.3539E-04 -2.0426E+00 -44.11

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SHELL ELEMENT FORCES

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ELEMENT ID 204 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1119  1.4708E+00  4.1533E-01 -4.5505E-01  1.6399E+00  2.4624E-01 -20.38
1143  1.4708E+00  4.1533E-01 -4.5505E-01  1.6399E+00  2.4624E-01 -20.38
1118  1.4708E+00  4.1533E-01 -4.5505E-01  1.6399E+00  2.4624E-01 -20.38
1118  1.4708E+00  4.1533E-01 -4.5505E-01  1.6399E+00  2.4624E-01 -20.38

```

```

ELEMENT ID 205 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
119  3.1143E-01 -6.0761E-01 -1.0743E+00  1.0203E+00 -1.3165E+00 -33.42
143  3.1143E-01 -6.0761E-01 -1.0743E+00  1.0203E+00 -1.3165E+00 -33.42
103  3.1143E-01 -6.0761E-01 -1.0743E+00  1.0203E+00 -1.3165E+00 -33.42
103  3.1143E-01 -6.0761E-01 -1.0743E+00  1.0203E+00 -1.3165E+00 -33.42
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
119  1.7407E+00  5.7407E+00 -2.5715E+00  6.9984E+00  4.8301E-01 -63.94
143  1.7407E+00  5.7407E+00 -2.5715E+00  6.9984E+00  4.8301E-01 -63.94
103  1.7407E+00  5.7407E+00 -2.5715E+00  6.9984E+00  4.8301E-01 -63.94
103  1.7407E+00  5.7407E+00 -2.5715E+00  6.9984E+00  4.8301E-01 -63.94

```

```

ELEMENT ID 206 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
103 -3.6034E-01  7.7561E-01  1.2679E-01  7.8958E-01 -3.7432E-01  83.71
143 -3.6034E-01  7.7561E-01  1.2679E-01  7.8958E-01 -3.7432E-01  83.71
104 -3.6034E-01  7.7561E-01  1.2679E-01  7.8958E-01 -3.7432E-01  83.71
104 -3.6034E-01  7.7561E-01  1.2679E-01  7.8958E-01 -3.7432E-01  83.71
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
103  2.5229E+00  1.6974E-01  4.4212E+00  5.9214E+00 -3.2288E+00  37.55
143  2.5229E+00  1.6974E-01  4.4212E+00  5.9214E+00 -3.2288E+00  37.55
104  2.5229E+00  1.6974E-01  4.4212E+00  5.9214E+00 -3.2288E+00  37.55
104  2.5229E+00  1.6974E-01  4.4212E+00  5.9214E+00 -3.2288E+00  37.55

```

```

ELEMENT ID 207 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1131 -3.9476E+01 -1.2621E+01 -8.3910E-01 -1.2595E+01 -3.9502E+01 -88.21
131  -3.9147E+01 -1.1525E+01 -4.5877E+00 -1.0783E+01 -3.9889E+01 -80.81
1132 -1.3385E+01 -4.5641E+00  2.7803E+00 -3.7609E+00 -1.4189E+01  73.89
132  -1.3208E+01 -3.9723E+00 -1.4434E+00 -3.7519E+00 -1.3428E+01 -81.32
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1131  7.1604E+00  8.2227E+00  1.2845E-01  8.2380E+00  7.1451E+00  83.20
131  8.4673E+00  8.5382E+00  4.5372E-02  8.5604E+00  8.4452E+00  64.00
1132  2.0607E+00  1.1279E-02  1.8692E-02  2.0609E+00  1.1108E-02  52
132  1.7370E+00 -7.8559E-02 -1.2958E-01  1.7462E+00 -8.7760E-02 -4.06

```

```

ELEMENT ID 208 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1132 -1.3389E+01 -4.5778E+00 -7.7536E-01 -4.5101E+00 -1.3457E+01 -85.01
132  -1.3423E+01 -4.6908E+00  1.6542E+00 -4.3880E+00 -1.3726E+01  79.63
1149  7.2426E-01 -3.1633E-01 -1.3054E+00  1.6092E+00 -1.2013E+00 -34.13
149  6.7232E-01 -4.8947E-01  1.3839E+00  1.5923E+00 -1.4095E+00  33.62

```

SHELL ELEMENT FORCES

ELEMENT ID 208 -----							
JOINT	M11	M22	M12	Fmax	Fmin	ANGLE	
1132	4.3733E-01	-4.8994E-03	-1.7214E-01	4.9643E-01	-6.4004E-02	-18.95	
132	1.2782E-01	-7.2648E-02	2.1633E-02	1.3013E-01	-7.4956E-02	6.09	
1149	2.5404E+00	4.5066E-01	-1.9120E-01	2.5578E+00	4.3331E-01	-5.18	
149	2.6181E+00	4.5244E-01	5.0101E-02	2.6193E+00	4.5128E-01	1.32	

ELEMENT ID 209 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1084	3.1436E-01	7.6345E-02	-5.4849E-02	3.2639E-01	6.4314E-02	-12.37	
84	2.6390E-01	-9.1857E-02	-4.1022E-02	2.6857E-01	-9.6526E-02	-6.49	
1059	3.3707E-01	5.6618E-02	2.1662E-01	4.5488E-01	-6.1201E-02	28.54	
59	3.0410E-01	-5.3258E-02	2.3127E-01	4.1768E-01	-1.6683E-01	26.16	
JOINT	M11	M22	M12	Fmax	Fmin	ANGLE	
1084	-3.7110E-01	-2.8813E-01	-6.0582E-02	-2.5619E-01	-4.0304E-01	-62.20	
84	3.3829E-01	1.9693E-01	-4.2055E-02	3.4986E-01	1.8536E-01	-15.38	
1059	8.7373E-01	4.3483E-01	-1.1004E-01	8.9977E-01	4.0878E-01	-13.32	
59	-5.7718E-01	-3.5000E-01	-8.8634E-02	-3.1951E-01	-6.0767E-01	-71.02	

ELEMENT ID 210 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1059	3.7591E-01	1.8611E-01	4.6843E-01	7.5895E-01	-1.9693E-01	39.27	
59	3.7791E-01	1.9276E-01	5.1073E-01	8.0439E-01	-2.3371E-01	39.86	
1049	-1.3690E-01	4.1832E-02	3.2782E-01	2.9225E-01	-3.8732E-01	52.62	
49	-1.4121E-01	2.7456E-02	3.6096E-01	3.1381E-01	-4.2756E-01	51.58	
JOINT	M11	M22	M12	Fmax	Fmin	ANGLE	
1059	-8.4429E-02	-1.2426E-01	-4.7858E-02	-5.2508E-02	-1.5618E-01	-33.70	
59	2.2253E-01	6.1120E-02	-4.7332E-02	2.3539E-01	4.8264E-02	-15.20	
1049	1.0576E-01	1.6539E-01	-3.0951E-03	1.6555E-01	1.0560E-01	-87.04	
49	1.5964E-03	5.5757E-02	-6.5629E-03	5.6541E-02	8.1253E-04	-83.19	

ELEMENT ID 211 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1049	-1.1736E-01	1.0696E-01	3.7850E-01	3.8956E-01	-3.9997E-01	53.25	
49	-1.0691E-01	1.4181E-01	3.6849E-01	4.0636E-01	-3.7146E-01	54.32	
1044	-2.1277E-01	7.8430E-02	3.8100E-01	3.4071E-01	-4.7504E-01	55.46	
44	-2.0237E-01	1.1308E-01	3.7183E-01	3.5925E-01	-4.4855E-01	56.49	
JOINT	M11	M22	M12	Fmax	Fmin	ANGLE	
1049	3.3983E-01	2.5045E-01	-6.1032E-02	3.7079E-01	2.1950E-01	-26.89	
49	-4.4656E-02	1.2913E-01	-6.1878E-02	1.4891E-01	-6.4437E-02	-72.27	
1044	5.5020E-02	3.5157E-01	-5.6811E-02	3.6208E-01	4.4509E-02	-79.52	
44	3.7419E-01	4.5544E-01	-5.5827E-02	4.8386E-01	3.4577E-01	-63.02	

ELEMENT ID 212 -----							
LOAD COND 1 -----							
JOINT	S11	S22	S12	Fmax	Fmin	ANGLE	
1044	-2.4940E-01	-4.3692E-02	3.0229E-01	1.7276E-01	-4.6586E-01	54.40	
44	-2.4302E-01	-2.2399E-02	2.8071E-01	1.6890E-01	-4.3432E-01	55.73	
1039	5.4599E-02	4.8091E-02	2.7287E-01	3.2423E-01	-2.2154E-01	44.66	
39	6.0604E-02	6.8106E-02	2.5295E-01	3.1734E-01	-1.8863E-01	45.42	

SHELL ELEMENT FORCES

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ELEMENT ID 212 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1044  1.1826E-01  3.7075E-01 -6.2300E-02  3.8528E-01  1.0373E-01 -76.87
  44  7.1734E-02  3.6308E-01 -6.4254E-02  3.7662E-01  5.8192E-02 -78.10
1039  2.6011E-02  1.7731E-01 -1.6254E-01  2.8094E-01 -7.7623E-02 -57.48
  39 -2.1307E-01  7.8993E-02 -1.6410E-01  1.5263E-01 -2.8671E-01 -65.83

```

```

ELEMENT ID 213 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1039  3.8470E-02 -5.6736E-03  1.5258E-01  1.7057E-01 -1.3777E-01  40.88
  39  3.8826E-02 -4.4863E-03  1.6471E-01  1.8330E-01 -1.4896E-01  41.26
1033 -9.8503E-01 -3.1307E-01  1.7691E-01 -2.6934E-01 -1.0288E+00  76.12
  33 -9.8444E-01 -3.1112E-01  1.8471E-01 -2.6377E-01 -1.0318E+00  75.62
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1039 -2.2495E-01  4.9153E-02 -1.1418E-01  9.0486E-02 -2.6628E-01 -70.10
  39 -2.4525E-03  1.5215E-01 -1.1332E-01  2.1202E-01 -6.2329E-02 -62.15
1033  2.2081E-01  1.1993E-01 -9.4004E-02  2.7705E-01  6.3690E-02 -30.89
  33  1.0178E-03  1.9761E-02 -9.1600E-02  1.0247E-01 -8.1688E-02 -47.92

```

```

ELEMENT ID 214 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1033 -9.6573E-01 -2.4876E-01  1.8467E-01 -2.0399E-01 -1.0105E+00  76.37
  33 -9.9334E-01 -3.4078E-01  3.8636E-01 -1.6136E-01 -1.1728E+00  65.09
1169 -2.1942E-01 -7.1498E-02  1.5744E-02 -6.9841E-02 -2.2108E-01  83.99
 169 -2.1628E-01 -6.1027E-02  1.6804E-01  4.6453E-02 -3.2376E-01  57.40
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1033 -2.1519E-01  1.5094E-01 -1.0457E-01  1.7870E-01 -2.4295E-01 -75.13
  33 -1.9888E-02  3.0658E-01 -7.6961E-02  3.2382E-01 -3.7121E-02 -77.38
1169  7.8753E-02  2.1396E-02  7.1749E-02  1.2734E-01 -2.7194E-02  34.11
 169 -6.2953E-02  1.6551E-02  6.8303E-02  5.5828E-02 -1.0223E-01  60.10

```

```

ELEMENT ID 215 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1020 -5.3439E-01  6.1933E-02 -9.7992E-01  7.8805E-01 -1.2605E+00 -53.46
  20 -5.4292E-01  3.3488E-02  1.4046E+00  1.1792E+00 -1.6886E+00  50.80
1015  3.7782E+00  1.3507E+00 -8.8703E-01  4.0677E+00  1.0611E+00 -18.08
  15  3.7729E+00  1.3333E+00  1.5470E+00  4.5232E+00  5.8300E-01  25.87
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1020 -2.1063E-01  3.2607E-03  3.4783E-02  8.7749E-03 -2.1615E-01  80.99
  20 -3.2385E-01 -8.5653E-02  3.7159E-02 -7.9991E-02 -3.2951E-01  81.34
1015 -2.9938E-01 -2.1210E-01  1.3723E-01 -1.1174E-01 -3.9974E-01  53.82
  15 -1.2726E-01 -4.3782E-02  1.4191E-01  6.2402E-02 -2.3344E-01  53.19

```

```

ELEMENT ID 216 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1015  3.6264E+00  8.4470E-01 -3.2348E-01  3.6635E+00  8.0758E-01 -6.55
  15  3.5460E+00  5.7668E-01  1.3582E+00  4.0735E+00  4.9174E-02  21.23
1010  3.1826E+00  6.0540E-01 -1.7159E+00  4.0399E+00 -2.5191E-01 -26.55
  10  3.1722E+00  5.7070E-01 -2.5868E-02  3.1724E+00  5.7044E-01 -5.57

```

SHELL ELEMENT FORCES

```

ELEMENT ID 216 -----
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1015 -2.5293E-01 -5.7294E-02  1.4265E-01  1.7854E-02 -3.2808E-01  62.22
  15 -1.4417E-01 -1.0015E-01  1.4814E-01  2.7605E-02 -2.7193E-01  49.23
1010 -5.0297E-02 -1.9754E-01  8.3033E-02 -1.2948E-02 -2.3489E-01  24.22
  10 -2.1962E-01 -1.9755E-01  8.3156E-02 -1.2470E-01 -2.9247E-01  48.78

```

```

ELEMENT ID 217 -----
LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1010  3.2038E+00  6.7628E-01 -9.8770E-01  3.5440E+00  3.3610E-01 -19.00
  10  3.2097E+00  6.9589E-01 -5.1249E-01  3.3102E+00  5.9543E-01 -11.09
1904  1.8488E+00  3.1549E-01 -7.1062E-01  2.1275E+00  3.6806E-02 -21.41
  904  1.8246E+00  2.3464E-01 -1.8009E-01  1.8447E+00  2.1450E-01 -6.38
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1010 -5.4537E-02 -2.1167E-01  1.2418E-01  1.3841E-02 -2.8005E-01  28.84
  10 -2.4058E-01 -2.6740E-01  1.5042E-01 -1.0297E-01 -4.0501E-01  42.45
1904  1.1830E-01  2.7465E-02  1.6465E-01  2.4368E-01 -9.7914E-02  37.29
  904  4.2943E-01  1.6296E-01  1.8589E-01  5.2490E-01  6.7492E-02  27.18

```

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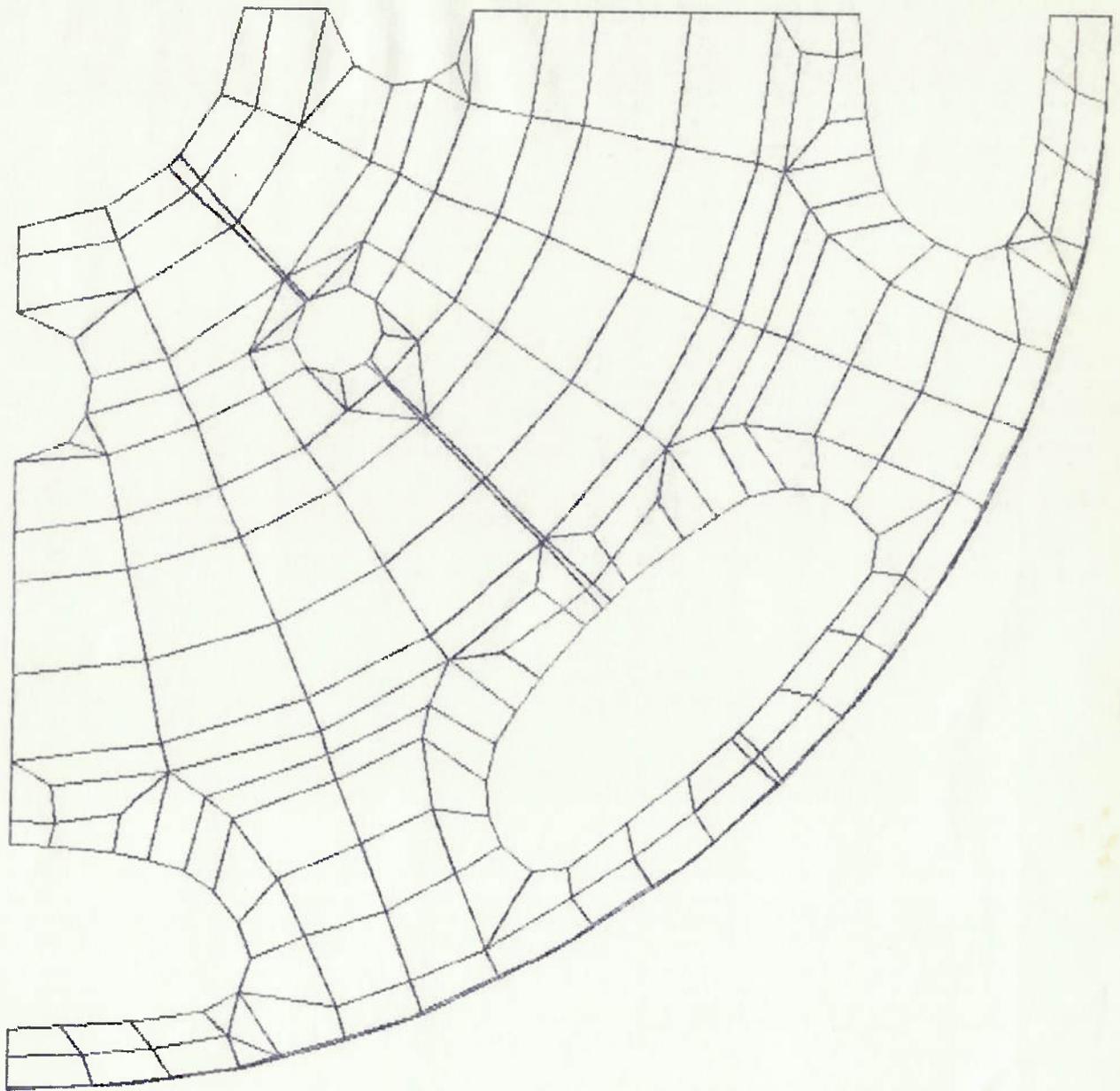
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LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1904  1.7997E+00  1.5156E-01 -5.1248E-01  1.9460E+00  5.1971E-03 -15.94
  904  1.8188E+00  2.1536E-01 -6.9945E-01  2.0810E+00 -4.6864E-02 -20.55
1004  5.1786E-01 -2.3298E-01 -4.8615E-01  7.5667E-01 -4.7179E-01 -26.16
  4  5.3700E-01 -1.6918E-01 -6.7312E-01  9.4401E-01 -5.7619E-01 -31.16
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1904  9.7149E-02 -1.1158E-01  2.4852E-01  2.6233E-01 -2.7676E-01  33.61
  904  1.6350E-01  4.0710E-01  1.7323E-01  4.9706E-01  7.3538E-02  62.56
1004 -1.2550E-02  6.6280E-02  1.2397E-01  1.5695E-01 -1.0322E-01  53.82
  4 -8.4790E-01 -1.0233E+00  4.8683E-02 -8.3529E-01 -1.0359E+00  14.52

```

```

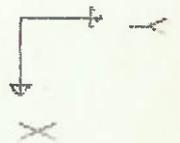
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LOAD COND  1 -----
JOINT      S11      S22      S12      Fmax      Fmin      ANGLE
1004  5.5325E-01 -1.1501E-01 -4.3777E-01  7.6984E-01 -3.3159E-01 -26.32
  4  6.1238E-01  8.2081E-02 -4.9476E-01  9.0856E-01 -2.1410E-01 -30.91
1001  1.2175E+00  1.2207E-01  3.4714E-02  1.2186E+00  1.2097E-01  1.81
  1  1.2517E+00  2.3606E-01 -3.6529E-02  1.2530E+00  2.3475E-01 -2.06
JOINT      M11      M22      M12      Mmax      Mmin      ANGLE
1004 -5.6083E-02 -2.1856E-01 -1.0094E-01 -7.7531E-03 -2.6689E-01 -25.59
  4 -3.3799E-01 -4.5120E-01 -8.0183E-02 -2.9644E-01 -4.9274E-01 -27.39
1001  2.2982E-01  9.2328E-03 -1.4322E-01  3.0029E-01 -6.1238E-02 -26.20
  1 -1.7668E-01 -6.2801E-02 -1.1982E-01  1.2925E-02 -2.5240E-01 -57.71

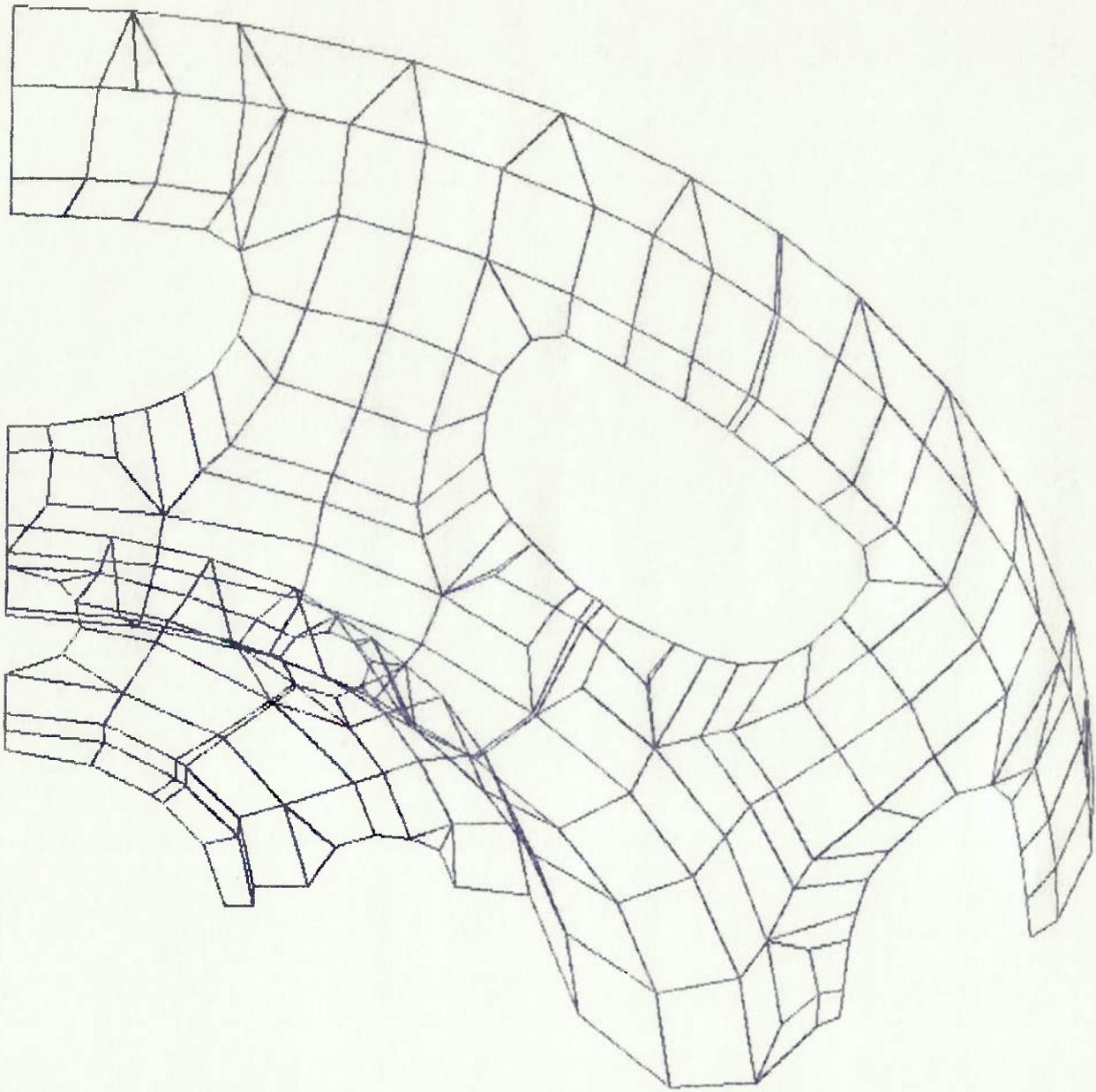
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SAP90

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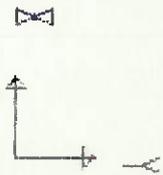


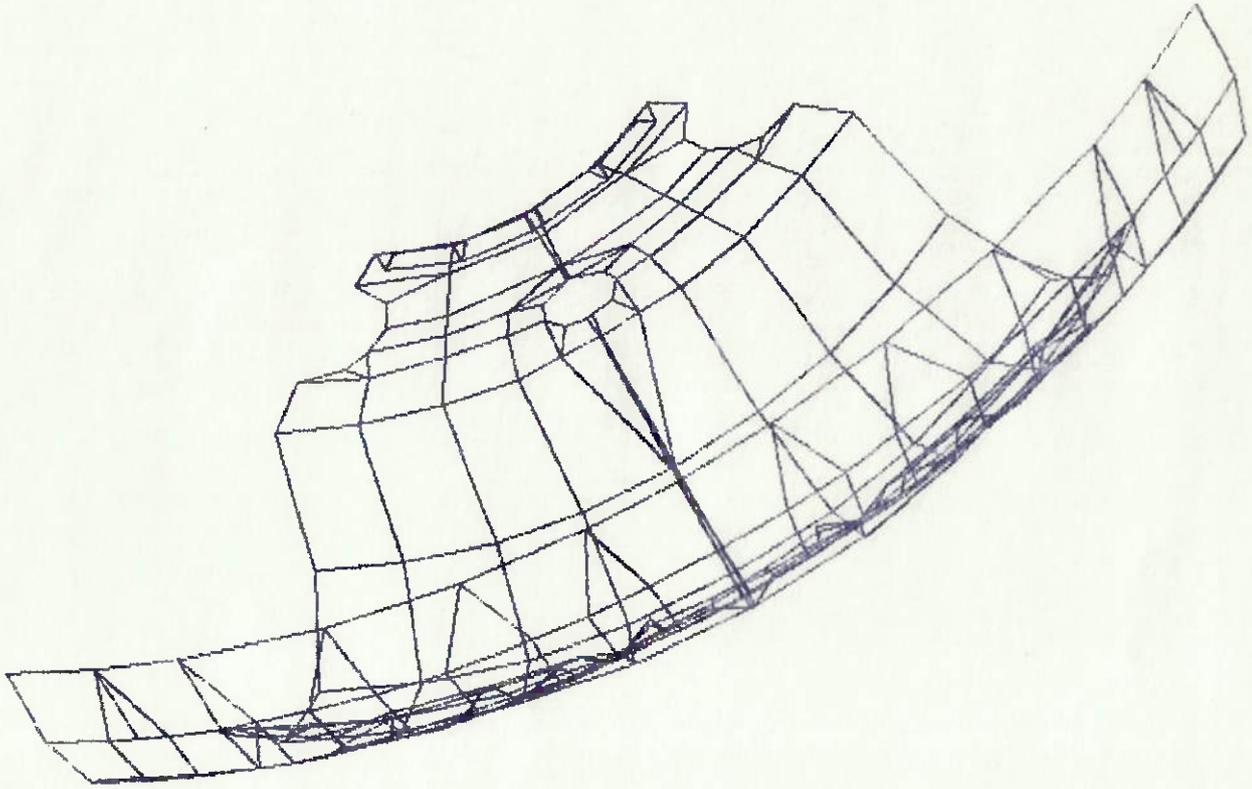


SAP90

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UNDEFORMED SHAPE

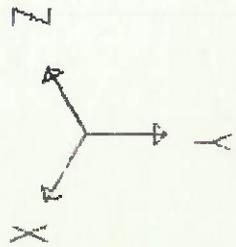




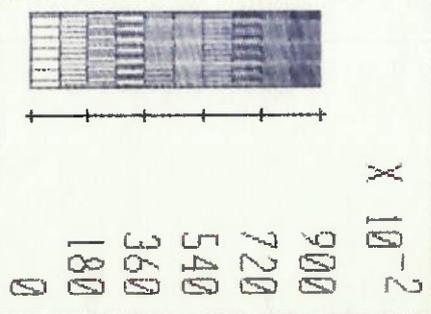
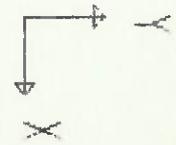
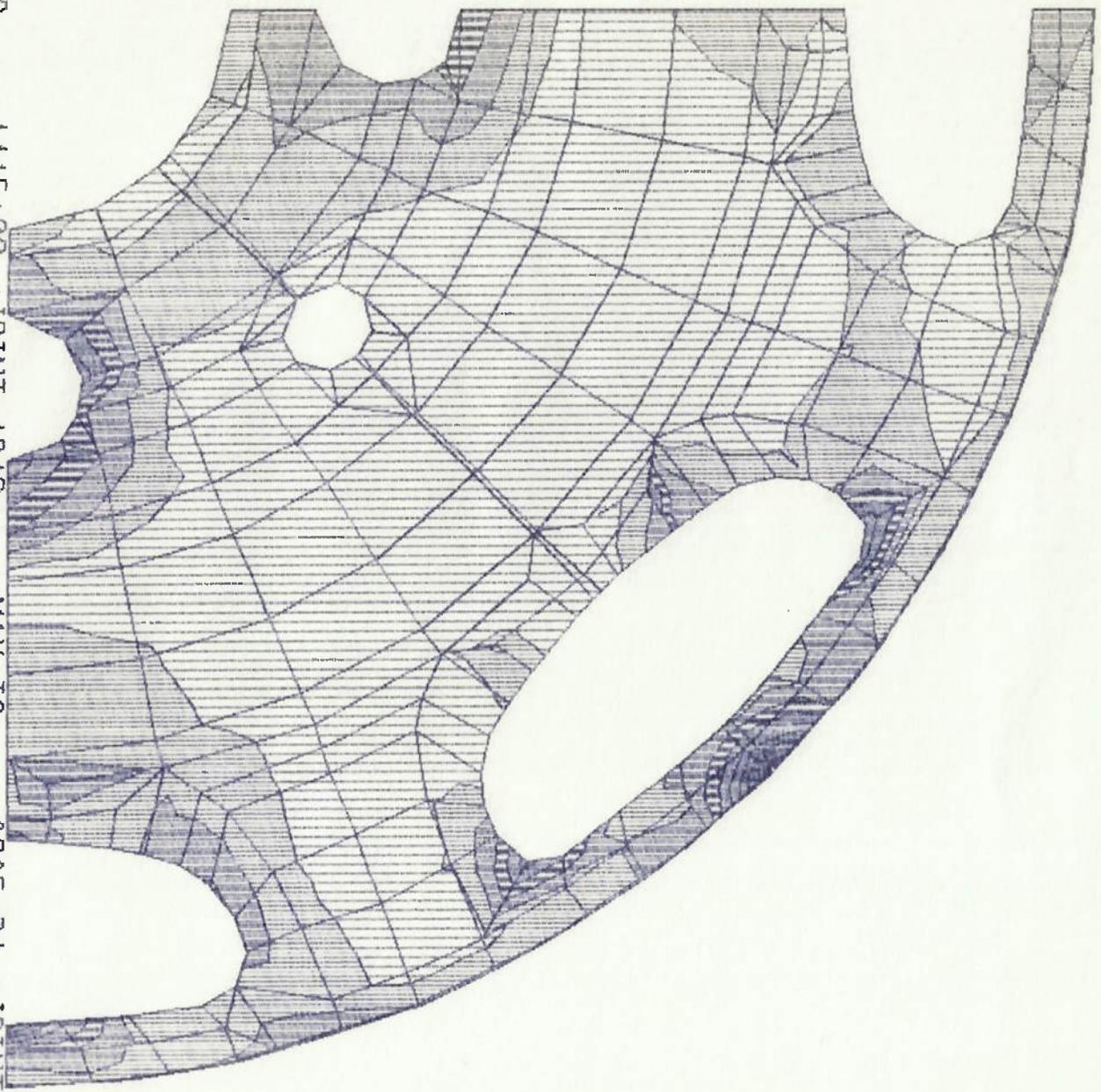
SAP90

FILE : rdaq

UNDEFORMED SHAPE



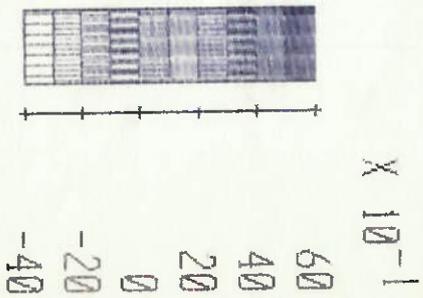
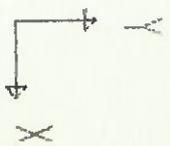
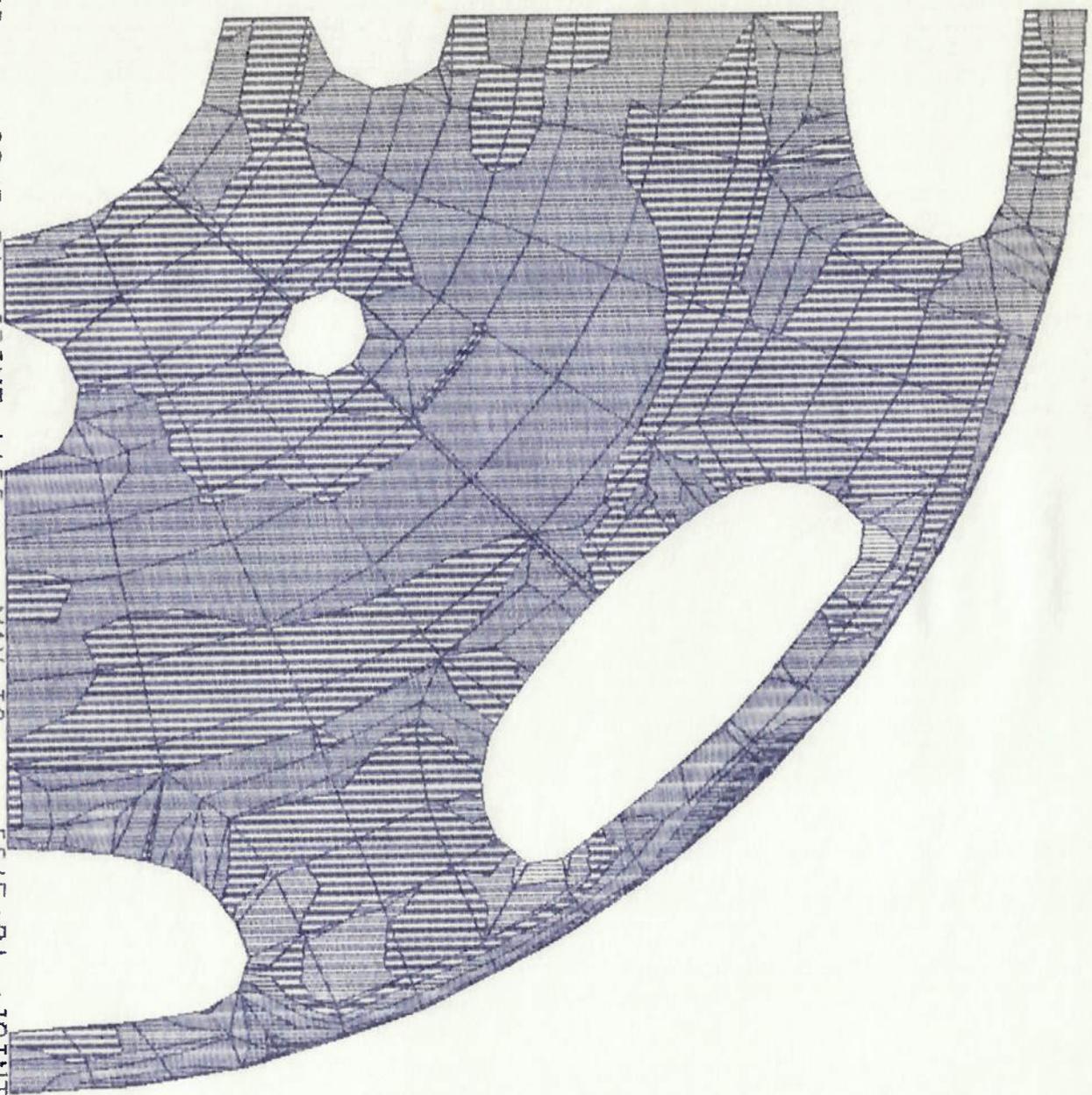
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FILE : nodaq
OUTPUT : SHELL SUM
LOAD : 1

SAP90

MIN IS -.306E+01 <JOINT 1155> MAX IS .551E+01 <JOINT 131>



FILE : rodaq
OUTPUT : SHELL M11
LOAD : 1

SAP90

WHEELS—PASSENGER CARS— PERFORMANCE REQUIREMENTS AND TEST PROCEDURES—SAE J328a

Report of Wheel Committee approved March 1968 and last revised May 1970.

1. Scope—This SAE Recommended Practice establishes minimum performance requirements and related uniform laboratory test procedures for evaluating certain essential characteristics of pressed steel wheels intended for use on passenger cars.

2. Definitions (Pressed Steel Wheels)

2.1 Wheel—Usually an assembly of a rim and a center member, commonly known as a disc or spider.

2.2 Rim—Supporting member for the tire or tire and tube assembly.

2.3 Center Member (Disc or Spider)—The connection between the vehicle and the rim.

2.4 Offset or Dish—The distance between the mounting face of the disc and the rim centerline. This distance is termed positive when the mounting face is outboard of the rim centerline and negative when inboard of the rim centerline.

SAE Recommended Practice

2.5 For further definitions and descriptions of nomenclature, see Fig. 1

3. Performance Requirements (Pressed Steel Wheels)—The test wheels, when subjected to the test procedures described in paragraph 4 shall meet the following minimum performance requirements:

3.1 Dynamic Cornering Fatigue

3.1.1 MINIMUM CYCLES—After being subjected to 10,000 test cycles, there shall be no evidence of failure as indicated by propagation of a crack existing prior to test, new visible cracks, or the inability of the wheel to sustain load.

3.1.2 BENDING MOMENT—The bending moment to be applied to the test wheel (force × moment arm) shall be determined as follows:

$$BM = \frac{1_w (RR\mu + d)}{12} \quad (S)$$

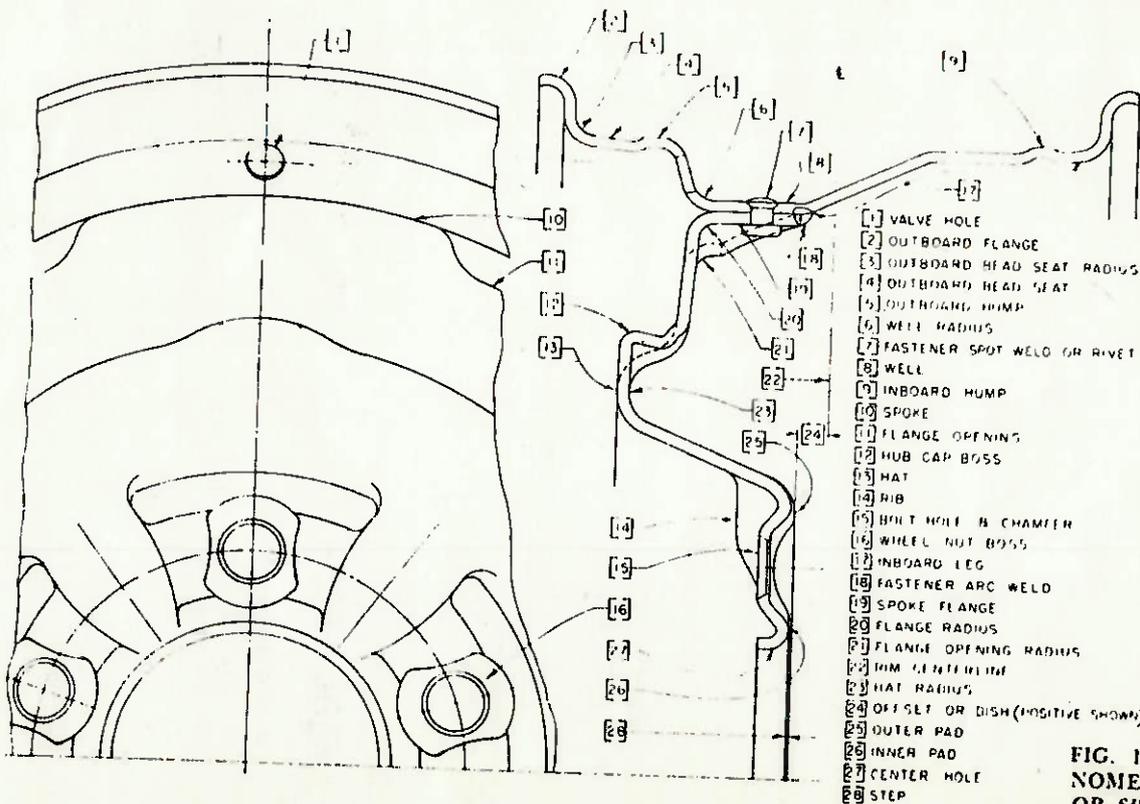


FIG. 1—PASSENGER CAR WHEEL NOMENCLATURE (RIM AND DISC OR SPIDER ASSEMBLY)

where: B_M = bending moment, lb-ft
 $L_f = \frac{1}{2}$ of the maximum vertical static load on the front axle
 RR = static loaded radius of the largest tire to be used on the wheel as specified by the vehicle manufacturer, (in.)
 μ = coefficient of friction developed between the tire and the road (0.7)
 d = dish or offset of wheel, (may be positive or negative, see Fig. 1)
 S = accelerated test factor of 1.6.

3.2 Dynamic Radial Fatigue

3.2.1 MINIMUM CYCLES After being subjected to 400,000 test cycles, there shall be no evidence of failure as indicated by propagation of a crack existing prior to test, new visible cracks, or the inability of the wheel to sustain load.

3.2.2 RADIAL LOAD The radial load to be applied to the test wheel shall be determined as follows:

$$RL = L_f K$$

where: RL = radial test load; use RL_1 or RL_2 , whichever is greater, as determined by the following formulas:

$$RL_1 = L_f K$$

where: $L_f = \frac{1}{2}$ of the maximum vertical static load on the front axle
 K = accelerated test factor = 2.25

$$RL_2 = L_r K$$

where: $L_r = \frac{1}{2}$ of the maximum vertical static load on the rear axle
 K = accelerated test factor = 2.00

4. Test Procedures

4.1 Wheels for Test—Use only fully processed new wheels which are representative of wheels intended for the vehicle. Separate wheels will be used for each test.

4.2 Dynamic Cornering Fatigue Test

4.2.1 EQUIPMENT—The test machine shall be one with a driven rotatable device and a means to impart a constant bending moment to a wheel.

4.2.2 PROCEDURE—The rim flange of the wheel or the wheel and tire assembly shall be clamped securely to the rotatable device. When a tire and wheel assembly is used, tire pressure shall be not less than 55 psi. A rigid load arm shaft and adaptor assembly shall be attached to the mounting surface of the wheel using nonlubricated studs and nuts (or bolts), in good condition representative of those used on the vehicle. These wheel nuts (or bolts) shall be hand torqued at the beginning of the test to 85 ± 5 lb-ft.

Force is applied to the load arm shaft by means of a bushing (or bearing) at a specified distance (moment arm) from the mounting surface of the wheel. Final clamped position of the wheel to the rotating device without load shall provide a concentricity at the point of loading of 0.010 in. maximum total indicator reading.

The loading system should maintain the bending moment within $\pm 2.5\%$.

4.3 Dynamic Radial Fatigue Test

4.3.1 EQUIPMENT—The test machine shall be one with a driven rotatable drum which presents a smooth surface wider than the loaded test tire section width. The suggested diameter of the drum is 67.23 in. (300 revolutions/min). The test wheel and tire fixture must provide loading normal to the surface of the drum and in line radially with the center of the test wheel and the drum.

4.3.2 PROCEDURE—The tire selected for this wheel test must be representative of the maximum size tire specified by the vehicle manufacturer for the wheel. The recommended cold inflation pressure of the test tire is 65 ± 2 psi. There is a slight increase in pressure during test operation. This increase is normal and no adjustment is necessary.

The loading system should maintain the specified load within $\pm 2.5\%$.

**WHEELS—PASSENGER CARS—
 IMPACT PERFORMANCE REQUIREMENTS
 AND TEST PROCEDURES—SAE J175**

SAE Recommended Practice

Report of Wheel Committee approved September, 1970

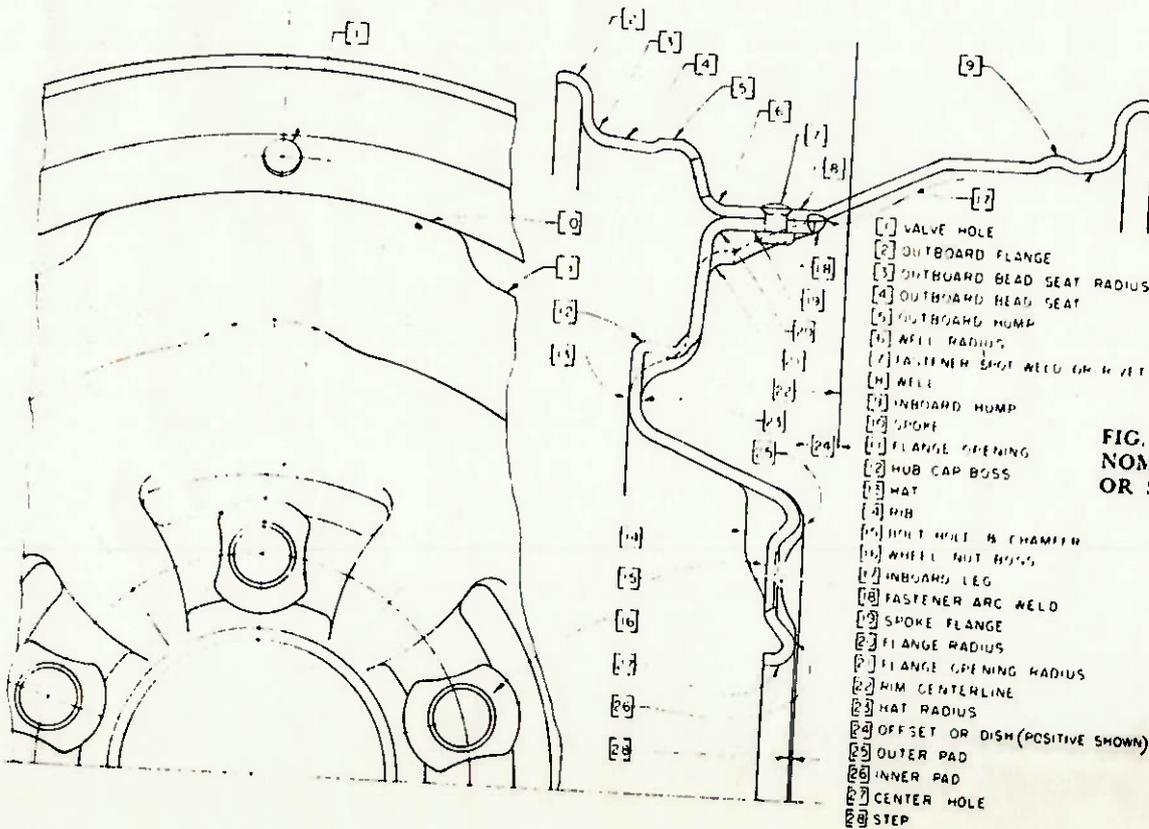


FIG. 1—PASSENGER CAR WHEEL NOMENCLATURE (RIM AND DISC OR SPIDER ASSEMBLY)

- [1] VALVE HOLE
- [2] OUTBOARD FLANGE
- [3] OUTBOARD BEAD SEAT RADIUS
- [4] OUTBOARD BEAD SEAT
- [5] OUTBOARD HUMP
- [6] AFLL RADIUS
- [7] FASTENER SPOT WELD OR WELD
- [8] WELL
- [9] INBOARD HUMP
- [10] SPOKE
- [11] FLANGE OPENING
- [12] HUB CAP BOSS
- [13] HAT
- [14] HUB
- [15] HUB HOLE R CHAMFER
- [16] WHEEL NUT BUSH
- [17] INBOARD LEG
- [18] FASTENER ARC WELD
- [19] SPOKE FLANGE
- [20] FLANGE RADIUS
- [21] FLANGE OPENING RADIUS
- [22] RIM CENTERLINE
- [23] HAT RADIUS
- [24] OFFSET OR DISH (POSITIVE SHOWN)
- [25] OUTER PAD
- [26] INNER PAD
- [27] CENTER HOLE
- [28] STEP

1. **Scope**—This SAE Recommended Practice establishes minimum performance requirements and related uniform laboratory test procedures for evaluating impact characteristics of all wheels intended for use on passenger cars.

2. **Definitions**

- 2.1 **Wheel**—Usually an assembly of a rim and a center member, commonly known as a disc or spider.
- 2.2 **Rim**—Supporting member for the tire or tire and tube assembly.
- 2.3 **Center Member (Disc or Spider)**—The connection between the vehicle and the rim.
- 2.4 **Offset or Dish**—The distance between the mounting face of the disc and the rim centerline. This distance is termed positive when the mounting face is outboard of the rim centerline and negative when inboard of the rim centerline.

2.5 For further definitions and descriptions of nomenclature, see Fig. 1.

3. **Performance Requirements**—The test wheels, when subjected to the test procedures described in paragraph 4 shall meet the following minimum performance requirements:

- 3.1 No visible fractures of the center member of the wheel assembly.
- 3.2 No separations of the center member from the rim.
- 3.3 No total sudden loss of tire air pressure.
- 3.4 Deformations of the wheel assembly, or fractures in the area of the rim section contacted by the face plate of the weight system, do not constitute a failure.

4. **Test Procedures**

4.1 **Wheels for Test**—Use only fully processed new wheels which are representative of wheels intended for passenger car applications.

4.2 **Equipment**—A test machine shall be a framework designed to guide a weight system in a free-fall manner to impact a wheel-tire assembly supported on a fixture. See Fig. 2.

The main weight shall be 2000 ± 40 lb with an auxiliary weight of 220 ± 10 lb mounted underneath. This auxiliary weight is guided and spring mounted to the main weight to impart an in-line, initial impact to the wheel assembly and to permit a minimum compliance force buildup before the main weight is subjected onto the test wheel-tire assembly. The combined rate of the three parallel springs in the auxiliary weight system is 6000 ± 100 lb/in. The spring assembly system is preloaded $1/4$ in.; 250 in. of travel is available before the auxiliary weight contacts the main weight. This calibration is obtained by dropping the total weight system onto a solid oak block 14 in. x 4 in. x 2 in. thick, (minimum) from a 12 in. height. This compliance is intended to simulate typical vehicle suspension rates and distance values under actual vehicle impact conditions. The face plate of the impact weight system is 6 in. x 15 in.

The wheel-tire support fixture is rigidly affixed to the machine base but is adjustable under the weight to accommodate various sizes and shapes of wheels.

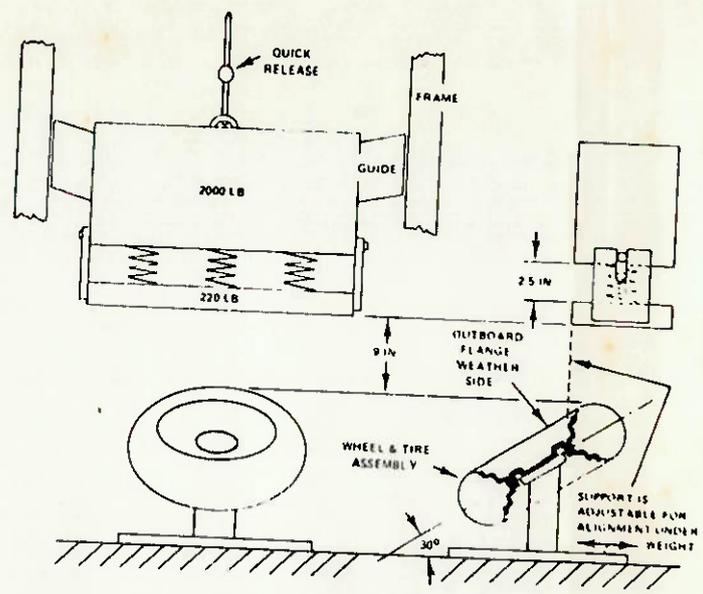


FIG. 2—WHEEL IMPACT TEST

4.3 **Procedure**—The wheel-tire assembly is held at a 30 deg angle to a horizontal plane and the securing stud system can be rotated to allow various sections of a wheel center assembly to be subjected to loadings. Weight edge must be in line with the outer bead radius of the rims. See Fig. 2

Tires shall be the smallest size recommended by the Tire and Rim Association for dimensional checks as used with the "measuring rim." The contained pressure is set at 37 ± 1 psi and is recorded before and after the test.

Using the equipment described in paragraph 4.2, the weight system shall be dropped from a height of 9 in. above the highest point of the wheel-tire assembly. See Fig. 2. The outboard flange of the wheel is the area contacted by the face of the weight system. Because the design of center members varies greatly, sufficient impact tests must be made to insure complete coverage of the integrity of the center member (and or attachments, if present); this requires that various portions of the center member structure be directly or indirectly subjected to the forces of the weight system as transferred from the wheel-tire contact area.

WHEELS—RECREATIONAL AND UTILITY TRAILER TEST PROCEDURES—SAE J1204

Report of Wheel Committee approved November 1977

SAE Recommended Practice

1. **Scope**—This SAE Recommended Practice provides uniform procedures for fatigue testing ferrous wheels intended for normal highway use on travel, camping, boat and light utility trailers drawn by passenger cars and light trucks. For performance requirements, see SAE Jxxx. For procedures and minimum performance requirements for truck-type rims and wheels, see SAE J267a and for passenger car rims and wheels see SAE J328a. Mobile home service is also outside the scope of this recommended practice.

There are two basic test procedures described, a cornering fatigue test and a radial fatigue test. The cornering test is directed at the wheel portion of the wheel/rim assembly; whereas the radial test will examine potential deficiencies in the rim portion of the structure. Both test procedures are required to obtain a thorough examination of the wheel/rim assembly.

2. **Definitions** (Pressed Steel Wheels)

- 2.1 **Passenger Car Type Wheels**
 - 2.1.1 **WHEEL**—Usually an assembly of a rim and a center member, commonly known as a disc or spider.
 - 2.1.2 **RIM**—Supporting member for the tire or tire and tube assembly.
 - 2.1.3 **CENTER MEMBER (DISC OR SPIDER)**—The connection between the vehicle and the rim.
 - 2.1.4 **OFFSET OR DISH**—The distance between the mounting face of the disc and the rim centerline. This distance is termed positive when the mounting face is outboard of the rim centerline and negative when inboard of the rim centerline. See Fig. 1.
 - 2.1.5 For further definitions and descriptions of nomenclature, see Fig. 1.

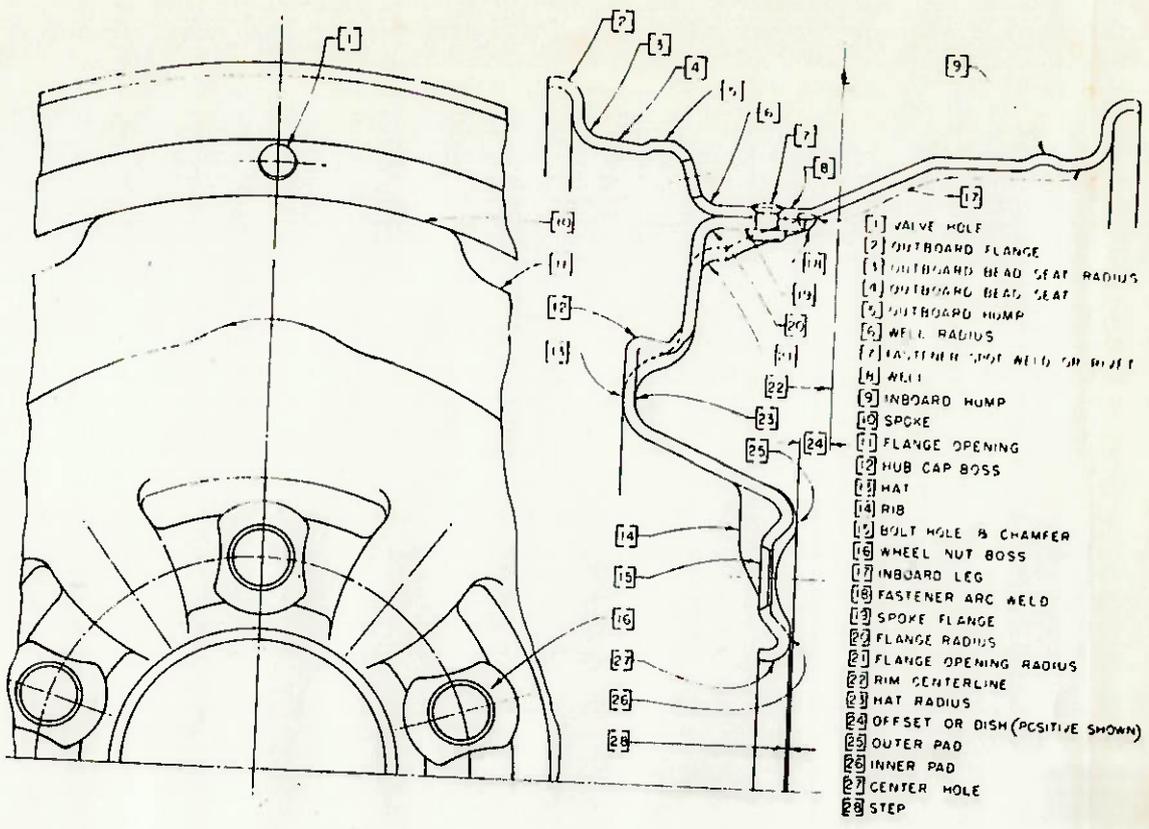


FIG. 1

2.2 Industrial-Type Wheels

2.2.1 For definitions and descriptions of nomenclature, see Fig. 2.
 3. Test Procedures

3.1 **Wheels for Test** Use only fully processed new wheels which are representative of production parts intended for the vehicle and ready for road use. Separate wheels are to be used for each test.

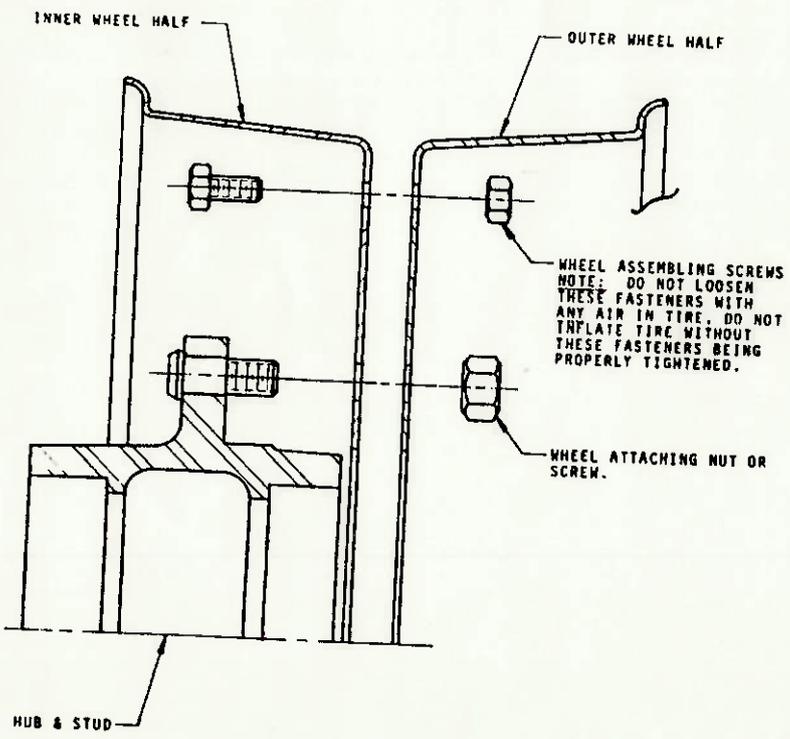


FIG. 2

3.2 Dynamic Cornering Fatigue

3.2.1 **EQUIPMENT**—The test machine shall be one with a means to impart constant rotating bending moment to the wheel.

3.2.2 **PROCEDURE** The rim shall be clamped securely to the test device rigid load arm shaft with a test adaptor with a mounting surface representative of production hubs shall be attached to the mounting surface of wheel, using studs and nuts representative of those specified for the wheel.

These wheel nuts shall be torqued to the torque limits specified in Table for the stud size and the type of nut. The mating surface of the test adaptor and wheel shall be free of excessive build-up of paint, dirt, or foreign matter. The final clamped position of the wheel without load shall not exceed eccentricity of 0.010 in (0.25 mm) total indicator reading normal to the axis at the point of loading. The load system shall maintain the specified load within +3%. The application of the test load will be parallel to a plane through the center of the rim as shown in Fig. 3.

3.2.3 **BENDING MOMENT**—Bending moment is determined by:

$$M = L(R\mu + d)S$$

where M = Bending moment lbf·ft (N·m)

L = The load rating of the wheel as specified by vehicle manufacturer and/or wheel manufacturer; lbf (N)

R = Static loaded radius of the largest tire to be used on the wheel specified by the vehicle and/or wheel manufacturer; ft (m)

μ = Coefficient of friction between the tire and the road; use $\mu = 0.1$

d = Dish or offset of wheel ft (m). If wheel may be used as both positive and negative, use positive offset. See Fig. 1 to determine if offset is positive or negative.

S = Accelerated Test Factor as shown below:

Wheel offset	S
Less than 0.33 ft (0.10 m)	1.45
0.33 ft (0.10 m) and more	1.10

The test load is determined from the following relation:

$$F = \frac{M}{D} \text{ (See Fig. 3)}$$

where F = Test load; lbf (N)

D = Moment arm; ft (m)

M = Bending moment

TABLE 1—MOUNTING NUT TORQUES* FOR LABORATORY WHEEL/RIM TESTS

Application	Thread Size	Torque (dry)	
		lbf · ft	N · m
Disc Wheels	7 16-20	80-90	110-120
	1 2-20	80-90	110-120
	9 16-18	110-120	150-165
	5 8-18	125-135	170-185

*Nut torque values shall be checked and reset during the course of a wheel test in order to compensate for the "wearing-in" of mating surfaces of nuts and bolt holes. This shall be done at 1000 cycles and it may be done again at 5000 cycles.

3.3 Dynamic Radial Fatigue Test

3.3.1 **EQUIPMENT**—The test machine shall be one with a driven rotatable drum which presents a smooth surface wider than the loaded test tire section width. The suggested diameter of the drum is 67.23 in (1707.6 mm) at 300 rev/mile (187.5 rev/km). The test wheel and tire must provide loading normal to the surface of the drum and in line radially with the center of the test wheel and the drum. The axis of the test wheel and the drum must be parallel. Equipment must hold test load to within ±3%.

3.3.2 **PROCEDURE**—Tires selected for this test shall be representative of a size and construction approved by the Tire and Rim Association and the wheel manufacturer for the wheel under test. If the wheel is to be certified for usage with different tires, the procedure must be repeated for those tires. The test adaptor shall be representative of production hubs using studs and nuts representative of those specified for the wheel. The wheel nuts shall be torqued to the torque limits specified in Table 1 of the Appendix for stud size and type of nut used. The test load and the inflation pressure are based on the wheel rating. Test inflation pressures shall be selected in accordance with Table 2.

3.3.3 **RADIAL LOAD DETERMINATION**—The radial load is determined as follows:

$$R = LK$$

where R = Radial load; lbf (N)

L = Load rating of the wheel as specified by the wheel manufacturer; lbf (N)

K = Accelerated test load factor = 2.00

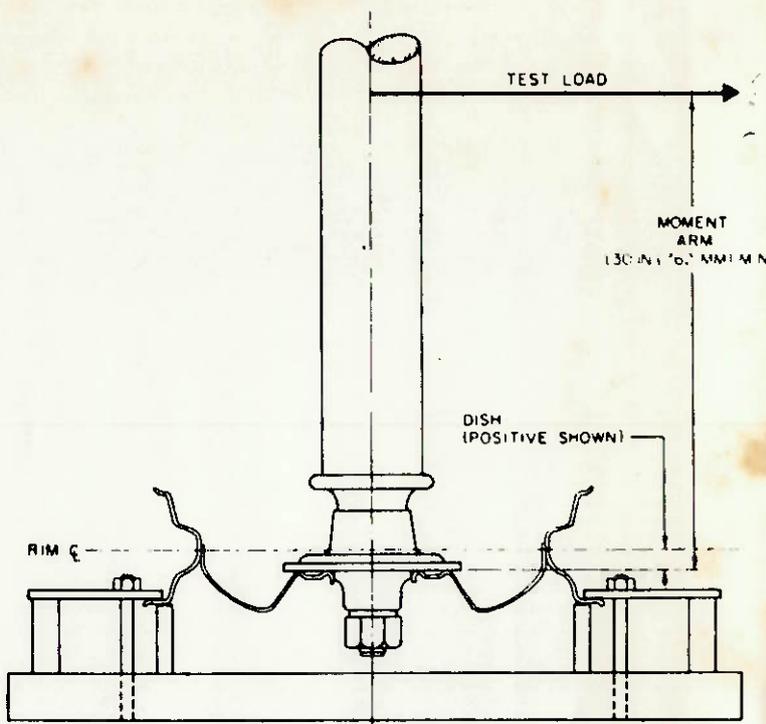


FIG. 3

TABLE 2

Usage Tire Pressure of Load		Test Pressure (Maintain within ±5%)	
psi	kPa	psi	kPa
Up to 40	Up to 280	65	450
41-60	280-410	80	550
61-80	420-550	100	690
81-100	560-690	130	900

♦ WHEELS/RIMS—TRUCKS—TEST PROCEDURES AND PERFORMANCE REQUIREMENTS—SAE J267 DEC83

SAE Recommended Practice

Report of the Wheel Committee, approved September 1971, completely revised by the Truck and Bus Chassis Committee December 1983

1. **Scope**—This SAE Recommended Practice provides uniform laboratory procedures for fatigue testing certain production disc wheels, wheels for demountable rims, and demountable rims intended for normal highway use on trucks, buses, truck-trailers, and multipurpose passenger vehicles. Standardized fatigue tests are yet to be developed for wheels and rims not covered in this recommended practice.

2. **References**

SAE J393 "Nomenclature—Wheels, Hubs, and Rims for Commercial Vehicles"

ISO 3894 "Road Vehicles—Commercial Vehicles—Wheels/Rims—Test Methods"

3. **Test Procedures**

3.1 **Wheels/Rims for Test**—Use only fully processed wheels/rims which are representative of production parts intended for vehicle application. New separate wheels/rims and new related components of multipiece design will be used for each test.

3.2 **Cornering Fatigue Test, Disc Wheels**—The cornering fatigue test shall be conducted by one of the following methods as specified by the wheel manufacturer.

NOTE: Both test methods have been proved valid; however, there is not necessarily a correlation between the two tests in number of cycles and/or load.

3.2.1 **CORNERING FATIGUE—10 DEG LOADING METHOD**

3.2.1.1 **Equipment**—The test machine shall be such that either the wheel rotates under the influence of a stationary bending moment and axial load, or the stationary wheel is subjected to an axial load and rotating bending moment (See Fig. 1).

3.2.1.2 **Procedure**—The rim shall be clamped securely to the test device. A rigid load arm shall with a test adaptor with a mounting surface representative of production hubs shall be attached to the mounting surface of the wheel, using studs and nuts representative of those specified for the wheel. These wheel nuts shall be torqued to the torque limits

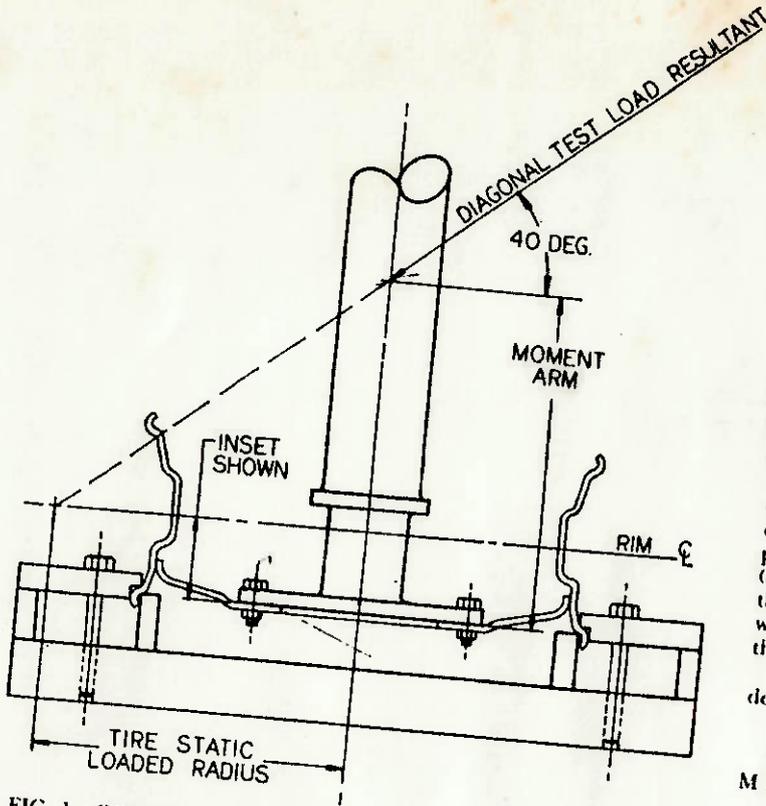


FIG. 1—CORNERING FATIGUE, 40 DEG LOADING METHOD

specified in Table A-1 of the Appendix for the stud size and type of nut. The mating surfaces of the test adaptor and wheel shall be free of excessive buildup of paint, dirt, or foreign material. The final clamped position of the wheel without load shall not exceed an eccentricity of 0.010 in (0.254 mm) total indicator reading, normal to the point of loading. The load system shall maintain the specified load within $\pm 3\%$. The nominal angle of the test load resultant will be 40 deg from a plane through the center of the rim as shown in Fig. 1.

3.2.1.3 *Test Load and Moment Arm Determination*—The test load and moment arm are determined as follows:

$$D = (S)L$$

- where: D = diagonal test load resultant, lb force (N)
 L = load rating of the wheel as specified by the wheel manufacturer, lb force (N)
 S = accelerated test factor
 Moment arm = $slr \tan 40 \text{ deg} + d$

where:

- slr = static loaded radius of the largest tire to be used on the wheel as specified by the vehicle or wheel manufacturer, in (mm). Refer to Table A-2 of the Appendix for static loaded radius.
- $\tan 40 \text{ deg}$ = tangent of 40 deg = 0.84
- d = inset or outset (positive for inset, negative for outset), in (mm). If wheel may be used as inset or outset, use inset (See SAE J393).

3.2.1.4 *Test Load Factors and Cycle Requirements*—See Table 1.
 3.2.2 *CORNERING FATIGUE—90 DEG LOADING METHOD*

3.2.2.1 *Equipment*—The test machine shall be such that either the wheel rotates under the influence of a stationary bending moment or the stationary wheel is subjected to a rotating bending moment (See Fig. 2.)

3.2.2.2 *Procedure*—The rim shall be clamped securely to the test machine. A rigid load arm shaft with a test adaptor with a mounting surface representative of production hubs shall be attached to the mounting face of the wheel. These wheel nuts shall be torqued to the torque specified in Table A-1 of the Appendix for the stud size and the mating surfaces of the test adaptor and wheel shall be free of excessive buildup of paint, dirt, or foreign matter. The final clamped position of the wheel without load should not exceed an eccentricity of 0.010 in (0.254 mm) total indicator reading normal to the shaft at the point of loading. The load system shall maintain the specified load within $\pm 3\%$. The application of the test load will be parallel to a plane through the center of the rim as shown in Fig. 2.

3.2.2.3 *Test Load and Bending Moment Determination*—The test load and moment arm are determined by:

$$\text{Test load} = \frac{M}{\text{Moment arm}} \quad (\text{See Fig. 2})$$

M is determined by the formula:

$$M = [\mu (slr) + d] (S) L$$

- where: M = bending moment, lbf-in (N·m)
 L = load rating of the wheel as specified by the wheel manufacturer, lb force (N)
 slr = static loaded radius of the largest tire to be used on the wheel as specified by the vehicle or wheel manufacturer, in (mm $\times 10^{-3}$). Refer to Table A-2 of the Appendix for static loaded radius.
 μ = coefficient of friction developed between tire and road surface
 d = inset or outset (positive for inset, negative for outset), in (mm). If wheel may be used as inset or outset, use inset (See SAE J393).
 S = accelerated test factor

3.2.2.4 *Test Load Factors and Cycle Requirements*—See Table 2.
 3.2.3 *TEST TERMINATION DEFINITION*

- (a) Inability of wheel to sustain load.
- (b) A visually detected fatigue crack penetrating through a section of the wheel.

3.3 *Radial Fatigue Test, Disc Wheels and Demountable Rim*

3.3.1 *EQUIPMENT*—The test machine shall be one with a driven, rotatable drum which presents a smooth surface wider than the loaded tire section width. The suggested diameter of the drum is 67.23 in (1718 mm).

TABLE 1—TEST LOAD FACTORS AND CYCLE REQUIREMENTS FOR CORNERING FATIGUE TEST, 40 DEG LOADING METHOD

Material	Disc Wheel Description				Inset/Outset	Performance Requirements	
	Bolt Circle		Rim Diameter Size Code			Accelerated Test Factor	Min Cycle Life
	in	mm	in	mm			
Ferrous	Less than 11.25	Less than 285.75	16 and greater ^a	406 and greater ^a	All	1.6	20 000
Ferrous ^b	8.75	222.25	15	380	All	1.6	20 000
Ferrous	All except 8.75	All except 222.25	Less than 16	Less than 406	All	b	b
Ferrous	11.25 and greater	285.75 and greater	All ^c	All ^c	All	1.9	30 000

^a Wheels used for low platform trailers.
^b Use 90 deg loading method, paragraph 3.2.2.
^c Exclude 17.5 in (444.5 mm) diameter and larger with rim width of 10.50 in (266.7 mm) and wider (wide-base truck-bus wheels).

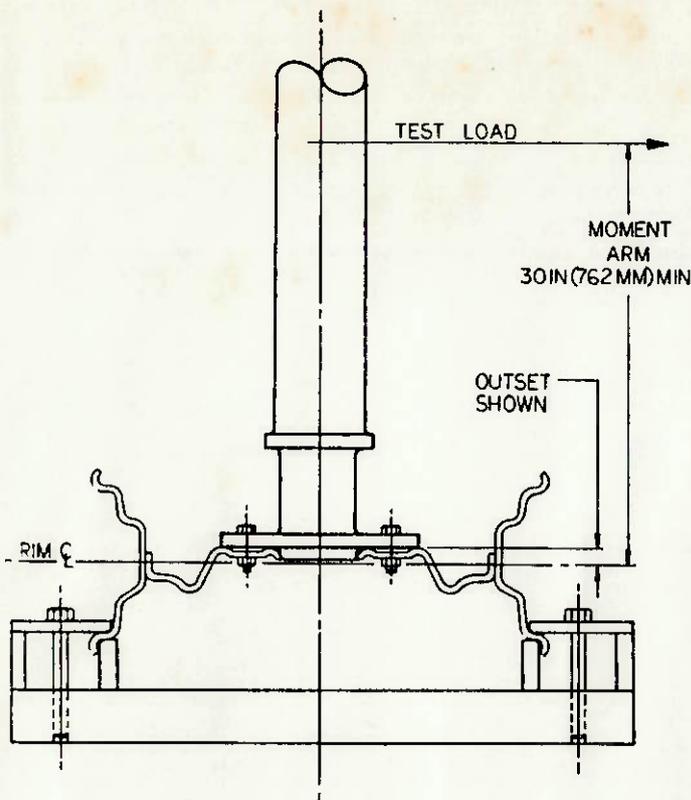


FIG. 2—CORNERING FATIGUE, 90 DEG LOADING METHOD

mm) which results in 300 revolutions/mile (186 revolutions/km). The test wheel (single application) and tire fixture must provide loading normal to the surface of the drum and in line radially with the center of the test wheel and the drum. The axes of the drum and the test wheel must be parallel.

3.3.2 PROCEDURE—Tires selected for this test shall be representative of a size and construction approved by the Tire and Rim Association and the wheel/rim manufacturer for the wheel/rim under test. For disc wheels, the test adaptor shall be representative of production hubs using studs and nuts representative of those specified for the wheel. For demountable rims, the test adaptor shall be representative of production spoke wheels using studs, nuts, and clamps representative of those speci-

fied for the rim. The wheel nuts shall be torqued to the torque limits specified in Table A-1 of the Appendix for stud size and type of nut used. The test load and the inflation pressure are based on wheel/rim ratings. Test inflation pressure should be selected in accordance with Table 3.

The selected test inflation pressure and load shall both be maintained within $\pm 3\%$.

3.3.3 RADIAL LOAD DETERMINATION—The radial load is determined as follows:

$$R = (S)L$$

where: R = radial load, lb force (N)

L = load rating of the wheel/rim as specified by the wheel/rim manufacturer, lb force (N)

S = accelerated test factor

3.3.4 TEST LOAD FACTORS AND CYCLE REQUIREMENTS—See Table 4.

3.3.5 TEST TERMINATION DEFINITION

(a) Inability of wheel/rim to sustain load or contain air.

(b) A visually detected fatigue crack penetrating through a section.

3.4 Cornering Fatigue Test, Wheels for Demountable Rims

3.4.1 EQUIPMENT—The test machine shall be such that either the wheel rotates under the influence of a stationary bending moment, or the stationary wheel is subjected to a rotating bending moment. (See Fig. 3)

3.4.2 PROCEDURE—The wheel shall be clamped securely to the test device using studs and/or bolts and nuts representative of those specified for the wheel assembly. The rim clamp nuts shall be torqued to the torque limits specified in Table A-1 of the Appendix for the stud or bolt size listed for spoke wheels. The mating surfaces of the test adaptor and wheel shall be free of excessive buildup of paint, dirt, or foreign material. A rigid load arm shaft with a test hub adaptor shall be attached to the hub of the wheel. The final clamped position of the wheel without load shall not exceed an eccentricity of 0.010 in (0.254 mm) total indicator reading normal to the shaft axis at the point of loading. The load system must maintain the specified test load within $\pm 5\%$.

NOTE: If the wheel application is always used with a brake drum/rotor, the wheel may be tested with a brake drum/rotor attached. If the wheel application is ever to be used without a brake drum/rotor, the wheel must be tested without a brake drum/rotor attached.

3.4.3 TEST LOAD AND BENDING MOMENT DETERMINATION—The test load is determined by:

$$\text{Test load} = \frac{M}{\text{Moment arm}} \quad (\text{See Fig. 3})$$

M is determined by the formula:

$$M = \mu (slr) (SL)$$

TABLE 2—TEST LOAD FACTORS AND CYCLE REQUIREMENTS FOR CORNERING FATIGUE TEST, 90 DEG LOADING METHOD

Disc Wheel Description						Performance Requirements	
Material	Belt Circle	Rim Diameter Size Code		Inset/Outset		Accelerated Test Factor	Min Cycle Life
		in	mm	in	mm		
Ferrous	All	13, 14, 15	330, 356, 381	Less than 4	Less than 101.6	1.60	18 000
Ferrous	All	16 and larger ^a	406 and larger ^a	Less than 4	Less than 101.6	1.45	30 000
Ferrous	All	All ^a	All ^a	4 or more	101.6 or more	1.10	60 000
Aluminum	All	20 and larger ^a	508 and larger ^a	All	All	1.30	40 000
						1.35	250 000

^a Exclude 17.5 in (444.5 mm) diameter and larger with rim width of 10.50 in (266.7 mm) and wider (wide-base truck-bus wheels).

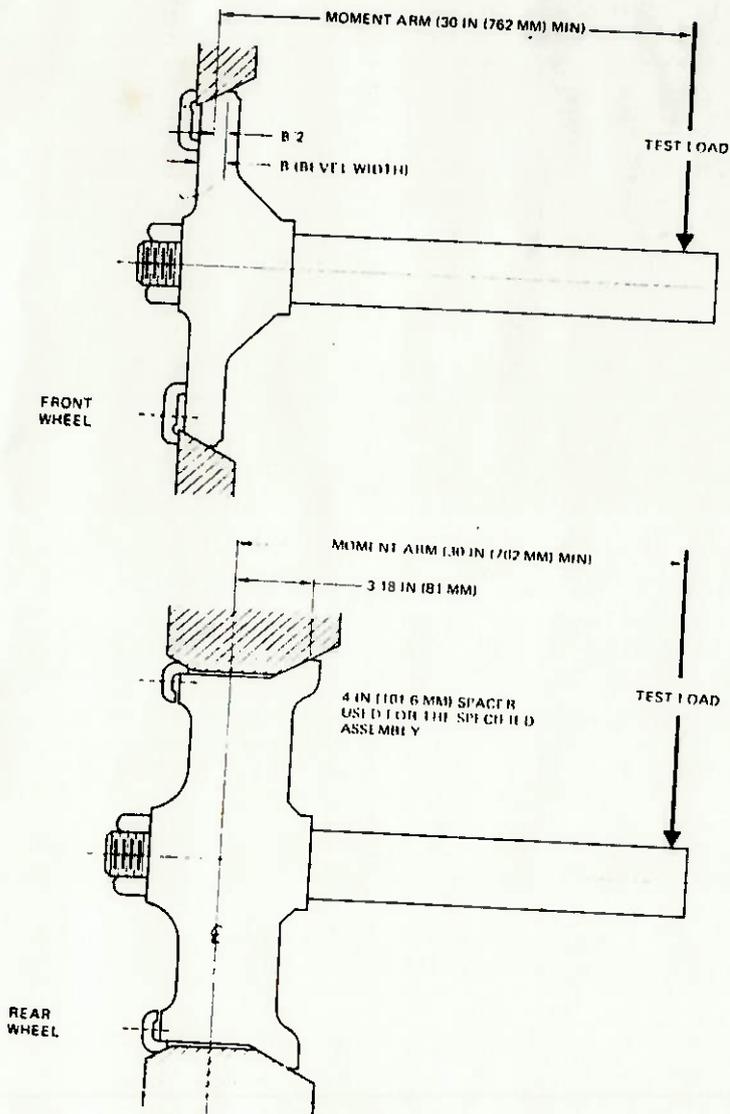
TABLE 3—TEST INFLATION PRESSURES

Max. Inflation Pressure Rating		Test Pressure, Minimum
psi	kPa	
0 through 45	0 through 310	65 psi (450 kPa)
Over 45	Over 310	1.2 × Max. Inflation Pressure Rating

TABLE 4—TEST LOAD FACTORS AND CYCLE REQUIREMENTS FOR RADIAL FATIGUE TEST

Material	Bolt Circle	Wheel/Rim Description		Inset/Offset ^b	Performance Requirements	
		Rim Diameter Size Code			Accelerated Test Factor	Min. Cycle Life
		In	mm			
Ferrous	All	13, 14, 15, 16, 16.5 ^a 17.5 ^a Full Drop Center 15, 16 Semi Drop Center	330, 336, 381, 406, 419 ^a 444 ^a Full Drop Center 381, 406 Semi Drop Center	All	2.2 1.8	500 000 1 000 000
Ferrous	All	15, 17, 18, 20, 22, 24 Flat Base 17.5HC, 19.5, 22.5, 24.5 Drop Center	381, 432, 457, 508, 559 610 Flat Base 444HC, 495, 572, 622 Drop Center	All	2.0 1.9 1.8 1.7 1.6	500 000 600 000 700 000 850 000 1 000 000
Aluminum	All	20 and larger	508 and larger	All	2.8 2.0	100 000 1 000 000

^a 9.75 in (248 mm) rim width and narrower.
^b Offset for demountable rims.



where: M = bending moment, lbf-in (N·m)
 L = load rating of the wheel as specified by the wheel manufacturer, lb force (N)
 slr = static loaded radius of the largest tire to be used on wheel as specified by the vehicle or wheel manufacturer (mm $\times 10^{-3}$). Refer to Table A-2 of the Appendix for slr loaded radius.
 μ = coefficient of friction developed between tire and road
 S = accelerated test factor

3.4.4 TEST LOAD FACTORS AND CYCLE REQUIREMENTS—See Table 4
 3.4.5 TEST TERMINATION DEFINITION
 (a) Inability of wheel to sustain load.
 (b) A visually detected fatigue crack penetrating through a section.

TABLE 5—TEST LOAD FACTORS AND CYCLE REQUIREMENTS FOR CORNERING FATIGUE TEST, WHEELS FOR DEMOUNTABLE RIMS

Material	Accelerated Test Factor	Min Cycle Life
Ferrous	1.90	35 000
	1.50	100 000

FIG. 3—CORNERING FATIGUE, 90 DEG LOADING METHOD

APPENDIX

TABLE A-1—MOUNTING NUT TORQUES FOR LABORATORY WHEEL/RIM TESTS

Application ^a	Thread Size ^a	Torque (dry) ^b			
		lbf·ft		N·m	
Disc Wheels Passenger and light truck type mounting	M12 × 1.5	80-100		110-140	
	7/16-20	80-90		110-120	
	1/2 -20	80-90		110-120	
	9/16-18	110-120		150-165	
	5/8 -18	125-135		170-185	
In-out coined mounting cone seat nut	9/16-18	175-185		250-250	
	5/8 -18	175-185		240-250	
In-out coined mounting flange nut	5/8 -18	275-285		370-385	
Potted mounting	9/16-18	1-pc. nut	2-pc. nut	1-pc. nut	2-pc. nut
		120-250	—	165-340	—
	11/16-16	300-320	250-300	410-440	340-410
	3/4 -16	450-470	300-350	610-640	410-470
	7/8 -14	—	350-400	—	470-540
Ball seat mounting	3/4 -16	450-470		610-640	
	1-1/8 -16	450-470		610-640	
Heavy-duty ball seat mounting	15/16-12	750-770		1020-1040	
	1-5/16-12	750-770		1020-1040	
Wheels for Demountable Rims Studs and nuts	5/8 -11	150-175		200-240	
	3/4 -10	175-225		240-300	
Bolts and nuts	5/8 -11	180-200		240-270	
	3/4 -10	270-295		370-400	

^a For applications and sizes not shown, use torque recommendations prescribed by the wheel/rim or vehicle manufacturer.

^b Nut torque values shall be checked and reset periodically during the course of a truck wheel test in order to compensate for the "wearing in" of mating surfaces of nuts and bolts.

TABLE A-2—AVERAGE STATIC LOADED RADII FOR CORNERING TEST CALCULATIONS

Light Truck Tires			Heavy Truck Tires		
Size	slr		Size	slr	
	in	mm		in	mm
6.50-16 LT	14.0	356	7.50-15 TR	15.0	381
6.70-15 LT	13.4	340	7.50-17	15.9	404
7.00-15 LT	14.0	356	7.50-18	16.5	419
7.50-16 LT	15.0	381	7.50-20	17.5	444
Tubeless-5 deg			8.25-15 TR	15.8	401
P 175/75-14	10.9	277	8.25-17	16.8	427
P 185/70-13	10.4	264	8.25-20	18.4	467
P 185/75-14	11.1	282	9.00-15 TR	16.5	419
P 195/75-14	11.3	287	9.00-20	19.2	488
P 195/60-15	11.0	279	10.00-15 TR	17.1	434
P 195/75-15	11.9	302	10.00-20	19.7	500
P 205/70-14	11.3	287	10.00-22	20.7	526
P 205/75-14	11.6	295	11.00-15 TR	17.5	444
P 205/75-15	12.1	307	11.00-20	20.3	516
P 215/75-15	12.2	310	11.00-22	21.3	541
P 225/75-15	12.5	318	11.00-24	22.2	564
P 235/75-15	12.7	323	12.00-20	20.7	526
			12.00-24	22.7	577
			Tubeless-15 deg		
LT 215/75-15	12.2	310	8-19.5	16.1	409
LT 235/75-15	12.7	323	8-22.5	17.6	447
LT 215/85-16	14.2	361	9-17.5 HC	15.4	391
LT 235/85-16	14.7	373	9-22.5	18.3	465
E 78-14 LT	12.6	320	10-17.5 HC	15.8	401
G 78-15 LT	13.5	343	10-22.5	19.2	488
H 78-15 LT	13.9	353	11-17.5 HC	16.9	429
L 78-16 LT	14.6	371	11-22.5	19.8	503
9-15 LT	13.8	351	11-24.5	20.8	528
10-15 LT	14.0	356	12-22.5	20.2	513
11-15 LT	14.5	368	12-24.5	21.1	536
12-15 LT	15.3	389	12.5-22.5	20.4	518
			12.75-22.5	20.5	521
Tubeless-15 deg					
7-17.5 LT	14.2	361			
8.00-16.5 LT	13.4	340			
8-17.5 LT	14.7	373			
8.75-16.5 LT	13.8	351			
9.50-16.5 LT	14.1	358			
10-16.5 LT	14.0	356			
10-17.5 LT	14.5	368			
12-16.5 LT	15.0	381			

For tire sizes not shown, use the slr listed in the individual tire manufacturer's Tire Data Book.

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