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TEXAS UTILITIES GENERATING COMPANY

SKYWAY TOWER · 400 NORTH OLIVE STREET, L.B. 81 · DALLAS, TEXAS 75201

March 14, 1986

WILLIAM G. COUNSIL
EXECUTIVE VICE PRESIDENT

Director of Nuclear Reactor Regulation
Attention: Mr. Vince S. Noonan, Director
Comanche Peak Project
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION
DOCKET NOS. 50-445 AND 50-446
CABLE TRAY HANGER INFORMATION

Dear Mr. Noonan:

Attached for your use are EBASCO's responses to questions discussed at the February 13, 1986, NRC audit of the cable tray design verification program conducted at EBASCO's New York office. Attachment 1 summarizes the responses and action items and Attachments 2 to 10 are related documents requested from EBASCO.

Very truly yours,

W G Counsil

W. G. Counsil

DRW/arm
Attachments

Original + 1 copy

c - Mr. R. E. Camp w/o attachments
Mr. H. A. Harrison w/o attachments
Mr. J. P. Padalino w/o attachments
Mr. R. C. Iotti w/o attachments
Mr. David Jeng

U. S. Nuclear Regulatory Commission
Mail Stop 244
7920 Norfolk Avenue
Bethesda, MD 20814

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LIST OF ATTACHMENTS

1. Ebasco Responses to NRC Cable Tray Hanger Audit Questions.

2. Calculations to be added to Ebasco Volume I Book 5 addressing web shear flows in composite channel section shear center determinations (Ref. Q2 on Page 10A of Attach. 1).

3. Write-up describing the analytical approach and verification of Ebasco's "WARPCC" computer program for composite channel warping (Ref. Q4 on Page 10A of Attach. 1).

4. Ebasco calculation packages for hangers CTH-2-10146 and CTH-2-11070 which have members subjected to warping stress (Ref. Page 2B of Attach. 1).

5. Ebasco memo SAG.TUG2.901, "Torsional Properties of Composite Channel Sections", dated 7/11/85 (Ref. Page 5B of Attach. 1).

6. Calculations to be added to Ebasco Volume I Book 7 extending the vertical load study to C6 channel tier members (Ref. Page 7B of Attach. 1).

7. Ebasco computer output for hanger CTH-2-337 calculation package dated 9/18/85 (Ref. Q1 on Page 9B of Attach. 1).

8. Appendix K of Ebasco's Comanche Peak Manual of Procedures (Ref. Page 4B of Attach. 1).

9. DCA-22,023 Rev. 0 dated 10/12/84 on bolt hole size tolerances (Ref. Q4 on Page 1B of Attach. 1).

10. Computer output for runs #CWCVCAJ, DOLUC9J, DOL3DFB, D2DLFWF from Ebasco's prying action factor studies (Requested by C. Browne of RLCA).

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ATTACHMENT 1

2/20/86

NRC AUDIT OF EBASCO
COMANCHE PEAK SES CABLE TRAY HANGERS
FEBRUARY 13, 1986
EBASCO RESPONSES TO NRC QUESTIONS (SET A)

VOLUME I BOOK 2: COMPUTER RELATED INFORMATION

QUESTION 1:

Please provide the sample problem solutions and the code verification study results for review.

Response:

The three sample problem solutions (Book 2, items 2, 3 and 4) will be incorporated into Vol. I by approximately 3/15/86.

The code verification study (Book 2, item 9) will be incorporated into Vol. I at a later date. A preliminary copy of this study is available for review.

Action Required:

Ebasco will add material to Book 2 as noted above.

1343m

VOLUME I BOOK 3: PRYING ACTION FACTORS & FORMULAS FOR EVALUATING ANCHOR BOLTS

QUESTION 1:

Only a small selection of base angle and base plate configurations are analyzed. Provide justification and/or data to substantiate that this selection is bounding or adequate for the purpose of establishing simplified analysis methods.

Response:

The prying action factors presented in Vol I and the General Instructions are applicable and conservative for specific geometries of base angles and base plates, and specific locations and sizes of bolts. The configurations were selected from a review of cable tray hanger drawings, from which it was found that there are very few base angles with thicknesses other than 3/4 inch, and that a thickness of 1 inch is used mostly for square plates. In addition, the sizes of most base angles and plates are bounded within the limitations presented in the General Instructions tables. The prying action factors are also conservatively applicable for base angles and plates with larger thicknesses and smaller lengths than those presented in the tables, and was so indicated in the General Instructions.

For any conditions for which the tabulated prying action factors are not applicable, specific analysis of the anchorage is performed using a base plate computer program.

Action Required:

None

QUESTION 2:

The spring constant of RC was calculated based on a concrete strength of 4 Ksi. Does this provide bounding estimates for the prying action factors?

Response:

Although the variation in concrete strength may cause some variation in the prying action factors, a concrete strength of 4 Ksi was used throughout the study since 4 Ksi is the design concrete strength and since any possible increase in prying action factor due to a higher concrete strength would be offset by incomplete bearing contact due to imperfect concrete surfaces and by the beneficial effect of base plate attachments which were conservatively neglected in the development of prying action factors.

Action Required:

Ebasco will perform an additional study to investigate the effects of higher concrete strengths. TUGCO will provide as-built concrete strength data for Ebasco review.

QUESTION 3:

In the evaluations a bolt stiffness in tension of 976.6 k/in was used to represent 1-1/4 Ø x 13-1/8 Hilti bolts. What was the source for this stiffness? Since the use of this stiffness provides bounding estimates for the prying action factors provide justification for neglecting its use.

Response:

The bolt stiffness of 976.6 k/in. was an arbitrary value approximately equal to two times the Hilti-Kwik stiffness, and only used to investigate the effect of the variation in bolt stiffness on the prying action factors. This stiffness was not obtained from test data in the Teledyne report. Since higher prying action factors (5% to 25% increase) were found using the higher bolt stiffness, it was decided that the prying action factors used for design verification of Hilti bolts would in general be based on upper bound bolt stiffnesses from the Teledyne report.

Action Required:

None

QUESTION 4:

For the Hilti bolts the bolt stiffness in tension and in shear are listed in the evaluation summaries. Are the bolt shear stiffnesses used in the evaluations? If they are, why weren't they used in the modeling of the Richmond inserts? Further, was a variation of K_v considered in establishing bounding estimates for the prying action factors.

Response:

For the types of base plates, angles and applied loads considered, the shear stiffness has virtually no effect on the tensile prying action factors, and a negligibly small effect on shear forces in the bolts, as found in analyses using Hilti bolts. The shear stiffnesses were thus excluded in the modeling of the Richmond inserts due to the above conclusion and the finding that the exclusion of bolt shear stiffness in the base plate analysis using 'ANSYS' may save up to 55% in computer cost. The shear stiffnesses in the summaries are Hilti bolt values from the Teledyne report. Thus due to small effects of shear stiffness it was concluded that no variation was necessary.

Action Required:

None

QUESTION 5:

A review of the analysis results indicates that a variation of load magnitude has no effect on the prying action factors. Since the prying effect is dependent on anchor structure deformations some dependence on load magnitude would be expected and some explanation or discussion of this aspect would be appropriate.

Response:

If base plate flexibility is not considered, the base plate is modeled as a rigid body and the deformations of the bolts are proportional to the applied loads. If base plate flexibility is considered, bolt deformations and also bolt tensions may be affected by the varying deformations of the base plate under varying loads. However, the deformations of base plates and angles with fixed configurations remain similar under varying loads. Consequently, the small variations in the deformations under varying loads do not introduce significant variations in prying action effects. Also, using loads close to bolt allowables for each direction provides the maximum deformation effect and therefore maximum prying action factors.

Action Required:

None

QUESTION 6:

The tension stiffness values used to model the Richmond bolts are mean values of the measured data. Since the prying action factors vary directly with these stiffness values upper bound estimates of stiffness values may be more appropriate.

Response:

Since the stiffnesses of Richmond inserts were found from very limited test data, and since the approach used to determine prying action factors is conservative (ie. attachment effects neglected), it was decided to use the mean values of available test data with unreasonably high values excluded from the mean.

Action Required:

Ebasco will test Richmond bolts to confirm prying action factors.

QUESTION 7:

What is the basis for the loads used in the evaluations?

Response:

The applied loads in the base plate analyses were so chosen that they introduce bolt tensions in the neighborhood of the allowables as given in the CTH Design Criteria to maximize prying action factors.

Action Required:

None

QUESTION 8:

Observations 5 & 6 state that the variation of results are due to smaller edge distances. They may also be due to smaller overall length dimensions.

Response:

For base angles with fixed bolt distances, the smaller the bolt edge distance, the larger the prying action factor. However, for square plates with fixed bolt distances, the larger the bolt edge distance, the larger the prying action factor. These observations are solely based on comparing results from cases with fixed bolt distances and varying edge distances.

Action Required:

None

QUESTION 9:

Using ratios of results to establish upper bound values for the prying action factors seems inappropriate. Evaluations for the specific cases of interest should be performed.

Response:

For a few anchorage configurations, Ebasco used ratios of results to obtain prying action factors rather than perform specific computer analysis, and feels this is justifiable.

Action Required:

As directed by TUGCO, Ebasco will perform computer analysis for the specific configurations in question.

VOLUME I BOOK 4: CABLE TRAY HANGER GEOMETRY GROUPING

QUESTION 1:

In the General Guidelines for Grouping it is stated that it is preferable to group CTHs with similar anchorages. However, anchorage data is not considered in the geometry code used to characterize CTHs and may not be available in the data base. Please comment on this seeming inconsistency.

Response:

The CTH Geometry Classification Code was formed to classify CTHs into general categories based on their geometry. It was not intended to provide detailed information such as CTH member sizes or anchorage data. During the grouping process, the anchorage data is obtained and considered by the Group Team Engineer during his review of the CTH drawings. Grouping Sheet Att A2 of grouping procedures has provisions for denoting the type of anchorage.

Action Required:

None

QUESTION 2:

Is the geometry data base for cable tray hangers based on as-built dimensions?

Response:

Walkdown redline drawings are used for grouping except for D&I's (Ebasco designed and installed hangers). Therefore, in general, as-built dimensions are used.

Action Required:

None

QUESTION 3:

Do the tray weights listed on the group data tabulation sheet correspond to the actual tray span or to the maximum tray span? In establishing the envelope case, the use of maximum tray span weights would seem most appropriate. Are they used?

Response:

The tray weights listed on the group data tabulation sheet correspond to the actual "tributary" tray length which is calculated from the two actual adjacent tray spans (L_1, L_2) as shown on the listed CTH drawings. In the majority of the existing groups, the envelope case is usually the one with the largest actual tributary tray length dead load. However, it is possible that an envelope case in one group could have a smaller cable tray dead load than another CTH in the same group. For example, the envelope case could be located at a higher building elevation than another CTH with larger tray dead load located at a lower building elevation, and thus would be more critically loaded under a seismic condition.

Action Required:

None

QUESTION 4:

Considering group U1-1

The elevation listed for the envelope case (support 7568) is 773 ft in the SFG building. In the attached calculations the OBE g values corresponding to elevation 810.5 ft, SFG building are used for this support. Why?

On the group data tabulation sheet, support 1013 is listed as being in the AUX building at elevation 810 ft. In the attached calculations OBE g values corresponding to elevation 831.5, SFG building are used for this support. Why?

If the AUX building g values are support 1013 in the comparison calculations the ratio of horizontal inputs (1.22/0.701) is 1.74 as opposed to 1.63 presented and CTH 1013, not 7568, is the envelope case. Provide explanation.

Response:

During the grouping process of group U1-1, the response spectra from the SFG at EL 810.50' was inadvertently selected for the design verification of this group. However, since the envelope case was lightly loaded resulting in low stresses, it was decided to keep this design elevation in lieu of the more appropriate design elevation 790.50'. This conservatism did not result in any hanger modifications.

Although maintining CTH 2-1013 in group U1-1 can be justified if the proper Aux building spectra is considered, CTH 2-1013 has been deleted from this group during backfitting since it was the only CTH located in the Aux Building. This is reflected in revision 3 of group U1-1.

Action Required:

Ebasco will add a statement to Book 4 group U1-1 indicating the conservatism noted above.

QUESTION 5:

Considering group U1-2, twenty-five supports comprise the group. Within this group seven to eight different anchorages are apparent. In establishing the envelope case for this group no consideration was given for anchorage type. Please provide a basis for this seeming omission.

Response:

On the seven/eight different anchorages in group U1-2, only one anchorage type (ceiling clip angle with one bolt) is modeled differently from the other type of anchorages. The ceiling clip angle with one bolt connection is modeled in design verification assuming free rotation (hinged condition) about the Y axis and assuming fixed rotations about the X and Z axes. The other anchorage types are modeled assuming fixed rotations about the X, Y and Z axes. (See sheets 9 and 10 of the CTH General Instructions, Revision 2.) For a small transverse U1 trapeze CTH with small loads such as the envelope case in group U1-2, the degree of rotational fixity about the Y axis has negligible effect on the frequency analysis and static analysis of the hanger. Therefore small U1 trapeze CTHs with different anchorages were combined into group U1-2.

Action Required:

Ebasco will add a discussion to Book 4 group U1-2 explaining the above logic used to group hangers with different anchorages.

VOLUME I BOOK 5: TORSION AND RELATED STUDIES

QUESTION 1:

The shear center computation of composite channels is based on uniform flange thickness. In reality the flanges of channels are tapered. Although the discrepancy may be negligible, it would be appropriate to show the difference.

Response:

We may compare the results of shear centers for single channels based on the AISC Manual and Ebasco's approach. The following are sample sections popular in Comanche Peak:

Channel Type	eo (Shear Center Relative to Web Center) AISC (7th Edition)	Ebasco*	Difference in %
C8 x 11.5	0.807	0.8045	$\frac{(0.807 - 0.8045)}{0.807} = 0.31\%$
C6 x 8.2	0.699	0.6965	$\frac{(0.699 - 0.6965)}{0.699} = 0.36\%$
C4 x 5.4	0.594	0.5901	$\frac{(0.594 - 0.5901)}{0.594} = 0.66\%$

For single channels, the differences are small. Since composite channels are welded together single channels, any inaccuracy caused by considering uniform flange thickness for shear center computation should be no more than ± 1 percent. This table will be added to Book 5.

*See pgs D-13, D-20, D-24 of Book 5.

Action Required:

Ebasco will add the above comparison to Book 5.

QUESTION 2:

Although the shear center computations were verified by hand computation, it would be desirable to show more detailed computations of the shear flow, i.e., not only the shear flow in the flanges but also those in the web.

Response:

The procedure adopted for the shear center computation of composite channels is based on first calculating the shear forces along the channel flanges and then determining the twisting moment about the junction point of the webs. Thus web shear forces are not needed in this procedure. However, also computing the shear flow in the web will no doubt provide a deeper insight into this problem. This calculation can be very tedious, especially for the unsymmetrical composite channels we are currently dealing with. For the case with $I_{yz} = 0$, the problem is greatly simplified. The example used in the verification by hand calculation (Vol I, Book 5, Section I) was recalculated, but with shear computations in the webs included. The shear center results are the same, and the web shear flows are shown for information and demonstrate force balance. This calculation is available and will be added to Book 5.

Action Required:

Ebasco will add the calculation noted above to Book 5, and provide same to TUGCO for distribution to interested parties.

QUESTION 3:

Mistakes were found on pages E-2 for the definition of I_x and I_y.

Response:

The definition of I_x and I_y should be interchanged and will be revised. This mistake did not affect the subsequent equation derivation and numerical calculations in which I_x and I_y were properly introduced. Volume I Book 5 will be revised accordingly.

Action Required:

Ebasco will revise Book 5 as noted above.

QUESTION 4:

In Section III, the computer code for computing torsional constraints for the composite channels should be described in detail. A detailed hand computation of these properties to verify the computer results would also be desirable.

Response:

A description of the analytical approach and verification of the computer program "WARPCC" that computes torsional properties and warping stresses for composite channel sections is available for review and will be incorporated into Book 2.

Action Required:

Ebasco will incorporate the above documentation for the "WARPCC" computer program into Book 2, and provide same to TUGCO for distribution to interested parties.

NRC AUDIT OF EBASCO
COMANCHE PEAK SES CABLE TRAY HANGERS
FEBRUARY 13, 1986
EBASCO RESPONSES TO NRC QUESTIONS (SET B)

VOLUME I BOOK 1: GENERAL INPUT DATA

Comments:

1) Seismic Design Criteria for Cable Tray Hangers for Commanche Peak Steam Electric Station No. 2: This document will be reviewed separately.

2) Design and Analysis Procedure of Seismic Category I Electric Conduit System: This document will be reviewed separately.

3) General Instructions for Cable Tray Hanger Analysis for Commanche Peak Steam Electrical Station No. 2: This document will be reviewed separately.

QUESTION 4

General Notes: Note #4 - What is the basis for the hole-size tolerance?

Response:

Hole size tolerance in Note #4 is based on Comanche Peak DCA 22,023 Rev. 0 dated 10/12/84.

Action Required:

Ebasco will provide to TUGCO for distribution to interested parties the subject DCA. TUGCO and Ebasco will follow up on determining the basis of tolerances stated in DCA 22,023 Rev 0, and why these tolerances are more liberal than AISC values.

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VOLUME I BOOK 2: COMPUTER-RELATED INFORMATION

QUESTION:

STRUDL will be used to calculate torsion on members. Will STRUDL properly calculate torsional stress considering members are modeled in several segments?

Response:

STRUDL will properly calculate total torsional force and stress using members modeled in several segments, without warping considerations. Warping stresses are then separately calculated and manually superimposed on STRUDL results.

Action Required:

Ebasco will provide to TUGCO for distribution to interested parties two CTH calculation packages in which warping stresses are present in hanger members.

VOLUME I BOOK 3: PRYING ACTION FACTORS

QUESTION 1:

Section I, page 3. The following items are listed as critical parameters but were not investigated.

a) Thickness of baseplate or angles.

b) Arrangement and size of attachment.

Response:

a) See response to Question 1 (Set A) on Volume I Book 3.

b) Because an attachment can serve to reduce the values of prying action factors, attachments were excluded in the base plate analysis model so that the conservative prying action factors could be used for evaluating base plates or angles with attachments of different arrangements and sizes.

Action Required:

None

QUESTION 2:

Prying factors were developed for a centered attachment, as shown in Attachment G3 of the General Instructions. How are the factors in Attachment G1 and G2 developed for uncentered attachments?

Response:

All two-bolt angle prying action factors were derived based on loads applied at a location midway between bolts. For the uncentered attachments shown in G1 and G2, the moment increments introduced by the offset of the attachment are accounted for in the prying action formulae. In addition, for uncentered attachments the stiffening effect of the attachment is greater than for centered attachments. Thus by neglecting any attachment effect in the determination of prying action factors, Ebasco is confident that these factors are valid for uncentered attachments.

Action Required:

Ebasco will perform additional analysis for an uncentered attachment to sustantiate the prying action factors in the General Instructions. The effects due to the presence of an attachment (ie. distributed attachment load and attachment stiffening effect) will be considered. This analysis and an expanded explanation of uncentered attachments will be added to Book 3.

VOLUME I BOOK 4: CABLE TRAY HANGER GEOMETRY GROUPING

QUESTION:

This book groups similar cable tray hangers together so that one analysis may be done for all hangers. While the grouping procedure addresses loads, member sizes and dimensions, it does not address connections, welds, or anchorages. How will the differences in these items be addressed?

Response:

Differences is anchorage are considered during grouping as described in response to Set A Question 1 on Vol. I Book 4 above. Differences in connections, welds and anchorages are also separately addressed in the weld evaluation and anchorage evaluation sections of the design verification calculation package for the envelope case per the requirements of Appendix K of the Ebasco Comanche Peak SES Manual of Procedures.

Action Required:

Ebasco will provide to TUGCO for distribution to interested parties Appendix K of Ebasco's Comanche Peak SES Manual of Procedures.

VOLUME I BOOK 5: TORSION AND RELATED STUDIES

QUESTION:

Memo SAG TUGC.901, "Torsional Properties of Composite Channel Sections", from Z. T. Shi/P. K. Hsueh to R. Alexandru dated July 11, 1985 is needed to complete review.

Response:

Memo is available for review.

Action Required:

Ebasco will provide the memo noted above to TUGCO for distribution to interested parties.

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VOLUME I BOOK 6: BUCKLING STUDY

QUESTION:

Is any bracing due to the cable trays accounted for in the study?

Response:

No, bracing effects due to the presence of cable trays are conservatively not considered.

Action Required:

None

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VOLUME I BOOK 7: CABLE TRAY HANGER LOAD LOCATION STUDIES

QUESTION:

Page 10, Vertical Load Study. Why was a C4 x 7.2 channel used to calculate rotation of channel when a C6 would provide smaller rotations? If this study only applies to a C4 x 7.2, then a note should be added to Attachment B saying so plus instructions of what to do with other sizes.

Response:

C4 x 7.2 channel was selected in the vertical load study because it covers 95 percent of actual tier members. Although a C6 channel has higher torsional rigidity and its flange may contact with the tray under vertical load, this contact force will be negligible based on the equation on page 9 of the study. Therefore, the conclusion of this study is also applicable to C6 channels. A statement to this effect and supporting calculations will be added to Book 7.

Action Required:

Ebasco will provide to TUGCO for distribution to interested parties the calculations noted above, and will incorporate same into Book 7.

II. SAMPLE CALCULATIONS: CTH-2-7321 (Cantilever Type)

QUESTION 1:

Page 4 G-values. How can G-values be read to 3 decimal places off a graph where 1G = 1 inch?

Response:

G values were scaled off by using 1:60 Engineering Scale. 1 inch length has 58 spaces on this scale. Vertical ordinates representing G values were measured by counting number of these spaces in the lengths and dividing by 58. Although some values were written to 3 decimals, everyone realizes the values are only good to 2 decimals at the most. This has no effect on calculations.

Action Required:

None

QUESTION 2:

Page 6. No torsional warping stresses are calculated.

Response:

No torsional warping stresses were calculated since at the supported end of the C6 the flanges are not restrained and thus no warping stresses exist at the supported end.

Action Required:

None

QUESTION 3:

Page 7. Hilti bolts are checked for OBE loads only. They are not checked for SSE loads.

Response:

The major load contributing to the bolt interaction ratio is the moment M_z as shown on page 7. The ratio of M_z for (DL + SSE) to M_z for (DL + OBE) is only 1.11 as shown on page 5. Thus, since the SSE to OBE allowable bolt load ratio is 1.25, SSE does not control the design. A statement to this effect will be added to the calculations during the backfit effort.

Action Required:

Ebasco will add a statement to the calculation package as indicated above.

II. SAMPLE CALCULATIONS: CTH-2-337 (Trapeze Type)

QUESTION 1:

Page 3. Where are the hanger frequency calculations?

Response:

The frequency calculations were performed by computer, using the STRUDL program. See output number J5318A, as referenced on the calculation cover sheet.

Action Required:

Ebasco will provide to TUGCO for distribution to interested parties all computer outputs for CTH-2-337.

QUESTION 2:

Page 4. Why are OBE loads used when Gz (SSE)/Gz (OBE) $>$ 1.6?

Response:

Both OBE and SSE cases were considered in the STRUDL analysis through the introduction of the SSE/OBE ratios for all three directions X, Y and Z. The static calculations and code check were performed by computer, using the STRUDL program, output # J1075A, referenced in the cover sheet.

Action Required:

Same as for Question 1 above.

QUESTION 3:

Pages 7 and 8. Why are bolts only checked for OBE loads?

Response:

The original intent of this calculation package was for it to contain two calculations, one for OBE loads and one for SSE loads since for two directions the OBE loads were governing and for one direction the SSE loads were governing. However, after completion of the OBE load calculations, a very small interaction equation ratio was found. This interaction ratio of 0.27 is well below 1.0 and will remain so even after being multiplied by 1.78 (maximum SSE/OBE ratio), and divided by 1.25 (permissible increase in allowables for

SSE loads). Therefore, no separate calculations were required for the SSE loads. The above explanation will be included during the backfit effort.

Action Required:

Ebasco will modify calculation package as noted above.

QUESTION 4

More information about computer run is needed in calculation for proper checking (i.e., input listing, copy code check results, ...).

Response:

All associated computer runs are available as part of CTH-2-337 calculation package. Computer run numbers are referenced on the calculation cover sheet.

Action Required:

Same as for Question 1 above.

II. SAMPLE CALCULATIONS: CTH-2-6242 (Triangular Type)

QUESTION 1:

Page 5. Why was support weight not added into longitudinal load?

Response:

Support weight in longitudinal direction was inadvertently omitted in calculation. However, this weight is very small compared to tray load (5%), and therefore has no significant impact. A statement to this effect will be added during the calculation backfit effort.

Action Required:

Ebasco will modify calculation package as noted above.

QUESTION 2:

Page 14. Why $M_y = 0$ at C.G. of bolts?

Response

M_y should not have been assumed equal to zero at CG of the bolts. Preliminary recalculation indicates a revised interaction ratio for the bolts of approximately 0.7, which is still acceptable. This error will be corrected in the backfit effort.

Action Required:

Ebasco will correct the error noted above during backfit.

QUESTION 3:

Page 19. How can angle and bolts be checked without loads in other brace?

Response:

Bracing axial load from CTH-2-6243 (1017#) is less than that of CTH-2-6242 (3661#).

Conservatively, the middle bolt was checked for the entire reaction of CTH-2-6242. A statement to this effect will be added during the calculation backfit.

Action Required:

Ebasco will modify calculation package as noted above.

BY N S Huang DATE Feb 6, 86 SHEET 1 OF 5

CHKD. BY L Chang DATE 2/21/86 OFS NO. DEPT. NO.

CLIENT TUGC

PROJECT Comanche Peak Units 1 & 2

SUBJECT Comanche Peak Questions from NRC Consultants

2. Although the shear center computations were verified by hand computation, it would be desirable to show more detailed computations of the shear flow, i.e., not only the shear flow in the flanges but also those in the web.

Ans.

The procedure adopted for the shear center computation of composite channels is calculating first the shear forces along the channel flanges and then determining the twisting moment about the junction point of the webs. Thus the shear forces in the webs are not really needed in this procedure. However, computing also the shear flow in the web will provide no doubt, a deeper insight to this problem. But this additional work is very tedious, especially for unsymmetrical composite channels we are currently dealing with. In the case $I_{yz} = 0$, the problem is greatly simplified. Attached is the example used in the verification by hand calculation (Vol I, book 5, Section I), but with shear computations in the webs.

ATTACHMENT 2
SHEET 1 OF 5

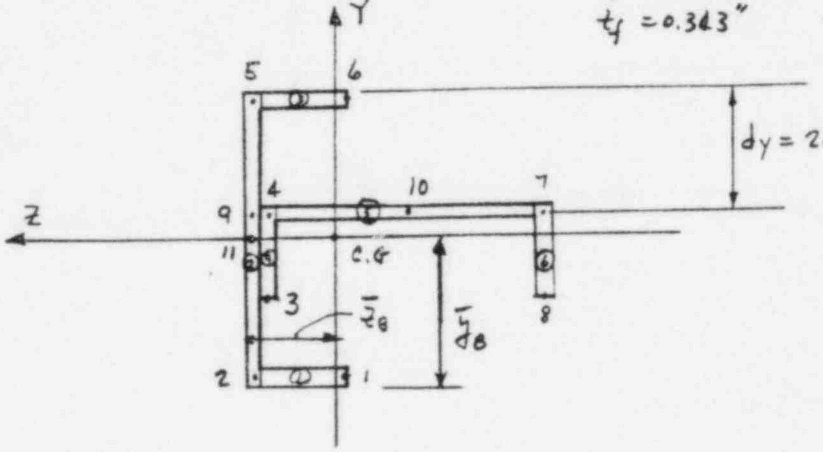
Question 2

Web shear force Computation

2-C6x8.2 Composite section

$b_f = 1.92''$ $d = 6''$

$t_f = 0.343''$ $t_w = 0.2''$



Refer to Volume I-Book 5 Section I, 'Composite channel section shear Center computation - Sample Calculations', We have the following section properties:

Location of the Center of gravity:

$\bar{y}_B = 3''$

$\bar{z}_B = -1.887975''$

and

$I_{yy} = \int y^2 dA = 13.89459 \text{ in}^4$ (about z-axis)

$I_{zz} = \int z^2 dA = 22.08823 \text{ in}^4$ (about y-axis)

$I_{yz} = 0.$

Assuming $V_y = 1000^{\#}$, we proceed first to compute the web shear flow as follow

The shear stress along flange between points 7 & 8 is: (See P. 6 of 12 Vol I - Book 5 Sec 2)

$$\tau = \frac{-V_y}{I_{yy} t_f} \int_{y_8}^{y} y\,dA = \frac{-V_y}{2 I_{yy}} (y^2 - y_8^2)$$, y is a variable

Since the locations of points 7 & 8 are

$$y_7 = 0.47595'' \quad , \quad y_8 = -1.34405''$$

The shear stress at point 7 is:

$$\tau_7 = \frac{-1000}{2 \times 13.89459} (0.47595^2 - 1.34405^2) = 56.85457 \text{ psi}$$

and the shear flow at pt 7:

$$q_7 = \tau_7 \times t_f = 56.85457 \times 0.343 = 19.501 \ \#/\text{in}.$$

(t_f = 0.343" for C6x8.2)

To find the shear flow at other points say the middle point of the web, point 10, we have to find the statical area moment Q_{10} at point 10:

element 10

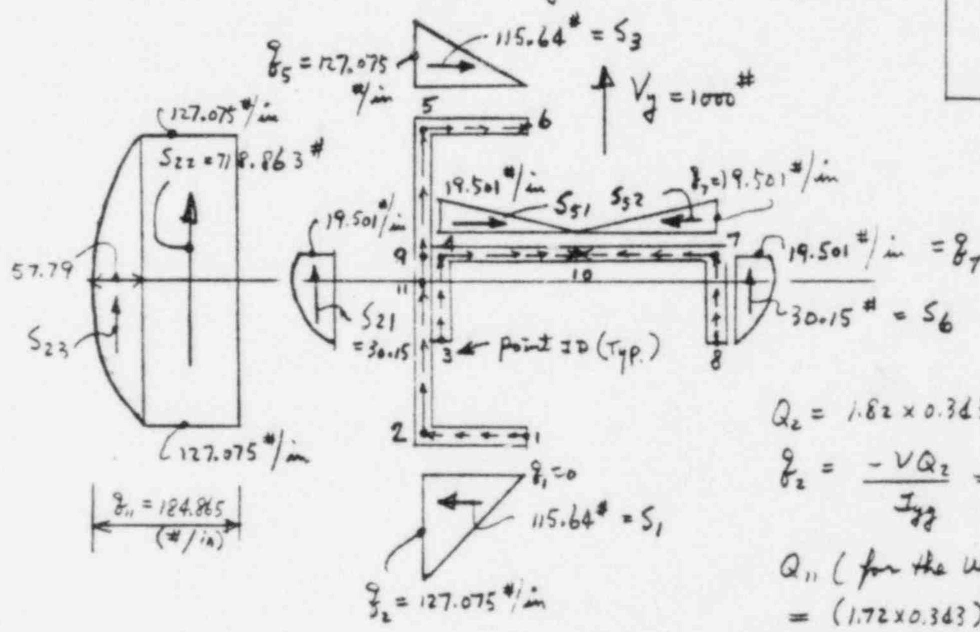
$$\text{Area } ⑥ = 1.92 \times 0.343 = 0.65856 \quad , \quad \bar{y}_⑥ = y_8 + \frac{1.92}{2} = -0.38405 \text{ in}$$

$$\text{Area } ⑤/2 = \frac{(5.314 \times 0.2)}{2} = 0.5314 \quad , \quad \bar{y}_⑤ = y_7 = 0.47595''$$

$$Q_{10} = 0.65856 \times (-0.38405) + 0.5314 \times 0.47595$$
$$= -0.2529199 + 0.2529183$$
$$= 0.$$

Since $Q_{10} = 0$, (this result should not be a surprise for this particular problem!)
the shear flow at this point is zero. And we can construct the shear flow pattern for $V_y = 1000^{\#}$ as follows:

S : Shear force, #
q : shear flow, #/in



$Q_2 = 1.82 \times 0.343 \times (-3 + 0.343/2) = -1.7657$

$q_2 = \dfrac{-VQ_2}{I_{yy}} = \dfrac{-1000 \times (-1.7657)}{13.895} = 127.075^{\#}/in$

Q_{11} (for the vertical channel only)
$= (1.72 \times 0.343) \times (-3 + .343/2) + (3 \times .2)(-1.5)$
$= -1.6687 - 0.9 = -2.5687$

$q_{11} = -1000(-2.5687) / 13.895 = 184.865$

Shear force of the horizontal web : (consists of 2 parts)

$S_{51} = 19.501^{\#}/in \times (6 - 0.343)/2 = +55.158^{\#}$

$S_{52} = -55.158^{\#}$

So $S_5 = S_{51} + S_{52} = 0$. for element ⑤, horizontal web

Shear force of the vertical web (Consists of 3 parts)

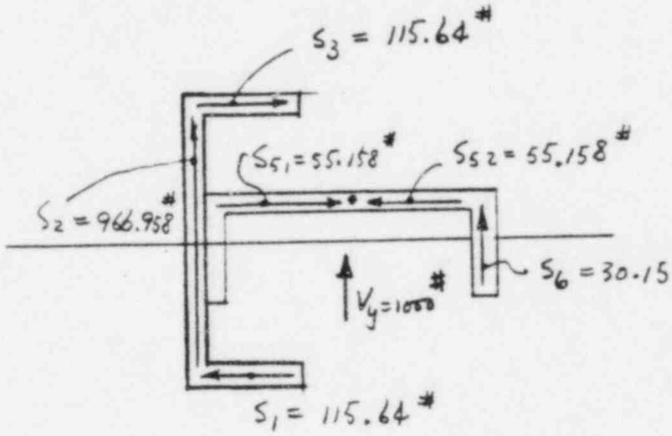
$S_{21} = 30.15^{\#}$

$S_{22} = 127.075 \times \underbrace{(6 - 0.343)}_{= 5.657''} = 718.863^{\#}$

$S_{23} = \frac{2}{3} \times 57.79 \times (6 - 0.343) = 217.945^{\#}$ (parabolic distribution)

So $S_2 = S_{21} + S_{22} + S_{23} = 966.958^{\#}$.

The shear forces may be summarized as shown below:



It is easy to see that the shear forces balance each other in the horizontal direction. For the vertical direction, we have

$$S_V = S_2 + S_6 = 966.958 + 30.15 = 997.108^{\#}$$

The shearing force in the vertical direction is $997.108^{\#}$ which is accurate enough to balance the $V_y = 1000^{\#}$ applying load.

Similar procedure may be used to find the shear flow pattern for $V_z = 1000^{\#}$.

BY PKH DATE 2-6-86

SHEET ____ OF ____

CHKD. BY M Huang DATE 2-18-86

OFS NO. ____ DEPT. NO. ____

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PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT

ATTACHMENT 3

SHEET 1 OF 55

A Description of Analytical Approach and Verification of the Computer Program that Computes torsional Properties and Warping Stresses for Composite Channel sections

BY PKH DATE 2-6-86 SHEET ___ OF ___

CHKD. BY MS Huang DATE 2-18-86 OFS NO. ___ DEPT. NO. ___

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS

CONTENT

BY PKH DATE 2-6-86 SHEET ___ OF ___

CHKD. BY MS Chang DATE 2-18-86 OFS NO. ___ DEPT. NO. ___

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

CABLE TRAY HANGERS

SUBJECT

I Introduction

The Computer Program "WARPCC" was written to solve warping stresses problem for composite channel sections with the configuration as shown in Fig 1. The program consisted two parts; the first part was to compute the torsional properties which included the torsional constant, warping constant, normalized warping functions and the warping statical moment of the composite section. The independent parameters of the problem were two channel sections and point of the intersection denoted by dimension Dy in Fig 1. The shear center of the section was a dependent parameter that can be obtained by other program*.

581/8-81

BY PKH DATE 2-6-86 SHEET ___ OF ___

CHKD. BY N.S. Huang DATE 2-18-86 TEXAS UTILITIES GENERATING CO. OFS NO. ___ DEPT. NO. ___

COMANCHE PEAK UNIT 2

CLIENT CABLE TRAY HANGERS

PROJECT

SUBJECT

The second part of the program was to compute the warping stresses that included warping normal stress and warping shear stress of the section.

The solution to the differential Equation of torsional Moment with prescribed boundary conditions were obtained in Reference 2. Then take derivatives of the angle of twist function ϕ to find ϕ', ϕ'' and ϕ'''. By knowing ϕ'', ϕ''' and torsional properties from Part 1. The warping normal stress and warping shear stress can be computed easily.

* Computer program to find shear center of the composite channel section has been developed by N. S. Huang

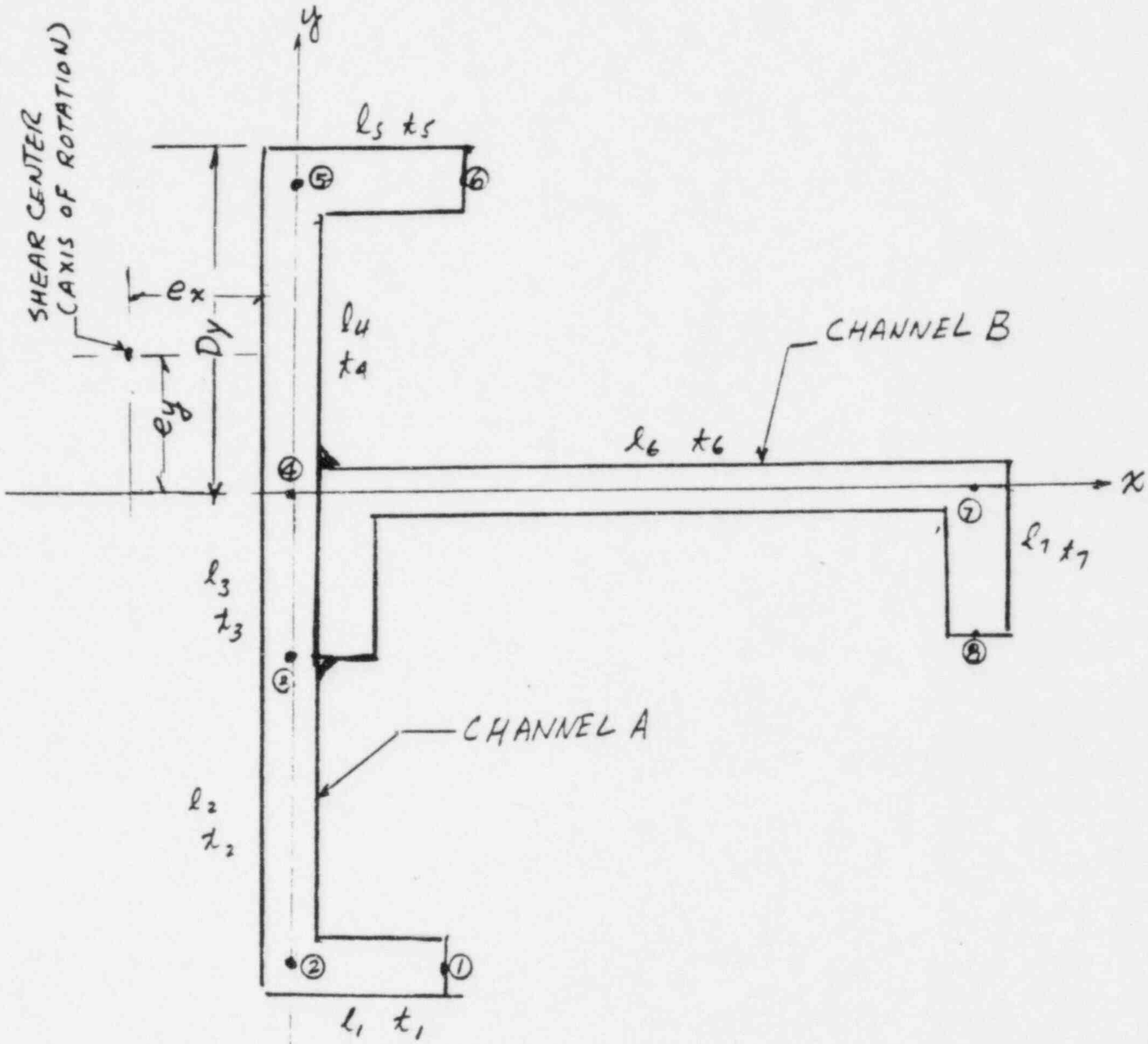

FIG 1 TYPICAL COMPOSITE CHANNEL SECTION

II. Basic Equations.

From pp 212-224 of Reference 1.

The warping function

$$\omega_s = \int_0^s r\,ds. \quad \text{-- (1)}$$

where r is the distance from tangent of a point to the axis of rotation (shear center)

The average value of ω_s

$$\bar{\omega}_s = \frac{1}{A}\int_0^m \omega_s\, t\, ds \quad \text{-- (2)}$$

where A is the cross section area
t is the thickness.

The normalized warping function $\omega_{n(s)}$

$$\omega_{n(s)} = \bar{\omega}_s - \omega_s \quad \text{-- (3)}$$

The Warping Constant C_w

$$C_w = \int_0^m (\bar{\omega}_s - \omega_s)^2\, t\, ds \quad \text{-- (4)}$$

BY PKH DATE 6-15-85 SHEET ___ OF ___

CHKD. BY WS Huang DATE 2-18-86 OFS NO. ___ DEPT. NO. ___

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COMANCHE PEAK UNIT 2

PROJECT CABLE TRAY HANGERS

SUBJECT ___

The Torsion-Bending Constant is defined.

$$a = \sqrt{\frac{E\,C_w}{G.J}} \quad - - - \quad (5)$$

where E is modulus of Elasticity.

G is shear modulus

J is torsional constant $= \sum \frac{1}{3} m_i t_i^3$

The warping statical moment function

$$S_w(s) = \int_0^s (\bar{\omega}_s - \omega_s)\, t\, ds \quad - - - \quad (6)$$

The warping normal stress σ_z

$$\sigma_z = E\,(\bar{\omega}_s - \omega_s)\,\phi'' \quad - - - \quad (7)$$

$$= E\,\omega_n(s)\,\phi''$$

The warping shear stress τ

$$\tau = -E\phi''' \int_0^s (\bar{\omega}_s - \omega_s)\, ds$$

$$= -E\,\frac{S_{ws}}{t}\,\phi''' \quad - - - \quad (8)$$

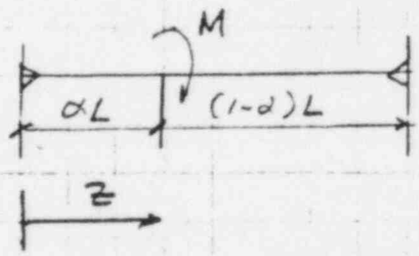
The differential Equation for torsional moment

$$M = GJ\phi' - EC_w \phi''' \quad \text{- - - (9)}$$

or $$\frac{M}{EC_w} = \frac{1}{a^2}\phi' - \phi''' \quad \text{- - (9a)}$$

The solution of Eq. 9a with proper boundary conditions were obtained from pp 76-77 of Reference 2.

CASE 1 Hinge - Hinge Ends
concentration moment.



$0 \le z \le \alpha L$

$$\phi = \frac{ML}{GJ}\left[(1-\alpha)\frac{z}{L} + \left(\frac{\sinh\frac{\alpha L}{a}}{\tanh L/a} - \cosh\frac{\alpha L}{a}\right)\frac{a}{L}\sinh\frac{z}{a}\right]$$

$\alpha L \le z \le L$

$$\phi = \frac{ML}{GJ}\left[(L-z)\frac{\alpha}{L} + \frac{a}{L}\left(\frac{\sinh\frac{\alpha L}{a}}{\tanh L/a}\sinh\frac{z}{a} - \sinh\frac{\alpha L}{a}\cdot \cosh\frac{z}{a}\right)\right]$$

BY PKH DATE 7-1-85 SHEET ___ OF ___

CHKD. BY MS Huang DATE 2-18-86 OFS NO. ___ DEPT. NO. ___

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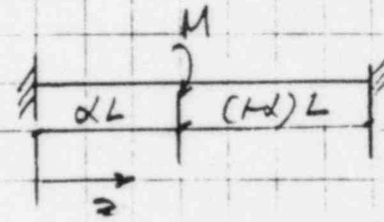
PROJECT CABLE TRAY HANGERS

SUBJECT

CASE 2 Fixed - Fixed Ends with

Concentrated moment



$0 < z \le \alpha L$

$$\phi = \frac{Ma}{(H+1)GJ}\left\{\left[H\cdot\left(\frac{1}{\sinh L/a} + \sinh\frac{\alpha L}{a} - \frac{\cosh\frac{\alpha L}{a}}{\tanh L/a}\right)\right.\right.$$

$$\left. + \left(\sinh\frac{\alpha L}{a} - \frac{\cosh\frac{\alpha L}{a}}{\tanh L/a} + \frac{1}{\tanh L/a}\right)\right] \times$$

$$\left.\left[\cosh\frac{z}{a} - 1\right] - \sinh\frac{z}{a} + \frac{z}{a}\right\}$$

$\alpha L \le z \le L$

$$\phi = \frac{M\cdot a}{(1+\frac{1}{H})GJ}\left\{\left[\frac{1}{H}\cdot\frac{1}{\sinh L/a}\left(\cosh\frac{\alpha L}{a} - 1\right)\right.\right.$$

$$\left. + \frac{\cosh\frac{\alpha L}{a} - \cosh L/a + \frac{L}{a}\sinh\frac{L}{a}}{\sinh L/a}\right]$$

$$+ \cosh\frac{z}{a}\left[\frac{1}{H}\,\frac{1}{\tanh L/a}\left(1 - \cosh\frac{\alpha L}{a}\right)\right.$$

$$\left. + \frac{(1 - \cosh \alpha L/a \cosh L/a)}{\sinh L/a}\right]$$

$$\left. + \sinh\frac{z}{a}\left[\frac{1}{H}\left(\cosh\frac{\alpha L}{a} - 1\right) + \cosh\frac{\alpha L}{a}\right] - \frac{z}{a}\right\}$$

581/8-81

BY PKH DATE 7-1-85 SHEET ___ OF ___

CHKD. BY M.S. Huang DATE 2-18-86 OES NO. ___ DEPT. NO. ___

TEXAS UTILITIES GENERATING CO.

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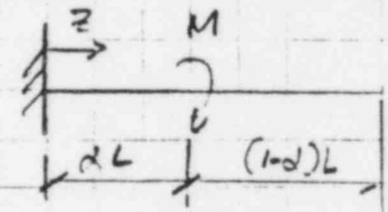
PROJECT CABLE TRAY HANGERS

SUBJECT ___

where

$$H=\frac{\left[\frac{1}{\tanh L/a}\left(1-\cosh\frac{\alpha L}{a}\right)+\frac{1}{\sinh L/a}\left(\cosh\frac{\alpha L}{a}-1\right)+\sinh\frac{\alpha L}{a}-\frac{\alpha L}{a}\right]}{\left[\frac{1}{\sinh L/a}\left(\cosh\frac{L}{a}+\cosh\frac{\alpha L}{a}\cdot\cosh\frac{L}{a}-\cosh\frac{\alpha L}{a}-1\right)+\frac{L}{a}(\alpha-1)-\sinh\frac{\alpha L}{a}\right]}$$

CASE 3 Fixed and Free Ends, with Concentrated moment.



$0 \le z \le \alpha L$

$$\phi=\frac{Ma}{GJ}\left[\left(\sinh\frac{\alpha L}{a}-\tanh\frac{L}{a}\cdot\cosh\frac{\alpha L}{a}+\tanh\frac{L}{a}\right)\cdot\left(\cosh\frac{z}{a}-1\right)-\sinh\frac{z}{a}+\frac{z}{a}\right]$$

$\alpha L \le z \le L$

$$\phi=\frac{Ma}{GJ}\left[\left(\tanh\frac{L}{a}\cdot\cosh\frac{\alpha L}{a}-\tanh\frac{L}{a}-\sinh\frac{\alpha L}{a}\right)-\left(\cosh\frac{\alpha L}{a}-1\right)\cdot\left(\tanh\frac{L}{a}\cosh\frac{z}{a}\right)+\left(\cosh\frac{\alpha L}{a}-1\right)\cdot\sinh\frac{z}{a}+\frac{\alpha L}{a}\right]$$

581/8-81

III Verification of Results

a) Verification of part 1 - Torsional properties

The result have been verified by hand calculation of a typical C6×8.2 + C6×8.2 composite channel section. Both result conformed well and are summarized in the following.

	Results From Computer output SEE ATTACHMENT 1	Result From Hand Calculation SEE ATTACHMENT 2
J	0.19661	0.1966
Cw	22.6059	22.6059
a	17.2898	17.29
W_{n1}	-5.9331	-5.933
W_{n2}	1.9632	1.963
W_{n3}	1.0499	1.050
W_{n4}	0.1788	0.178
W_{n5}	-0.7441	-0.744
W_{n6}	1.6551	1.655
W_{n7}	-3.4387	-3.438
W_{n8}	8.2221	8.223
S_{w2}	-1.2391	-1.239
S_{w5}	-0.28123	-0.284
S_{w7}	-1.4930	-1.493

BY PKH DATE 7-28-85 SHEET ____ OF ____

CHKD. BY ms Huang DATE 2-19-86 OFS NO. ____ DEPT. NO. ____

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PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT

(b) Verification of part II - Warping Stresses calculation

Use Composite Channel section C6x8.2 + C6x8.2 with $D_y = 2.0$ in. For Torsional Properties see Attachment 4 P 4-1

(i) Hinge-Hinge ends condition

Max. warping normal stress occurred at Point of applying concentrated moment.

assume that: $\alpha = 0.5$ $L/a = 3.0$

From Attachment 3 page 3-1.

$$\phi'' \frac{GJ}{M} a = -.455$$

$$\phi'' = -.455 \times \frac{M}{GJa} = \frac{-0.455 \times 1.0}{\frac{29000}{2.6} \times 0.1966 \times 17.39}$$

$$= -11.93 \times 10^{-6}$$

$$\sigma_1 = E W_{n1} \phi'' \quad \text{(at nodal point 1)}$$

$$= 29000 (-6.0784)(-11.93) \times 10^{-6}$$

$$= 2.103 \text{ ksi} \quad (2.0917 \text{ ksi})^{*a}$$

*a Result from computer output see Attachment 4 P 4-3

561/8-81

BY PKH DATE 7-28-85 SHEET ___ OF ___

CHKD. BY WS Huang DATE 2-19-86 OFS NO. ___ DEPT. NO. ___

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS

From Attachment 3 P.3-2

$$\phi'''\left(\frac{GJ}{M}a^2\right) = -0.5 \qquad ; M = 1.0 \text{ k-in}$$

$$\phi''' = \frac{\pm M}{GJa^2} \times 0.5 = \frac{0.5 \times 1.0}{\frac{29000}{2.6} \times 0.1966 \times (17.39)^2}$$

$$= -0.7539 \times 10^{-6}$$

$$\tau_2 = -E\frac{S_{w2}}{t}\phi'''$$

$$= -29{,}000 \times \frac{(-1.264)}{0.2}(-0.7539) \times 10^{-6}$$

$$= -0.1382 \text{ ksi} \qquad (-0.1382)^{*b}$$

*b Result from computer output see attachment 4 P. 4-3

(ii) Fixed - Fixed Ends

The max. warping normal stress accurred at support point ie $z=0$.

Assume: $\alpha = 0.3$ $\quad L/a = 3.0$

From graph in Attachment 3 P 3-3.

$$\phi''\left(\frac{GJ}{M}a\right) = 0.385$$

$$\phi'' = 0.385 \times \frac{M}{GJa} = 0.385 \frac{1}{\frac{29000}{2.6} \times 0.1966 \times 17.39}$$

$$= 10.095 \times 10^{-6}$$

$$\sigma_1 = E W_{n1} \phi'' = 29000 \times (-6.0784)(10.095) \times 10^{-6}$$

$$= -1.779 \text{ ksi } (-1.7992)^{*C}$$

*C Result from computer output see Attachment 4 P 4-4.

From graph in attachment 3 P 3-4

$$\phi'''\left(\frac{GJ}{M}a^2\right) = -0.78$$

BY PKH DATE 7-28-85 SHEET ____ OF ____

CHKD. BY WS Huang DATE 2-19-86 OFS NO. ____ DEPT. NO. ____

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS

$$\phi''' = 0.78 \frac{M}{GJa^2} = -0.78 \frac{1.0}{\frac{29000}{2.6} \times 0.1966 \times (17.39)^2}$$

$$= -1.1762 \times 10^{-6}$$

$$\tau_2 = -E \frac{S_{w2}}{t} \phi'''$$

$$= -29000 \frac{-1.264}{0.2} (-1.1762) \times 10^{-6}$$

$$= -0.2156 \text{ ksi} \quad (-0.2166)^{*d}$$

*d Result from computer output see attachment 4 P. 4-4.

BY PKH DATE 7-28-86 SHEET ___ OF ___

CHKD. BY MS Khang DATE 2-19-86 OFS NO. ___ DEPT. NO. ___

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PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS

iii Fixed - Free Ends Condition

The max. warping normal stress occurred at support point ie $z=0$.

assume $\alpha = 0.7$; $L/a = 3.0$

From graph in Attachment 3 p3-5

$$\phi''\left(\frac{GJ}{M} \cdot 2a\right) = 1.75$$

$$\phi'' = 1.75 \times \frac{M}{GJ\,2a} = \frac{1.75 \times 1.0}{\frac{29000}{2.6} \times 0.1966 \times 2 \times 17.39}$$

$$= 22.943 \times 10^{-6}$$

$$\sigma_1 = E W_{n1} \phi'' = 29000 \cdot (-6.0784)(22.943) \times 10^{-6}$$

$$= -4.044 \text{ ksi} \quad (-4.1277)^{*e}$$

$*^e$ Result from computer output see Attachment 4 p 4-8

From graph in attachment 3 p 3-6

$$\phi'''\left(\frac{GJ}{M} a^2\right) = -1.0$$

581/8-81

BY PKH DATE 7-28-85 SHEET ___ OF ___

CHKD. BY [illegible] DATE 2-19-86 OFS NO. ___ DEPT. NO. ___

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

CABLE TRAY HANGERS

SUBJECT

$$\phi''' = \frac{-1.0\ M}{G J a^2} = -\frac{1.0 \times 1.0}{\frac{29000}{2.6} \times 0.1966 \times (17.39)^2}$$

$$= -1.5079 \times 10^{-6}$$

$$\tau_2 = -E \frac{S_{w2}}{t} \phi'''$$

$$= -29000 \times \frac{-1.264}{0.2} \times (-1.5079) \times 10^{-6}$$

$$= -0.2764 \text{ ksi} \quad (-0.2763)^{*t}$$

*t Result from computer output; see Attachment 4 P4-8

iv. Summary of results due to $M = 1.0^{k\text{-}in.}$

Ends Condition		Results From Computer output	Results by using graphs from Ref 2.
Hinge - Hinge	σ_1	2.0917 (ksi)	2.013 (ksi)
	τ_2	-0.1382 (ksi)	-0.1382 (ksi)
Fixed - Fixed	σ_1	-1.7992 (ksi)	-1.779 (ksi)
	τ_2	-0.2166 (ksi)	-0.2156 (ksi)
Fixed - Free	σ_1	-4.1277 (ksi)	-4.044 (ksi)
	τ_2	-0.2763 (ksi)	-0.2764 (ksi)

BY P.KH DATE 7-28-85 SHEET ___ OF ___

CHKD. BY MS Huang DATE 2-19-86 TEXAS UTILITIES GENERATING CO. DEPT. NO. ___

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CABLE TRAY HANGERS

PROJECT

SUBJECT

IV References.

(1). "Theory of Elastic Stability" By S.P. Timoshenko and J. M. Gere. 2nd ed.

(2) "Torsion Analysis of Rolled Steel Sections" From Bethlehem Steel.

581/8-81

ATTACHMENT 1

APPENDIX B SAMPLE PROBLEMS

```
RUN
 6C8.2 AND 6C8.2 COMPOSITE CHANNELS W/DY=  2.1
INPUT DATA:
(A) VERTICAL CHANNEL:Tf=      .343          Tw=              .2
Bf=             1.92         Dw=            6
(B) HORIZONTAL CHANNEL:Tf=    .343          Tw=              .2
Bf=             1.92         Dw=            6
 EX=            .4786         EY=           .6102
 AREA =         4.76          DY =          2.1
WARPING CONSTANT CW=          22.60587      IN-6
TORSIONAL CONSTANT J=         .196614        IN-4
 a^2=E*CW/(G*J)=  298.9373  OR    a=        17.2898
NORMALIZED WARPING FUNCTION Wns VALUE AT END PTS. OF THE ELEMENT
ELEMENT         Wns AT i      Wns AT j
 1             -5.933158      1.963276
 2              1.963276      1.049868
 3              1.049868      .1788161
 4              .1788163     -.7441638
 5             -.7441635      1.655142
 6              .1788163     -3.438754
 7             -3.438751      8.222168
WARPING STATICAL MOMENT Sws AT END PTS.  AND MAX. PT.OF THE ELEMENT
ELEMENT           SWA           SWB          SWMAX/SWMIN     AT LOCATION
 1              0             -1.239119      -1.391478       1.367497
 5             -.2843426      0              -.3563857       8.041488
 7             -1.493047      0              -1.809569       12.01371
 END OF PROGRAM
Ok
```

ATTACHMENT 2 - HAND CALCULATION FOR VERIFICATION

APPENDIX C - PROGRAM VERTIFICATION CALCULATIONS

BY P.K.H DATE 6/22/85 SHEET 1 OF ____

CHKD. BY H.S. Huang DATE Jan 21, 86 OFS NO. ____ DEPT. NO. ____

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PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

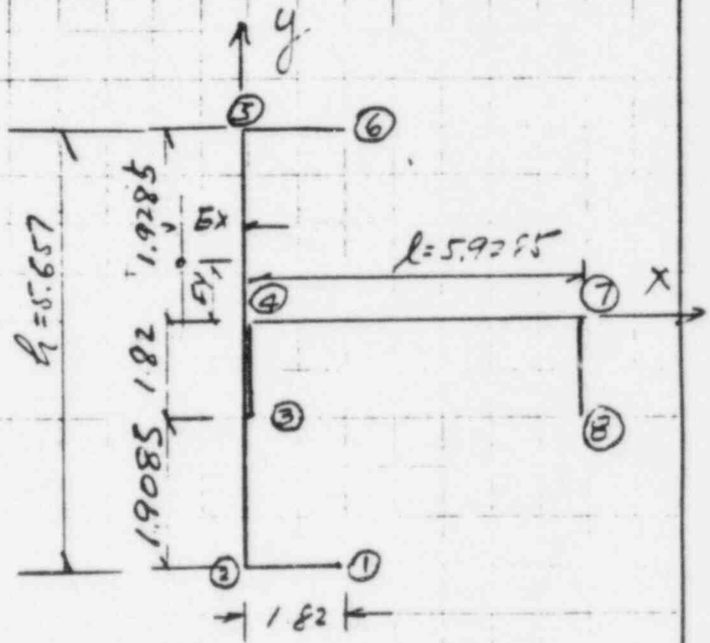
SUBJECT "WARPCC" program verification

I Given Data

FOR 6C8.2 AND 6C8.2

WITH Dy = 2.1"

As shown dimensions were taken along center line of each element of the Channel section



$A = 2.38 \times 2 = 4.76$

$Ex = 0.4786$" (shear center x coordinate)

$Ey = 0.6102$" (shear center y coordinate)

II Compute $\omega_s = \int_0^s r\, ds$ Function

$\omega_s = \int_0^s r\, ds$ For ① → ②

$= \int_0^s -(1.9085 + 1.82 + 0.6102)\, ds$

$= \boxed{-4.33875}$

$\int_0^{1.82} r\, ds = (-4.3387)(1.82) = -7.896$

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BY PKH DATE 6/22/85 SHEET 2 OF

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PROJECT COMANCHE PEAK UNIT 2 ~~CABLE TRAY HANGERS~~

SUBJECT "WARPCC" Program Verification

$$W_s = \int_0^s r\,ds \quad \text{for } 2 - 3$$

$$= \int_0^{1.82} r\,ds + \int_{1.82}^{s} r\,ds$$

$$= -7.896 + 0.4786\,s \Big|_{1.82}^{s}$$

$$= -7.896 - 0.4786 \times 1.82 + 0.4786 \cdot s$$

$$= \boxed{-8.767 + 0.4786\,s}$$

$$\int_0^{3.7285} r\,ds = -8.767 + (0.4786)(3.7285) = -6.983$$

$$W_s = \int_0^s r\,ds \quad \text{for } 3 - 4$$

$$= \int_0^{3.7285} r\,ds + \int_{3.7285}^{s} r\,ds$$

$$= -6.983 + 0.4786 \cdot s \Big|_{3.7285}^{s}$$

$$= -6.983 + (0.4786)(-3.7285) + 0.4786\,S$$

$$= \boxed{-8.767 + 0.4786\,S}$$

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BY PKH DATE 6/22/85 SHEET 3 OF

CHKD. BY ms huang DATE Jan 21 86 OFS NO. DEPT. NO.

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PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT "WARPCC" Program Vertification

$$\int_0^{5.5485} r\,ds =$$

$$= -8.767 + 0.4786 \times 5.5485 = -6.112$$

$$W_s = \int_0^s r\,ds \quad \text{for } ④ \rightarrow ⑤$$

$$= \int_0^{5.5485} r\,ds + \int_{5.5485}^{s} r\,ds$$

$$= -6.112 + 0.4786 \Big|_{5.5485}^{s}$$

$$= -6.112 - (0.4786)(5.5485) + 0.4786\,s$$

$$= \boxed{-8.767 + 0.4786\,s}$$

$$\int_0^{7.477} r\,ds = -8.767 + 0.4786 \times 7.477 = -5.188$$

$$W_s = \int_0^s r\,ds \quad \text{for } ⑤ \rightarrow ⑥$$

$$= \int_0^{7.477} r\,ds - \int_{7.477}^{s} r\,ds$$

$$= -5.188 - \left(2.1 - 0.6102 - \frac{0.343}{2}\right)s \Big|_{7.477}^{s}$$

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PROJECT COMANCHE PEAK UNIT 2 "CABLE TRAY HANGERS"

SUBJECT WARPCC Program Verification

$= -5.188 + 1.3183 \times 7.477 - 1.3183 S$

$= \boxed{4.669 - 1.3183 S}$

$W_s = \int_0^S r\,ds$ for ④ To ⑦

$= \int_0^{5.5485} r\,ds + \int_{5.5485}^{S} r\,ds$

$= -6.112 + 0.6102 \Big|_{5.5485}^{S}$

$= -6.112 - (0.6102)(5.5485) + 0.6102 S$

$= \boxed{-9.498 + 0.6102 S}$

$\int_0^{11.477} r\,ds = -9.498 + 0.6102 \times 11.477 = -2.495$

$W_s = \int_0^S r\,ds$ for ⑦ → ⑧

$= \int_0^{11.477} r\,ds + \int_{11.477}^{S} r\,ds$

$= -2.495 - (5.9285 + 0.4786) \Big|_{11.477}^{S}$

$= \boxed{71.038 - 6.407 S}$

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BY PKH DATE 6-27-85 SHEET 5 OF

CHKD. BY [signature] DATE Jan-22 86 OFS NO. DEPT. NO.

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PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT "WALPCC" Program ~~cert~~ification

III Compute $\bar{\omega}_s = \frac{1}{A}\int_0^m \omega_s t\, ds$

$$\bar{\omega}_s \cdot A = \int_0^{1.82} (-4.3387)s(0.343)\,ds$$

$$+\int_{1.82}^{3.7285} (-8.767+0.4786\times s)(0.2)\,ds$$

$$+\int_{3.7285}^{5.5548} (-8.767+0.4786\times s)(0.343+0.2)\,ds$$

$$+\int_{5.5485}^{7.477} (-8.767+0.4786\,s)(0.2)\,ds$$

$$+\int_{7.477}^{9.297} (4.595-1.3183\,s)(0.343)\,ds$$

$$+\int_{5.5485}^{11.477} (-9.498+0.6102\,s)\,0.2\,ds$$

$$+\int_{11.477}^{13.297} (76.029-6.407\,s)(0.343)\,ds$$

$= (-1.488\ (1.6562)$ $= -2.465$

$+ (-1.7534)(1.9085) + (0.0957)(5.2942)$ $= -2.840$

$+ (-4.7605)(1.82) + (0.2597)(8.442)$ $= -6.470$

$+ (-1.7534)(1.9285) + (0.0957)(12.56)$ $= -2.1794$

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CHKD. BY MS Huang DATE Jan 22 86 OFS NO. DEPT. NO.

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SUBJECT "WARPCC" Program Verification

$+ (1.6014)(1.82) - (0.4522)(15.269) = -3.9852$

$+ (-1.8996)(5.92E5) + (0.122)(5046E) = -5.105$

$+ (24.366)(1.82) - (2.1976)(22.544) = -5.197$

$=$ 28.2416

$\bar{W}_s = -28.2416 / 4.76 = -5.933$

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CHKD. BY MS Huang DATE Jan 22, 86 OFS NO. DEPT. NO.

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PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT "WARPCC" program verification

a	b	$b-a$	$\frac{1}{2}(b^2-a^2)$	$\frac{1}{3}(b^3-a^3)$	
0	1.82	1.82	1.6562	2.0095	
1.82	3.7285	1.9085	5.2946	15.268	
3.7285	5.5485	1.82	8.4421	39.661	
5.5485	7.477	1.9285	12.560	82.3968	
7.477	9.297	1.82	15.2643	128.5244	
5.5485	11.477	5.9285	50.4678	446.984	
11.477	13.297	1.82	22.5443	279.759	

IV Normalized Warping function

$w = (\bar{\omega}_s - \omega_s)$

$w(s) = -5.933 + 9.3387\,S$ ① - ②

$W(s) = 2.834 - 04786\,S$ ② - ③

$w(s) = 2.834 - 0.4786\,S$ ③ - ④

$W(s) = 2.834 - 0.4786\,S$ ④ - ⑤

$w(s) = -10.601 + 1.3183\,S$ ⑤ - ⑥

$w(s) = 3.565 - 0.6102\,S$ ④ - ⑦

$W(s) = -76.971 + 6.407\,S$ ⑦ - ⑧

Function value W_n

$W_{n①} = -5.933$ in^2

$W_{n②} = +2.834 - 0.4786 \cdot 1.82 = +1.963$ in^2

$W_{n③} = +2.834 - 0.4786 \times 3.7285 = +1.050$ in^2

$W_{n④} = +2.834 - 04786 \cdot 5.5485 = +0.178$ in^2

$W_{n⑤} = 2.834 - 0.4786 \cdot 7.47 = -0.744$ in^2

$W_{n⑥} = -10.601 + 1.3183 \times 9.297 = +1.655$ in^2

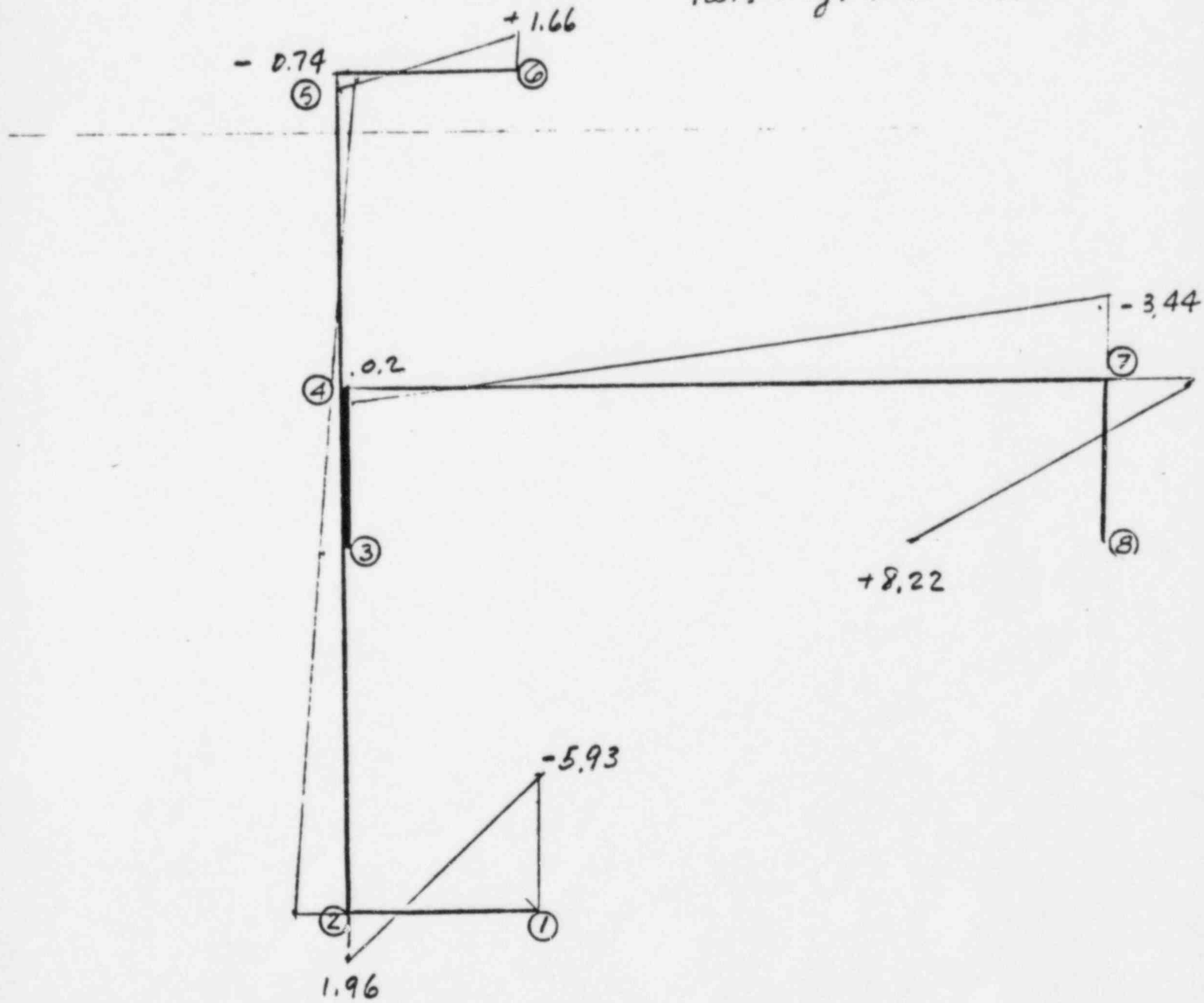
$W_{n⑦} = -76.971 + 6.407 \times 11.477 = -3.438$ in^2

$W_{n⑧} = -76.971 + 6.407 \times 13.297 = +8.223$ in^2

6] 8.2 AND 6] 8.2 w/Dy = 2.1

Sign Convention: + Compression
− tension

Twisting Moment: Clockwise



Normalized warping function W_{ns}

Normal warping stress $= E \cdot W_{ns} \phi''$

BY PKH DATE 6-24-85 SHEET 10 OF

CHKD. BY [illegible] DATE Jan 22-86 OFS NO. DEPT. NO.

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PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT "WARPCC" Program Verification

V Computer warping constant "C_w" and "a" value

$$C_w = \int_0^m W_{(s)}^2 \, t \, ds$$

$$= \int_0^{1.82} (-5.933 + 4.3387S)^2 \, 0.343 \, ds$$

$$+ \int_{1.82}^{3.7285} (2.834 - 0.4786 s)^2 \, 0.20 \, ds$$

$$+ \int_{3.7285}^{5.5485} (2.834 - 0.4786 s)^2 (0.2 + 0.343) \, ds$$

$$+ \int_{5.5485}^{7.477} (2.834 - 0.4786 s)^2 (0.2) \, ds$$

$$+ \int_{7.477}^{9.297} (-10.601 + 1.31833)^2 (0.343) \, ds$$

$$+ \int_{5.5485}^{11.477} (3.565 - 0.6102 \cdot s)^2 (0.20) \, ds$$

$$+ \int_{11.477}^{13.297} (-76.971 + 6.407 \cdot s)^2 (0.343) \, ds$$

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BY PKH DATE 6-24-85 SHEET 11 OF

CHKD. BY M. Huang DATE Jan 23-86 OFS NO. DEPT. NO.

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PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT "WARPCC" Program Verification

$$= 0.343\left[(5.933)^2 s - 2(5.933)(4.3387)\frac{s^2}{2} + (4.3387)^2\frac{s^3}{3}\right]\Bigg|_0^{1.82}$$

$$+0.2\left[(2.834)^2 s - 2(2.834)(0.4786)\frac{s^2}{2} + (0.4786)^2\frac{s^3}{3}\right]\Bigg|_{1.82}^{3.7285}$$

$$+0.543\left[(2.834)^2 s - 2(2.834)(0.4786)\frac{s^2}{2} + (0.4786)^2\frac{s^3}{3}\right]\Bigg|_{3.7285}^{5.5485}$$

$$+0.20\left[(2.834)^2 s - 2(2.843)(0.4786)\frac{s^2}{2} + (0.4786)^2\frac{s^3}{3}\right]\Bigg|_{5.5485}^{7.477}$$

$$+0.343\left[(10.601)^2 s - 2(10.601)(1.3183)\frac{s^2}{2} + (1.3183)^2\frac{s^3}{3}\right]\Bigg|_{7.477}^{9.297}$$

$$+0.20\left[(3.565)^2 s - 2(3.565)(0.6102)\frac{s^2}{2} + (0.6102)^2\frac{s^3}{3}\right]\Bigg|_{5.5485}^{11.477}$$

$$+0.343\left[(76.971)^2 s - 2(76.971)(6.407)\frac{s^2}{2} + (6.407)\frac{s^3}{3}\right]\Bigg|_{11.477}^{13.297}$$

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BY: PKH DATE: 6-24-85 SHEET: 12 OF:

CHKD. BY: TS Huang DATE: Jan 23-86 OFS NO.: DEPT. NO.:

CLIENT: TEXAS UTILITIES GENERATING CO.

PROJECT: COMANCHE PEAK UNIT 2 / CABLE TRAY HANGERS

SUBJECT: WARPCC program verification

$$= 0.343\left[(5.933)^2(1.82) - 2(5.933)(4.3387)(1.6562) + (4.3387)^2(2.0095)\right]$$

$$+ 0.2\left[(2.834)^2(1.9085) - 2(2.834)(0.4786)(5.2947) + (0.4786)^2(15.268)\right]$$

$$+ 0.543\left[(2.834)^2(1.82) - 2(2.834)(0.4786)(8.4421) + (0.4786)^2(39.661)\right]$$

$$+ 0.70\left[(2.834)^2(1.9785) - 2(2.834)(0.4786)(12.560) + (0.4786)^2(82.3968)\right]$$

$$+ 0.343\left[(10.601)^2(1.82) - 2(10.601)(1.3183)(15.2643) + (1.3183)^2(128.574)\right]$$

$$+ 0.20\left[(3.565)^2(5.9785) - 2(3.565)(0.6102)(50.4678) + (0.6102)^2(446.984)\right]$$

$$+ 0.343\left[(76.971)^2(1.82) - 2(76.971)(6.407)(22.5443) + (6.407)^2(277.757)\right]$$

$$= 5.7033 + 0.8929 + 0.4355 + 0.0582 + 0.4290 + 4.443 + 10.6437$$

$$= 22.6059 \text{ in}^6$$

581/8-81

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BY P.K.H. DATE 6-24-85 SHEET 13 OF

CHKD. BY M S Huang DATE Jan 24 86 OFS NO. DEPT. NO.

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PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT WARPCC program verification

$$J = \sum_{i=1}^{7} \frac{1}{3} m_i t_i^3$$

$$= \frac{1}{3} \left[1.82 \cdot (0.343)^3 + 1.9085 (0.2)^3 + 1.82 (0.534)^3 \right.$$

$$\left. + 1.9285 \cdot 0.2^3 + 1.82 (0.343)^3 + 5.9285 \cdot 0.2^3 + 1.82 \cdot 0.343^3 \right]$$

$$= 0.1966 \ in^4$$

assume $\mu = 0.3$ $E/G = 2(1+\mu) = 2.6$

$$a = \sqrt{\frac{E C_w}{G J}} = \sqrt{2.6 \cdot \frac{22.609}{1.966}}$$

$$= 17.29 \ in$$

581/8-81

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BY P.K.H. DATE 7-9-85 SHEET 19 OF

CHKD. BY W.S. Huang DATE Jan 24-86 OFS NO. DEPT. NO.

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PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT "WARPCC" Program verification

V Compute warping statical moment Sws at Critical points

$$S_{\omega i} = \int_0^s (\bar{\omega}_s - \omega_s)\, t\, ds$$

at pt ① $ds \to 0$ $S_{\omega 1} = 0$

at pt ②

$$S_{\omega 2} = \int_0^{1.82} (-5.933 + 4.338\, s) \cdot .343\, ds$$

$$= -5.933(0.343)(1.82) + (4.338)(0.343)(1.6562)$$

$$= -1.239$$

max pt between ① and ②

set $\dfrac{\partial (S_{\omega s})}{\partial s} = \dfrac{\partial}{\partial s} \int_0^s (\bar{\omega}_s - \omega_s)\, t\, ds = 0$

ie $s = + \dfrac{5.933}{4.338} = 1.367$

at max. pt.

$$S_{\omega m} = \frac{1}{2} \cdot 1.367 \cdot (-5.933)^{*} \cdot 0.343 = -1.39$$

* see page Wn①

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BY PKH DATE 7-9-85 SHEET 15 OF

CHKD. BY M Huang DATE Jan 24-86 OFS NO. DEPT. NO.

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PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT "WARPcc" Program Verification.

@ pt 5.

$$Sw_5 = -\int_{7.477}^{9.297} (-10.601 + 1.3183S) \cdot 0.343\, ds$$

$$= (10.601)(.343)(1.82) - (1.3183)(.343) \cdot (15.2643)$$

$$= 6.618 - 6.902 = -0.284$$

at pt 6

$Sw_6 = 0$ Since $ds \to 0$

max pt. between 5 and 6.

set $\frac{\partial}{\partial S} \int (-10.601) + 1.3183S)\, t\, ds = 0.$

ie $S = \frac{10.601}{1.3183} = 8.041$

$$Sw_m = -\frac{1}{2}(9.297 - 8.041) \cdot 0.343 \times 1.655$$

$$= -0.356$$

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BY PKH DATE 7-9-85 SHEET 16 OF
CHKD. BY [signature] DATE Jan 27-86 OFS NO. DEPT. NO.
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COMANCHE PEAK UNIT 2
PROJECT CABLE TRAY HANGERS
SUBJECT "WARPCC" Program Verification

@ pt. 7

$$S_{w7} = -\int_{11.477}^{13.297} (-76.971 + 6.407S)\,0.343\,ds$$

$$= (76.971)(.343)(1.82) - (6.407)(.343)(22.5443)$$

$$= 48.05 - 49.543 = -1.493$$

at pt 8

$S_{w8} = 0$ since $ds \to 0$

Max pt between ⑦ and ⑧.

Set $\frac{\partial}{\partial s}\int (-76.971 + 6.407S)\, t\, ds = 0$

ie $S = \frac{76.971}{6.407} = 12.013$

$$S_{wm} = -\tfrac{1}{2}(13.297 - 12.013) \cdot 0.343 \cdot 8.223$$

$$= -1.811$$

BY ZS Huang DATE Feb 5, 86 SHEET 1 OF 2

CHKD. BY______ DATE ______ OFS NO. 3306.221 DEPT. NO. 550

CLIENT TUGC

PROJECT Comanche Peak Units 1 & 2

SUBJECT Comanche Peak Questions from NRC Consultants

Comanche Peak Questions from NRC Consultants :

Question 4. In Section III, the computer code for computing torsional constants for the composite channels should be described in detail. A detailed hand computation of these properties to verify the computer results would also be desirable.

Ans. As an independent check, a second program based on the formulas described in the AISC Torsional Analysis of Steel Structures was developed. Attached output checks completely the hand calculation results.

[illegible] Jan [illegible] [illegible]

Composite channel warping constants.

[illegible]	[illegible]	3.729	[illegible]	[illegible]	[illegible]	[illegible]
4.339	-0.479	-0.479	-0.479	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	-2.934	-2.934	-2.934	[illegible]	[illegible]	[illegible]
5.703	[illegible]	0.435	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] ← C_w

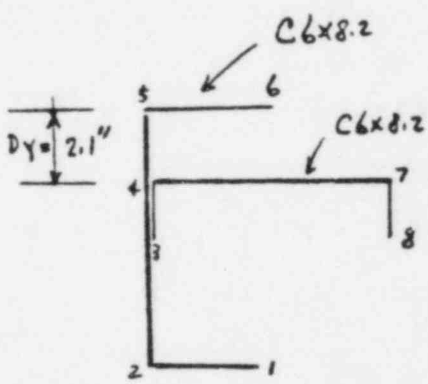
[illegible] W_{n1} [illegible] W_{n2} [illegible] W_{n3} [illegible] W_{n4} [illegible] W_{n5} [illegible] W_{n6} [illegible] W_{n7} [illegible] W_{n8}

[illegible]

SMAX= [illegible]

SMAX= [illegible]

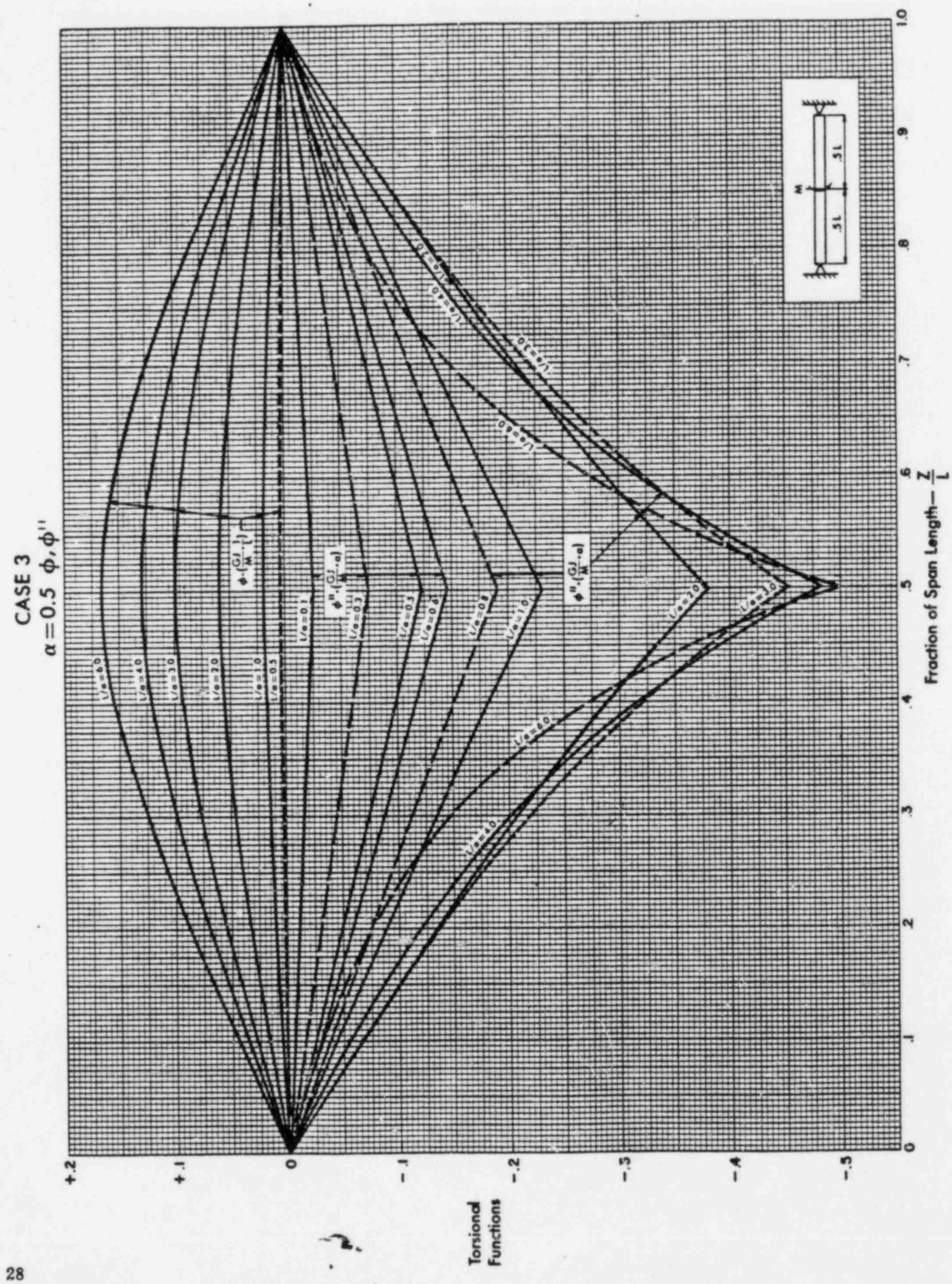
SMAX= [illegible]



Case 3

ATTACHMENT 3

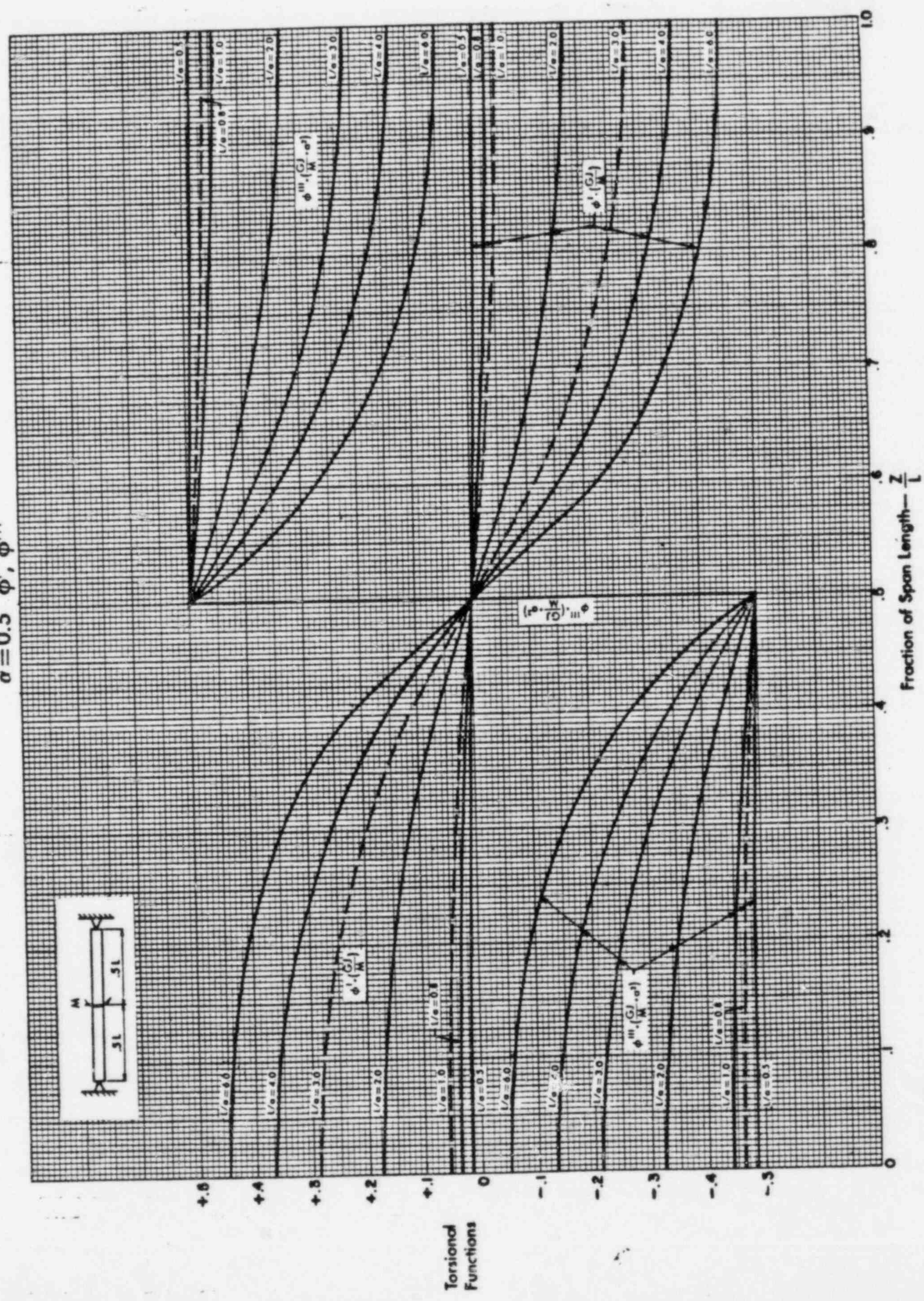
$\alpha = 0.5 \ \phi, \phi''$



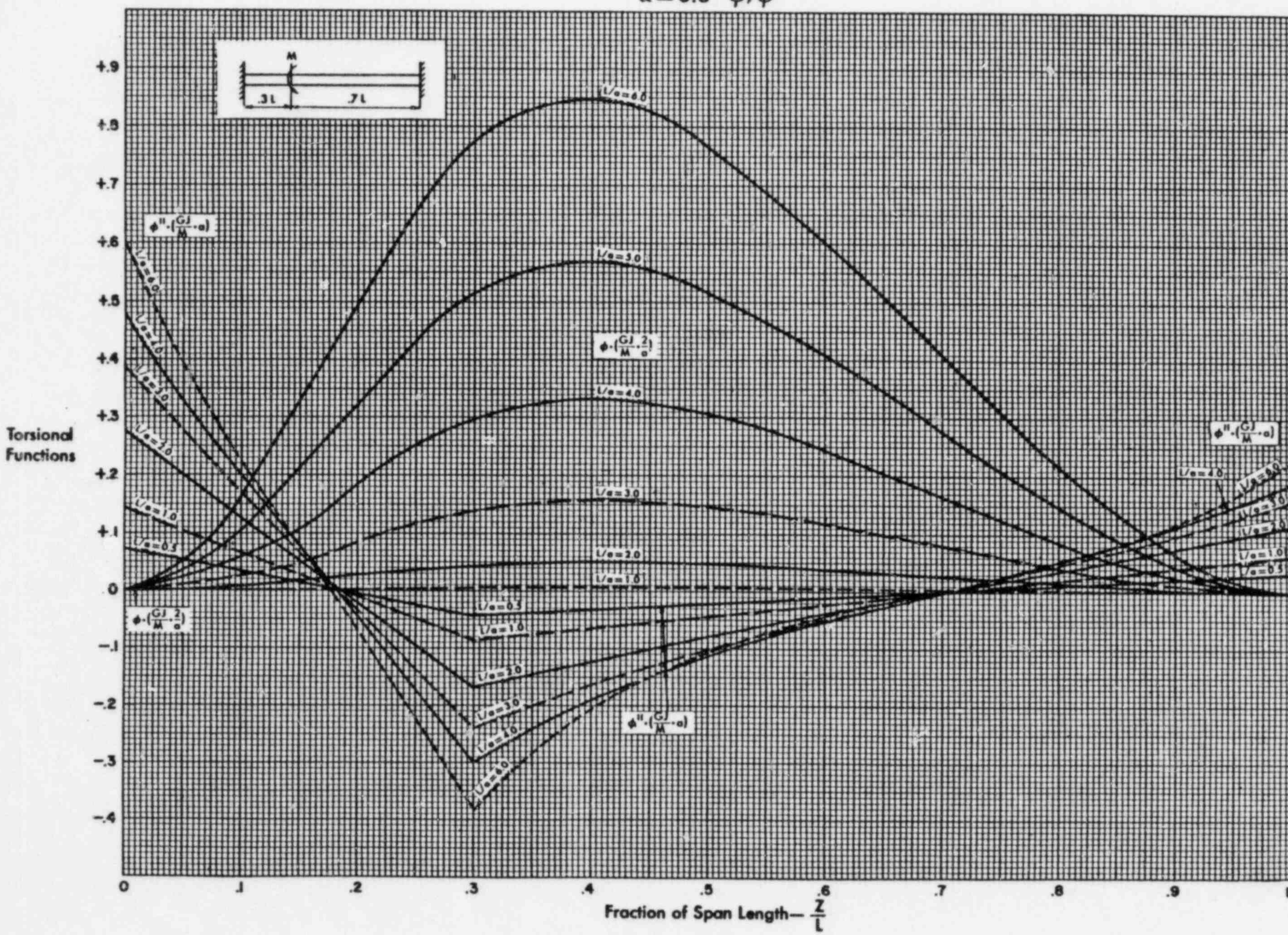
P 3-2

Case 3

$\alpha = 0.5 \quad \phi', \phi'''$

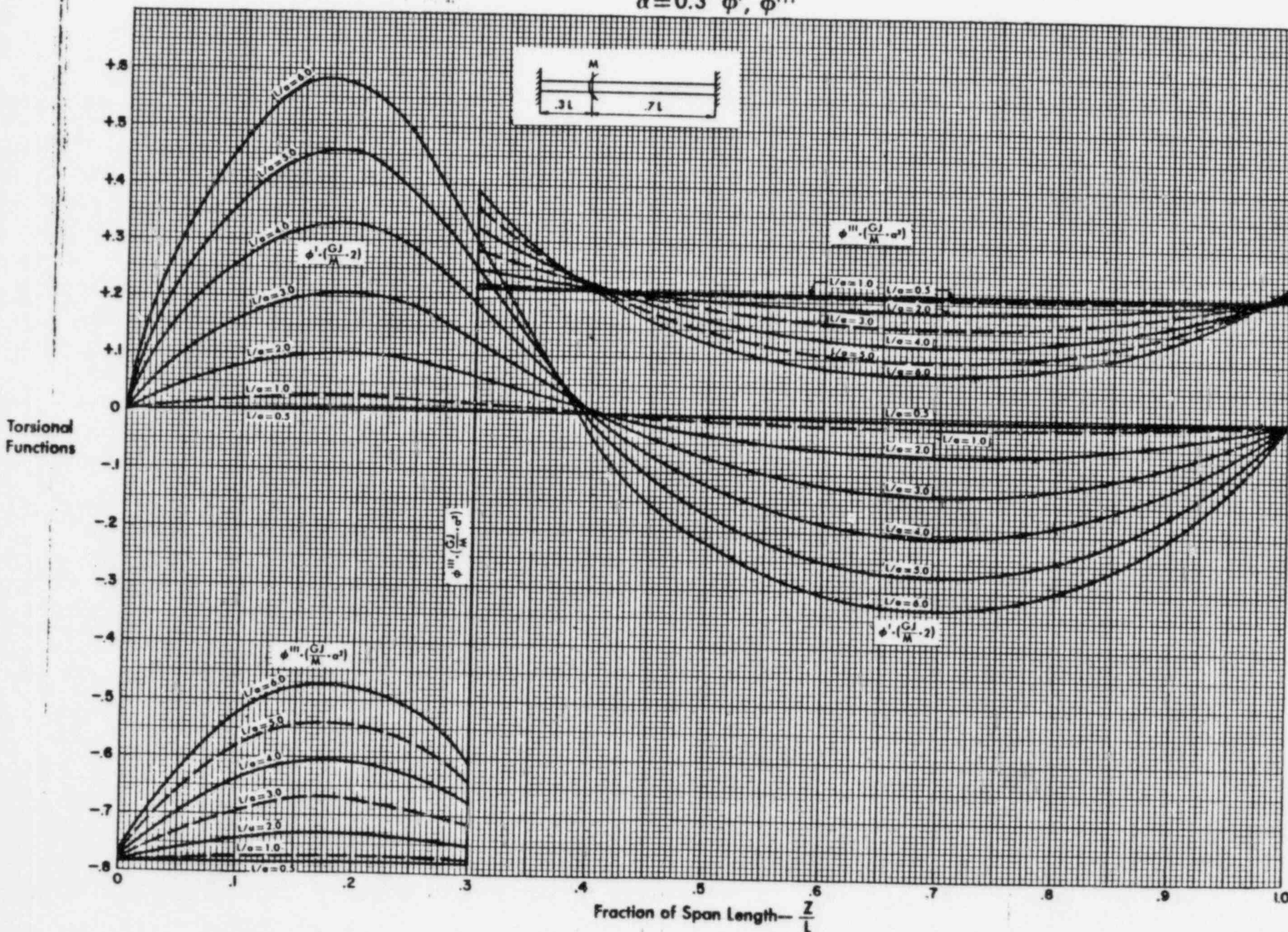


CASE 6
$\alpha = 0.3 \quad \phi, \phi''$



P 3.3

CASE 6
$\alpha = 0.3 \quad \phi', \phi'''$

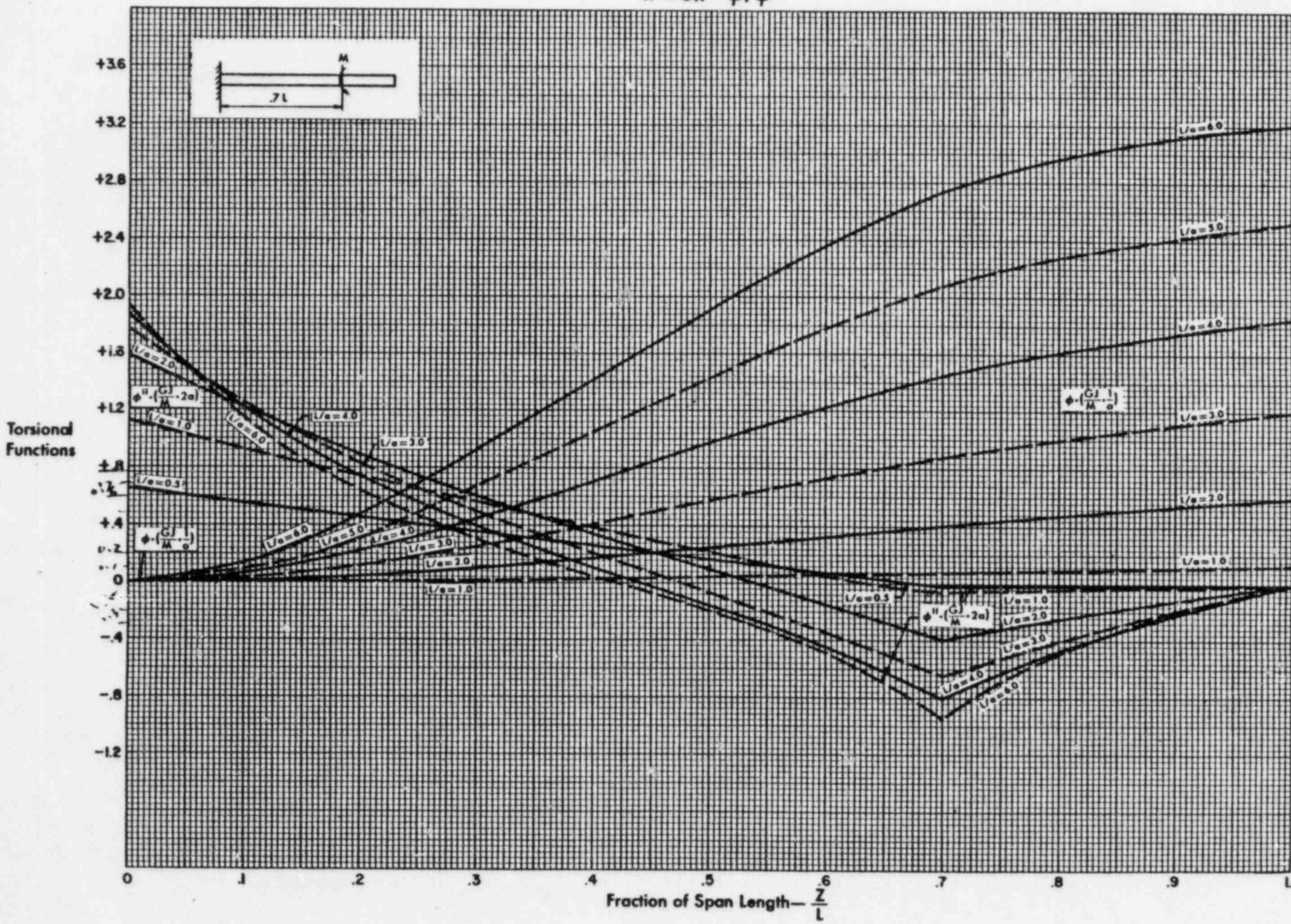


P 3-4

Case 6
$\alpha = 0.3 \quad \phi', \phi'''$

CASE 9

$\alpha = 0.7\ \phi, \phi''$



Case **9** $\alpha = 0.7\ \phi, \phi''$

P.3.5

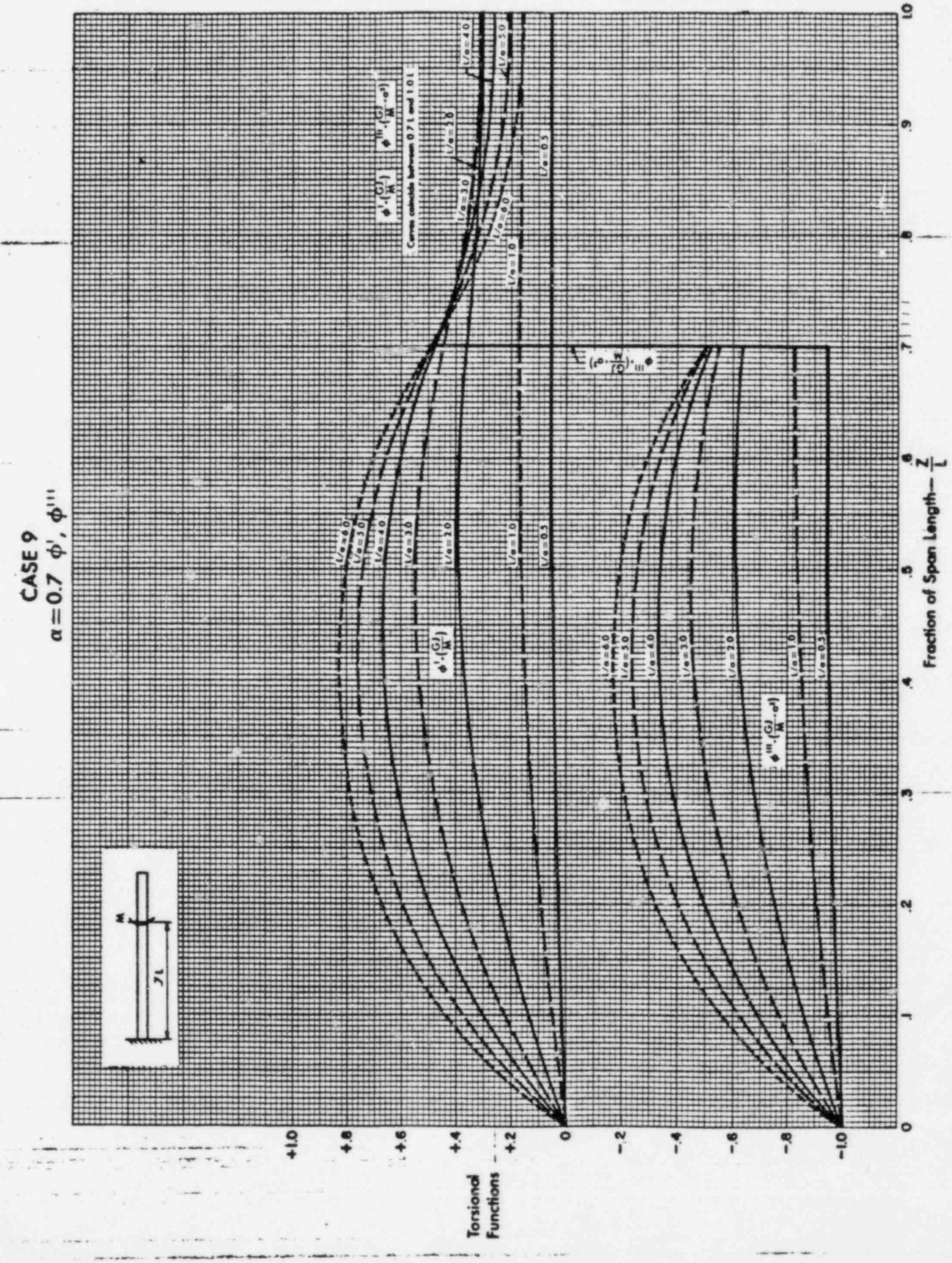

CASE 9
α = 0.7 φ', φ'''
Torsional Functions
Fraction of Span Length — Z/L
φ'·(GJ/M)
φ'''·(GJ/M·a²)
Curves coincide between 0.7 L and 1.0 L
αL
M

TABLE 3 ATTACHMENT 4 P4-1

6C8.2 AND 6C8.2 COMPOSITE CHANNELS WITH Dy= 2.0000 (Mt=1.0 k-in)
INPUT DATA:

(A) VERTICAL CHANNEL:Tf=		.343	Tw=		.2
Bf=	1.92	Dw=	6		
(B) HORIZONTAL CHANNEL:Tf=		.343	Tw=		.2
Bf=	1.92	Dw=	6		
EX=	.476	EY=	.626		
AREA =	4.76	DY =	2		

E=29000 ksi.; Mu=0.3
0
TORSIONAL PROPERTIES:
WARPING CONSTANT Cw= 22.87213 IN-6
TORSIONAL CONSTANT J= .196614 IN-4
a^2=E*Cw/(G*J)= 302.4583 OR a= 17.39133
0
NORMALIZED WARPING FUNCTION Wns VALUE AT END PTS. OF THE ELEMENT

ELEMENT	Wns AT i	Wns AT j
1	-6.0784	2.0288
2	2.0288	1.0728
3	1.0728	0.2064
4	0.2064	-0.6639
5	-0.6639	1.5246
6	0.2064	-3.5048
7	-3.5048	8.1514

WARPING STATICAL MOMENT Sws AT END PTS. AND MAX. PT.OF THE ELEMENT

ELEMENT	SWA	SWB	SWMAX/SWMIN	AT LOCATION
1	0	-1.263998	-1.422467	1.36455
2	-.2686452	0	-.3315135	8.029126
3	-1.450334	0	-1.779268	12.12424

34
P 4-2

6C8.2 AND 6C8.2 COMPOSITE CHANNELS WITH Dy= 2.0000 (Mt=1.0 k-in)
BOUNDARY CONDITION CASE NO. 3(HINGE --- HINGE)
MAX. WARPING NORMAL STRESSES in ksi AT Z/L=ALPHA ,FOR ALPHA= 0.10

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	0.2065	-0.0689	0.0226	-0.0518	0.1190	-0.2769
1.00	0.4044	-0.1350	0.0442	-0.1014	0.2332	-0.5423
1.50	0.5880	-0.1962	0.0642	-0.1475	0.3390	-0.7885
2.00	0.7549	-0.2520	0.0825	-0.1893	0.4353	-1.0123
2.50	0.9053	-0.3022	0.0989	-0.2271	0.5220	-1.2140
3.00	1.0405	-0.3473	0.1137	-0.2610	0.6000	-1.3954
3.50	1.1623	-0.3879	0.1270	-0.2915	0.6702	-1.5587
4.00	1.2720	-0.4246	0.1389	-0.3191	0.7335	-1.7059
4.50	1.3711	-0.4576	0.1498	-0.3439	0.7906	-1.8387
5.00	1.4607	-0.4875	0.1595	-0.3664	0.8422	-1.9588
6.00	1.6149	-0.5390	0.1764	-0.4050	0.9311	-2.1656

WARPING SHEAR STRESSES in ksi AT Z/L=ALPHA, FOR ALPHA=0.10

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1621	-0.2471	-0.0525	-0.0378	-0.2835	-0.2028

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=ALPHA ,FOR ALPHA= 0.20

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	0.3649	-0.1218	0.0399	-0.0915	0.2104	-0.4894
1.00	0.7032	-0.2347	0.0768	-0.1764	0.4055	-0.9430
1.50	0.9977	-0.3330	0.1090	-0.2503	0.5753	-1.3380
2.00	1.2435	-0.4150	0.1358	-0.3119	0.7170	-1.6675
2.50	1.4438	-0.4819	0.1577	-0.3621	0.8325	-1.9361
3.00	1.6056	-0.5359	0.1754	-0.4027	0.9258	-2.1531
3.50	1.7362	-0.5795	0.1896	-0.4355	1.0011	-2.3283
4.00	1.8419	-0.6148	0.2012	-0.4620	1.0620	-2.4701
4.50	1.9277	-0.6434	0.2106	-0.4835	1.1115	-2.5852
5.00	1.9976	-0.6667	0.2182	-0.5010	1.1518	-2.6789
6.00	2.1011	-0.7013	0.2295	-0.5270	1.2115	-2.8177

WARPING SHEAR STRESSES in ksi AT Z/L=ALPHA, FOR ALPHA=0.20

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1436	-0.2189	-0.0465	-0.0335	-0.2512	-0.1797

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=ALPHA ,FOR ALPHA= 0.30

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	0.4770	-0.1592	0.0521	-0.1196	0.2750	-0.6397
1.00	0.9085	-0.3032	0.0992	-0.2279	0.5238	-1.2183
1.50	1.2665	-0.4227	0.1383	-0.3177	0.7303	-1.6984
2.00	1.5450	-0.5157	0.1688	-0.3875	0.8908	-2.0719
2.50	1.7529	-0.5851	0.1915	-0.4397	1.0107	-2.3507
3.00	1.9047	-0.6357	0.2080	-0.4778	1.0983	-2.5543
3.50	2.0147	-0.6724	0.2201	-0.5053	1.1617	-2.7018
4.00	2.0942	-0.6990	0.2287	-0.5253	1.2075	-2.8084
4.50	2.1519	-0.7183	0.2351	-0.5398	1.2408	-2.8858
5.00	2.1940	-0.7323	0.2396	-0.5503	1.2650	-2.9422
6.00	2.2473	-0.7501	0.2455	-0.5637	1.2958	-3.0137

WARPING SHEAR STRESSES in ksi AT Z/L=ALPHA, FOR ALPHA=0.30

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1257	-0.1915	-0.0407	-0.0293	-0.2196	-0.1572

6C8.2 AND 6C8.2 COMPOSITE CHANNELS WITH Dy= 2.0000 (Mt=1.0 k-in)

BOUNDARY CONDITION CASE NO. 3(HINGE --- HINGE)

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=ALPHA ,FOR ALPHA= 0.40

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	0.5438	-0.1815	0.0594	-0.1364	0.3136	-0.7293
1.00	1.0285	-0.3433	0.1123	-0.2580	0.5930	-1.3752
1.50	1.4186	-0.4735	0.1549	-0.3558	0.8179	-1.9024
2.00	1.7083	-0.5702	0.1866	-0.4285	0.9850	-2.2909
2.50	1.9116	-0.6380	0.2088	-0.4795	1.1022	-2.5635
3.00	2.0489	-0.6839	0.2238	-0.5139	1.1814	-2.7477
3.50	2.1398	-0.7142	0.2337	-0.5367	1.2338	-2.8656
4.00	2.1992	-0.7340	0.2402	-0.5516	1.2681	-2.9492
4.50	2.2379	-0.7470	0.2444	-0.5613	1.2904	-3.0011
5.00	2.2631	-0.7554	0.2472	-0.5676	1.3049	-3.0349
6.00	2.2902	-0.7644	0.2502	-0.5744	1.3205	-3.0713

WARPING SHEAR STRESSES in ksi AT Z/L=ALPHA, FOR ALPHA=0.40

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1081	-0.1647	-0.0350	-0.0252	-0.1890	-0.1352

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=ALPHA ,FOR ALPHA= 0.50

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	0.5660	-0.1689	0.0618	-0.1420	0.3263	-0.7590
1.00	1.0679	-0.3564	0.1166	-0.2679	0.6158	-1.4321
1.50	1.4678	-0.4899	0.1603	-0.3682	0.8463	-1.9684
2.00	1.7600	-0.5874	0.1922	-0.4414	1.0148	-2.3603
2.50	1.9603	-0.6543	0.2141	-0.4917	1.1303	-2.6283
3.00	2.0917	-0.6982	0.2285	-0.5247	1.2061	-2.8051
3.50	2.1754	-0.7261	0.2376	-0.5457	1.2544	-2.9174
4.00	2.2278	-0.7436	0.2433	-0.5588	1.2845	-2.9876
4.50	2.2601	-0.7544	0.2469	-0.5669	1.3032	-3.0309
5.00	2.2800	-0.7610	0.2490	-0.5719	1.3146	-3.0575
6.00	2.2995	-0.7675	0.2512	-0.5768	1.3259	-3.0637

WARPING SHEAR STRESSES in ksi AT Z/L=ALPHA, FOR ALPHA=0.50

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.0907	-0.1382	-0.0294	-0.0211	-0.1585	-0.1134

6C8.2 AND 6C8.2 COMPOSITE CHANNELS WITH Dy= 2.0000 (Mt=1.0 k-in)
BOUNDARY CONDITION CASE NO. 6(FIXED --- FIXED)

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0, FOR ALPHA= 0.10

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-0.1869	0.0624	-0.0204	0.0469	-0.1078	0.2506
1.00	-0.3721	0.1242	-0.0406	0.0933	-0.2146	0.4990
1.50	-0.5540	0.1849	-0.0605	0.1390	-0.3195	0.7430
2.00	-0.7314	0.2441	-0.0799	0.1834	-0.4217	0.9806
2.50	-0.9031	0.3014	-0.0986	0.2265	-0.5207	1.2111
3.00	-1.0684	0.3566	-0.1167	0.2680	-0.6161	1.4328
3.50	-1.2270	0.4095	-0.1340	0.3078	-0.7075	1.6455
4.00	-1.3785	0.4601	-0.1506	0.3458	-0.7949	1.8487
4.50	-1.5230	0.5083	-0.1664	0.3820	-0.8782	2.0424
5.00	-1.6606	0.5543	-0.1814	0.4165	-0.9575	2.2269
6.00	-1.9157	0.6394	-0.2092	0.4805	-1.1046	2.5690

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.10

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1762	-0.2686	-0.0571	-0.0411	-0.3081	-0.2204

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0, FOR ALPHA= 0.20

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-0.2950	0.0985	-0.0322	0.0740	-0.1701	0.3956
1.00	-0.5850	0.1953	-0.0639	0.1467	-0.3373	0.7845
1.50	-0.8657	0.2889	-0.0946	0.2171	-0.4992	1.1609
2.00	-1.1333	0.3783	-0.1238	0.2843	-0.6535	1.5196
2.50	-1.3852	0.4623	-0.1513	0.3474	-0.7987	1.8576
3.00	-1.6196	0.5406	-0.1769	0.4062	-0.9339	2.1720
3.50	-1.8359	0.6128	-0.2005	0.4605	-1.0586	2.4620
4.00	-2.0340	0.6789	-0.2222	0.5102	-1.1728	2.7277
4.50	-2.2144	0.7391	-0.2419	0.5554	-1.2768	2.9696
5.00	-2.3781	0.7937	-0.2598	0.5965	-1.3712	3.1891
6.00	-2.6595	0.8877	-0.2905	0.6671	-1.5335	3.5665

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.20

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1624	-0.2475	-0.0526	-0.0379	-0.2840	-0.2032

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0, FOR ALPHA= 0.30

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-0.3384	0.1129	-0.0370	0.0849	-0.1951	0.4536
1.00	-0.6691	0.2233	-0.0731	0.1678	-0.3858	0.8973
1.50	-0.9852	0.3288	-0.1076	0.2471	-0.5681	1.3212
2.00	-1.2812	0.4276	-0.1399	0.3214	-0.7387	1.7181
2.50	-1.5532	0.5184	-0.1697	0.3896	-0.8956	2.0829
3.00	-1.7992	0.6005	-0.1965	0.4513	-1.0374	2.4128
3.50	-2.0187	0.6738	-0.2205	0.5063	-1.1640	2.7071
4.00	-2.2122	0.7384	-0.2416	0.5549	-1.2755	2.9666
4.50	-2.3812	0.7948	-0.2601	0.5973	-1.3730	3.1933
5.00	-2.5278	0.8437	-0.2761	0.6340	-1.4576	3.3899
6.00	-2.7626	0.9221	-0.3018	0.6929	-1.5929	3.7047

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.30

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1421	-0.2166	-0.0460	-0.0331	-0.2485	-0.1778

C8.2 AND 6C8.2 COMPOSITE CHANNELS WITH Dy= 2.0000 (Mt=1.0 k-in)
BOUNDARY CONDITION CASE NO. 6(FIXED --- FIXED)

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0,FOR ALPHA= 0.40

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-0.3312	0.1106	-0.0362	0.0831	-0.1910	0.4442
1.00	-0.6534	0.2181	-0.0714	0.1639	-0.3768	0.8762
1.50	-0.9585	0.3199	-0.1047	0.2404	-0.5527	1.2854
2.00	-1.2402	0.4139	-0.1355	0.3111	-0.7151	1.6631
2.50	-1.4944	0.4988	-0.1632	0.3748	-0.8617	2.0040
3.00	-1.7191	0.5738	-0.1878	0.4312	-0.9913	2.3054
3.50	-1.9144	0.6390	-0.2091	0.4802	-1.1038	2.5673
4.00	-2.0814	0.6947	-0.2273	0.5221	-1.2001	2.7913
4.50	-2.2225	0.7418	-0.2428	0.5575	-1.2815	2.9805
5.00	-2.3404	0.7812	-0.2556	0.5870	-1.3495	3.1386
6.00	-2.5184	0.8406	-0.2751	0.6317	-1.4521	3.3773

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.40

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1175	-0.1790	-0.0380	-0.0274	-0.2054	-0.1469

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0,FOR ALPHA= 0.50

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-0.2874	0.0959	-0.0314	0.0721	-0.1657	0.3854
1.00	-0.5660	0.1889	-0.0618	0.1420	-0.3263	0.7590
1.50	-0.8281	0.2764	-0.0905	0.2077	-0.4775	1.1106
2.00	-1.0679	0.3564	-0.1166	0.2679	-0.6158	1.4321
[illegible]	-1.2816	0.4278	-0.1400	0.3215	-0.7390	1.7187
3.00	-1.4678	0.4899	-0.1603	0.3682	-0.8463	1.9684
3.50	-1.6267	0.5429	-0.1777	0.4080	-0.9379	2.1814
4.00	-1.7600	0.5874	-0.1922	0.4414	-1.0148	2.3602
4.50	-1.8702	0.6242	-0.2043	0.4691	-1.0784	2.5061
5.00	-1.9603	0.6543	-0.2141	0.4917	-1.1303	2.6269
6.00	-2.0917	0.6982	-0.2285	0.5247	-1.2061	2.8051

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.50

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.0907	-0.1382	-0.0294	-0.0211	-0.1585	-0.1134

6C8.2 AND 6C8.2 COMPOSITE CHANNELS WITH Dy= 2.0000 (Mt=1.0 k-in)
BOUNDARY CONDITION CASE NO. 9(ONE END FIXED AND ONE END FREE)

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0,FOR ALPHA= 0.10

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-0.2285	0.0763	-0.0250	0.0573	-0.1318	0.3065
1.00	-0.4453	0.1486	-0.0486	0.1117	-0.2568	0.5972
1.50	-0.6487	0.2165	-0.0709	0.1627	-0.3741	0.8700
2.00	-0.8411	0.2807	-0.0919	0.2110	-0.4850	1.1280
2.50	-1.0243	0.3419	-0.1119	0.2569	-0.5906	1.3736
3.00	-1.1989	0.4002	-0.1310	0.3007	-0.6913	1.6078
3.50	-1.3654	0.4557	-0.1491	0.3425	-0.7873	1.8311
4.00	-1.5240	0.5087	-0.1665	0.3823	-0.8787	2.0437
4.50	-1.6749	0.5590	-0.1830	0.4201	-0.9658	2.2462
5.00	-1.8186	0.6070	-0.1986	0.4562	-1.0486	2.4388
6.00	-2.0853	0.6960	-0.2278	0.5231	-1.2024	2.7965

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.10

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0,FOR ALPHA= 0.20

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-0.4523	0.1510	-0.0494	0.1134	-0.2608	0.6065
1.00	-0.8599	0.2870	-0.0939	0.2157	-0.4958	1.1532
1.50	-1.2178	0.4065	-0.1330	0.3054	-0.7022	1.6331
2.00	-1.5372	0.5131	-0.1679	0.3856	-0.8864	2.0615
2.50	-1.8264	0.6096	-0.1995	0.4581	-1.0531	2.4493
3.00	-2.0896	0.6974	-0.2282	0.5241	-1.2048	2.8022
3.50	-2.3288	0.7773	-0.2544	0.5841	-1.3428	3.1231
4.00	-2.5462	0.8498	-0.2781	0.6386	-1.4681	3.4145
4.50	-2.7432	0.9156	-0.2996	0.6881	-1.5818	3.6788
5.00	-2.9218	0.9752	-0.3191	0.7329	-1.6847	3.9182
6.00	-3.2298	1.0780	-0.3528	0.8101	-1.8623	4.3313

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.20

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0,FOR ALPHA= 0.30

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-0.6718	0.2242	-0.0734	0.1685	-0.3874	0.9009
1.00	-1.2479	0.4165	-0.1363	0.3130	-0.7195	1.6734
1.50	-1.7200	0.5741	-0.1879	0.4314	-0.9917	2.3065
2.00	-2.1162	0.7063	-0.2311	0.5308	-1.2202	2.8379
2.50	-2.4569	0.8200	-0.2684	0.6162	-1.4166	3.2948
3.00	-2.7526	0.9188	-0.3007	0.6904	-1.5872	3.6914
3.50	-3.0096	1.0045	-0.3287	0.7549	-1.7353	4.0360
4.00	-3.2323	1.0788	-0.3531	0.8107	-1.8637	4.3346
4.50	-3.4249	1.1431	-0.3741	0.8590	-1.9748	4.5929
5.00	-3.5911	1.1986	-0.3923	0.9007	-2.0707	4.8159
6.00	-3.8580	1.2877	-0.4214	0.9677	-2.2245	5.1737

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.30

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

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P4-7

C8.2 AND 6C8.2 COMPOSITE CHANNELS WITH Dy= 2.0000 (Mt=1.0 k-in)
BOUNDARY CONDITION CASE NO. 9(ONE END FIXED AND ONE END FREE)

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0,FOR ALPHA= 0.40

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-0.8877	0.2963	-0.0970	0.2227	-0.5118	1.1904
1.00	-1.6131	0.5384	-0.1762	0.4046	-0.9301	2.1632
1.50	-2.1666	0.7232	-0.2367	0.5434	-1.2493	2.9055
2.00	-2.6012	0.8682	-0.2841	0.6525	-1.4999	3.4883
2.50	-2.9552	0.9864	-0.3228	0.7412	-1.7039	3.9630
3.00	-3.2483	1.0842	-0.3548	0.8148	-1.8730	4.3561
3.50	-3.4918	1.1655	-0.3814	0.8758	-2.0134	4.6827
4.00	-3.6936	1.2328	-0.4034	0.9264	-2.1297	4.9533
4.50	-3.8603	1.2884	-0.4216	0.9683	-2.2258	5.1768
5.00	-3.9975	1.3343	-0.4366	1.0027	-2.3050	5.3608
6.00	-4.2028	1.4028	-0.4591	1.0542	-2.4233	5.6362

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.40

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0,FOR ALPHA= 0.50

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-1.1004	0.3673	-0.1202	0.2760	-0.6345	1.4757
1.00	-1.9592	0.6539	-0.2140	0.4914	-1.1297	2.6273
1.50	-2.5678	0.8571	-0.2805	0.6441	-1.4806	3.4436
2.00	-3.0119	1.0053	-0.3290	0.7555	-1.7366	4.0390
2.50	-3.3526	1.1190	-0.3662	0.8409	-1.9331	4.4960
3.00	-3.6215	1.2087	-0.3956	0.9084	-2.0881	4.8566
3.50	-3.8352	1.2801	-0.4189	0.9620	-2.2114	5.1432
4.00	-4.0049	1.3367	-0.4374	1.0045	-2.3092	5.3707
4.50	-4.1390	1.3815	-0.4521	1.0382	-2.3866	5.5506
5.00	-4.2446	1.4167	-0.4636	1.0647	-2.4474	5.6922
6.00	-4.3922	1.4660	-0.4798	1.1017	-2.5326	5.8902

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.50

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0,FOR ALPHA= 0.60

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-1.3106	0.4374	-0.1432	0.3287	-0.7557	1.7576
1.00	-2.2897	0.7642	-0.2501	0.5743	-1.3202	3.0706
1.50	-2.9326	0.9788	-0.3203	0.7356	-1.6909	3.9327
2.00	-3.3645	1.1230	-0.3675	0.8439	-1.9400	4.5120
2.50	-3.6742	1.2264	-0.4013	0.9216	-2.1186	4.9273
3.00	-3.9060	1.3037	-0.4266	0.9797	-2.2522	5.2381
3.50	-4.0823	1.3626	-0.4459	1.0240	-2.3539	5.4746
4.00	-4.2167	1.4074	-0.4606	1.0577	-2.4313	5.6548
4.50	-4.3186	1.4414	-0.4717	1.0832	-2.4901	5.7914
5.00	-4.3955	1.4671	-0.4801	1.1025	-2.5345	5.8946
6.00	-4.4965	1.5008	-0.4911	1.1278	-2.5927	6.0300

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.60

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

C8.2 AND 6C8.2 COMPOSITE CHANNELS WITH Dy= 2.0000 (Mt=1.0 k-in)
BOUNDARY CONDITION CASE NO. 9(ONE END FIXED AND ONE END FREE)

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0, FOR ALPHA= 0.70

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
[illegible]	-1.5187	0.5069	-0.1659	0.3809	-0.8757	2.0367
1.00	-2.6079	0.8704	-0.2849	0.6541	-1.5037	3.4973
1.50	-3.2692	1.0912	-0.3571	0.8200	-1.8850	4.3841
2.00	-3.6735	1.2261	-0.4012	0.9214	-2.1181	4.9263
2.50	-3.9402	1.3151	-0.4304	0.9883	-2.2719	5.2840
3.00	-4.1277	1.3777	-0.4509	1.0353	-2.3801	5.5355
3.50	-4.2637	1.4231	-0.4657	1.0695	-2.4585	5.7179
4.00	-4.3633	1.4563	-0.4766	1.0944	-2.5159	5.8513
4.50	-4.4360	1.4806	-0.4845	1.1127	-2.5578	5.9488
5.00	-4.4888	1.4982	-0.4903	1.1259	-2.5883	6.0197
6.00	-4.5544	1.5201	-0.4975	1.1424	-2.6261	6.1076

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.70

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0, FOR ALPHA= 0.80

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-1.7253	0.5758	-0.1884	0.4327	-0.9948	2.3137
1.00	-2.9169	0.9736	-0.3186	0.7316	-1.6819	3.9117
1.50	-3.5851	1.1966	-0.3916	0.8992	-2.0672	4.8078
2.00	-3.9510	1.3187	-0.4316	0.9910	-2.2781	5.2984
2.50	-4.1672	1.3909	-0.4552	1.0452	-2.4028	5.5884
3.00	-4.3067	1.4375	-0.4704	1.0802	-2.4833	5.7755
3.50	-4.4019	1.4692	-0.4808	1.1041	-2.5381	5.9031
[illegible]	-4.4684	1.4914	-0.4881	1.1208	-2.5765	5.9924
4.50	-4.5153	1.5071	-0.4932	1.1326	-2.6035	6.0552
5.00	-4.5482	1.5181	-0.4968	1.1408	-2.6225	6.0994
6.00	-4.5872	1.5311	-0.5011	1.1506	-2.6450	6.1516

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.80

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0, FOR ALPHA= 0.90

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-1.9308	0.6445	-0.2109	0.4843	-1.1133	2.5893
1.00	-3.2199	1.0747	-0.3517	0.8076	-1.8566	4.3181
1.50	-3.8876	1.2976	-0.4246	0.9751	-2.2416	5.2135
2.00	-4.2082	1.4046	-0.4597	1.0555	-2.4265	5.6434
2.50	-4.3696	1.4584	-0.4773	1.0960	-2.5195	5.8598
3.00	-4.4592	1.4884	-0.4871	1.1185	-2.5712	5.9800
3.50	-4.5138	1.5066	-0.4930	1.1322	-2.6027	6.0532
4.00	-4.5492	1.5184	-0.4969	1.1411	-2.6231	6.1007
4.50	-4.5729	1.5263	-0.4995	1.1470	-2.6367	6.1325
5.00	-4.5890	1.5317	-0.5012	1.1510	-2.6460	6.1540
6.00	-4.6072	1.5378	-0.5032	1.1556	-2.6565	6.1784

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.90

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

C8.2 AND 6C8.2 COMPOSITE CHANNELS WITH Dy= 2.0000 (Mt=1.0 k-in)
BOUNDARY CONDITION CASE NO. 9(ONE END FIXED AND ONE END FREE)

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0, FOR ALPHA= 0.70

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-1.5187	0.5069	-0.1659	0.3809	-0.8757	2.0367
1.00	-2.6079	0.8704	-0.2849	0.6541	-1.5037	3.4973
1.50	-3.2692	1.0912	-0.3571	0.8200	-1.8850	4.3841
2.00	-3.6735	1.2261	-0.4012	0.9214	-2.1181	4.9263
2.50	-3.9402	1.3151	-0.4304	0.9883	-2.2719	5.2840
3.00	-4.1277	1.3777	-0.4509	1.0353	-2.3801	5.5355
3.50	-4.2637	1.4231	-0.4657	1.0695	-2.4585	5.7179
4.00	-4.3633	1.4563	-0.4766	1.0944	-2.5159	5.8513
4.50	-4.4360	1.4806	-0.4845	1.1127	-2.5578	5.9488
5.00	-4.4888	1.4982	-0.4903	1.1259	-2.5883	6.0197
6.00	-4.5544	1.5201	-0.4975	1.1424	-2.6261	6.1076

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.70

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0, FOR ALPHA= 0.80

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-1.7253	0.5758	-0.1884	0.4327	-0.9948	2.3137
1.00	-2.9169	0.9736	-0.3186	0.7316	-1.6819	3.9117
1.50	-3.5851	1.1966	-0.3916	0.8992	-2.0672	4.8078
2.00	-3.9510	1.3187	-0.4316	0.9910	-2.2781	5.2984
2.50	-4.1672	1.3909	-0.4552	1.0452	-2.4028	5.5884
3.00	-4.3067	1.4375	-0.4704	1.0802	-2.4833	5.7755
3.50	-4.4019	1.4692	-0.4808	1.1041	-2.5381	5.9031
4.00	-4.4684	1.4914	-0.4881	1.1208	-2.5765	5.9924
4.50	-4.5153	1.5071	-0.4932	1.1326	-2.6035	6.0552
5.00	-4.5482	1.5181	-0.4968	1.1408	-2.6225	6.0994
6.00	-4.5872	1.5311	-0.5011	1.1506	-2.6450	6.1516

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.80

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0, FOR ALPHA= 0.90

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-1.9308	0.6445	-0.2109	0.4843	-1.1133	2.5893
1.00	-3.2199	1.0747	-0.3517	0.8076	-1.8566	4.3181
1.50	-3.8876	1.2976	-0.4246	0.9751	-2.2416	5.2135
2.00	-4.2082	1.4046	-0.4597	1.0555	-2.4265	5.6434
2.50	-4.3696	1.4584	-0.4773	1.0960	-2.5195	5.8598
3.00	-4.4592	1.4884	-0.4871	1.1185	-2.5712	5.9800
3.50	-4.5138	1.5066	-0.4930	1.1322	-2.6027	6.0532
4.00	-4.5492	1.5184	-0.4969	1.1411	-2.6231	6.1007
4.50	-4.5729	1.5263	-0.4995	1.1470	-2.6367	6.1325
5.00	-4.5890	1.5317	-0.5012	1.1510	-2.6460	6.1540
6.00	-4.6072	1.5378	-0.5032	1.1556	-2.6565	6.1784

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =0.90

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

#
P.4-9

5C8.2 AND 6C8.2 COMPOSITE CHANNELS WITH Dy= 2.0000 (Mt=1.0 k-in)
BOUNDARY CONDITION CASE NO. 9(ONE END FIXED AND ONE END FREE)
MAX. WARPING NORMAL STRESSES in ksi AT Z/L=0, FOR ALPHA= 1.00

L/a	Sigma1	Sigma2	Sigma3	Sigma4	Sigma5	Sigma6
0.50	-2.1358	0.7129	-0.2333	0.5357	-1.2315	2.8642
1.00	-3.5200	1.1749	-0.3845	0.8829	-2.0296	4.7204
1.50	-4.1834	1.3963	-0.4570	1.0493	-2.4122	5.6102
2.00	-4.4556	1.4872	-0.4867	1.1176	-2.5691	5.9751
2.50	-4.5600	1.5220	-0.4981	1.1438	-2.6293	6.1151
3.00	-4.5990	1.5350	-0.5023	1.1535	-2.6518	6.1674
3.50	-4.6134	1.5398	-0.5039	1.1572	-2.6601	6.1868
4.00	-4.6187	1.5416	-0.5045	1.1585	-2.6632	6.1939
4.50	-4.6207	1.5423	-0.5047	1.1590	-2.6643	6.1966
5.00	-4.6214	1.5425	-0.5048	1.1592	-2.6647	6.1975
6.00	-4.6218	1.5426	-0.5048	1.1593	-2.6649	6.1980

WARPING SHEAR STRESSES in ksi AT Z/L=0, FOR ALPHA =1.00

Tau1	Tau2	Tau3	Tau4	Tau5	Tau6
-0.1813	-0.2763	-0.0587	-0.0423	-0.3171	-0.2268

CALCULATION COVER SHEET

SHT i

CLIENT: TEXAS UTILITIES GENERATING CO. OFS No. 3306.221

PROJECT: COMANCHE PEAK UNIT No. 2 DEPT No. 550

ATTACHMENT 4

SHEET ---- OF ----

SUBJECT: CABLE TRAY HANGER

CALCULATION No. CTH-2- 11070 NUMBER OF SHEETS 37

PROBLEM: AS-BUILT REVIEW ✓ DESIGNED AND INSTALLED N/A

THIS CALCULATION IS APPLICABLE TO DWG			CTH-2- 11070	(Rev 2)
AND ALSO	CTH-2- N/A	(Rev)	CTH-2- N/A	(Rev)
	CTH-2- /	(Rev)	CTH-2- /	(Rev)
	CTH-2- /	(Rev)	CTH-2- /	(Rev)

COMPUTER RUN No. N/A DATE N/A

CONTAINS ASSUMPTIONS WHICH REQUIRE CONFIRMATION YES N/A NO ✓

ASSUMPTIONS CONFIRMED ON N/A BY N/A

REV. No.	SHEET Nos.	COVER SHEET BY NAME	DATE	COVER SHEET CHECKED BY NAME	DATE	CALC. PACKAGE REVIEWED BY NAME	DATE
1*	REPLACED COVER SHT & SHT 1, 2, 8 & 9 REVISED SHT 7 ADDED: SHT 8 & TABLE OF CONTENTS & ATTACH A, B, C, E, F, H, J & K	H. Zarian	1-20-86	A Marder	1-22-86		
0	1-9	SEE NOTE BELOW		SEE NOTE BELOW			

PRELIMINARY ☐ N/A FINAL ☑ SUPERSEDES CALC No. N/A

NOTE: FOR ORIGINAL CALCULATION COMPLETION DATES AND INITIALS, SEE PACKAGE

* NO DWG REV REQ'D

CTH-2-11070
SHT ii

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK SES UNIT No. 2
DESIGN VERIFICATION OF CTH-2-11070

REV 1

By H. Zarian Date 1-20-86
CH. A. Mardgu Date 1-22-86

TABLE OF CONTENTS

CTH-2-11070

REV 1

EBASCO SERVICES INCORPORATED

BY H. Zarian DATE 1-20-86 SHEET 1 OF 8

CHKD. BY A Merda DATE 1-22-86 OFS NO. 3306.221 DEPT. NO. 549

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Steam Electric Station Unit No. #2

SUBJECT Standard Format for Seismic Design Calculation

I. DESIGN DATA

1. CTH No.- 2 - 11070

2. Location: Building SFGD Rm#94 FLOOR ELEV. 831.50'

3. Type of Support: Transverse ✓

   Longitudinal N.A.

   Multidirectional N.A

4. Anchorage

   Strip Plate N/A

   Larger Embedded Plate ✓

   Surface Plate N/A, Hilti-Kwik Bolt N.A

   Richmond Insert N.A

   Hilti Super-Kwik Bolt N.A

5. Type of Mounting: Ceiling Mounted N/A

   Wall Mounted ✓

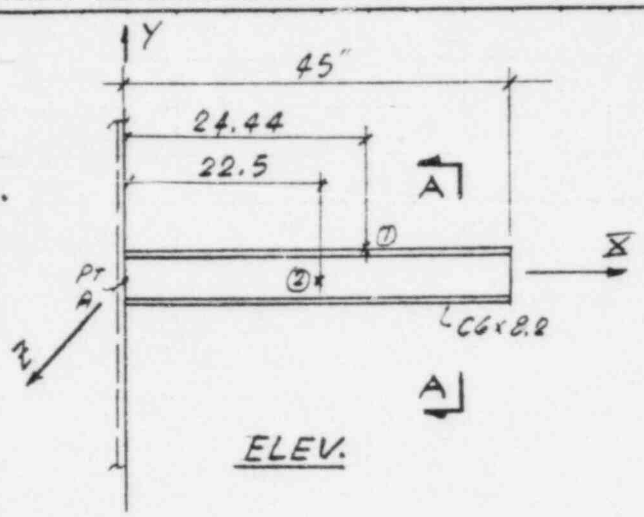
   Steel Mounted N/A

   Floor Mounted N/A

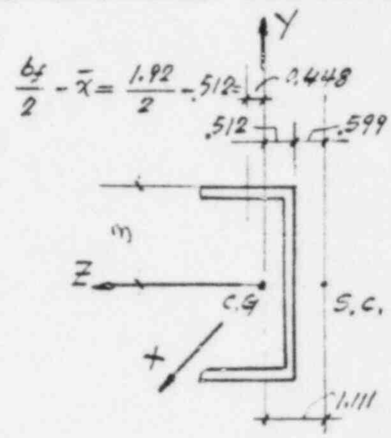
II. CONCLUSION

1. CTH is Adequate ☑
2. CTH is Adequate with conditions as noted on drawing ☐ N/A
3. CTH is Adequate as Modified ☐ N/A

☑ Site calculation does not change the above conclusion. See Attachment "K".



ELEV.



SECT. A-A

PROPERTIES OF C6×8.2

$A = 2.4$	$S_x = 4.38$	$E_o = 0.699$
$b_f = 1.92$	$S_y = 0.492$	$J = 0.075$
$t_f = 0.343$	$r_y = .537$	$I_x = 13.1$
$t_w = 0.2$	$\bar{x} = 0.512$	$I_y = 0.692$

DESIGN D. L. (WITH THERMOLAG)

(1) TRAY (24×4)

UNIT WT. = 96#/FT. SPAN = 5'-0

TOTAL WT. = 5×96 = 480#

H.Z. 1-20-86 ACTUAL SPAN = 5'2" SINCE STRESSES FOR CALC'S ARE LOW CALC'L IS O.K. AS IS.

(2) C6×8.2

$3.75 \times (8.2 + 9.84) = 68^{\#}$

DESIGN "g" VALUE AT ELEV. 852.5' SEE SH. ~~4~~ 3 & ~~5~~ 4 FOR FREQUENCY H.Z. 1/20/86

OBE $\begin{cases} V = 1.25 \times 1.458 = 1.823 \\ H_T = 1.25 \times 0.55 = 0.688 \\ H_L = 1.25 \times 0.7 = 0.875 \end{cases}$

SSE $\begin{cases} V = 1.25 \times 2.041 = 2.551 \\ H_T = 1.25 \times 0.82 = 1.025 \\ H_L = 1.25 \times 1.00 = 1.25 \end{cases}$

EBASCO SERVICES INCORPORATED

BY J. LEE DATE 6-11-85 By H. Zarian Date 1-20-86 } REV 1 SHEET ~~4~~ 3 OF ~~8~~ 8

CHKD. BY A. JARLIK DATE 6-25-85 CH. A. Maroun Date 1-22-86 OFS NO. 317.002 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

CABLE TRAY HANGERS

SUBJECT

LOADING		OBE			SSE			OBE	SSE
i	W_i	V_i	H_i TRAN.	H_i LONGIT.	V_i	H_i TRAN.	H_i LONG.	W_i+V_i	W_i+V_i
1	480	875	330	0	1225	492	0	1355	1705
2	68	124	47	60	173	70	85	192	241
SUM	548	999	377	60	1398	562	85	1547	1946

OBE LOADS

$F_x = 377^{\#}$

$F_Y = 1547^{\#}$

$F_Z = 60^{\#}$

$\frac{1+V_{SSE}}{1+V_{OBE}} = \frac{1+2.551}{1+1.823} = 1.258 < \cancel{1.5}\ 1.6$ H.Z. 1/20/86

$\frac{H_{T\,SSE}}{H_{T\,OBE}} = \frac{1.025}{0.688} = 1.49 < \cancel{1.5}\ 1.6$ - H.Z. 1/20/86

$\frac{H_{L\,SSE}}{H_{L\,OBE}} = \frac{1.25}{0.875} = 1.43 < \cancel{1.5}\ 1.6$

$\therefore$ OBE GOVERNS

(TORSION) $M_x = (W_1+V_1)E_0 + (W_2+V_2)\times 1.111$

$= 1355 \times 0.699 + 192 \times 1.111 = 1160''^{\#}$

$M_y = H_1 \times .448 + H_2 \times 22.5 = 330 \times .448 + 60 \times 22.5 = 1498''^{\#}$

$M_z = (W_1+V_1)\times 24.44 + (W_2+V_2)\times 22.5 + H_1 \times 3$

$= 1355 \times 24.44 + 192 \times 22.5 + 330 \times 3 = 38426''^{\#}$

CHECK FREQUENCY

SPECTRA CURVES FOR SFGD EL. 852'-6

OBE FIG-1427-B

SSE FIG-1403-B

(1) VERT. DIRECTION.

$\Delta_{MAX} = \frac{Pb^2}{6EI}(3l-b) = \frac{548 \times 24.44^2}{6 \times 29 \times 10^6 \times 13.1}(3 \times 45 - 24.44) = 0.0158754$

$f_n = \frac{1}{2\pi}\sqrt{\frac{g}{\Delta}} = \frac{1}{2\pi}\sqrt{\frac{386}{.0158754}} = 24.8\ Hz$

TRAY $f_v = 9.178$ (FOR 7' SPAN)

{ ACTUAL SPAN = 7.5' BUT SINCE PEAK VALUE IS USED IN CALC'S - $\therefore$ O.K. H.Z 1-20-86

$\frac{1}{f_{sys}^2} = \frac{1}{f_{TRAY}^2} + \frac{1}{f_{HANG}^2} = \frac{1}{9.178^2} + \frac{1}{24.8^2} = 0.013497$

$f_{sys} = 8.61$ (PEAK) $V = $ OBE $= 1.25 \times 1.458 = 1.823$

SSE $= 1.25 \times 2.041 = 2.551$

(2) TRANSVERSE DIRECTION (Ax)

$$\Delta_{MAX} = \frac{Pl_1}{AE} = \frac{548 \times 24.44}{2.4 \times 29 \times 10^6} = 0.0001924$$

$$f_n = \frac{1}{2\pi}\sqrt{\frac{g}{\Delta}} = \frac{1}{2\pi}\sqrt{\frac{386}{1.924 \times 10^{-4}}} = 225.4 \ Hz$$

TRAY $f_H = 16.89 \ Hz$ (FOR 7.0' SPAN)

{ ACTUAL SPAN = 7.5'. SINCE DEFL IS SMALL IT wouldn't have IMPACT ON CALC'S. H.Z. 1-20-86

$$\frac{1}{f_{sys}^2} = \frac{1}{225.4^2} + \frac{1}{16.89^2} = 0.0035251$$

$$f_{sys} = 16.84 \ Hz \qquad H_T = \begin{cases} OBE = 1.25 \times 0.55 = 0.688 \\ SSE = 1.25 \times 0.82 = 1.025 \end{cases}$$

(3) LONGITUDINAL DIRECTION (Az) (ONLY C6 DL = 18.04 #/')

$$\Delta_{MAX} = \frac{w l^4}{8EI} = \frac{\frac{18.04}{12} \times 45^4}{8 \times 29 \times 10^6 \times 0.692} = 0.0384$$

$$f_n = \frac{1}{2\pi}\sqrt{\frac{386}{0.0384}} = 15.96 \ Hz$$

$$f_{sys} = f_n = 15.96 \ Hz$$

$$H_L = \begin{cases} OBE = 1.25 \times 0.7 = 0.875 \\ SSE = 1.25 \times 1.00 = 1.25 \end{cases}$$

WARPING NORMAL STRESS

MEMBER: C6×8.2

$M_x = 1160$ "#

$J = 0.08\ IN^4$ $a = 12.7$ $W_{n2} = 1.98\ IN^2$

$G = 11.2\times10^6$ P.S.I. $E = 29\times10^6$ P.S.I.

$L/a = \frac{45}{12.7} = 3.54$ SAY 4.0

$\alpha = \frac{24.44}{45} = 0.543$ SAY 0.5

CASE 9 TO BE USED AT $\alpha = 0.5$. $L/a = 4$. $Z/L = 0$

$\phi''\left(\frac{GJ}{M}\cdot a\right) = 0.85$, (PER AISC 'TORSIONAL ANALYSIS OF STEEL MEMBERS') H.Z. 1-20-86

$\phi'' = \frac{0.85\ M}{GJ\ a} = 0.0000866$

WARPING NORMAL STRESS

$\sigma_{w2} = EW_{n2}\phi'' = 29\times10^6 \times 1.98 \times 0.0000866 = 4975$ #/□"

Warping Shear

$\tau_{w2} = 0.21647$ KSI (sh. 116) OF GENERAL INSTRUCTIONS / $M_T = 1160$ #"

$f_w = 0.21647 \times 1.160 = 0.251$ KSI

H. Zarian 1-20-86

CTH-2-11070

EBASCO SERVICES INCORPORATED

BY J. LEE DATE 6-12-85 TEXAS UTILITIES GENERATING CO. SHEET ~~7~~ 6 OF ~~8~~ 8 H.Z. 1/20/86

CHKD. BY A. JARLIK DATE 6-25-85 COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS OFS NO. 3317.002 DEPT. NO. 549

CLIENT — By H. Zorian Date 1-20-86 } REV 1

PROJECT — CH. A. Moreden Date 1-22-86

SUBJECT

CHECKING MEMBER STRESSES FOR MEMBER

C 6×8.2		
A = 2.4	$\bar{x}$ = 0.512	
S_x = 4.38	e_o = 0.599	
S_y = 0.492	t_w = 0.2	
J = 0.075	t_f = 0.343	
r_y = 0.537	b_f = 1.92	

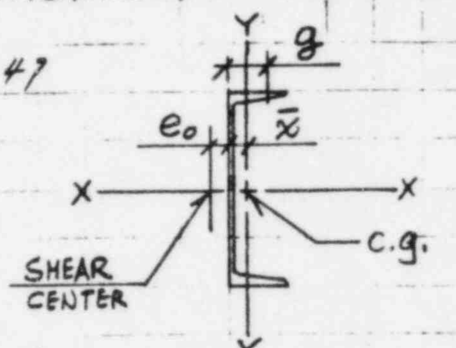
d = 6

$Kl/r_y = \frac{2 \times 12.44}{0.537} = 47$

F_a = 18610 #/□"

F_{bx} = 21600

F_{by} = 21600



F_z = 377 #

$f_a = \frac{F_z}{A} = \frac{377}{2.4} = 157$ $\quad f_a/F_a$ = 0.008 < .15

M_x = 38426 "#

$f_{bx} = \frac{M_x}{S_x} = \frac{38426}{4.38} = 8773$ #/□"

M_y = 1498 "#

$f_{by} = \frac{M_y}{S_y} = \frac{1498}{0.492} = 3045$ #/□"

WARPING, SH 6

$\frac{f_a}{F_a} + \frac{f_{bx}}{F_{bx}} + \frac{f_{by}}{F_{by}} = \frac{157}{18610} + \frac{8773}{21600} + \frac{3045}{21600} + \frac{4975}{21600} = 0.786^{*} < 1.0$ o.k.

*VALUES ARE LINEARLY ADDED W/O SRSS ∴ O.K SINCE CONSERVATIVE. H.Z. 1-20-86

F_y = 1547 #

$f_{vy} = \frac{F_y}{d\,t_w} = \frac{1547}{6 \times 0.2} = 1289$ #/□"

M_z = 1160 "#

$f_t = \frac{M_z t}{J} = \frac{1160 \times .343}{0.075} = 5305$ #/□"

(t = Larger value of t_w & t_f)

F_x = 60 #

$f_{vx} = \frac{F_x}{2 b_f t_f} = \frac{60}{2 \times 1.92 \times .343} = 46$ #/□"

Let f_{v1} = Larger value of f_{vx} & f_{vy}

$f_v = f_{v1} + f_t = 1289 + 5305 = 6594$ #/□" < 14400 = F_v OK

$f_v = f_{v1} + f_t + f_w = 1289 + 5305 + 251^{*} = 6845$ #/□" } H. Zorian 1-20-86

* SEE SHT # 5

581/8-81

REV 1

EBASCO SERVICES INCORPORATED CTH-2-11070 1

BY H. Zarian DATE 1-20-86 SHEET 7 OF 8

CHKD. BY A. Mae/k DATE 1-22-86 OFS NO. 3306.221 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

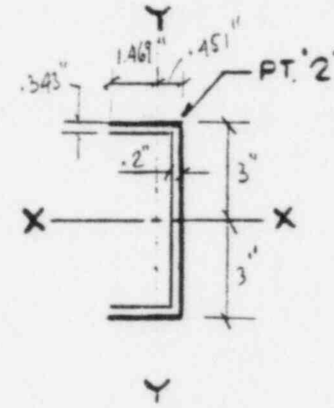
PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT

CHECKING WELD SIZES: APPLY TO TRANSVERSE SUPPORT WITH CANTILEVERED CHANNEL ONLY

WELDING @ PT.'2' BETWEEN C6x8.2 & Emb. PL

* from sh. 5



*$M_Z = 1160''\#$ $\quad \sigma_{w2} t = \frac{4975^*}{2} \times .343 = 853$ #/in

$F_Z = 377\#$ $\quad f_a = \frac{F_z}{A} = \frac{377}{18.6} = 20$ #/in

$M_X = 38426''\#$ $\quad f_{bx} = \frac{M_x}{S_x} = \frac{38426}{29.8} = 1289$ #/in

$M_Y = 1498''\#$ $\quad f_{bY} = \frac{M_Y}{S_Y} = \frac{1498}{13} = 115$ #/in

$f_z = \sigma_{w2} t + f_a + f_{bx} + f_{bY} = 2277$*

* VALUES ARE LINEARLY ADDED W/O SRSS (CONSERVATIVE)

$M_Z = 1160''\#$ $\quad$ ** $\tau_{w2} t_f = 251 \times .343 = 86$ #/in

$F_x = 60\#$ $\quad f_{vx} = \frac{F_x}{A} = \frac{60}{18.6} = 3$ #/in

$f_x = \tau_{w2} t_f + f_{vx} = 89$ #/in

$A = 18.6$

$S_x = 29.8$

$S_Y = 13.0$

$J = 95.2$

t (LARGER OF t_w OR t_F) =

$t_w = 0.343$

$t_F = 0.20$

** $\tau_{w2} t_w = 251 \times .20 = 50$ #/in

$F_Y = 1547$ $\quad f_{vY} = \frac{F_Y}{A} = \frac{1547}{18.6} = 83$ #/in

$f_Y = \tau_{w2} t_w + f_{vY} = 133$ #/in

$f = (f_x^2 + f_Y^2 + f_z^2)^{0.5} = (2277^2 + 133^2 + 89^2)^{0.5} = 2283$

CAPACITY OF D/16" WELD $= \frac{D}{16} \cdot \frac{1}{\sqrt{2}} \cdot 21000 = 928D$

REQ'D $D = f/928 = \frac{2283}{928} = 2.46 < 4^*$ = PROVIDED

* WELD IS DOWNGRADED FROM 1/4 TO 3/16 @ LOWER FLANGE (BY SITE) ∴ O.K

$3/16 > \frac{2.46}{16}$ ∴ O.K.

CTH-2-11070

Rev 1

EBASCO SERVICES INCORPORATED

BY H. Zarrai DATE 1-20-86 SHEET 8 OF 8

CHKD. BY A. Moeller DATE 1-22-86 OFS NO. DEPT. NO. 550

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT

INTERACTION RATIOS ARE SUFFICIENTLY LOW SO THAT DETAILED EVALUATION OF DIMENSIONAL TOLERANCES EFFECT ARE NOT REQUIRED.

581/8-81

CTH-2-11070

0599(COM)/10-85

EBASCO SERVICES INCORPORATED

CHECKLIST FOR DESIGN VERIFICATION OF CABLE TRAY HANGERS AND CONDUIT SUPPORT DRAWINGS AND CALCULATIONS BY DESIGN REVIEW METHOD

TEXAS UTILITIES GENERATING CO.
COMANCHE PEAK PROJECTS

ATTACHMENT A
SHEET 1 OF 1

DOCUMENT NUMBER	REVISION	DOCUMENT NUMBER	REVISION
CTH-2-11070	1	N/A	
N/A			

QUESTIONS (SHALL BE ANSWERED BY THE INDEPENDENT VERIFIER)	CALCS	DRAWINGS
1. WERE THE INPUTS CORRECTLY SELECTED AND INCORPORATED INTO DESIGN?	YES	NA
2. ARE ASSUMPTIONS NECESSARY TO PERFORM THE DESIGN ACTIVITY ADEQUATELY DESCRIBED AND REASONABLE? WHERE NECESSARY ARE THE ASSUMPTIONS IDENTIFIED FOR SUBSEQUENT REVERIFICATIONS WHEN THE DETAILED DESIGN ACTIVITIES ARE COMPLETED?	YES	NA
3. ARE THE APPROPRIATE QUALITY AND QUALITY ASSURANCE REQUIREMENTS SPECIFIED?	YES	NA
4. ARE THE APPLICABLE CODES, STANDARDS AND REGULATORY REQUIREMENTS INCLUDING ISSUE AND ADDENDA PROPERLY IDENTIFIED AND ARE THEIR REQUIREMENTS FOR DESIGN MET?	YES	NA
5. HAVE FEASIBILITY AND PRACTICALITY OF CONSTRUCTION BEEN REVIEWED?	NA	NA
5a. HAS OPERATING EXPERIENCE BEEN CONSIDERED?	NA	NA
6. HAVE THE DESIGN INTERFACE REQUIREMENTS BEEN SATISIFIED?	NA	NA
7. WAS AN APPROPRIATE DESIGN METHOD USED?	YES	NA
8. IS THE OUTPUT REASONABLE COMPARED TO TO INPUTS?	YES	NA
9. ARE THE SPECIFIED PARTS, EQUIPMENT AND PROCESSES SUITABLE FOR THE REQUIRED APPLICATION?	YES	NA
10. ARE THE SPECIFIED MATERIALS COMPATIBLE WITH EACH OTHER AND THE DESIGN ENVIRONMENTAL CONDITIONS TO WHICH THE MATERIAL WILL BE EXPOSED?	YES	NA
11. HAVE ADEQUATE MAINTENANCE FEATURES AND REQUIREMENTS BEEN SPECIFIED?	NA	NA
12. ARE ACCESSIBILITY AND OTHER DESIGN PROVISIONS ADEQUATE FOR PERFORMANCE OF NEEDED MAINTENANCE AND REPAIR?	NA	NA
13. HAS ADEQUATE ACCESSIBILITY BEEN PROVIDED TO PERFORM THE IN SERVICE INSPECTION EXPECTED TO BE REQUIRED DURING THE PLANT LIFE?	NA	NA
14. HAS THE DESIGN PROPERLY CONSIDERED RADIATION EXPOSURE TO THE PUBLIC AND PLANT PERSONNEL?	NA	NA
15. ARE THE ACCEPTANCE CRITERIA INCORPORATED IN THE DESIGN DOCUMENTS SUFFICIENT TO ALLOW VERIFICATION THAT DESIGN REQUIREMENTS HAVE BEEN SATISFACTORILY ACCOMPLISHED?	YES	NA
16. HAVE ADEQUATE PREOPERATIONAL AND SUBSEQUENT PERIODIC TEST REQUIREMENTS BEEN APPROPRIATELY SPECIFIED?	NA	NA
17. ARE ADEQUATE HANDLING, STORAGE, CLEANING AND SHIPPING REQUIREMENTS SPECIFIED?	NA	NA
18. ARE ADEQUATE IDENTIFICATION REQUIREMENTS SPECIFIED?	YES	NA
19. ARE REQUIREMENTS FOR RECORD PREPARATION REVIEW, APPROVAL, RETENTION, ETC. ADEQUATELY SPECIFIED?	YES	NA
20. HAVE THE INDEPENDENT VERIFIER'S COMMENTS BEEN RESOLVED WITH THE PREPARER?	YES	NA

LEGEND: YES = ACCEPTABLE
NA = NOT APPLICABLE

A. Marden
INDEPENDENT VERIFIER SIGNATURE

1-22-86
DATE

ATTACHMENT B

TEXAS UTILITIES GENERATING COMPANY-COMANCHE PEAK SES UNIT NO. 2
CALCULATION FORMAT BACKFIT WORKSHEET
FOR NEW YORK OFFICE CABLE TRAY HANGERS
CALCULATION NO. CTH-2- 11070 REV 1

THIS REVIEW APPLIES TO SUPPORT CTH-2- 11070 (REV 2), AND TO THE FOLLOWING OTHER SUPPORTS (AND REVISIONS): SUPPORT N/A (REV N/A),
N/A

UNLESS OTHERWISE NOTED BELOW, INDICATE WITH A
✓ ITEMS CORRECTLY CONSIDERED IN DESIGN VERIFICATION
X ITEMS INCORRECTLY CONSIDERED OR OMITTED IN DESIGN VERIFICATION
N/A ITEMS NOT APPLICABLE
(FILL IN ALL SPACES)

GENERAL: CALCS NEAT ✓ ORDERLY ✓ ALL SHEETS NUMBERED ✓
ALL CALC SHEETS INITIALED AND DATED BY: ORIGINATOR ✓ CHECKER ✓
ALL REVISED SHEETS INITIALED ✓ DATED ✓
ATTACHMENTS LABELLED ✓ CALCS ON FORM 581 ✓
CROSS OUTS/WHITEOUTS/TAPEOUTS INITIALED ✓ DATED ✓
COVER SHEET: SIGNED AND DATED BY: ORIGINATOR ✓ CHECKER ✓
CALC REV NO. ✓ DWG REV NO. ✓
ADDED/REVISED/SUPERSEDED/VOIDED SHEETS NOTED ✓
NO OUTSTANDING ASSUMPTIONS NOTED ✓ TOTAL SHEETS NOTED ✓
ORIG CALC COMPLETION NOTE ✓ COMPUTER RUN NO. N/A DATE N/A
STANDARD TABLE OF CONTENTS ✓
SUMMARY SHEETS: DESIGN DATA SHEET ✓ GROUPING SHEET N/A
CALCULATIONS: PROBLEM SCOPE ✓ ASSUMPTIONS NOTED ✓
DESIGN INPUT PROPERLY STATED AND/OR REFERENCED ✓
CONCLUSIONS ✓ COMPUTER RUNS REFERENCED N/A
COMPUTER RUNS: LABELLED N/A ORIGINATOR N/A CHECKER N/A DATED N/A
ATTACHMENTS: CALC DESIGN VERIFICATION CHECKLIST (FORM 599) ✓
FORMAT BACKFIT WORKSHEET ✓ TECHNICAL BACKFIT WORKSHEET ✓
RED LINE DWGS ✓ SIGNED OUT DWGS ✓
COPY OF SELECT PAGES OF EACH COMPUTER RUN N/A
WEB INPUT (LATEST FORM) ✓ MISC. BACKUP INFO N/A
SITE CALCULATIONS ✓

BY H. Zarian DATE 1-20-86
CHKD A. Moeller DATE 1-22-86
(FORM 599 HAS BEEN COMPLETED)

CC: R. ALEXANDRU
Y. LATIFAOGLU

ATTACHMENT C

TEXAS UTILITIES GENERATING COMPANY-COMANCHE PEAK SES UNIT NO. 2
CALCULATION TECHNICAL BACKFIT WORKSHEET
FOR NEW YORK OFFICE CABLE TRAY HANGERS
CALCULATION NO. CTH-2-11070 REV 1

THIS REVIEW APPLIES TO SUPPORT CTH-2- 11070 (REV 2), AND TO THE FOLLOWING OTHER SUPPORTS (AND REVISIONS): SUPPORT N/A (REV N/A),

N/A

- UNLESS OTHERWISE NOTED BELOW, INDICATE WITH A
- ✓ ITEMS CORRECTLY CONSIDERED IN THE DESIGN VERIFICATION, OR CONSERVATIVELY CONSIDERED IF THE CONSERVATISM DOES NOT CAUSE HANGER MODIFICATION.
- x ITEMS INCORRECTLY CONSIDERED OR OMITTED IN THE DESIGN VERIFICATION, OR CONSERVATIVELY CONSIDERED IF THE CONSERVATISM CAUSES HANGER MODIFICATION.
- N/A ITEMS NOT APPLICABLE.
- (FILL IN ALL SPACES)

COMPUTER PROGRAM: STRUDL VERSION 0385 OR 0985 N/A
GEOMETRY: BOUNDARY CONDITIONS ✓ ECCENTRICITIES ✓
LOADS: THERMOLAG ✓ SYSTEMS EFFECT (MAINLY VERT RISERS) N/A
LONGIT TRAY SPANS N/A THERMAL LOAD N/A
LOAD APPL POINTS ✓ LONGIT DIR SELF-WEIGHT (ALL SUPPORTS) ✓
SEISMIC G BASIS: PEAK N/A FREQ ✓ MRM ✓ MRM (SPECIFY VALUE) 1.25
FREQ CALC ✓ FREQ REQUIREMENT FOR ATTACHED CONDUITS N/A
DESIGN VERIFICATION:
MEMBERS: SLENDERNESS RATIO ✓ WARPING STRESS (NORMAL ✓ SHEAR ✓)
SRSS FOR SEISMIC (W/O DL) N/A ALL LOAD COMBINATIONS ✓
BOLT HOLE EFFECT N/A DIMENSIONAL TOLERANCE ✓
STRESS INTERACTION (GIVE CRITICAL VALUE) 0.82
CONNECTIONS: SRSS 3D WELD STRESS ✓ MIN WELD SIZE ✓
ALL LOAD COMBINATIONS ✓
ANCHORAGE: BOLT PRYING ACTION N/A
WELD WARPING STRESS (NORMAL ✓ SHEAR ✓)
ALL LOAD COMBINATIONS ✓ BOLT INTERACTION (GIVE CRITICAL VALUE) N/A
BASEPLATE FOOTPRINT LOADS (LATEST WEB INPUT FORM) ✓
STRUDL COMPUTER BUGS: TUBE SECTION STRESS CHECK N/A
ALLOWABLE AXIAL STRESSES N/A

BY H Zerran DATE 1-20-86
CHKD A. MARDEN DATE 1-22-86
(FORM 599 HAS BEEN COMPLETED)

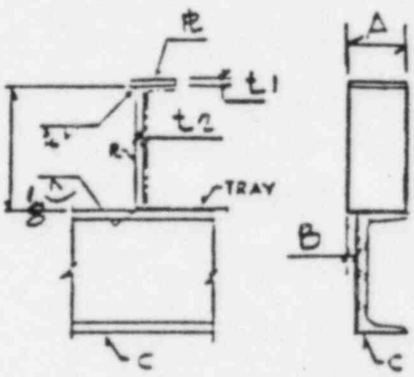
CC: R. ALEXANDRU
Y. LATIFAOGLU

CTH-11070

[redacted]

TRANSFERED BY: R. LEMOINE
MEASURED BY: C. NOLTE
DATE: 4-22-85
REVIEW BY S. CHAN
CTH-2-11070

ATTACHMENT E
SHEET 1 OF 3



CLAMP TYPE G

[redacted]

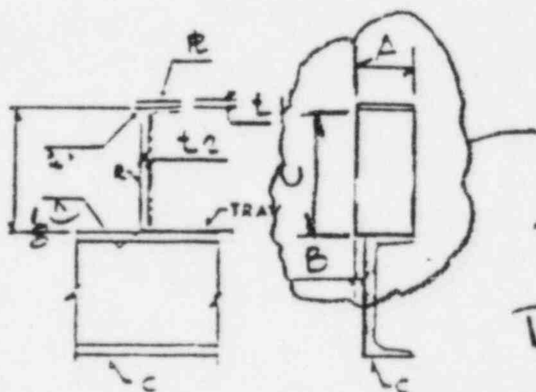
CLAMP No	1	2						
A=	2	2						
B=	1/16	0						
TOP PL THK t1	1/4	1/4						
VERT PL THK t2	1/4	1/4						

RECEIVED
JUN 10 1985
R. ALEXANDRU

VERIFY ALL INFORMATION FURNISHED
& ANY DEVIATION SHALL BE NOTED

TRANSFERED BY: R. LEMOINE
MEASURED BY: C. NOLTE
DATE: 4-22-85
REVIEW BY S. CHAN
CTH-2-11070

ATTACHMENT - E
SHEET 2 OF 3



CADD CELL IS SHOWN WITH "C" DIM, PLEASE ADD TO DETAIL & SCHED. IF REQ'D.
6/6/85
SLR

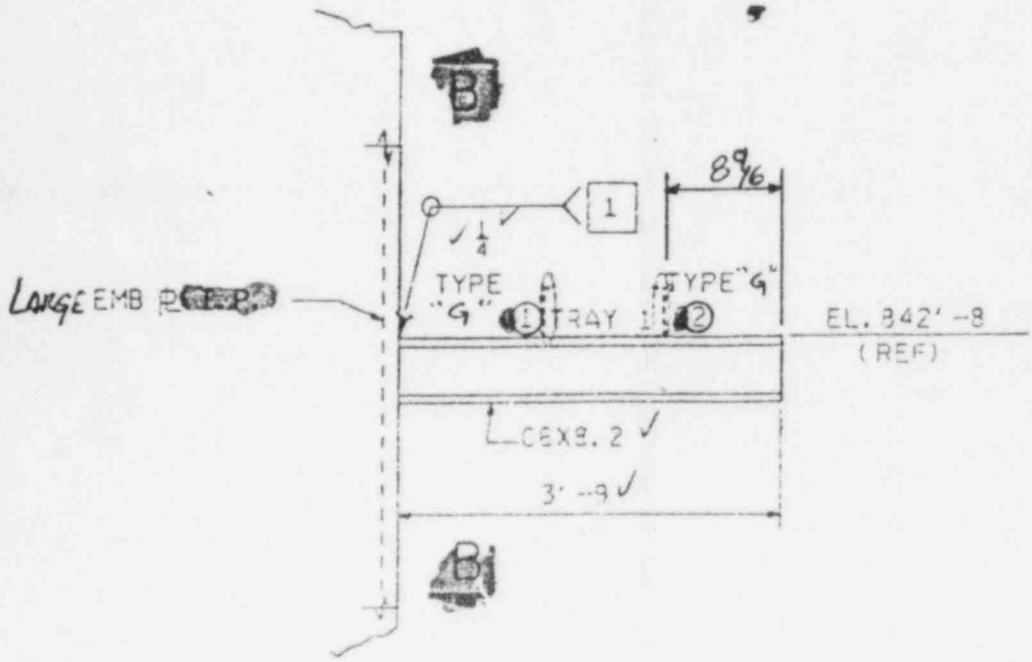
CLAMP TYPE G

[redacted]

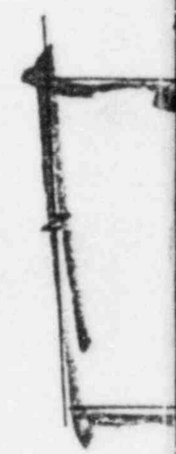
CLAMP N°	1	2						
A=	2	2						
B=	1/16	0						
C=								
TOP PL THK t1	1/4	1/4						
VERT PL THK t2	1/4	1/4						

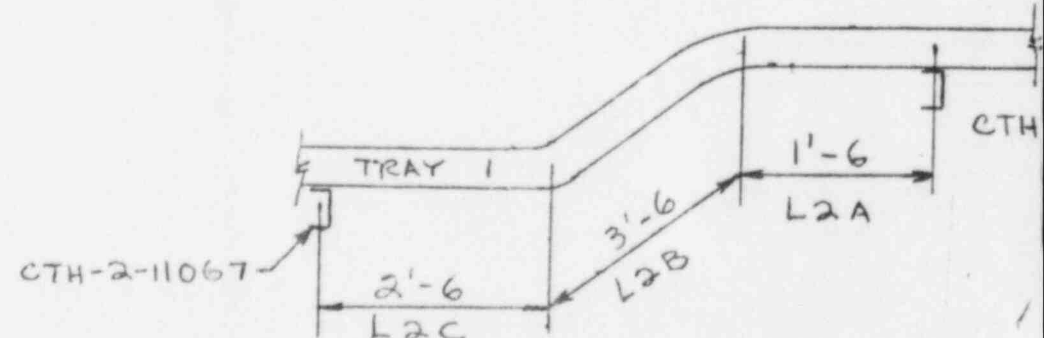
RECEIVED
JUN 10 1985
R. ALEXANDRU

ATTACHMENT E
SHEET 3 OF 3

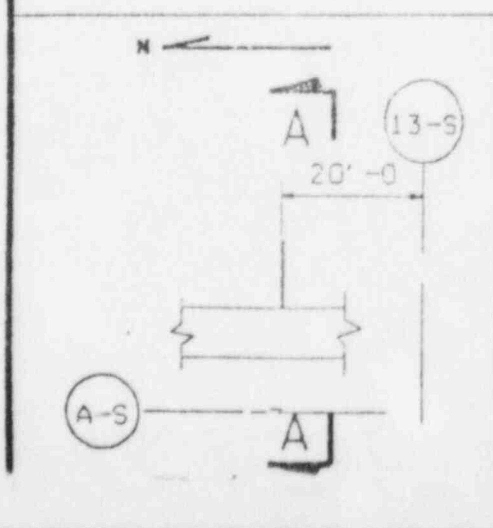


ELEVATION A-A





TRAY PROFILE
LOOKING WEST



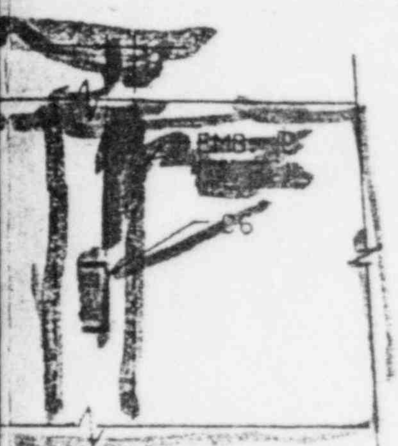
						G2 =	
TRAY 1	24x4	2'-10	11073	SEE TRAY PROFILE	11067	G1 =	
	SIZE	L1	CTH No	L2	CTH No	G DIM	BOLT MKG

CTH-2-11070

NOTES:

TRANSFERED BY: R. LEMOINE
MEASURED BY: C. NOLTE
DATE: 4-22-85

REVIEW By S. CHAN 5-21-85



☐ INDICATES WELD JOINT NUMBER.

○ INDICATES CLAMP NUMBER

CT-B-B

TI
APERTURE
CARD

Also Available On
Aperture Card

-2-11070

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
00	RR	AF/DP			THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-C0159-11070 REV. 1, FSE-C0253 (MAP), REF DWG: 2323-E2-0717-S R1, REF DWG: 2323-S-0903 R5 (CASE SP-7)
01					AS BUILT
					RECEIVED JUN 10 1985 R. ALEXANDRU

PASSED AS-BUILT
DONE BY V. Lee DATE 6-12-85
CHKD. BY A. JARLIK DATE 6-25-85

TEXAS UTILITIES
GENERATING CO.

EBASCO SERVICES INCORPORATED

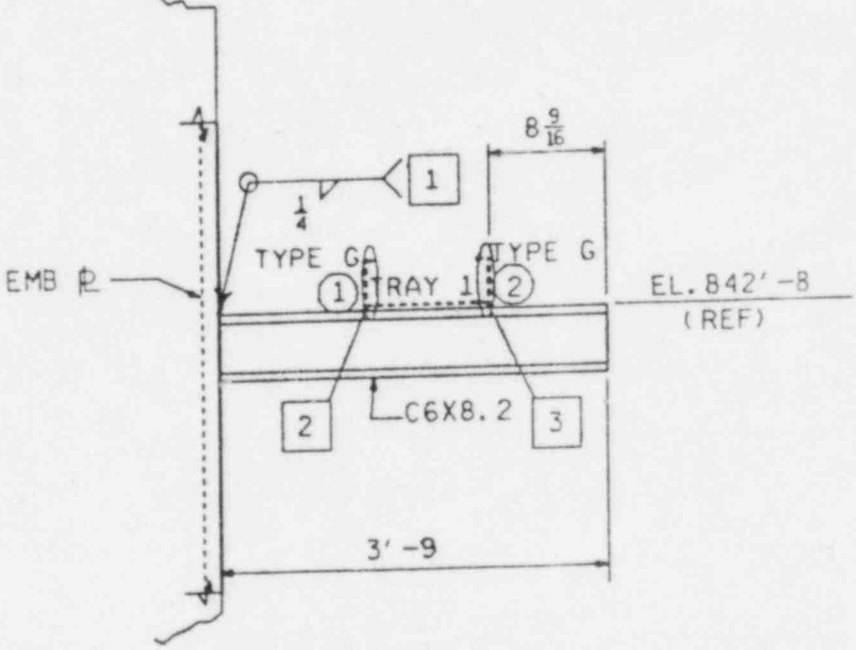
CABLE TRAY HANGER

WASH TYPE

CLASS 1
(NUCLEAR SAFETY-RELATED)
SAFETY CLASS 1 SEISMIC CATEGORY 1

C.P.S.E.S. | DWG. NO. | REV.

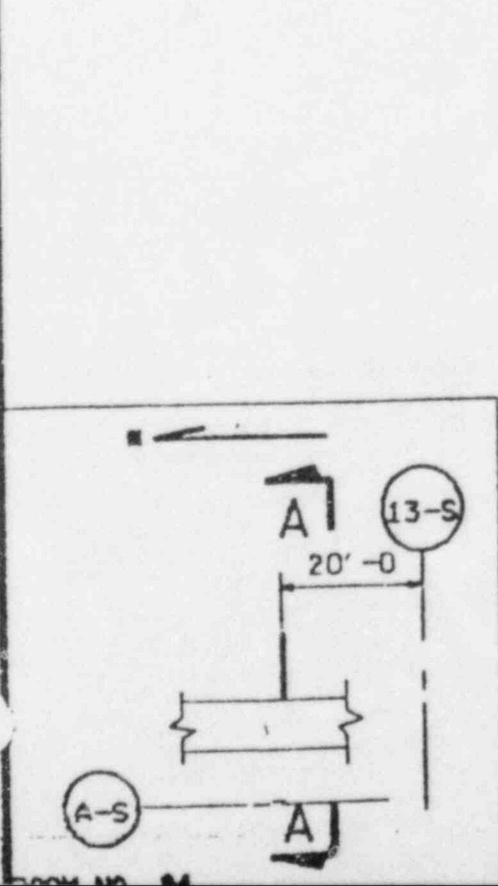
8603210035-01



ELEVATION A-A

TI
APERTURE
CARD

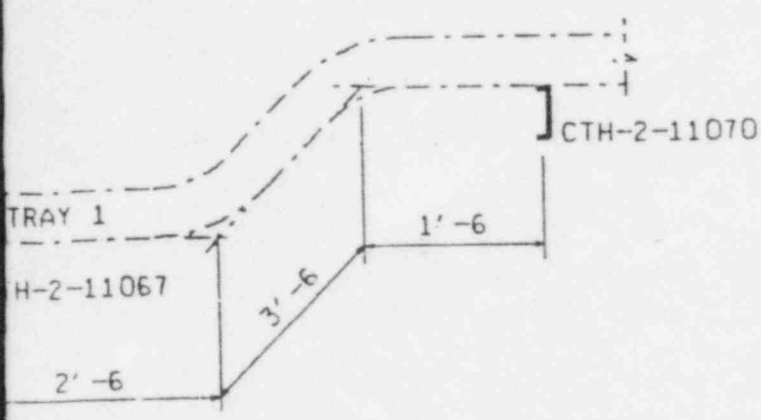
Also Available On
Aperture Card



** SEE TRAY ELEVATION

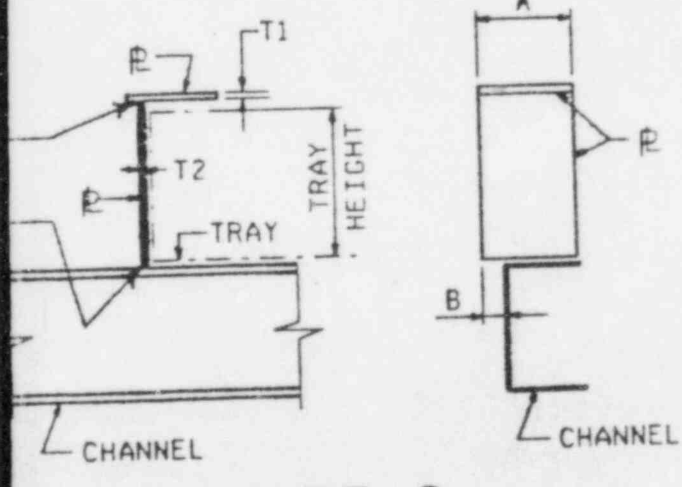
TRAY 1	24X4	2'-10	11073	**	11067
	SIZE	L1	CTH No	L2	CTH No

TRAY SPANS



TRAY ELEVATION

(LOOKING WEST)



TYPE G

CLAMP NO.	A	B	C	T1	T2
2	2	0	-	1/4	1/4
1	2	1/16	-	1/4	1/4

CLAMP TYPE G

8603210035-02

CLASS 1
(NUCLEAR SAFETY-RELATED)

SAFETY CLASS 1 SEISMIC CATEGORY 1
SAFETY CLASS 2 CLASS 1E
SAFETY CLASS 3 ASSOCIATED CIRCUITS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING CTH-2-NOTES.
2. APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.
3. THIS IS A TRANSVERSE SUPPORT.

ATTACHMENT F
SHEET 2 OF 2

☐ INDICATES JOINT NUMBER.

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
00	RR	AF DP			THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-00159-11070 REV. 1. FSE-00258 (MAP), REFDWG: 2323-E2-0717-5 R1 REFDWG: 2323-S-0903 R5 (CASE SP-7)
01	SJC	NC	JCY	CW RLa 7-2-85	AS BUILT

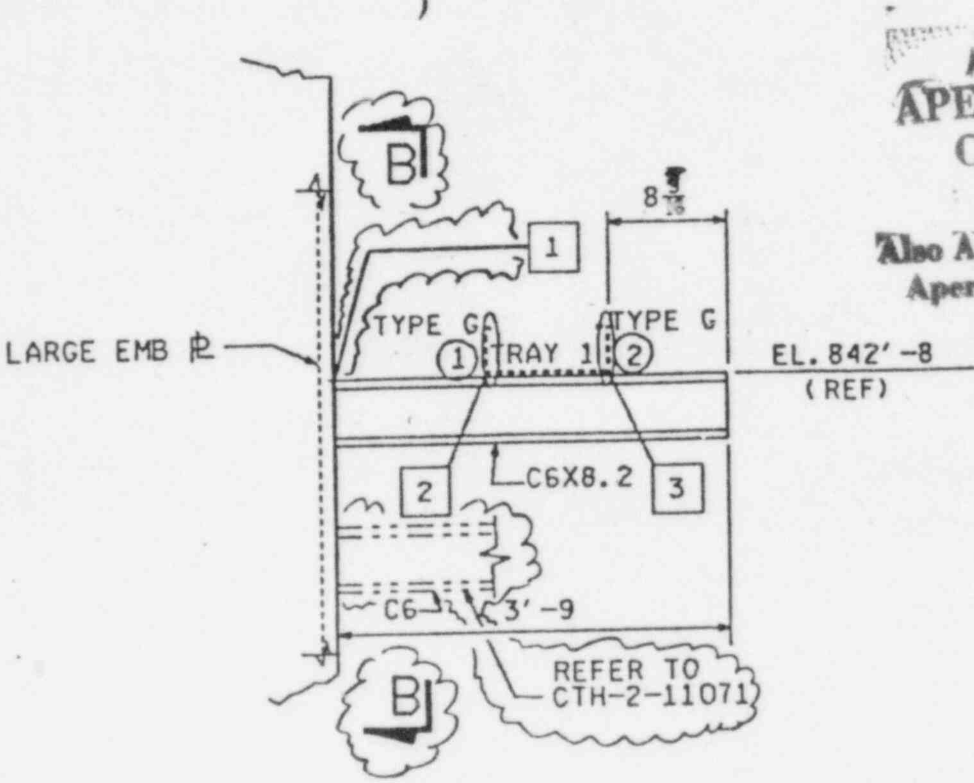
TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

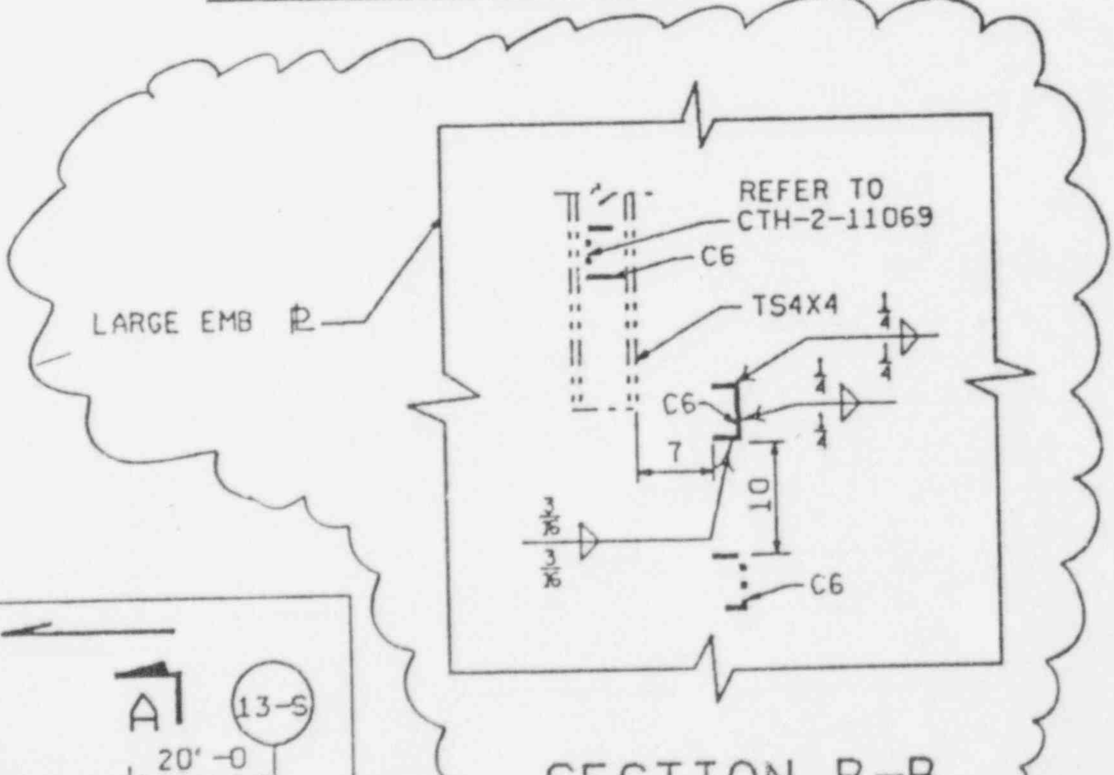
CABLE TRAY HANGER

C. P. S. E. S. GLEN ROSE TEXAS	DWG. NO. CTH-2-11070	REV. 01

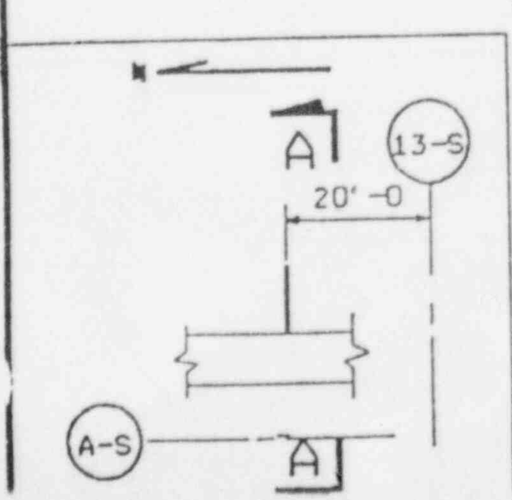
OS2:[214.007]110TOOL.DGN;003
29-JUN-85 20:29:29
123456789/0123456789/0123456789
0123456789/0123456789/0123456789/01234



ELEVATION A-A



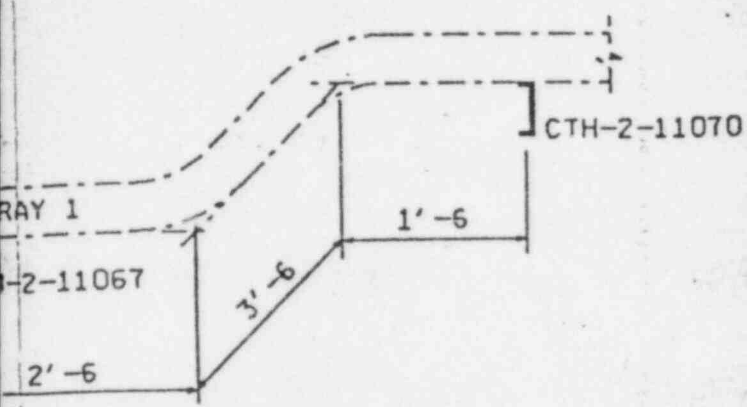
SECTION B-B



** SEE TRAY ELEVATION

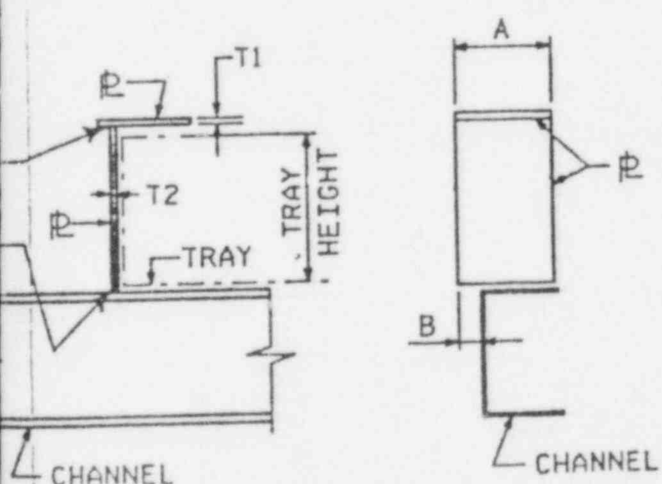
TRAY 1	24X4	2'-10	11073	**	11067
	SIZE	L1	CTH No	L2	CTH No

CTH-2-11070



TRAY ELEVATION

(LOOKING WEST)



TYPE G

2	2	0	-	1/4	1/4
1	2	1/16	-	1/4	1/4
CLAMP NO.	A	B	C	T1	T2
CLAMP TYPE G					

8603210035-03

CLASS 1

(NUCLEAR SAFETY-RELATED)

SAFETY CLASS 1 SEISMIC CATEGORY 1

SAFETY CLASS 2 CLASS 1E

ASSOCIATED CIRCUITS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING CTH-2-NOTES.
2. APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.
3. THIS IS A TRANSVERSE SUPPORT.

ATTACHMENT F

SHEET 1 OF 2

☐ INDICATES JOINT NUMBER.

◯ INDICATES CLAMP NUMBER.

FOR OFFICE AND ENGINEERING USE ONLY

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
00	RR	AF DP			THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-00159-11070 REV.1. FSE-00258 (MAP). REFDWG: 2323-E2-0717-S R1 REFDWG: 2323-S-0903 R5 (CASE SP-7)
01	SJC	RC	JCT	CW RSA 07-02-85	AS BUILT
02	PJT	PKB	GN	VP/Y.O 8/10/85	REVISED AS NOTED

TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

SAFEGUARDS BLDG UNIT #2

CABLE TRAY HANGER

C.P.S.E.S. GLEN ROSE TEXAS	DWG. NO. CTH-2-11070	REV. 02

CTH-2-11070

TRANSMITTAL #
PAGE ________ OF ________

FOOTPRINT LOAD TRANSMITTAL FORM

TO: TNE ENGINEERING SUPPORT

The following Footprint Loads are hereby transmitted for processing in accordance with TNE-AD-4:

1. Support No. CTH-2-11070
2. Support Rev. 2

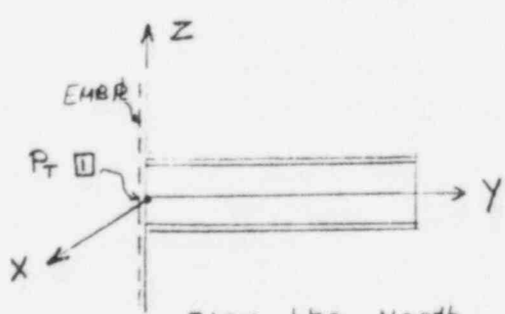
ATTACHMENT H
SHEET 1 OF 1

3. Support installed [V] not installed [ ] N.A.
4. Footprint Loads have been previously supplied [ ] YES [V] NO N.A.
5. Footprint Loads: @ P_T 1

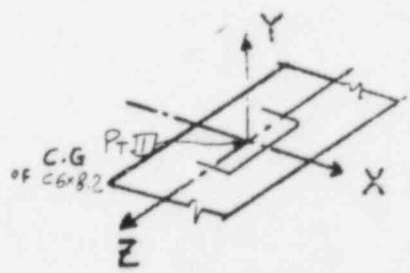
	F = (KIPS)			M = (FT-KIPS)		
	FX	FY	FZ	MX	MY	MZ
Design	0.060	0.377	1.547	3.202	0.097	0.125
Faulted	0.085	0.562	1.946	4.028	0.122	0.183

Loads are: Conservative [ ] N.A. Refined [V]

6. Prepared By: H. Zarian Date 1-20-86
   Checked By: A. MARDER Date 1-22-86
7. Attachment Size: X = 1.92 in. Z = 6 in.
8. Sketch:



Elev. Lkg North



9. Special Instructions: Distribute copy to TNE Civil/WEB
10. Acknowledgement of Receipt:
    Please acknowledge the receipt of this transmittal by signing, dating, and returning a copy of this form to ________
    Originator

____
Discipline

Received ________ Date ________
TNE Engineering Support

CTH-2-11070

EBASCO [illegible] ICES INCORPORATED

BY J. LEE DATE 6-12-85 SHEET 1 OF 9

CHKD. BY A. JARLIK DATE 6-25-85 OFS NO. 3317.002 DEPT. NO. 549

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Steam Electric Station Unit No.# 2

SUBJECT Standard Format for Seismic Design Calculation

ATTACHMENT J

SHEET 1 OF 5

SUPERSEDED

I. DESIGN DATA

1. CTH No. CTH-2-11070

2. Location: Building SFGD Rm = 94 FL. ELEV. 831'-6

3. Type of Support: Transverse ✓
   Longitudinal N.A.
   Multidirectional N.A.

4. Size of Cable Tray: 24x4
   Unit Wt. = 96#/FT WITH THERMOLAG

5. Span Length = 5'-0

6. Total Cable Tray Wt = 480#

7. Seismic design "g" value AT EL. 852'-6

SSE (H_T = ~~1.5~~ 1.25 x .82 = 1.025) (V = ~~1.5~~ 1.25 x 2.041 = 2.551) (H_L = 1.25 x 1.00 = 1.25)

OBE (H_T = ~~1.5~~ 1.25 x .55 = 0.688) (V = ~~1.5~~ 1.25 x 1.458 = 1.823) (H_L = 1.25 x 0.7 = 0.875)

8. No. of Earthquake Components to be considered = 3 ✓ (SUPPORT), 2 ✓ (TRAY), 1 N.A.

9. Anchorage

   Strip Plate N.A.

   Larger Embedded Plate ✓

   Surface Plate N.A., Hilti-Kwik Bolt N.A.
   Richmond Insert N.A.
   Hilti Super-Kwik Bolt N.A.

10. Type of Mounting : Ceiling Mounted N.A.
    Wall Mounted ✓
    Steel Mounted N.A.
    Floor Mounted N.A.

See New Form attached

CTH-2-11070

ATTACHMENT J

SHEET 2 OF 5

EBASCO SERVICES INCORPORATED

CALCULATION COVER SHEET

CLIENT TEXAS UTILITIES GENERATING CO. OFS NO. 3317

PROJECT COMANCHE PEAK UNIT NO. 2 DEPT NO. 549

SUBJECT CABLE TRAY HANGER

CALCULATION NO. CTH-2-11070 NUMBER OF SHEETS 9

PROBLEM AS-BUILT REVIEW R/B N.A, SFGD ✓, DC/B N.A., AUX/B N.A.

DESIGNED AND INSTALLED N.A.

SUPERSEDED

CONTAINS ASSUMPTIONS WHICH REQUIRE CONFIRMATION* YES N.A. NO ✓

ASSUMPTIONS CONFIRMED ON N.A. BY N.A

REV. NO.	SHEET NOS.	CALCULATION BY NAME	DATE	CHECKED BY NAME	DATE	OPTIONAL	REVIEWED OR APPROVED BY NAME	DATE
0	1-9	J. LEE	6-12-85	A. SARLIK	6-25-85			

PRELIMINARY ☐ N.A. FINAL ☑ SUPERSEDES CALC NO. N.A.

* CONFIRMATION OF DESIGN DATA TO BE VERIFIED BY FIELD.

CTH-2-11070

EBASCO SERVICES INCORPORATED

BY J. LEE DATE 6-12-85 SHEET 2 OF 9

CHKD. BY A. JARLIK DATE 6-25-85 OFS NO. 3317.002 DEPT. NO. 549

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Steam Electric Station Unit No. #2

SUBJECT Standard Format for Seismic Design Calculation

II. ANALYSIS METHOD

1. Computer N.A Run no. N.A Date N.A.

2. Hand ✓

ATTACHMENT J
SHEET 3 OF 5

III. DESIGN CALCULATION INCLUDES

1. Member Stress Evaluation ✓
2. Member Connection Detail Evaluation and ✓
3. Anchorage Evaluation N.A.

SUPERSEDED

IV. CONCLUSION

1. CTH is Adequate ☑
2. CTH is Adequate with conditions as noted on drawing [N/A]
3. CTH is Adequate as Modified [N/A]

ATTACHMENT J

SHEET 4 OF 5

HANGER LOAD SUMMARY
COMANCHE PEAK

CTH - 2 - 11070
SH. 9 OF 9

DATE 6-12-85
DATE 6-25-85

1. PREPARED BY: J. LEE
2. CHECKED BY: A. JARLIK
3. DISCIPLINE = CIVIL - SAG
4. SUPPORT NUMBER = CTH-2-11070
5. SUPPORT REV = —
6. CPSL NUMBER = —
7. CPSL REVISION = —
8. LOCATION (DESIGN/AS BUILT) = SFGD, RM 94
9. EMBEDDED PLATE NUMBER = —
10. LENGTH DIM. (LEFT/BOTTOM) = — FT. BY FIELD
11. WIDTH DIM. = — FT.
12. ATTACHMENT (X) = — IN.
ATTACHMENT (Z) = — IN.

13. THIS SHEET IS ATTACHMENT _ OF A TOTAL OF __ ATTACHMENTS FOR THIS SUPT.

14. LOADS @ PT "A" F=(KIPS) M=(FT-KIPS)

		FX	FY	FZ	MX	MY	MZ
DESIGN	OBE	± 0.377	± 1.547	± 0.060	± 0.097	± 0.125	± 3.202
FAULTED	SSE	± 0.562	± 1.946	± 0.085	± 0.122	± 0.183	± 4.028

SSE = OBE × 1.258 SSE = OBE × 1.46 SSE = OBE × 1.258

SUPERSEDED

15. LIST OF GANGED SUPPORTS:

1) ____
2) ____
3) ____
4) ____
5) ____
6) ____
7) ____
8) ____
9) ____
10) ____

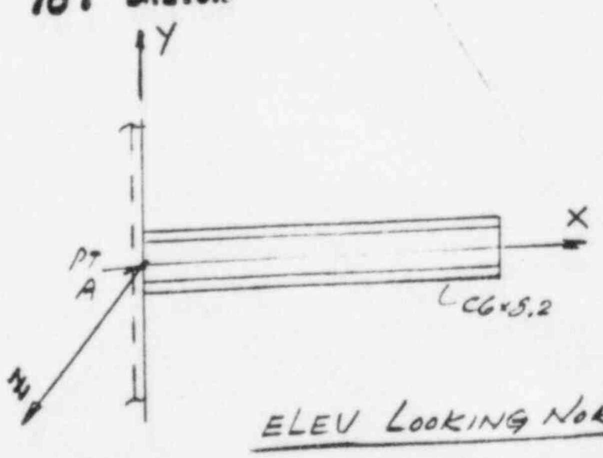
16.

REV.	DATE	PREPARED BY	CHECKED BY

17.

TRANSMITTAL RECORD	
REVISION	DATE

18. SKETCH



ELEV LOOKING NORTH

see new form attached

CTH - 2 - 11070

EBASCO SERVICES INCORPORATED

BY J. LEE DATE 6-12-85 TEXAS UTILITIES GENERATING CO. SHEET ~~8~~ 7 OF ~~9~~ 8

CHKD. BY A. JARLIK DATE 6-25-85 COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS OFS NO. 3317.002 DEPT. NO. 549

CLIENT

ATTACHMENT J

PROJECT

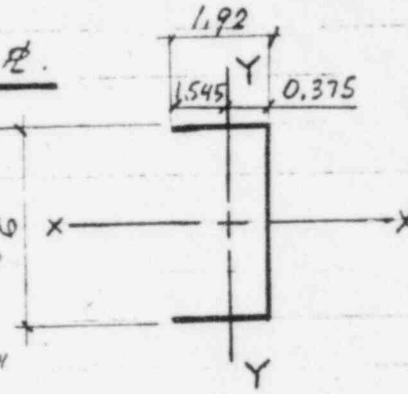
SHEET 5 OF 5

SUBJECT

SUPERSEDED

CHECKING WELD SIZES :—

WELDING BETWEEN C6×8.2 AND EMB. PL.



$F_z = 377^{\#}$ $\quad f_a = \frac{F_z}{A} = \frac{377}{9.84} = 38\ \#/\square''$

$M_x = 38426''^{\#}$ $\quad f_{bx} = \frac{M_x}{S_x} = \frac{38426}{17.52} = 2193\ \#/\square''$

$M_y = 1498''^{\#}$ $\quad f_{by} = \frac{M_y}{S_y} = \frac{1498}{2.1597} = 694\ \#/\square''$

$f_z = f_a + f_{bx} + f_{by} = 2925\ \#/\square''$

$A = 9.84$

$S_x = 1.92 \times 6 + \frac{6^2}{6} = 17.52$

$F_x = 60^{\#}$ $\quad f_{vx} = \frac{F_x}{A} = \frac{60}{9.84} = 6\ \#/\square''$

$M_z = 1160''^{\#}$ $\quad f_{tx} = \frac{M_z\, Y_c}{J} = \frac{1160 \times 3}{55.9} = 62\ \#/\square''$

$S_y = \frac{1.92^2(2 \times 6 + 1.92)}{3(6 + 1.92)} = 2.1597$

$f_x = f_{vx} + f_{tx} = 68\ \#/\square''$

$J = 55.9$

$f_{ty} = \frac{M_z\, X_c}{J} = \frac{1160 \times 1.545}{55.9} = 32\ \#/\square''$

$F_y = 1547^{\#}$ $\quad f_{vy} = \frac{F_y}{A} = \frac{1547}{9.84} = 157\ \#/\square''$

$f_y = f_{vy} + f_{ty} = 157 + 32 = 189\ \#/\square''$

$f = \sqrt{f_x^2 + f_y^2 + f_z^2} = \sqrt{68^2 + 189^2 + 2925^2} = 2932\ \#/\square''$

CAPACITY OF D/16" WELD $= \frac{D}{16} \cdot \frac{1}{\sqrt{2}} \cdot 21000 = 928\,D$

REQ'D $D = \frac{f}{928} = \frac{2932}{928} = 3.16 < 2 \times 4 =$ PROVIDED

OK

EBASCO SERVICES INCORPORATED

CTH-2-11070

BY H. Zarian DATE 1-20-86 SHEET 1 OF 1

CHKD. BY I. Hopder DATE 1-21-86 OFS NO. 3306.221 DEPT. NO. 550

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Unit #2

SUBJECT Cable Tray Hangers

ATTACHMENT K

THIS IS SITE CALCULATION AND CONTAINS 11 PAGES

- [x] Site calculation has been reviewed and accepted without comment.

- [ ] Site calculation has been reviewed with comments as noted below.

- [ ] Site calculation has been reviewed and the impact of the revisions are reflected on page of the main calculation.

ATTACHMENT K
SHEET ---- OF ----

CALCULATION COVER SHEET

CLIENT TEXAS UTILITIES GENERATING CO. OFS No. 3306.202

PROJECT COMANCHE PEAK STEAM ELECTRIC DEPT No. 653(SITE)

STATION UNIT #2 SAFEGUARDS BLDG.

SUBJECT CABLE TRAY HANGER DESIGN VERIFICATION

CALCULATION No. CTH-2-11070 NUMBER OF SHEETS 10

CONTAINS ASSUMPTIONS WHICH REQUIRE CONFIRMATION ☐ YES ☒ NO

ASSUMPTIONS CONFIRMED ON N/A BY

REV No.	SHEET NUMBERS	CALCULATION BY NAME	DATE	CHECKED BY NAME	DATE	OPTIONAL	REVIEWED OR APPROVED BY NAME	DATE
SR 01	ADDED ATTACHMENTS E&F AND CALC SHEET 1, REPLACED ATTACHMENT COVER SHEET AND UPDATED PACKAGE	P.K. Baru	12-13-85	T. Chang	12-16-85		D. Persaud	12/18/85
SR 00	MAIN CALCS. 2 ATTACH. # 1 3 ATTACH. # 2 1	P.K. Baru	8-7-85	N. GHASSABIAN	8-8-85		D. Persaud	12/18/85

PRELIMINARY ☐ FINAL ☒ SUPERCEDES CALC No.

NOTE: FOR ORIGINAL CALCULATION COMPLETION DATES & INITIALS SEE PACKAGE

EBASCO SERVICES INC.

CTH-2-11070 REV SR01
SHEET 1 of 3

CLIENT: TEXAS UTILITIES GENERATING COMPANY

PROJECT: COMANCHE PEAK STEAM ELECTRIC STATION UNIT #2

SUBJECT: TABLE OF CONTENTS

Prepared By: R.L. Bau Date 12-13-85

Checked BY: T. Chang Date 12-16-85

INPUT DOCUMENTATION (CTH)

CLIENT TEXAS UTILITIES GENERATING COMPANY OFS. No. 3305.202

PROJECT COMANCHE PEAK STEAM ELECTRIC STATION UNIT #2 SAFEGUARDS BUILDING DEPT No. 653 (Site)

SUBJECT CABLE TRAY HANGER DESIGN VERIFICATION

Calculation No. CTH-2-11070 REV. SR 00

Drawing No. CTH-2-11070 Rev. No. 02

I. Design Inputs

1. Seismic Design Criteria for Cable Tray Hangers;SAG-CP3-Rev.02 dated: June 21,1985.
2. Marked up Drawings Furnished by Task Force for Rev. 02
3. Copy of Drawing Rev. 01
4. Design Calculations from SAG-NY - NONE
5. Other (Specify) NONE

II. Design Outputs

Computer Run No. NONE Dated: ______ Attachment: ______

Computer Run No. ______ Dated: ______ Attachment: ______

Computer Run No. ______ Dated: ______ Attachment: ______

Other (Specify) ______

III. References:

NONE

Prepared By: R. K. Basu Date: 8-7-85

~~Checked~~ By: RAPatel Date: 8-10-85

APPROVED RP 8-10-85

BY P.K. Basu DATE 8-7-85 SHEET 3 OF 3

CHKD. BY N.GHASSABIAN DATE 8-8-85 OFS NO. 3306.202 DEPT. NO. 653

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK SES UNIT NO. 2

SUBJECT AS-BUILT CABLE TRAY HANGER SAFEGUARD BLDG.

SUPPORT NO. CTH-2-11070 RM NO 94 REV. NO. 02

EVALUATION:

1) THE WELD @ JOINT #1 BETWEEN C 6x8.2 AND EXISTING EMBEDDED PLATE IS REVISED AS SHOWN IN REV. #02 OF THE DRAWING. THE REVISED WELD IS O.K. BY ENGINEERING INSPECTION.

2) SEPARATION BETWEEN WELDED ATTACHMENTS SHOWN ON EMBEDDED PLATE DOES NOT AFFECT THE STRENGTH OF THE SUPPORT. EMBEDDED PLATE TO BE QUALIFIED BY EMBEDDED PLATE ANALYSIS GROUP.

DISPOSITION:

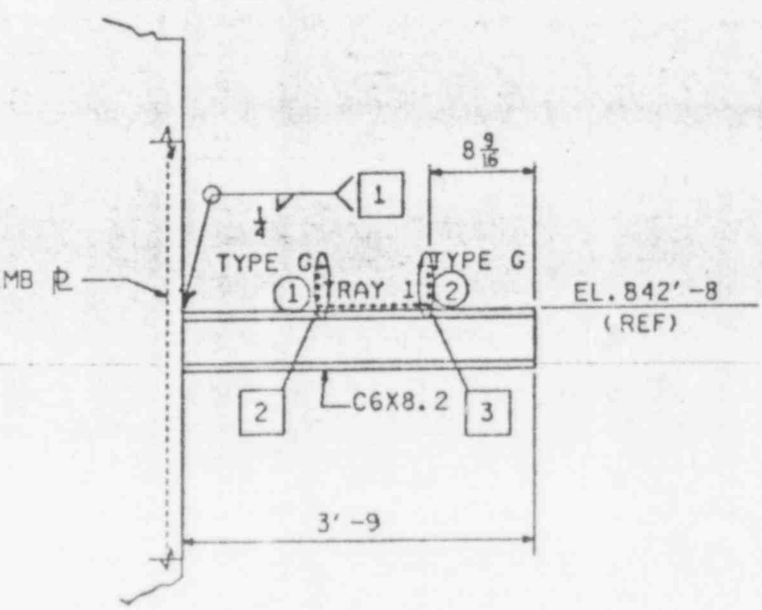
REVISION #02 TO THIS DRAWING IS ACCEPTABLE.

CTH-2-11070

ATTACHMENTS

(REV. SR 01)

A.	DESIGN INPUT	2
B.	SIGNED OUT COPY	1
C.	COMPUTER RUN NO.	N/A
D.	HANGER LOAD SUMMARY FORM	LATER
E.	WORKSHEET FOR CALCULATION PACKAGE PREPARATION	2
F.	CHECKLIST FOR DESIGN VERIFICATION	1
	TOTAL	6

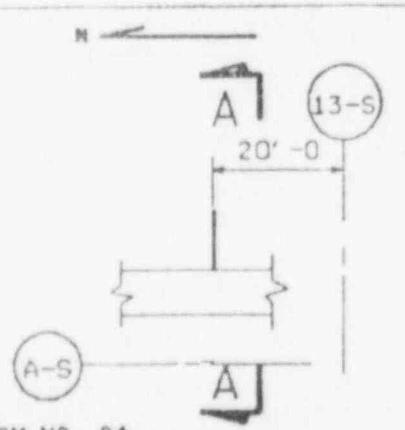


ELEVATION A-A

** SEE TRAY ELEVATION

TRAY 1	24X4	2'-10	11073	**	11067
	SIZE	L1	CTH No	L2	CTH No

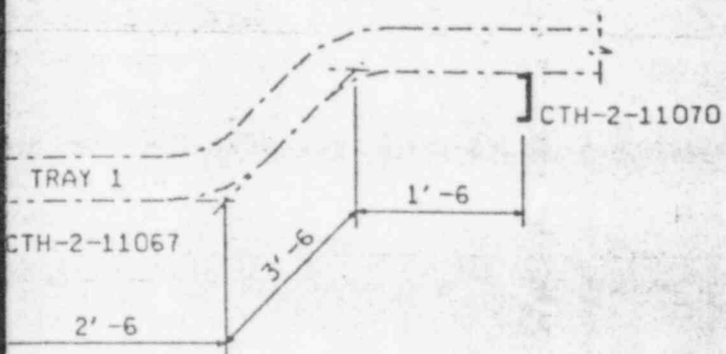
TRAY SPANS



ROOM NO. 94
LOCATION PLAN AT FL EL 831'-6

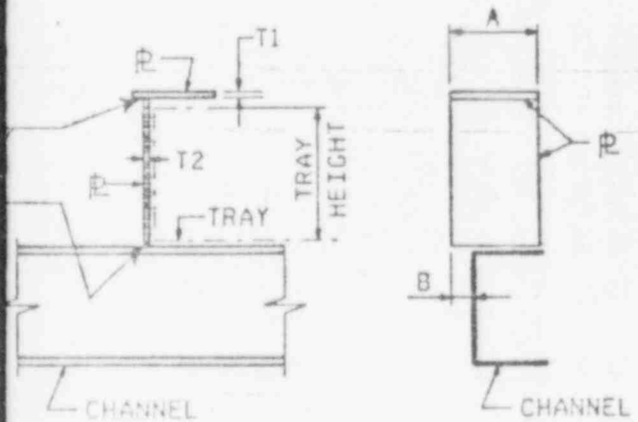
OS2:[214.OOT]1107001.DGN;003
01-JUL-85 12:31:33
12 456789/0123456789/0123456789
0123456789/0123456789/0123456789/01234

ATTACHMENT A



TRAY ELEVATION

(LOOKING WEST)



TYPE G

CLAMP NO.	A	B	C	T1	T2
2	2	0	-	1/4	1/4
1	2	1/16	-	1/4	1/4

CLAMP TYPE G

CLASS 1
(NUCLEAR SAFETY-RELATED)
SAFETY CLASS 1 SEISMIC CATEGORY 1
SAFETY CLASS 2 CLASS 1E
SAFETY CLASS 3 ASSOCIATED CIRCUITS

NOTES:

1. FOR GENERAL NOTES SEE DRAWING CTH-2-NOTES.
2. APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.
3. THIS IS A TRANSVERSE SUPPORT.

☐ INDICATES JOINT NUMBER.

APERTURE CARD

Also Available On Aperture Card

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
00	RR	AP DP			THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-00159-11070 REV. 1, FSE-00258 (MAP), REFDWG: 2323-E2-0717-S R1 REFDWG: 2323-S-0903 R5 (CASE SP-7)
01	JJC	NC	JCY	CW	AS BUILT

FOR REFERENCE ENGINEERING USE ONLY

TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

CABLE TRAY HANGER

C.P.S.E.S. GLEN ROSE TEXAS	DWG. NO. CTH-2-11070	REV. 01

8603210035-04

QS2:[214.00T1110T001.DGN;003
01-JUL-85 12:31:33
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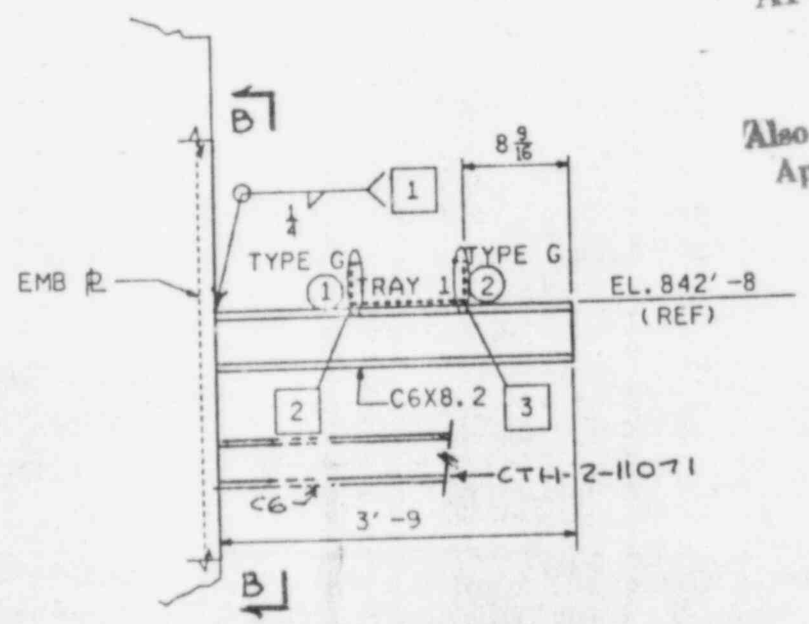
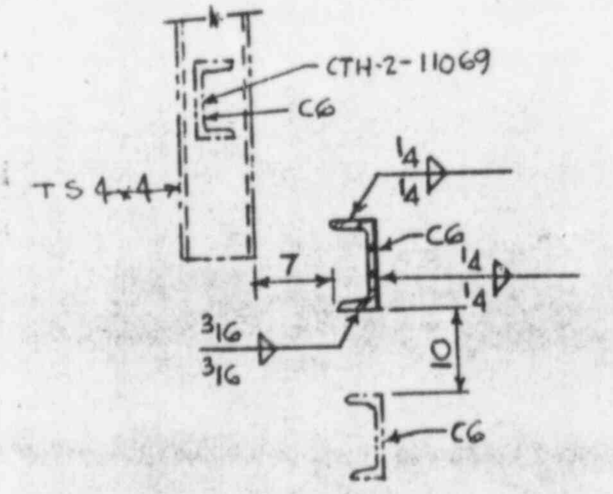
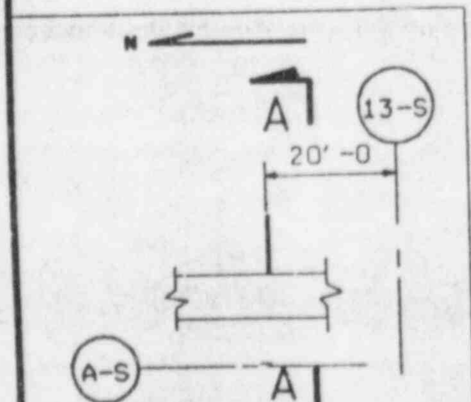
0123456789/0123456789/0123456789/01234



ELEVATION A-A



SECTION B-B



ROOM NO. 94
LOCATION PLAN AT FL EL 831'-6

** SEE TRAY ELEVATION

TRAY 1	24X4	2'-10	11073	**	11067
	SIZE	L1	CTH No	L2	CTH No

TRAY SPANS

ATTACHMENT A

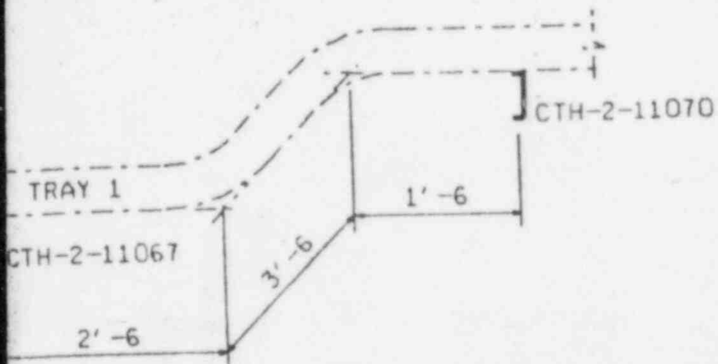
NOTES:

1. FOR GENERAL NOTES SEE DRAWING CTH-2-NOTES.
2. APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.
3. THIS IS A TRANSVERSE SUPPORT.

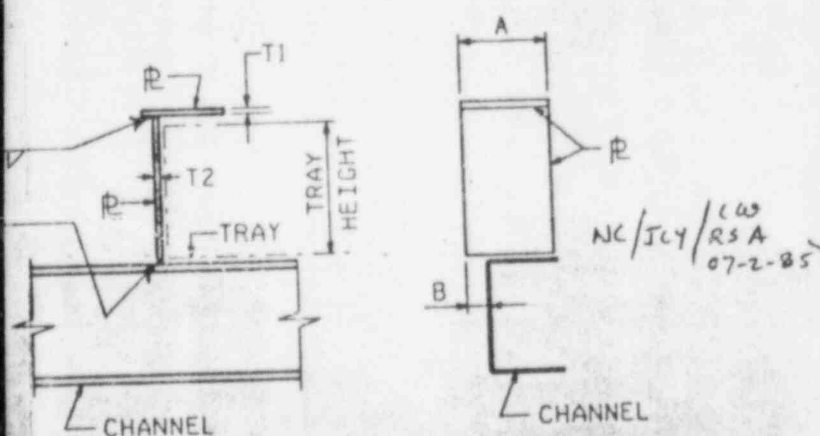
☐ INDICATES JOINT NUMBER.

TRANSFER COPY BY:
B. FRAISTAT 7/17/85
Checked By: S. Desai 07/24/85

FOR OFFICE AND ENGINEERING USE ONLY



TRAY ELEVATION
(LOOKING WEST)



TYPE G

2	2	0	-	1/4	1/4
1	2	1/16	-	1/4	1/4
CLAMP NO.	A	B	C	T1	T2
CLAMP TYPE G					

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
00	RR	AP DP			THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-00159-11070 REV. 1, FSE-00258 (MAP), REFDWG: 2323-E2-0717-S R1 REFDWG: 2323-S-0903 R5 (CASE SP-7)
01	ZIC	NC	JCY	CW RSA 7-2-85	AS BUILT
02	BF				~~RECONCILED CRAFT COMMENTS~~ REVISED AS NOTED

TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

SAFE

CABLE TRAY HANGER

C.P.S.E.S. GLEN ROSE TEXAS	DWG. NO. CTH-2-11070	REV. ~~01~~ 02

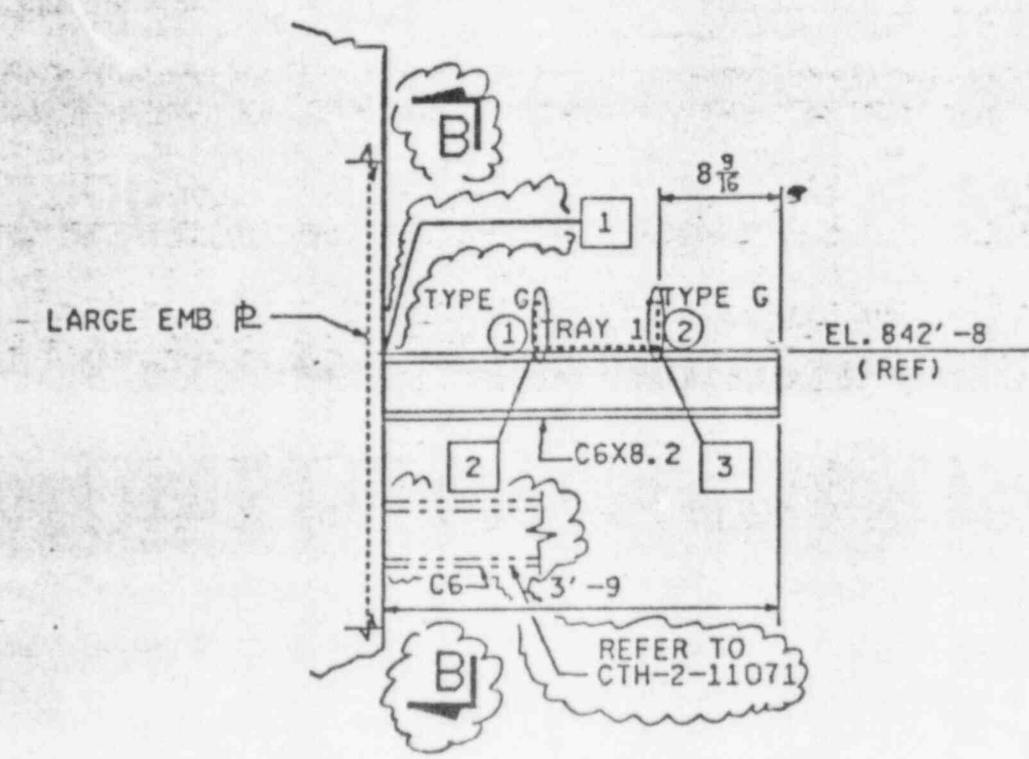
CLASS 1
(NUCLEAR SAFETY-RELATED)

SAFETY CLASS 1	SEISMIC CATEGORY 1
SAFETY CLASS 2	CLASS 1E
SAFETY CLASS 3	ASSOCIATED CIRCUITS

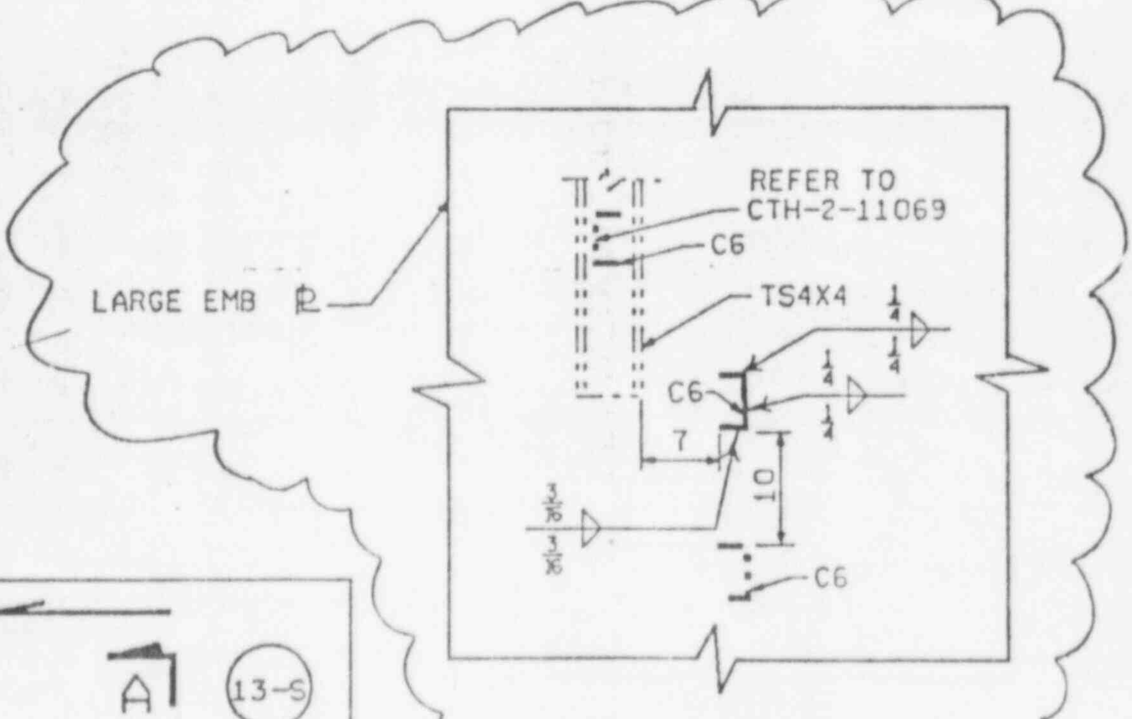
ORIGIN

SCALE

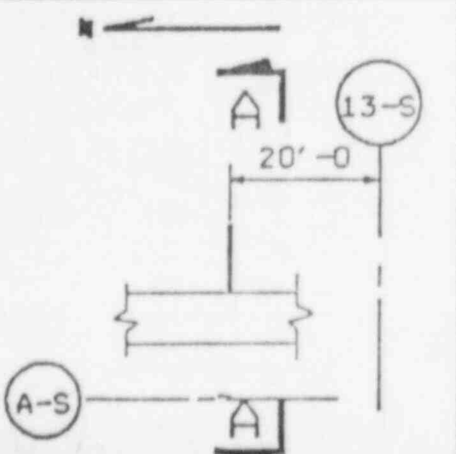
8603210035-05



ELEVATION A-A



SECTION B-B

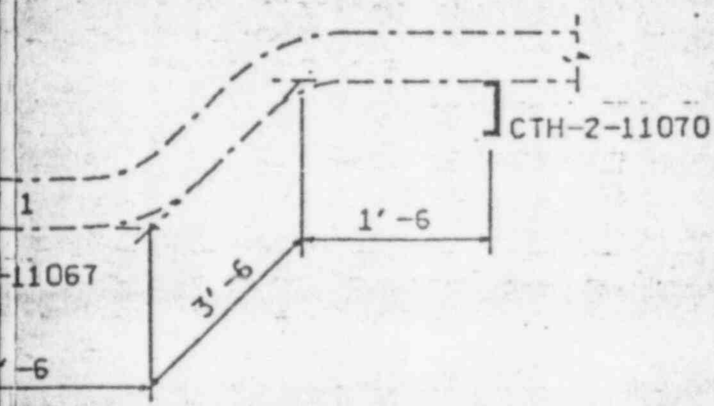


ROOM NO. 94

** SEE TRAY ELEVATION

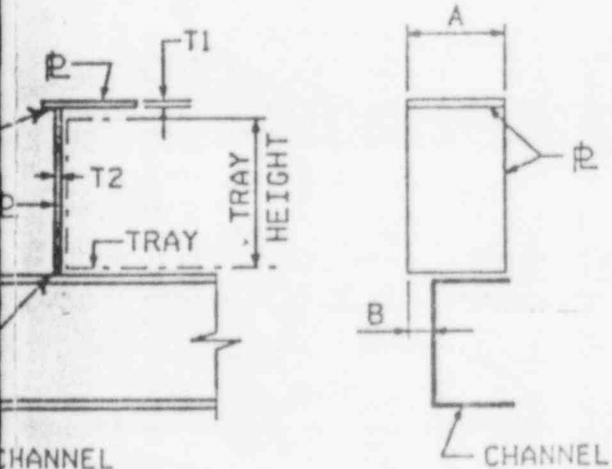
TRAY 1	24X4	2'-10	11073	**	11067
	SIZE	L1	CTH No	L2	CTH No

TRAY SPANS



TRAY ELEVATION

(LOOKING WEST)



TYPE G

CLAMP NO.	A	B	C	T1	T2
2	2	0	–	1/4	1/2
1	2	3/16	–	1/4	1/4

CLAMP TYPE G

CLASS 1
(NUCLEAR SAFETY-RELATED)
SAFETY CLASS 1 SEISMIC CATEGORY 1
SAFETY CLASS 2 CLASS 1E
SAFETY CLASS 3 ASSOCIATED CIRCUITS

NOTES: ATTACHMENT B

1. FOR GENERAL NOTES SEE DRAWING CTH-2-NOTES.
2. APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.
3. THIS IS A TRANSVERSE SUPPORT.

☐ INDICATES JOINT NUMBER.

◯ INDICATES CLAMP NUMBER.

FOR OFFICE AND ENGINEERING USE ONLY

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
00	RR	AF DP			THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-00159-11070 REV. 1, FSE-00258 (MAP), REFDWG: 2323-E2-0717-S R1 REFDWG: 2323-S-0903 R5 (CASE SP-7)
01	SJC	RC	JCT	CW RSA 07-02-85	AS BUILT
02	PJT	PKB	GN	VP/YO 8/10/85	REVISED AS NOTED

TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

SAFEGUARDS BLDG UNIT #2
CABLE TRAY HANGER

C.P.S.E.S. GLEN ROSE TEXAS	DWG. NO. CTH-2-11070	REV. 02

8603210035-06

ATTACHMENT E

EBASCO SERVICES INCORPORATED

BY L.L. Barr DATE 12-13-85

CHKD. BY T. Chang DATE 12-16-85

SHEET 1 OF 2

OFS NO. 3306.202 DEPT. NO. 653

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Steam Electric Station UNIT No 2

SUBJECT Worksheet For Calculation CTH-2-11070 Rev. SR01

ITEM No.	ITEM	Yes or NA Preparer	Yes or NA Checker
1	Is the problem stated, clear and complete?	YES	YES
2	Is Generic Conduit Support number w/revision number referenced?	N/A	N/A
3	Are modifications from Generic Conduit/JB support stated clear and complete?	N/A	N/A
4	Are design inputs clearly identified & complete?	YES	YES
5	Are assumptions clearly stated and acceptable ?	YES	YES
6	Are assumptions to be verified later identified, 'yes' box on cover sheet checked, and punchlisted?	N/A	N/A
7	Are references, including other calculations and sources listed?	N/A	N/A
8	Are formula and equations applicable, defined and referenced with the exception of AISC or Blodgett?	N/A	N/A
9	Is conclusion statement added, clear and correct?	YES	YES
10	Is the drawing revision number identified in the calculations?	YES	YES
11	Are all comments by the checker incorporated or otherwise reconciled and documented?	YES	YES
12	As a minimum, is the Computer Run Cover Sheet completed and made as an attachment, and referenced in the calculation?	N/A	N/A
13	Are Task Force marked up prints signed, checked and dated by Task Force?	YES	YES
14	Are all attachments identified and labeled?	YES	YES
15	Are superseded original calculations marked superseded?	N/A	N/A
16	Are all calculation sheets initialed and dated?	YES	YES
17	Are all calculation sheets and attachments arranged properly?	YES	YES

881/8-81

ATTACHMENT E

EBASCO SERVICES INCORPORATED

BY R.L.Barr DATE 12-13-85 SHEET 2 OF 2

CHKD. BY T. Chang DATE 12-16-85 OFS NO. 3306.202 DEPT. NO. 653

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Steam Electric Station UNIT No 2

SUBJECT Worksheet For Calculation CTH-2-11070 Rev. SR01

ITEM No.	ITEM	Yes or NA Preparer	Yes or NA Checker
18	Is approval letter from N.Y.O allowing Site-SAG to sign-off the drawing made as Attachment?	N/A	N/A
19	Is Footprint Load sheet (HLS Form) prepared, checked and made an Attachment?	LATER	LATER

0699(COM)/10-85

EBASCO SERVICES INCORPORATED

CHECKLIST FOR DESIGN VERIFICATION OF CABLE TRAY HANGERS AND CONDUIT SUPPORT DRAWINGS AND CALCULATIONS BY DESIGN REVIEW METHOD

TEXAS UTILITIES GENERATING CO.
COMANCHE PEAK PROJECTS

ATTACHMENT F
CTH-2-11070

DOCUMENT NUMBER	REVISION	DOCUMENT NUMBER	REVISION
DWG CTH-2-11070	02		
CALC CTH-2-11070	SR01		

QUESTIONS (SHALL BE ANSWERED BY THE INDEPENDENT VERIFIER)	CALCS	DRAWINGS
1. WERE THE INPUTS CORRECTLY SELECTED AND INCORPORATED INTO DESIGN?	YES	YES
2. ARE ASSUMPTIONS NECESSARY TO PERFORM THE DESIGN ACTIVITY ADEQUATELY DESCRIBED AND REASONABLE? WHERE NECESSARY ARE THE ASSUMPTIONS IDENTIFIED FOR SUBSEQUENT REVERIFICATIONS WHEN THE DETAILED DESIGN ACTIVITIES ARE COMPLETED?	YES	NA
3. ARE THE APPROPRIATE QUALITY AND QUALITY ASSURANCE REQUIREMENTS SPECIFIED?	YES	YES
4. ARE THE APPLICABLE CODES, STANDARDS AND REGULATORY REQUIREMENTS INCLUDING ISSUE AND ADDENDA PROPERLY IDENTIFIED AND ARE THEIR REQUIREMENTS FOR DESIGN MET?	YES	YES
5. HAVE FEASIBILITY AND PRACTICALITY OF CONSTRUCTION BEEN REVIEWED?	NA	YES
5a. HAS OPERATING EXPERIENCE BEEN CONSIDERED?	NA	NA
6. HAVE THE DESIGN INTERFACE REQUIREMENTS BEEN SATISIFIED?	NA	NA
7. WAS AN APPROPRIATE DESIGN METHOD USED?	YES	YES
8. IS THE OUTPUT REASONABLE COMPARED TO TO INPUTS?	YES	NA
9. ARE THE SPECIFIED PARTS, EQUIPMENT AND PROCESSES SUITABLE FOR THE REQUIRED APPLICATION?	YES	YES
10. ARE THE SPECIFIED MATERIALS COMPATIBLE WITH EACH OTHER AND THE DESIGN ENVIRONMENTAL CONDITIONS TO WHICH THE MATERIAL WILL BE EXPOSED?	YES	YES
11. HAVE ADEQUATE MAINTENANCE FEATURES AND REQUIREMENTS BEEN SPECIFIED?	NA	NA
12. ARE ACCESSIBILITY AND OTHER DESIGN PROVISIONS ADEQUATE FOR PERFORMANCE OF NEEDED MAINTENANCE AND REPAIR?	NA	NA
13. HAS ADEQUATE ACCESSIBILITY BEEN PROVIDED TO PERFORM THE IN SERVICE INSPECTION EXPECTED TO BE REQUIRED DURING THE PLANT LIFE?	NA	NA
14. HAS THE DESIGN PROPERLY CONSIDERED RADIATION EXPOSURE TO THE PUBLIC AND PLANT PERSONNEL?	NA	NA
15. ARE THE ACCEPTANCE CRITERIA INCORPORATED IN THE DESIGN DOCUMENTS SUFFICIENT TO ALLOW VERIFICATION THAT DESIGN REQUIREMENTS HAVE BEEN SATISFACTORILY ACCOMPLISHED?	YES	YES
16. HAVE ADEQUATE PREOPERATIONAL AND SUBSEQUENT PERIODIC TEST REQUIREMENTS BEEN APPROPRIATELY SPECIFIED?	NA	NA
17. ARE ADEQUATE HANDLING, STORAGE, CLEANING AND SHIPPING REQUIREMENTS SPECIFIED?	NA	NA
18. ARE ADEQUATE IDENTIFICATION REQUIREMENTS SPECIFIED?	YES	YES
19. ARE REQUIREMENTS FOR RECORD PREPARATION REVIEW, APPROVAL, RETENTION, ETC. ADEQUATELY SPECIFIED?	YES	YES
20. HAVE THE INDEPENDENT VERIFIER'S COMMENTS BEEN RESOLVED WITH THE PREPARER?	YES	YES

LEGEND: YES = ACCEPTABLE
NA = NOT APPLICABLE

T Chang — INDEPENDENT VERIFIER SIGNATURE

12-16-85 — DATE

EBASCO SERVICES INCORPORATED
CALCULATION COVER SHEET

CTH-2-10146 SH. i
REV. 1

CLIENT: TEXAS UTILITIES GENERATING CO. OFS No. 3306.221

PROJECT: COMANCHE PEAK UNIT No. 2 DEPT No. 550

SUBJECT: CABLE TRAY HANGER

CALCULATION No. CTH-2- 10146 NUMBER OF SHEETS 79

PROBLEM: AS-BUILT REVIEW ✓ DESIGNED AND INSTALLED NA

THIS CALCULATION IS APPLICABLE TO DWG CTH-2- 10146 (Rev 02)

AND ALSO CTH-2- NA (Rev) CTH-2- NA (Rev)

CTH-2- ____ (Rev) CTH-2- ____ (Rev)

CTH-2- ____ (Rev) CTH-2- ____ (Rev)

COMPUTER RUN No. J 1649 A (DYNAMIC) DATE 1-8-86

J 9712 A (STATIC) 1-13-86

NA NA

CONTAINS ASSUMPTIONS WHICH REQUIRE CONFIRMATION YES NA NO ✓

ASSUMPTIONS CONFIRMED ON NA BY NA

REV. No.	SHEET Nos.	COVER SHEET BY NAME	DATE	COVER SHEET CHECKED BY NAME	DATE	CALC. PACKAGE REVIEWED BY NAME	DATE
*1	SH. 1 TO 16 REPLACED: COVER SHEET. ADDED: TABLE OF CONTENTS, ATTACH'S: A-C, E-K	K Reddy	1-28-86	BIMAL BANERJEE	1-28-86		
0		SEE NOTE BELOW		SEE NOTE BELOW			

PRELIMINARY NA FINAL ✓ SUPERSEDES CALC No. 2-10146 (REV0)

NOTE: FOR ORIGINAL CALCULATION COMPLETION DATES AND INITIALS, SEE PACKAGE

* NO DRWG. REVISION REQUIRED.

CTH-2-10146

SHT. ii

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK SES UNIT No. 2
DESIGN VERIFICATION OF CTH-2-10146

REV. 1

TABLE OF CONTENTS

BY K Reddy DATE 1-27-86
CHKD. BY [illegible] DATE 1-27-86

EBASCO SERVICES INCORPORATED CTH - 2-10146

BY K. Reddy DATE 1-7-86 SHEET 1 OF 16

CHKD. BY B Banerjee DATE 1-24-86 REV 1 OFS NO. 3306.221 DEPT. NO. 550

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Steam Electric Station Unit No. #2

SUBJECT Standard Format for Seismic Design Calculation

I. DESIGN DATA

1. CTH No. 2-10146

2. Location: Building SFGD Room No 83 FLOOR ELEV. 810'-6

3. Type of Support: Transverse NA

Longitudinal ✓

Multidirectional NA

4. Anchorage

Strip Plate NA

Larger Embedded Plate ✓

Surface Plate NA, Hilti-Kwik Bolt NA

Richmond Insert NA

Hilti Super-Kwik Bolt NA

5. Type of Mounting: Ceiling Mounted ✓

Wall Mounted NA

Steel Mounted NA

Floor Mounted NA

II. CONCLUSION

1. CTH is Adequate ☑

2. CTH is Adequate with conditions as noted on drawing NA

3. CTH is Adequate as Modified NA

☑ Site calculation does not change the above conclusion. See Attachment "K".

CTH-2-1014-S

EBASCO SERVICES INCORPORATED

BY K. Reddy DATE 1-7-86 REV. 1 SHEET 2 OF 16

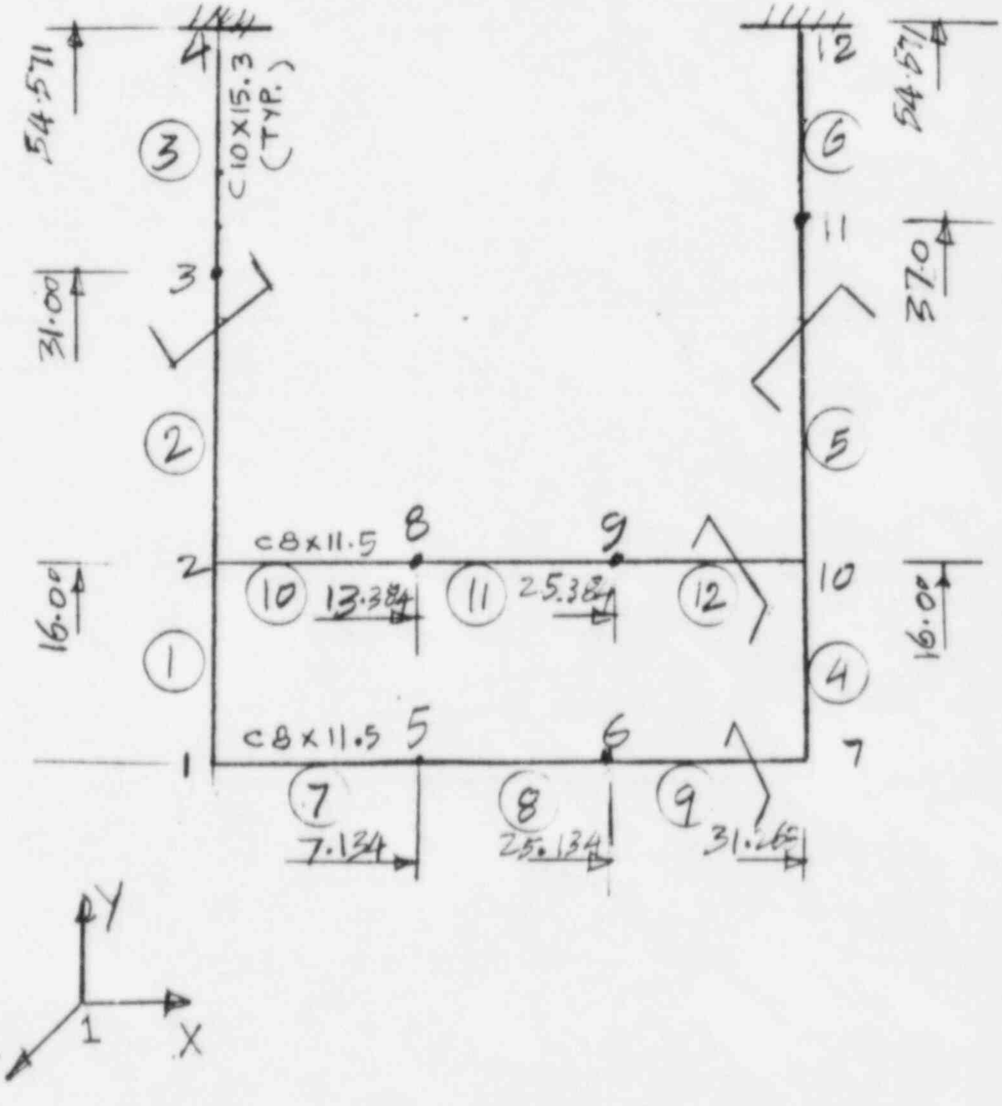
CHKD. BY R Bangin DATE 1-24-86 OFS NO. 3306.221 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS

MODEL
IN UNIT



CTH-2-10146

EBASCO SERVICES INCORPORATED

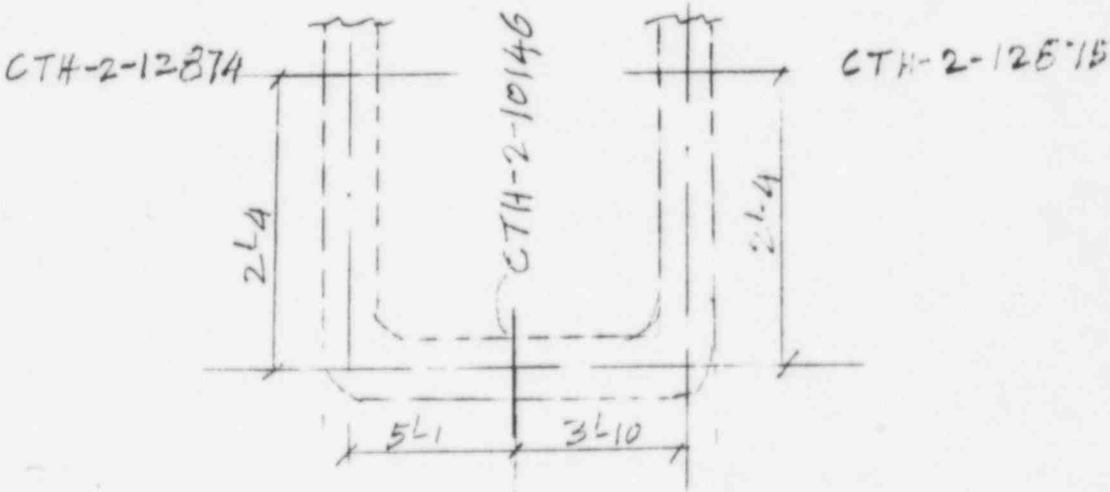
BY K. Reddy DATE 1-7-86 REV. 1 SHEET 3 OF 16

CHKD. BY [illegible] DATE 1-24-86 OFS NO. 3306.221 DEPT. NO. 549

CLIENT ~~TEXAS UTILITIES GENERATING CO.~~

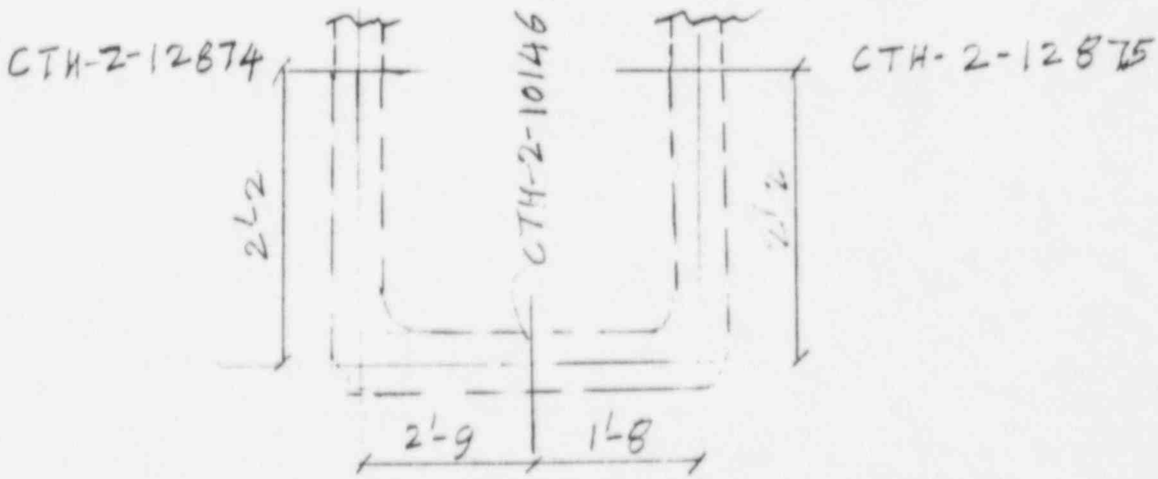
PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS



Plan View

Tray #1 (12"x4")



Plan View

Tray #2 (18"x4")

581/8-81

EBASCO SERVICES INCORPORATED

BY K REddy DATE 1-7-86 REV. 1 SHEET 4 OF 16
CHKD. BY BRanjin DATE 1-24-86 OFS NO. 3306.221 DEPT. NO. 549
CLIENT TEXAS UTILITIES GENERATING CO.
PROJECT COMANCHE PEAK UNIT 2
SUBJECT CABLE TRAY HANGERS

D.L

Tray-1 Tran. span $= \frac{7'-5 + 6'-2}{2} = 6'-9\frac{1}{2}$

D.L $= 6.792' \times 51 = 345^{\#}$

Long. span $= (5'-1 + 3'-10) + \frac{1}{2}(2'-4 + 2'-4) = 11'-3$

DL $= 11.25' \times 51 = 574^{\#}$

Tray-2 Tran-span $= \frac{4'-11 + 3'-10}{2} = 4'-4\frac{1}{2}$

D.L $= 4.375' \times 74 = 324^{\#}$

Long. span $= (2'-9 + 1'-8) + \frac{1}{2}(2'-2 + 2'-2) = 6'-7$

D.L $= 6.58 \times 74 = 487^{\#}$

NOTE: THERMAL LOAD NOT CONSIDERED - TRAY SPAN FREE TO EXPAND IN N-S DIRECTION.

581/8-81

Results from Computer Run # J1649A
Dated 1-8-86

support frequency (Hz)

		Tray frequ. (from tables)
Trans	X = 12.65	12x4 span (7.5) = 26.12
Vert	Y = 83.54 >33Hz	span (7.5) = 12.20
Long	Z = 27.50	f span (16') = 74.88 > 33Hz

system frequency

Trans $f_{sys \cdot x}$ (E-W) — $\frac{1}{f_{sys}^2} = \frac{1}{12.65^2} + \frac{1}{26.12^2}$ = 11.39 Hz

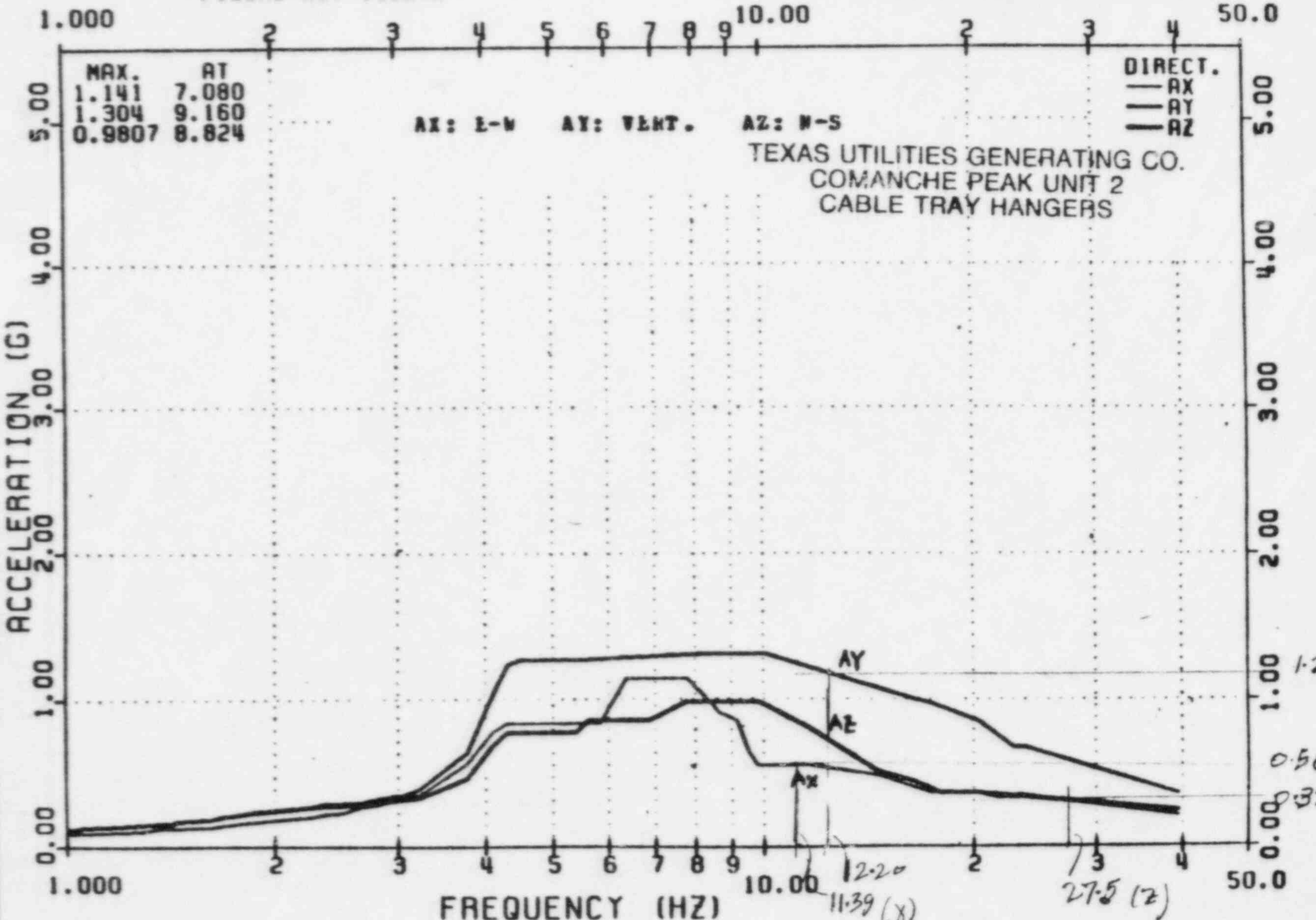
Vert $f_{sys \cdot y}$ — = 12.20 = 12.20 Hz

Long $f_{sys \cdot z}$ (N-S) — = 27.50 = 27.50 Hz

TUSI-REFINED RESPONSE SPECTRA FOR SAFEGUARDS BLDG.

FLOOR RESPONSE SPECTRA FOR 1/2SSE;
FIGURE NO. 1428-B

DAMPING = 0.04
AT ELEVATION 831.50 FEET



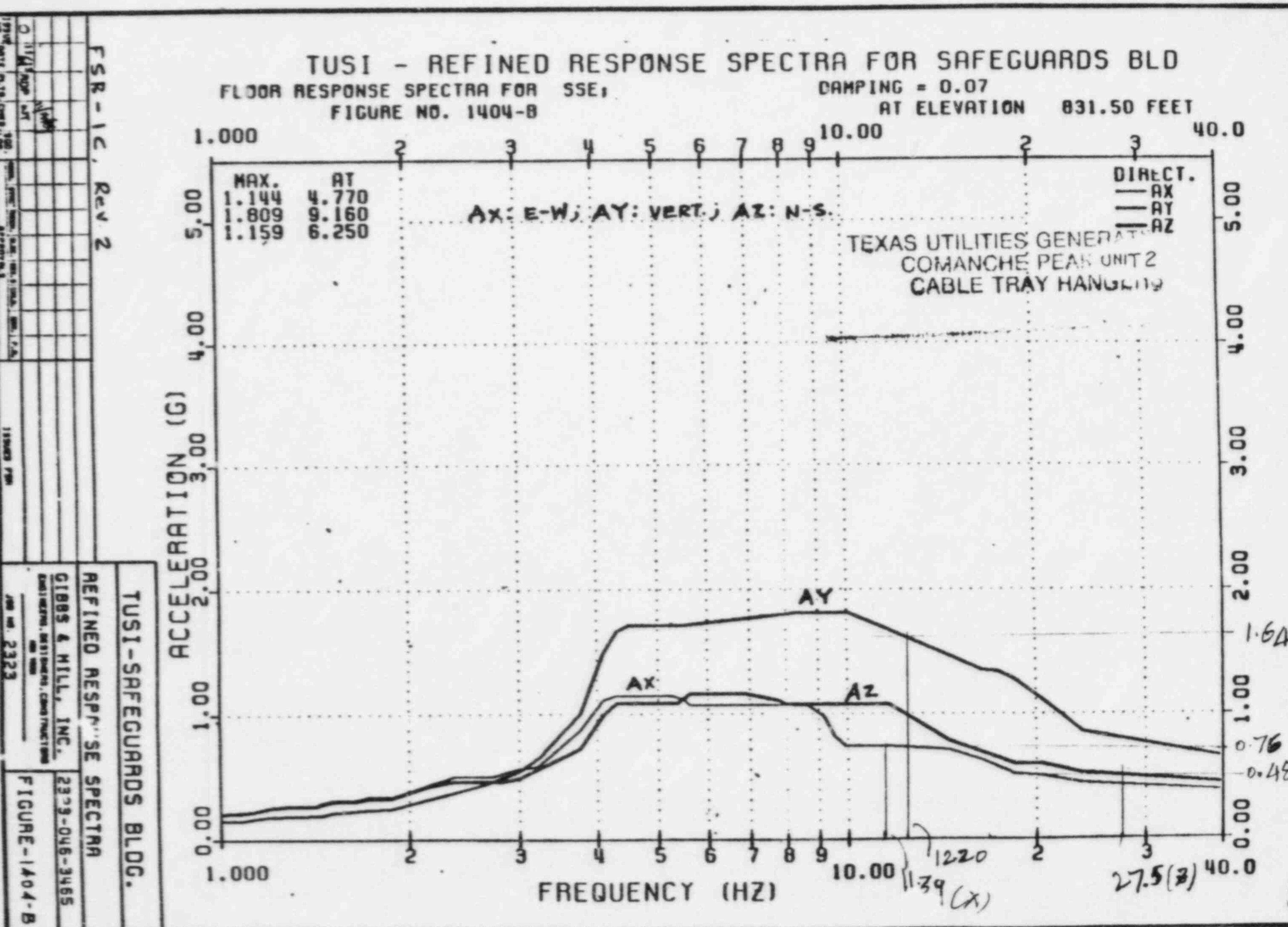
FSB-IE, Rev. 1

TUSI-SAFEGUARDS BLDG.
REFINED RESPONSE SPECTRA
GIBBS & HILL, INC.
JOB NO. 2323
FIGURE-1428-B

BY: K. Reddy 1-24-86
REV. 1 CHK BY: B. Rang 1-24-86
SHT 66 of 16

98

SHEET 107 (6/14/85)



By: K. Reddy 1-8-86
CHK BY: B. Bany 1-24-86 REV. 1
CTH-2-10146
SHT 7 of 16

SHEET 99 (6/14/85)

CTH-2-10146

EBASCO SERVICES INCORPORATED

BY K. Reddy DATE 1-8-86 REV.1 SHEET 8 OF 16

CHKD. BY [illegible] DATE 1-24-86 OFS NO. 3306.221 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS

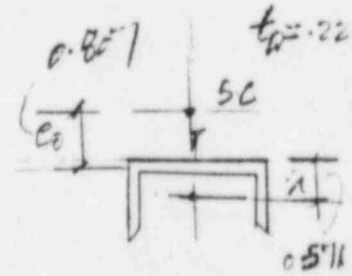
g-values from Response spectra

MRM = 1.25

Item	OBE X1.25	SSE X1.25	Ratio = SSE/OBE	REMARKS
Tran. g_x	0.56x1.25 = 0.7	0.76x1.25 = 0.95	1.36<1.6	OBE governing FOR CHECK OF MEMBER AND CONN. ADEQUACY
Vert. g_y	1.20x1.25 = 1.50	1.64x1.25 = 2.05	1.37<1.6	
Long. g_z	0.32x1.25 = 0.4	0.48x1.25 = 0.60	1.50<1.6	

Item	JOINTS: 8, 9 (TRAY 1)	JOINTS: 5, 6 (TRAY 2)
DL (T&V)	0.173 k	*0.162 k
Vert g_y=1.5	F_y = 0.260^k	F_y = 0.243^k
Tran. g_x=0.7	F_x = 0.121^k M_z = .121x0.571 = -0.069$^{k''}$	F_x 0.113^k M_z = .113x.571 = -0.065$^{k''}$
Long g_z=.4	F_z = .287x.4 = 0.115$^{k''}$ M_x = 0.115x.697 = -0.08$^{k''}$	F_z = .243x.4 = 0.097$^{k''}$ M_z = .097x.697 = -0.068$^{k''}$

C8X11.5



* .612^k used @ STRUDL INPUT ~ conservative

EBASCO SERVICES INCORPORATED

BY K. Reddy DATE 1-20-86 REV. 1 SHEET 9 OF 16

CHKD. BY BBanerjee DATE 1-24-86 OFS NO. 3306.221 DEPT. NO. 549

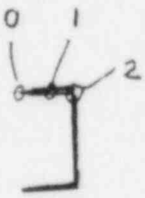
CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

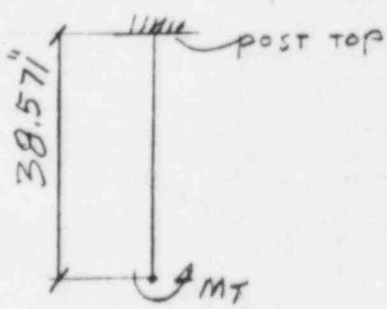
SUBJECT CABLE TRAY HANGERS

All members passed, see computer Run (AISC code check) dated 1-13-86, J9712A (Static)

WITH MOST CRITICAL VALUE = 0.393 < 1.0 FOR MEM. 12 (TIER)



check warping stress



Member C10X15.3 (POST)

Normal Stress

$$\sigma_{w_0} = E\, W_{ns}\, \Phi''$$

Torsn. properties:

$J = 0.21 \text{ in}^4 \quad a = 23.6 \qquad \frac{L}{a} = \frac{38.571}{23.6}$

$C_w = 45.6 \quad W_{n_2} = 7.48 \qquad = 1.64 \simeq 2$

$1 \cdot \Phi'' = \frac{M_T}{GJ\, n\, a}(4.8)$ Case-9, $\frac{L}{a} = 2.0$ (used)

$M_T = 0.002 + 0.002 = 0.004$ $\quad E = 29 \times 10^3$ KSI $\quad G = 11.2 \times 10^3$ KSI $\quad \alpha = 1.0$

$\frac{Z}{L} = 0$

Comp out put page 17/20

$$\Phi'' = \frac{0.004\ (4.8)}{11.2 \times 10^3 \times 0.21 \times 5 \times 23.6}$$

561/8-81

CTH-2-10146

EBASCO SERVICES INCORPORATED

BY K Reddy DATE 1-20-86 REV. 1 SHEET 10 OF 16

CHKD. BY [illegible] DATE 1-24-86 OFS NO. 3306.221 DEPT. NO. 549

CLIENT ~~TEXAS UTILITIES GENERATING CO.~~

PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS

$$\sigma_w = \frac{29\times10^3 \times 7.48 \times 0.004 \times 4.8}{11.2\times10^3 \times 0.21 \times 23.6 \times 5}$$

$$= 0.02 \text{ ksi}$$

Interaction.

from page 53 comp. out put CODE CHECK MEM. 6

$$0.378 + \frac{0.02}{21.6} = 0.379 < 1.0$$

O.K.

Member C8X11.5 (HORIZ MEMBER) Ref. 'Torsional Analysis' of AISC

Warping Normal Stress

$$\sigma_{wo} = E\, W_{ns}\, \phi''$$

Torsn properties:

$J = 0.13 \text{ in}^4$ $a = 18.0$ $C_w = 16.3$

$W_{no} = 3.11$ $E = 29\times10^3$ ksi

$G = 11.2\times10^3$ ksi

581/8-81

CTH-2-10146

EBASCO SERVICES INCORPORATED

BY K. Reddy DATE 1-20-86 REV. 1 SHEET 11 OF 16

CHKD. BY B. Banerjee DATE 1-24-86 OFS NO. 3306.221 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT

SUBJECT CABLE TRAY HANGERS

$L = 31.268''$ $\quad \frac{L}{a} = \frac{31.268}{18} = 1.74 = 2.0$ USE

$\alpha = 0.5$ *

$\frac{Z}{L} = 0$ & 0.5

case-6

* ASSUMED CONSERVATIVELY (LOAD CONSERVATIVELY APPROXIMATED TO ACT AT MIDSPAN)

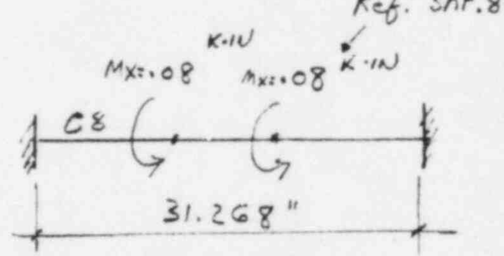
$\phi'' \left(\frac{GJ}{M_T} a\right) = \underline{\pm 0.230}$

$\phi'' = \frac{M_T (0.230)}{G J a}$

Ref. sht. 8

$M_T = 0.08 + 0.08$

$= \underline{0.16}\ K''$



$\sigma_{w_0} = \frac{29\times10^3 \times 5.11 \times 0.16 \times 0.230}{11.2\times10^3 \times 0.13 \times 18.0}$

$= 0.2146$ KSI

Interaction

from page 53 (Run # J9712A) $\quad 0.393 + \frac{0.2146}{21.6} = 0.40 < 1.0$

O.K.

EBASCO SERVICES INCORPORATED

BY K. Reddy DATE 1-20-86 REV. 1 SHEET 12 OF 16
CHKD. BY [illegible] DATE 1·24·86 OFS NO. 3306.221 DEPT. NO. 549
CLIENT TEXAS UTILITIES GENERATING CO.
PROJECT COMANCHE PEAK UNIT 2
SUBJECT CABLE TRAY HANGERS

Member C10X15.3 (member # 1 to # 6)

check warping shear stress

C10 X 15.3
$S_{w2} = 1.68$
$S_{w1} = 2.55$
case-9

$$\tau_{ws} = -E \frac{S_{ws}}{t} \phi'''$$

$$\phi''' \left(\frac{GJ}{m} a^2 \right) = -1.0 \qquad \frac{z}{l} = 0$$

$$\phi''' = -\frac{m}{GJa^2}$$

$$\tau_{ws} = -\frac{29 \times 10^3 \times 2.55 \times 1 \times .004 \times 10^3}{(11.2 \times 10^3 \times 0.21 \times 23.6^2)\, 0.436} = .52 \text{ PSI}$$

CONCLUSION: ALL HANGERS MEMBERS ARE ADEQUATE.
STRESS IS WITHIN ALLOWABLE LIMITS.
MAX. STRESS INTERACTION (WARPING INCL.) = .403.
(Enveloped)

$f_{vz} = 311$ psi from computer output page 28 to 33)

$f_t = \frac{M_T t}{J}$ = negligible

Total shear = 311 + .52 = 312 PSI < 14.4 ksi ok

Member C8X11.5 is o.k. by comparison (STRESS LEVEL VERY LOW)

EBASCO SERVICES INCORPORATED CTH-2-10146

BY K. Reddy DATE 1-20-86 REV. 1 SHEET 13 OF 16

CHKD. BY [illegible] DATE 1-24-86 OFS NO. 3306-221 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2 ~~CABLE TRAY HANGERS~~

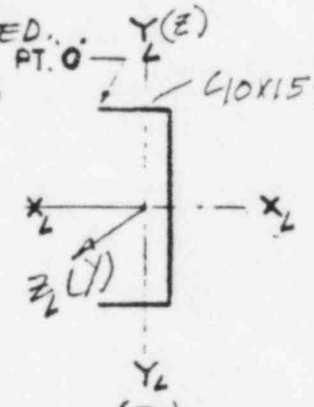
SUBJECT

CHECKING WELD SIZES : APPLY TO FIXED END CHANNEL EXCEPT TRANSVERSE SUPPORT WITH CANTILEVERED CHANNEL

Joint 12, page 23
CASE 1001

WELDING @ PT. 'O' BETWEEN C10X15.3 & Embd PL

SMALL ECCENTR. BETW. C.G. OF MEM & C.G. OF WELD - NEGLECTED.



$M_Y = M_{Z_L} = 0.001^{K''}$ $\quad \sigma_{wo} t_f = 20 \times .436 = 9$ #/in

$F_Y = F_{Z_L} = 1.987^K$ $\quad f_a = \frac{F_Z}{A} = \frac{1987}{15.2} = 130.7$ #/in

$M_{X_L} = 13.682^{K''}$ $\quad f_{bx} = \frac{M_x}{S_x} = \frac{13682}{42.7} = 321$ #/in

$M_Z = M_{Y_L} = 7.786^{K''}$ $\quad f_{bY} = \frac{M_Y}{S_Y} = \frac{7786}{4.04} = 1927$ #/in

$f_z = \sigma_{wo} t_f + f_a + f_{bx} + f_{bY} = 2388$ #/in

Ew
$A = 15.2''$
$S_x = 42.7 \text{ in}^3/\text{in}$
$S_Y = 4.04 \text{ in}^3/\text{in}$
$J = 222 \text{ in}^4/\text{in}$
$t_f = 0.436''$
(From weld manual)

$= F_{X_L} = 0.358^K$ $\quad f_{vx} = \frac{F_x}{A} = \frac{358}{15.2} = 23.6$ #/in

$f_x = f_{vx} = 23.6$ #/in

$F_Z = F_{Y_L} = 0.313^K$ $\quad f_{vY} = \frac{F_Y}{A} = \frac{313}{15.2} = 20.6$ #/in

$f_Y = f_{vY} = 20.6$ #/in

$f = (f_x^2 + f_Y^2 + f_Z^2)^{0.5} = (20.6^2 + 23.6^2 + 2388^2)^{0.5}$ #/in
$= 2389$

CAPACITY OF D/16" WELD $= \frac{D}{16} \cdot \frac{1}{\sqrt{2}} \cdot 21000 = 928D$

REQ'D $D = f/928 = \frac{2389}{928} = 2.575 < 3$ = PROVIDED (AS MINIMUM) OK

NOTE : WELD @ JT. 4 : FORCES ARE LESS CRITICAL, O.K. BY COMPARISON TO ABOVE CALCS. (IN Add-Iw provided)

EBASCO SERVICES INCORPORATED CTH-2-10146

BY K Reddy DATE 1-21-86 REV. 1 SHEET 14 OF 16

CHKD. BY B Barry DATE 1-24-86 OFS NO. 3306.221 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

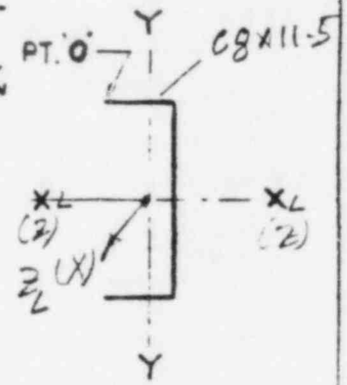
PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT

CHECKING WELD SIZES: APPLY TO FIXED END CHANNEL EXCEPT TRANSVERSE SUPPORT WITH CANTILEVERED CHANNEL. ASSUME C.G. OF MEM. @ C.G. OF WELD.

Envelope Loadings 1001 & 1002 M-7, 9, 10 & 12 pages - 20 to 22 (ENVELOPE LD)

WELDING @ PT. 'O' BETWEEN C8X11.5 & C10X15.3



$M_X = M_Z = 0.098K''$ $\qquad \sigma_{wo} t_f = 215 \times .390 = 84$ #/in

$F_X = F_Z = 0.412K$ $\qquad f_a = \frac{F_Z}{A} = \frac{412}{12.5} = 33$ #/in

$M_Z: M_X = 1.263K''$ (CONSERV.) $\qquad f_{bx} = \frac{M_x}{S_x} = \frac{1263}{28.7} = 44$ #/in

$M_Y = 6.522K''$ $\qquad f_{bY} = \frac{M_Y}{S_Y} = \frac{6522}{3.03} = 2153$ #/in

$f_z = \sigma_{wo} t_f + f_a + f_{bx} + f_{bY} = 2314$ #/in

E_W
$A = 12.5''$
$S_x = 28.7$ in^3/in
$S_Y = 3.03$ in^3/in
$J = 121$ in^4/in
$t_f = 0.390''$
(FROM weld Manual)

$F_Z = F_X = 0.980K$ $\qquad f_{vx} = \frac{F_x}{A} = \frac{980}{12.5} = 78$ #/in

$f_x = f_{vx} = 78$ #/in

$F_Y = 0.153K$ $\qquad f_{vY} = \frac{F_Y}{A} = \frac{153}{12.5} = 12$ #/in

$f_Y = f_{vY} = 12$ #/in

$$f = (f_x^2 + f_Y^2 + f_z^2)^{0.5} = (78^2 + 12^2 + 2314^2)^{0.5} = 2316 \text{ #/in}$$

CAPACITY OF D/16" WELD $= \frac{D}{16} \cdot \frac{1}{\sqrt{2}} \cdot 21000 = 928D$

REQ'D $D = f/928 = \frac{2316}{928} = 2.5 < 3$ = PROVIDED (AS MINIMUM). OK

NOTE: ABOVE CALCS SHOWS ADEQUACY OF WELDS @ JTS. 1, 2, 7 AND 10.

(In ADD- Iw provided)

CTH-2-10146

EBASCO SERVICES INCORPORATED

BY K. Reddy DATE 1-21-86 REV. 1 SHEET 15 OF 16

CHKD. BY R Banerjee DATE 1-24-86 OFS NO. 3306.221 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS

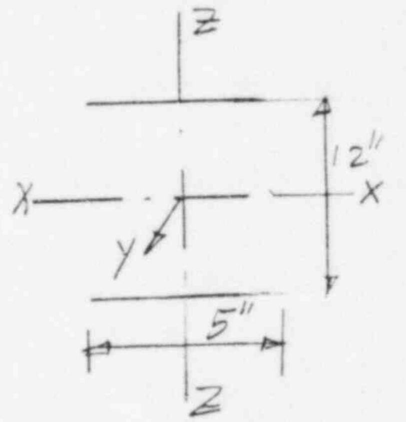
check weld between PL 1"x5"x1'-0 & Embd. PL

Envelope (Joints 4 & 12 of model)
page 23

$M_y = 0.002^{k''}$ $F_y = 1.987^k$

$M_x = 13.682^{k''}$ $F_x = 0.358^k$

$M_z = 7.802^{k''}$ $F_z = 0.313^k$



$\bar{e}_x = \frac{5}{2} - (1\frac{1}{2} + .634) = .366$

$M'_y = .002 + (.366 \times .313) = .117$ K-"

$M'_z = 7.802 + (.366 \times 1.987) = 8.529$ K-"

$f_y = \left(\frac{1.987}{10} + \frac{13.682}{60} + \frac{8.529}{8.34} \right) = 1.449$ K/in   A = 10"

$S_x = 5 \times 12 = 60$ in³/in

$f_{vx} = \left(\frac{0.358}{10} + \frac{0.117 \times 6}{380.83} \right) = 0.0376$ K/in

$S_z = \frac{5^2}{3} = 8.34$ in³/in

J = 380.83"

$f_{vz} = \left(\frac{0.313}{10} + \frac{0.117 \times 2.5}{380.83} \right) = 0.0321$ K/in

$f_R = (f_y^2 + f_x^2 + f_z^2)^{\frac{1}{2}}$

$= (1449^2 + 38^2 + 32^2)^{\frac{1}{2}} = 1450$ P...

Req'd weld D = $\frac{1450}{928}$ = 1.56 < 4 = provided
O.K.

CONCLUSION: ALL WELDS ARE O.K.

581/8-81

CTH-2-101A6

EBASCO SERVICES INCORPORATED

BY K. Reddy DATE 1-21-86 REV. 1 SHEET 16 OF 16
CHKD. BY B. Banerjee DATE 1·24-86 OFS NO. 3306.221 DEPT. NO. 549
CLIENT TEXAS UTILITIES GENERATING CO.
PROJECT COMANCHE PEAK UNIT
SUBJECT CABLE TRAY HANGERS

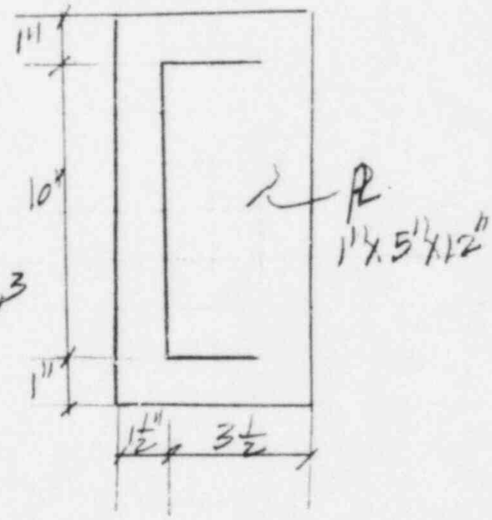
THIS PAGE IS CONTINUATION OF MEM. CHECK. (SEE PG. 12)

<u>Check The PL 1" x 5" x 12"</u>

Force on weld $= 1450\ \#/in$ (REF. SH. 15)

Moment @ Flange/inch

$= 1450 \times 1 = 1450\ \#\text{-}in/in$



$S\ PL/in = \dfrac{bt^2}{6}$

$= \dfrac{1 \times 1^2}{6} = 0.167\ in^3$

$\sigma_B\ PL = \dfrac{1450}{0.167} = 8682\ psi$

$< 27000\ psi$ (allowable)

$\therefore$ PL 1" x 5" x 12" O.K.

INTERACTION RATIOS ARE SUFFICIENTLY LOW SO THAT DETAILED EVALUATION OF DIMENSIONAL TOLERANCES EFFECT ARE NOT REQUIRED

581/8-81

ATTACHMENTS

ATTACHMENT A

SHEET 1 OF 1

CTH - 2 - 10146

0599(COM)/10-85

EBASCO SERVICES INCORPORATED

CHECKLIST FOR DESIGN VERIFICATION OF CABLE TRAY HANGERS AND CONDUIT SUPPORT DRAWINGS AND CALCULATIONS BY DESIGN REVIEW METHOD

TEXAS UTILITIES GENERATING CO.
COMANCHE PEAK PROJECTS

DOCUMENT NUMBER	REVISION	DOCUMENT NUMBER	REVISION
CTH - 2 - 10146	1		

QUESTIONS (SHALL BE ANSWERED BY THE INDEPENDENT VERIFIER)	CALCS	DRAWINGS
1. WERE THE INPUTS CORRECTLY SELECTED AND INCORPORATED INTO DESIGN?	YES	NA
2. ARE ASSUMPTIONS NECESSARY TO PERFORM THE DESIGN ACTIVITY ADEQUATELY DESCRIBED AND REASONABLE? WHERE NECESSARY ARE THE ASSUMPTIONS IDENTIFIED FOR SUBSEQUENT REVERIFICATIONS WHEN THE DETAILED DESIGN ACTIVITIES ARE COMPLETED?	YES	NA
3. ARE THE APPROPRIATE QUALITY AND QUALITY ASSURANCE REQUIREMENTS SPECIFIED?	YES	NA
4. ARE THE APPLICABLE CODES, STANDARDS AND REGULATORY REQUIREMENTS INCLUDING ISSUE AND ADDENDA PROPERLY IDENTIFIED AND ARE THEIR REQUIREMENTS FOR DESIGN MET?	YES	NA
5. HAVE FEASIBILITY AND PRACTICALITY OF CONSTRUCTION BEEN REVIEWED?	NA	NA
5a. HAS OPERATING EXPERIENCE BEEN CONSIDERED?	NA	NA
6. HAVE THE DESIGN INTERFACE REQUIREMENTS BEEN SATISIFIED?	NA	NA
7. WAS AN APPROPRIATE DESIGN METHOD USED?	YES	NA
8. IS THE OUTPUT REASONABLE COMPARED TO TO INPUTS?	YES	NA
9. ARE THE SPECIFIED PARTS, EQUIPMENT AND PROCESSES SUITABLE FOR THE REQUIRED APPLICATION?	YES	NA
10. ARE THE SPECIFIED MATERIALS COMPATIBLE WITH EACH OTHER AND THE DESIGN ENVIRONMENTAL CONDITIONS TO WHICH THE MATERIAL WILL BE EXPOSED?	YES	NA
11. HAVE ADEQUATE MAINTENANCE FEATURES AND REQUIREMENTS BEEN SPECIFIED?	NA	NA
12. ARE ACCESSIBILITY AND OTHER DESIGN PROVISIONS ADEQUATE FOR PERFORMANCE OF NEEDED MAINTENANCE AND REPAIR?	NA	NA
13. HAS ADEQUATE ACCESSIBILITY BEEN PROVIDED TO PERFORM THE IN SERVICE INSPECTION EXPECTED TO BE REQUIRED DURING THE PLANT LIFE?	NA	NA
14. HAS THE DESIGN PROPERLY CONSIDERED RADIATION EXPOSURE TO THE PUBLIC AND PLANT PERSONNEL?	NA	NA
15. ARE THE ACCEPTANCE CRITERIA INCORPORATED IN THE DESIGN DOCUMENTS SUFFICIENT TO ALLOW VERIFICATION THAT DESIGN REQUIREMENTS HAVE BEEN SATISFACTORILY ACCOMPLISHED?	YES	NA
16. HAVE ADEQUATE PREOPERATIONAL AND SUBSEQUENT PERIODIC TEST REQUIREMENTS BEEN APPROPRIATELY SPECIFIED?	NA	NA
17. ARE ADEQUATE HANDLING, STORAGE, CLEANING AND SHIPPING REQUIREMENTS SPECIFIED?	NA	NA
18. ARE ADEQUATE IDENTIFICATION REQUIREMENTS SPECIFIED?	YES	NA
19. ARE REQUIREMENTS FOR RECORD PREPARATION REVIEW, APPROVAL, RETENTION, ETC. ADEQUATELY SPECIFIED?	YES	NA
20. HAVE THE INDEPENDENT VERIFIER'S COMMENTS BEEN RESOLVED WITH THE PREPARER?	YES	NA

LEGEND: YES = ACCEPTABLE
NA = NOT APPLICABLE

B Banerjee
INDEPENDENT VERIFIER SIGNATURE

1-24-86
DATE

ATTACHMENT B

TEXAS UTILITIES GENERATING COMPANY-COMANCHE PEAK SES UNIT NO. 2
CALCULATION FORMAT BACKFIT WORKSHEET
FOR NEW YORK OFFICE CABLE TRAY HANGERS

CALCULATION NO. CTH-2- 10146 REV 1

THIS REVIEW APPLIES TO SUPPORT CTH-2- 10146 (REV 02), AND TO THE FOLLOWING OTHER SUPPORTS (AND REVISIONS): SUPPORT N/A (REV N/A),

---

UNLESS OTHERWISE NOTED BELOW, INDICATE WITH A

✓ ITEMS CORRECTLY CONSIDERED IN DESIGN VERIFICATION

X ITEMS INCORRECTLY CONSIDERED OR OMITTED IN DESIGN VERIFICATION

N/A ITEMS NOT APPLICABLE

(FILL IN ALL SPACES)

GENERAL: CALCS NEAT ✓ ORDERLY ✓ ALL SHEETS NUMBERED ✓
ALL CALC SHEETS INITIALED AND DATED BY: ORIGINATOR ✓ CHECKER ✓
ALL REVISED SHEETS INITIALED N/A DATED N/A
ATTACHMENTS LABELLED ✓ CALCS ON FORM 581 ✓
CROSS OUTS/WHITEOUTS/TAPEOUTS INITIALED N/A DATED N/A

COVER SHEET: SIGNED AND DATED BY: ORIGINATOR ✓ CHECKER ✓
CALC REV NO. ✓ DWG REV NO. ✓
ADDED/REVISED/SUPERSEDED/VOIDED SHEETS NOTED ✓
NO OUTSTANDING ASSUMPTIONS NOTED ✓ TOTAL SHEETS NOTED ✓
ORIG CALC COMPLETION NOTE ✓ COMPUTER RUN NO. ✓ DATE ✓

STANDARD TABLE OF CONTENTS ✓

SUMMARY SHEETS: DESIGN DATA SHEET ✓ GROUPING SHEET N/A

CALCULATIONS: PROBLEM SCOPE ✓ ASSUMPTIONS NOTED ✓
DESIGN INPUT PROPERLY STATED AND/OR REFERENCED ✓
CONCLUSIONS ✓ COMPUTER RUNS REFERENCED ✓

COMPUTER RUNS: LABELLED ✓ ORIGINATOR ✓ CHECKER ✓ DATED ✓

ATTACHMENTS: CALC DESIGN VERIFICATION CHECKLIST (FORM 599) ✓
FORMAT BACKFIT WORKSHEET ✓ TECHNICAL BACKFIT WORKSHEET ✓
RED LINE DWGS ✓ SIGNED OUT DWGS ✓
COPY OF SELECT PAGES OF EACH COMPUTER RUN ✓
WEB INPUT (LATEST FORM) ✓ MISC. BACKUP INFO ✓
SITE CALCULATIONS ✓

BY K. Reddy DATE 1-24-86
CHKD [signature] DATE 1-24-86
(FORM 599 HAS BEEN COMPLETED)

CC: R. ALEXANDRU
Y. LATIFAOGLU

CTH - 2 - 10146

SHT. 1 OF 1

ATTACHMENT C

TEXAS UTILITIES GENERATING COMPANY-COMANCHE PEAK SES UNIT NO. 2
CALCULATION TECHNICAL BACKFIT WORKSHEET
FOR NEW YORK OFFICE CABLE TRAY HANGERS
CALCULATION NO. CTH-2- 10146 REV 1

THIS REVIEW APPLIES TO SUPPORT CTH-2- 10146 (REV 02), AND TO THE FOLLOWING OTHER SUPPORTS (AND REVISIONS): SUPPORT N/A (REV N/A),

UNLESS OTHERWISE NOTED BELOW, INDICATE WITH A

- ✓ ITEMS CORRECTLY CONSIDERED IN THE DESIGN VERIFICATION, OR CONSERVATIVELY CONSIDERED IF THE CONSERVATISM DOES NOT CAUSE HANGER MODIFICATION.
- × ITEMS INCORRECTLY CONSIDERED OR OMITTED IN THE DESIGN VERIFICATION, OR CONSERVATIVELY CONSIDERED IF THE CONSERVATISM CAUSES HANGER MODIFICATION.
- N/A ITEMS NOT APPLICABLE.

(FILL IN ALL SPACES)

COMPUTER PROGRAM: STRUDL VERSION 0385 OR 0985 ✓
GEOMETRY: BOUNDARY CONDITIONS ✓ ECCENTRICITIES ✓
LOADS: THERMOLAG ✓ SYSTEMS EFFECT (MAINLY VERT RISERS) N/A
LONGIT TRAY SPANS ✓ THERMAL LOAD N/A
LOAD APPL POINTS ✓ LONGIT DIR SELF-WEIGHT (ALL SUPPORTS) ✓
SEISMIC G BASIS: PEAK NA FREQ ✓ MRM ✓ MRM (SPECIFY VALUE) 1.25
FREQ CALC N/A FREQ REQUIREMENT FOR ATTACHED CONDUITS NA
DESIGN VERIFICATION:
MEMBERS: SLENDERNESS RATIO ✓ WARPING STRESS (NORMAL ✓ SHEAR ✓)
SRSS FOR SEISMIC (W/O DL) ✓ ALL LOAD COMBINATIONS ✓
BOLT HOLE EFFECT NA DIMENSIONAL TOLERANCE ✓
STRESS INTERACTION (GIVE CRITICAL VALUE) .86
CONNECTIONS: SRSS 3D WELD STRESS ✓ MIN WELD SIZE ✓
ALL LOAD COMBINATIONS ✓
ANCHORAGE: BOLT PRYING ACTION N/A
WELD WARPING STRESS (NORMAL ✓ SHEAR ✓)
ALL LOAD COMBINATIONS ✓ BOLT INTERACTION (GIVE CRITICAL VALUE) N/A
BASEPLATE FOOTPRINT LOADS (LATEST WEB INPUT FORM) ✓
STRUDL COMPUTER BUGS: TUBE SECTION STRESS CHECK NA
ALLOWABLE AXIAL STRESSES NA

BY K. Reddy DATE 1-24-86
CHKD [signature] DATE 1-24-86
(FORM 599 HAS BEEN COMPLETED)

CC: R. ALEXANDRU
Y. LATIFAOGLU

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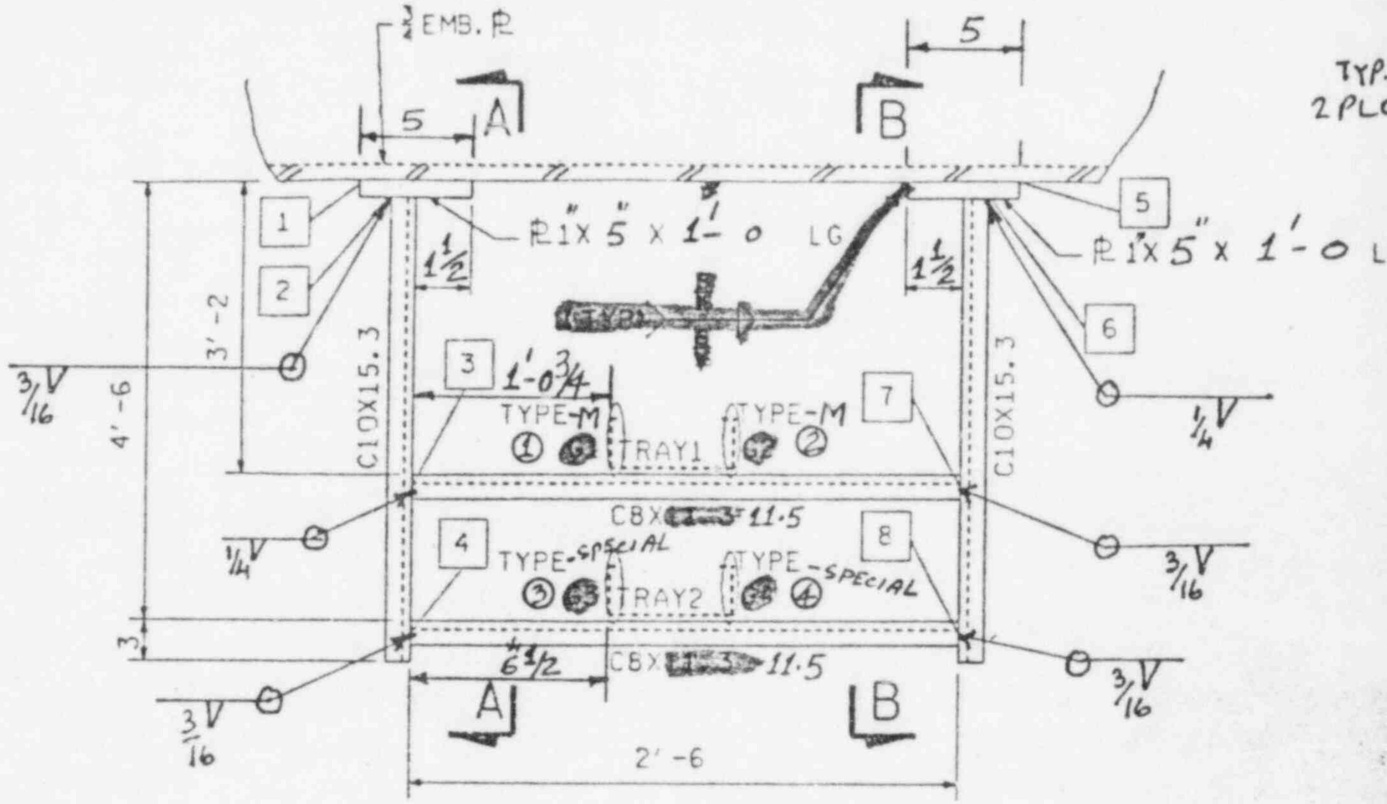
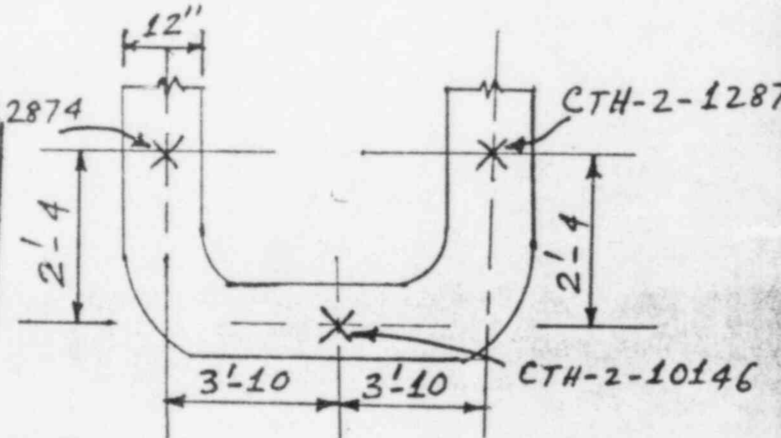


ELEVATION A-A

PASSED AS-BUILT

DONE BY P. PATADIA DATE 5/10/85

CHKD. BY P.L. PATEL DATE 5/17/85

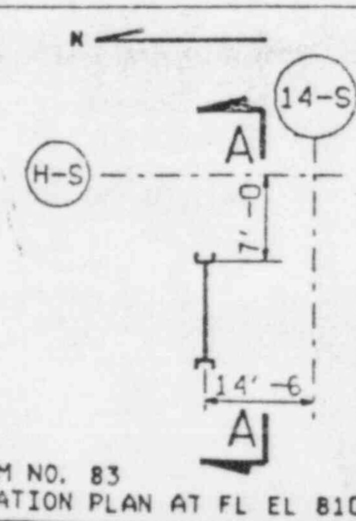


PLAN- VIEW @ TRAY#1

N

TI
APERTURE
CARD

Also Available On
Aperture Card

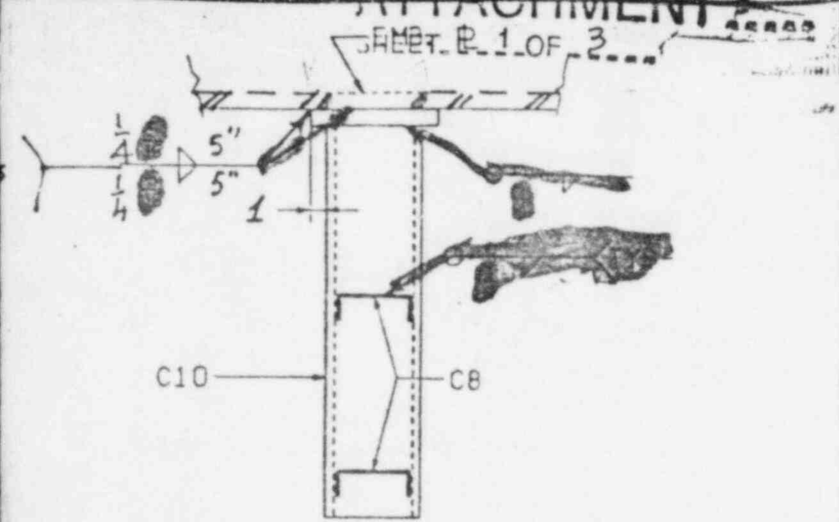


ROOM NO. 83
LOCATION PLAN AT FL EL 810'-6

						G4=	
						G3=	
TRAY 2	18x4	3'-10	12874	3'-10	12875	G2=	
TRAY 1	12x4	6'-2	12874	6'-2	12875	G1=	
	SIZE	L1	CTH No	L2	CTH No	G DIM	BO_ MK(
TRAY SPANS						TRAY CL	

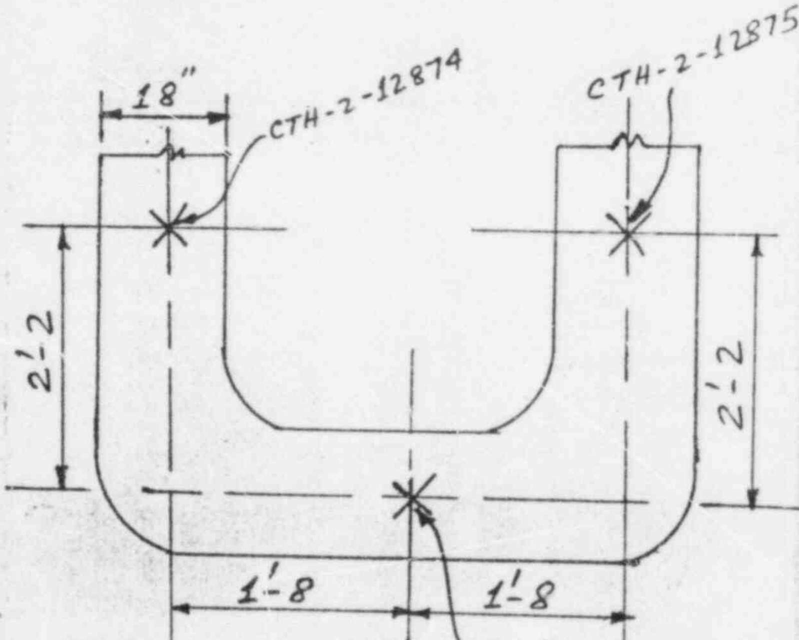
ATTACHMENT 5

CTH-2-10146



SECT. A-A (AS SHOWN)

SECT. B-B (OPP. SHOWN)



PLAN VIEW @ TRAY #2

N

NOTES: INFORMATION TRANSFERRED

By: P.K. Basu

CHKD: R. Chatterjee

DATE: 3-11-85

TRANSFER COPY

☐ INDICATES JOINT NUMBER.

O INDICATES CLAMP NUMBER.

APPLICATION OF THERMOLAG TO CABLE TRAY IS ASSUMED.

LONGITUDINAL SUPPORT IS ASSUMED.

PRELIMINARY ISSUE

REV. A

REVIEWER: LAL THUKRAL 3/19/85

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
OC	CN				THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-00159-10146 REV. 02, FSE-00255 (MAP), CMC-85847 REV. 00, REFDWG: 2323-E2-0716-S R0, REFDWG: 2323-S-0902 R5 (CASE L-B1)
01	PKB				"AS-BUILT"

RECEIVED

APR 24, 1985

R. ALEXANDRU

TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

CABLE TRAY HANGER

8603210035-07 SH. #1 OF 3

CLASS 1

(NUCLEAR SAFETY-RELATED)

SAFETY CLASS 1 SEISMIC CATEGORY 1

SAFETY CLASS 2 CLASS 1E

SAFETY CLASS 3 ASSOCIATED CIRCUITS

WASH TYPE

AMPS

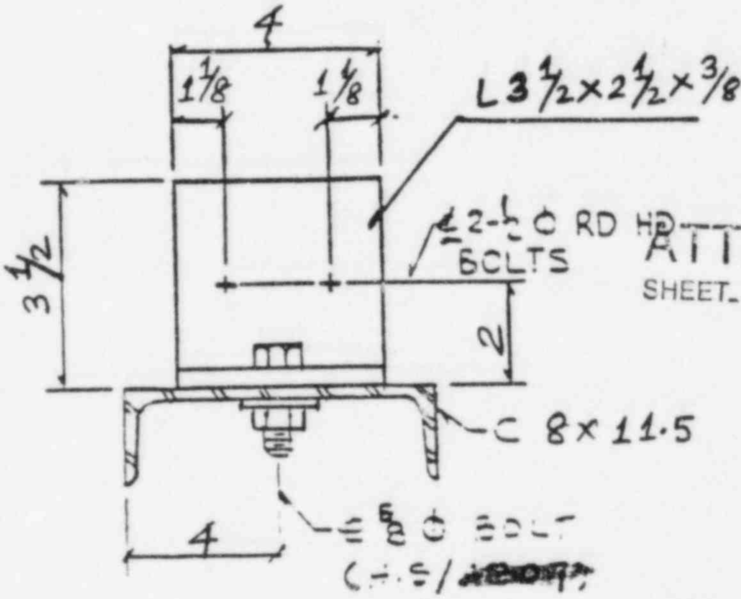
C.P.S.E.S.	DWG. NO.	REV.
GLEN ROSE TEXAS	CTH-2-10146	01

CTH-2-10146

SUPPORT # CTH-2-10146
REV. # 01

SH. # 2 OF 3

INFORMATION TRANSFERRED.
BY: P. K. Basu
CHKD: R. Chatterjee
DATE: 3-11-85



ATTACHMENT E
SHEET 2 OF 3

TYPE M

FURNISH FOLLOWING INFO

	G TABLE		BEVEL WASHER	STANDARD WASHER	BOLT MARK H.S	BOLT MARK REGULAR
CLAMP #1	G1	1 1/2		✓	✓	
CLAMP #2	G2	1 1/2		✓	✓	
	G3					
	G4					
	G5					
	G6					
	G7					
	G8					
	G9					
	G10					

RECEIVED
APR 24 [illegible]
R. ALEXANDRU

CTH-2-10146

ATTACHMENT E

SHEET 3 OF 3

[redacted]

[redacted]

INFORMATION TRANSFERRED.

BY : P. K. Basu

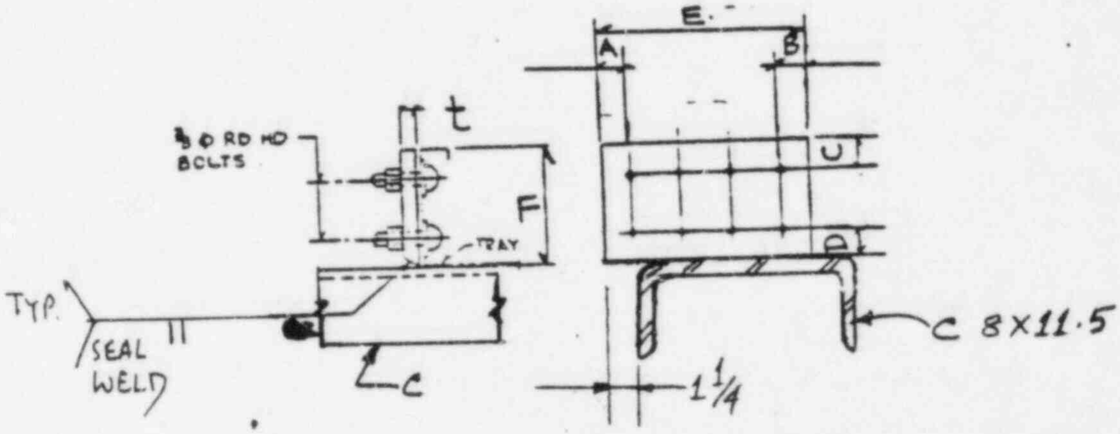
CHKD : R. Chatterjee

DATE : 3/11/85

SUPPORT # CTH-2-10146

REV. # 01

SH. # 3 of 3



CLAMP TYPE- SPECIAL

(AT TRAY SPLICE)

FURNISH THE FOLLOWING INFO:

CLAMP NOS	③	④					
A=	1/2	1/2					
B=	1/2	1/2					
C=	1	1					
D=	1	1					
E=	6	6					
F=	4	4					
♇ THK t=	1/2	1/2					

RECEIVED

APR 24 1985

R. ALEXANDRU

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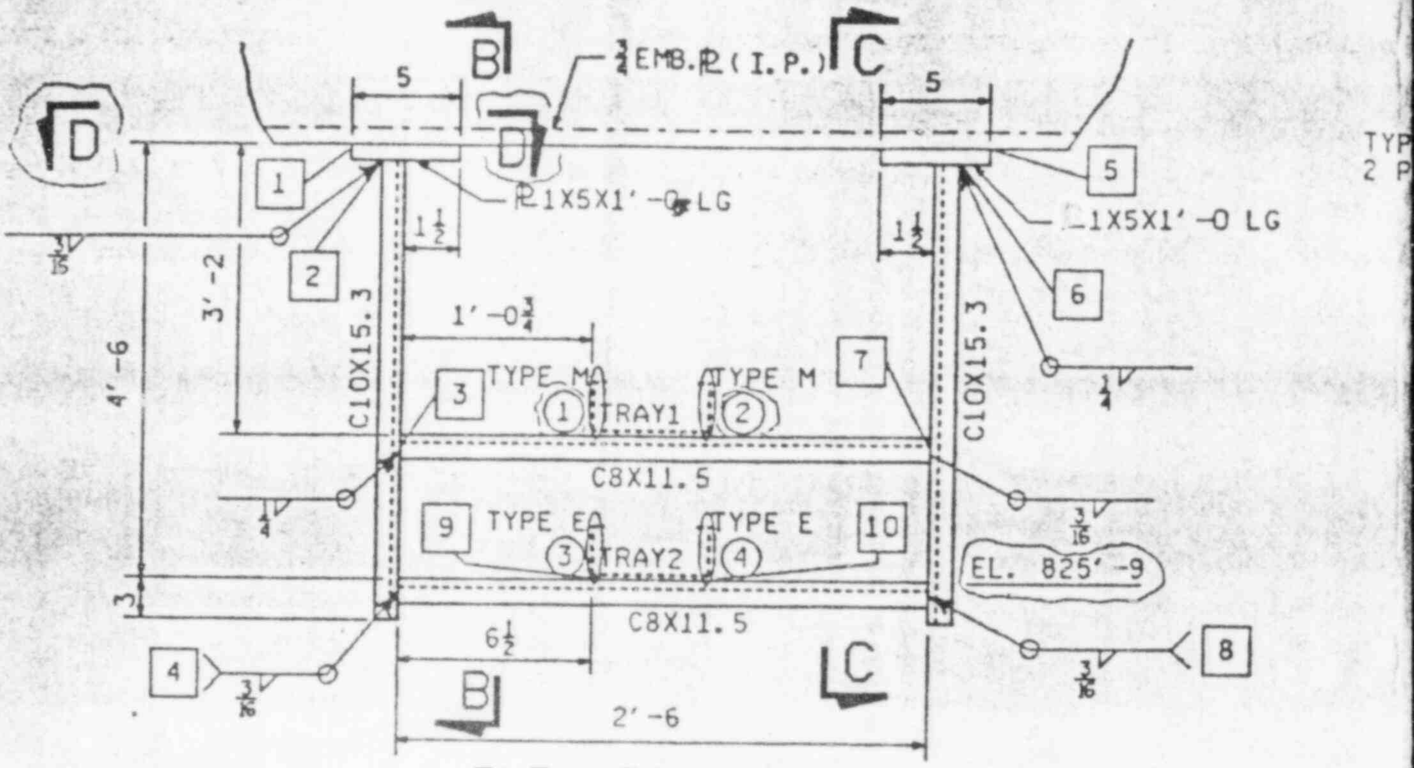
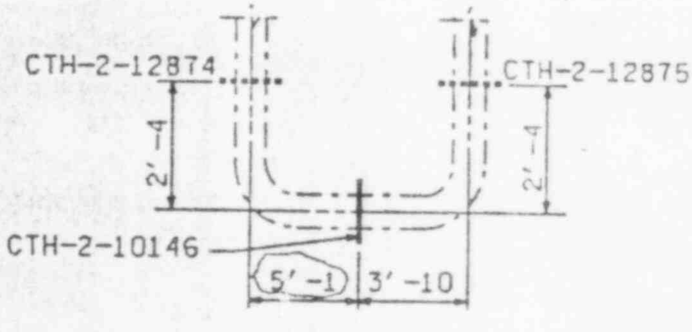
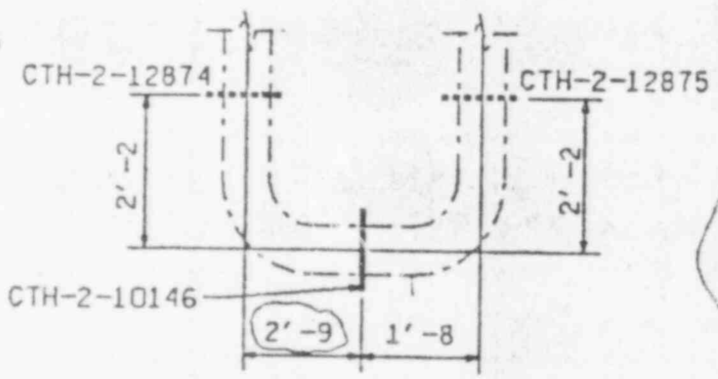


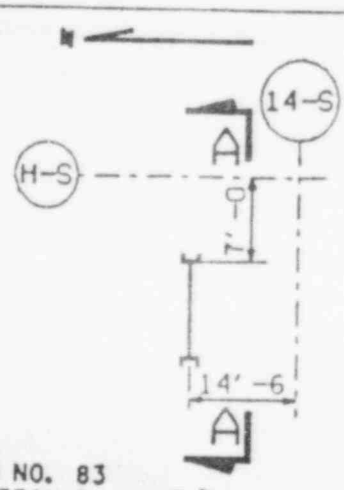
ELEVATION A-A



PLAN VIEW
TRAY#1



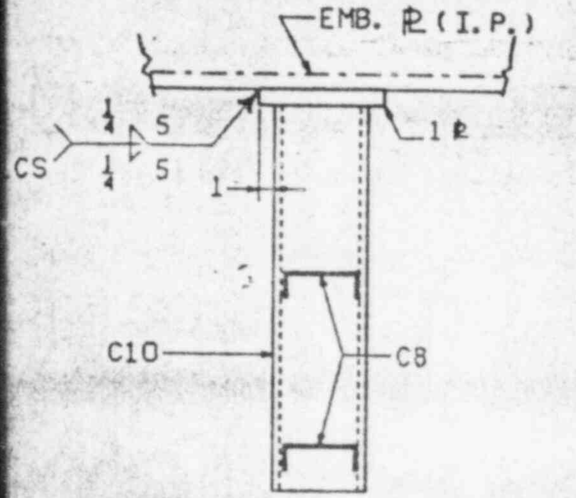
PLAN VIEW
TRAY#2



ROOM NO. 83
LOCATION PLAN AT EL EL 810'-6

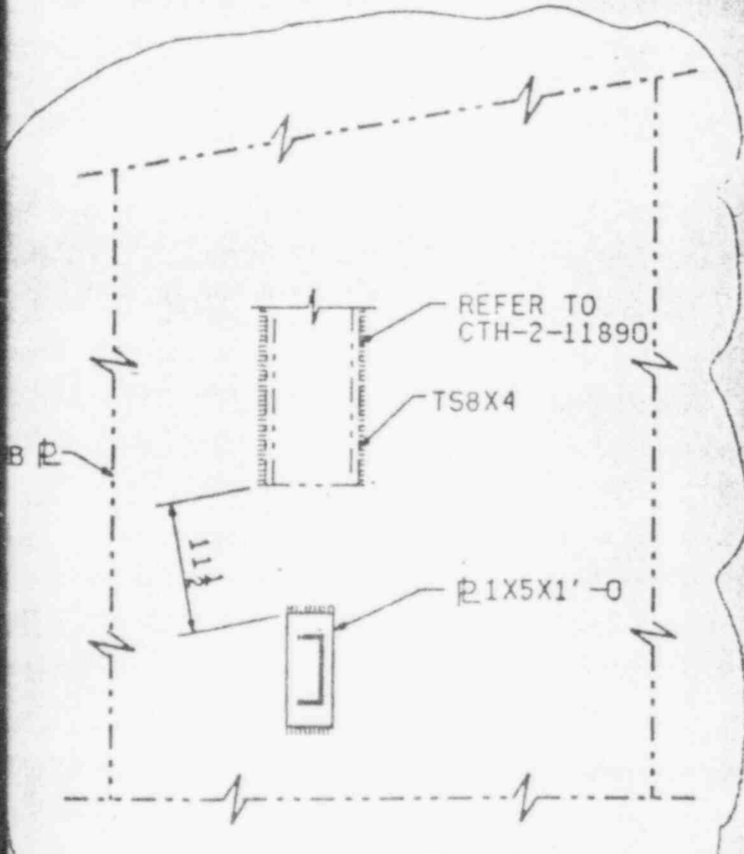
	SIZE	L1	CTH No	L2	CTH No
TRAY 2	18X4	SEE TRAY PLAN			
TRAY 1	12X4	SEE TRAY PLAN			

TRAY SPANS



SECT. B-B (AS SHOWN)

SECT. C-C (OPP. SHOWN)



PLAN D-D

CTH-2-10146

ATTACHMENT F

SHEET 1 OF 4

NOTES:

1. FOR GENERAL NOTES SEE DRAWING CTH-2-NOTES.
2. APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.
3. LONGITUDINAL SUPPORT IS ASSUMED.
4. FIELD TO REPLACE EXISTING BOLT MARK DC IN CLAMP (1) WITH HS A-325 OR A-449.

☐ INDICATES JOINT NUMBER.

○ INDICATES TRAY CLAMP NUMBER..

MODIFICATION(S) REQUIRED:

△1 FIELD TO UPGRADE WELD FROM EXISTING 1/8 FILLET TO 3/16 FILLET.

FOR OFFICE AND ENGINEERING USE ONLY

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
00	CB	AB LL			THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-00159-10146 REV. 02, FSE-00255 (MAP), REFDWG: 2323-E2-0716-S R0 REFDWG: 2323-S-0902 R5 (CASE L-81)
01	PS	RCK	RL	YL PSA 6-4-85	AS BUILT
02	GP	KSD	AP	DPR 10/24/85	MODIFIED AND REVISED AS NOTED

TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

SAFEGUARDS BLDG UNIT #2

CABLE TRAY HANGER

CLASS 1
(NUCLEAR SAFETY-RELATED)

SAFETY CLASS 1 SEISMIC CATEGORY 1
SAFETY CLASS 2 CLASS 1E

C.P.S.E.S. GLEN ROSE	DWG. NO. CTH-2-10146	REV. 02

8603210035-08

QS2:[214.00T]10146A01.DGN;001
29-MAY-85 18:13:10
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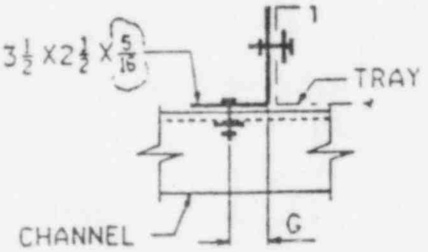
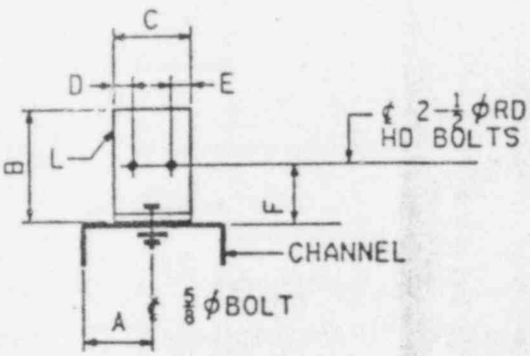
0123456789/0123456789/0123456789/01234





TYPE M

CLAMP NO.	A	B	C	D	E	F	G	BOLT MKG	WASH TYPE
2	4	3½	4	1⅛	1⅛	2	1½	HS	STD
1	4	3½	4	1⅛	1⅛	2	1½	□ HS	STD
CLAMP TYPE M									

□ SEE NOTE 4 ON SHEET 1 OF 2

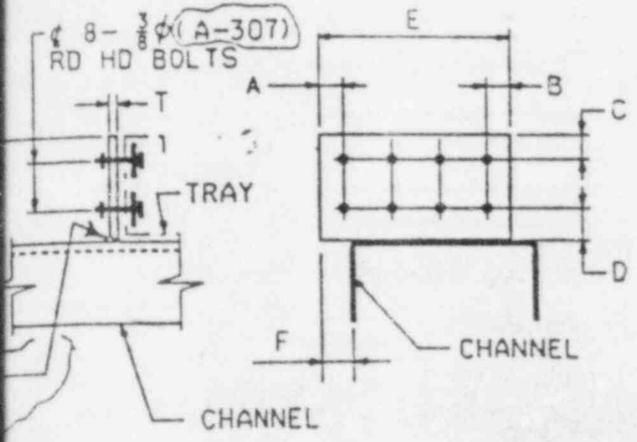
1

ATTACHMENT

SHEET 2 OF 4

NOTES:

FOR NOTES SEE SHEET 1.



TYPE E

CLAMP NO.	A	B	C	D	E	F	G	H	T
4	1/2	1/2	1	1	6	1 1/4	-	-	1/2
3	1/2	1/2	1	1	6	1 1/4	-	-	1/2

CLAMP TYPE E

MODIFICATION(S) REQUIRED:

SEE SHEET 1 OF 2.

FOR OFFICE AND ENGINEERING USE ONLY

REV.	DWN.	CKR.	DES. VER.	APPROVED DATE	REMARKS
01	PG	RCE	RL	YL PSA 6-4-85	AS BUILT
02	GF	PSP	PSP	DP 10/24/85	SEE SHT 1 OF 2

TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

SAFEGUARDS BLDG UNIT #2

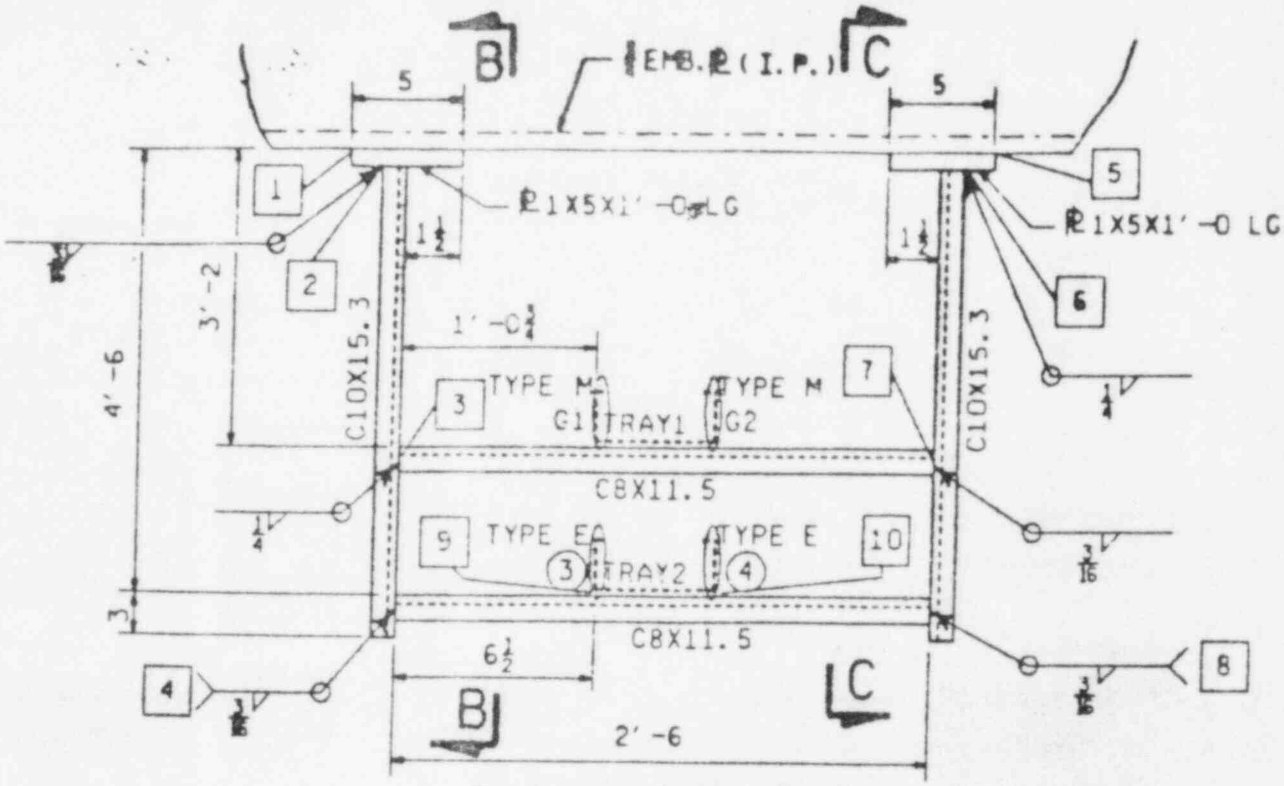
CABLE TRAY HANGER

CLASS 1 (NUCLEAR SAFETY-RELATED)

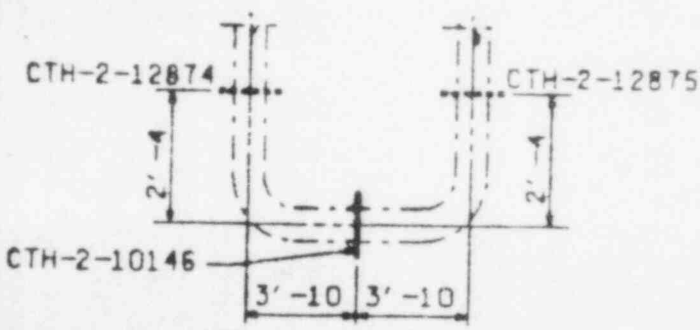
SAFETY CLASS 1 SEISMIC CATEGORY 1
SAFETY CLASS 2 CLASS 1E
SAFETY CLASS 3 ASSOCIATED CIRCUITS

C.P.S.E.S. GLEN ROSE TEXAS	DWG. NO. CTH-2-10146 SH 2 OF 2	REV. 02

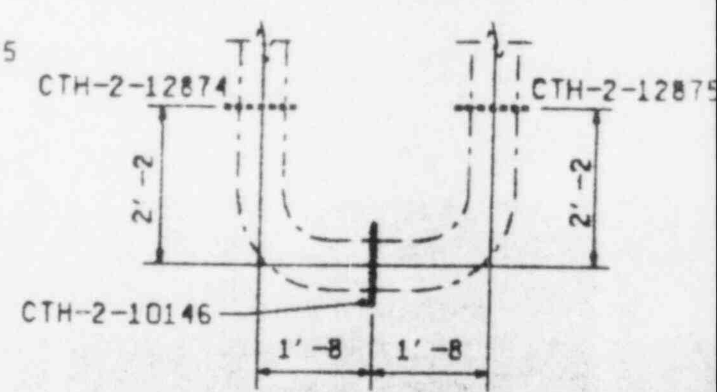
8603210035-09



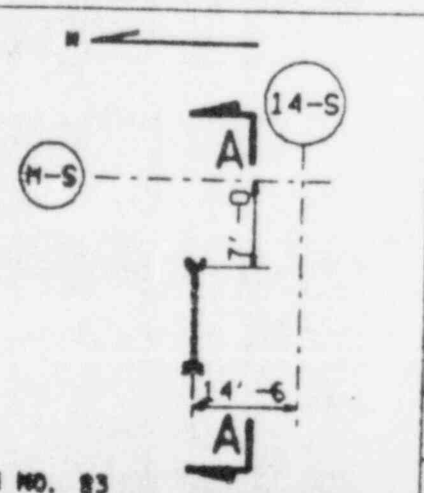
ELEVATION A-A



PLAN VIEW
TRAY#1



PLAN VIEW
TRAY#2



ROOM NO. 83
LOCATION PLAN AT EL

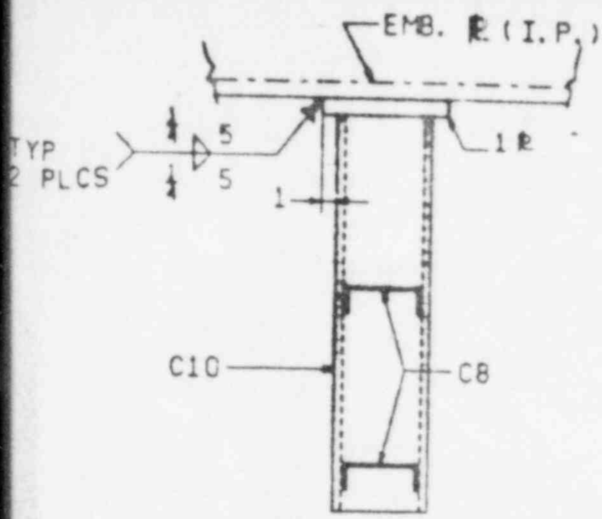
TRAY 2	18X4	SEE TRAY PLAN			
TRAY 1	12X4	SEE TRAY PLAN			
	SIZE	L1	CTH No	L2	CTH No

TRAY SPANS

CTH-2-10146

ATTACHMENT E

SHEET 3 OF 4



SECT. B-B (AS SHOWN)

SECT. C-C (OPP. SHOWN)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING CTH-2-NOTES.
2. APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.
3. LONGITUDINAL SUPPORT IS ASSUMED.

☐ INDICATES JOINT NUMBER.

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
00	CN	AN LL			THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-00159-10146 REV. 02. FSE-00255 (MAP). REFDWG: 2323-E2-0716-S R0 REFDWG: 2323-S-0902 R5 (CASE L-B1)
01	PS	RCK	RL	YL KLR 6-4-85	AS BUILT

TI APERTURE CARD

Also Available On Aperture Card

TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

CABLE TRAY HANGER

8603210035-10

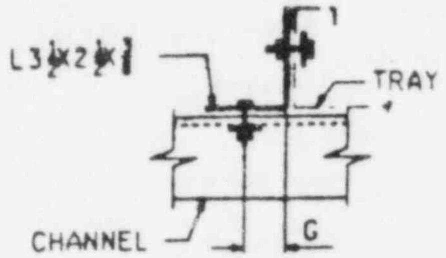
CLASS 1
(NUCLEAR SAFETY-RELATED)

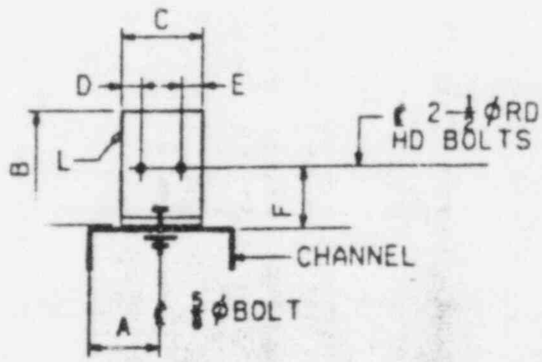
SAFETY CLASS 1 SEISMIC CATEGORY 1
SAFETY CLASS 2 CLASS 1E

C.P.S.E.S. GLEN ROSE

DWG. NO. CTH-2-10146

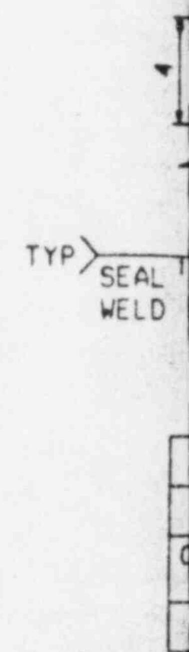
REV. 01



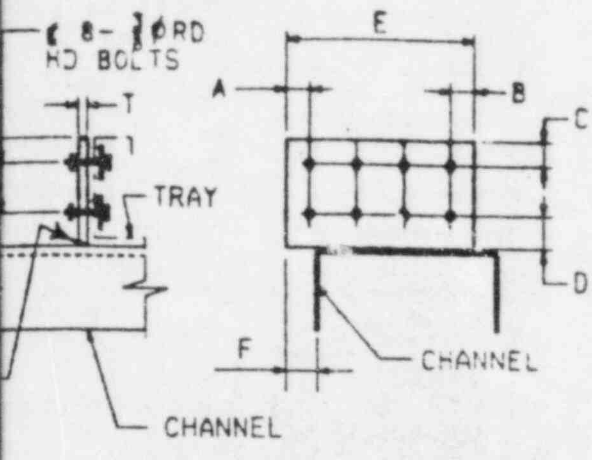


TYPE M

G2	4	3½	4	1⅛	1⅛	2	1½	HS	F
G1	4	3½	4	1⅛	1⅛	2	1½	HS	F
CLAMP NO.	A	B	C	D	E	F	G	BOLT MKG	WASH TYPE
CLAMP TYPE M									



CTH-2-10146



TYPE E

1	1/2	1/2	1	1	6	1 1/4	-	-	1/2
2	1/2	1/2	1	1	6	1 1/4	-	-	1/2
CLAMP NO.	A	B	C	D	E	F	G	H	T

CLAMP TYPE E

NOTES:

FOR NOTES SEE SHEET 1.

ATTACHMENT E
SHEET 4 OF 4

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
01	PS	RCK	RL	YL KEA 6-4	AS BUILT

TI
APERTURE
CARD

Also Available On
Aperture Card

TEXAS UTILITIES
GENERATING CO.

EBASCO SERVICES INCORPORATED

CABLE TRAY HANGER

8603210035-11

CLASS 1
(NUCLEAR SAFETY-RELATED)
SAFETY CLASS 1 SEISMIC CATEGORY 1
SAFETY CLASS 2 CLASS 1E
SAFETY CLASS 3 ASSOCIATED CIRCUITS

C.P.S.E.S.
GLEN ROSE
TEXAS

DWG. NO. CTH-2-10146
SH 2 OF 2

REV. 01

```
            000000000000   KK
           000000000000   KK
          00          00  KK       KK
         00          00  KK      KK
        00          00  KK     KK
       00          00  KKKKKKK
      00          00  KKKKKKK
     00          00  KK     KK      R
    00          00  KK      KK      RR
   00          00  KK       KK     RR
  000000000000  KK        KK    RR
 000000000000  KK         KK   RR


   JJJJJJJJJJ        11        666666
   JJJJJJJJJJ       111       6666666
       JJ          1111       66
       JJ            11       66
       JJ            11       66
       JJ            11       6666666
       JJ            11       6666666
       JJ            11       66
  JJ   JJ            11       66
  JJ   JJ            11       66
  JJJJJJJ        1111111111   6666666
   JJJJJ         1111111111    666666
```

```
1     //OKREDD JOB HE66YECA000CP3306297,'K.REDDY'
      // MSGCLASS=A,TIME=60,MSGLEVEL=(0,0),REGION
```

```
IEF374I STEP /NEWS     / STOP  86007.1732 TCB    OMIN
*******************************************************
*
*                                                    K
*
* STEP NAME      NEWS            START TIME 17.32.44.28
* PGM NAME       IEBGENER        STOP  TIME 17.32.45.31
* DISPATCH PRTY 105              ELAP. TIME 00.00.01.03
* PERF. GROUP              1     SRU               .48
*
*******************************************************
*
*
* UNIT    EXCP COUNT      UNIT    EXCP COUNT      UNIT
```

CTH - 2 - 10146

ATTACHMENT G
SHEET 1 OF 4

```
KK   RRRRRRRRRRRR    EEEEEEEEEEEE   DDDDDDDDD         DDDDDDDDD
K   RRRRRRRRRRRR   EEEEEEEEEEEE   DDDDDDDDDD       DDDDDDDDDD
   RR        RR   EE              DD        DD   DD        DD
  RR        RR   EE              DD        DD   DD        DD
 RR        RR   EE              DD        DD   DD        DD
RRRRRRRRRRRR   EEEEEEEE        DD        DD   DD        DD
RRRRRRRRRR    EEEEEEEE        DD        DD   DD        DD
    RR       EE              DD        DD   DD        DD
    RR      EE              DD        DD   DD        DD
    RR     EE              DD        DD   DD        DD
    RR   EEEEEEEEEEEE   DDDDDDDDDD   DDDDDDDDDD
    RR  EEEEEEEEEEEE   DDDDDDDDD    DDDDDDDDD
```

TI
APERTURE
CARD

Also Available On
Aperture Card

```
666        444      9999999999              AAAAAAAAAA
6666      4444     999999999999            AAAAAAAAAAAA
 66      44 44     99        99            AA        AA
        44  44     99        99            AA        AA
       44   44     99        99            AA        AA
666   44444444444  999999999999            AAAAAAAAAAAA
6666  44444444444  999999999999            AAAAAAAAAAAA
 66         44               99            AA        AA
 66         44               99            AA        AA
 66         44     99        99            AA        AA
6666        44     999999999999            AA        AA
666         44      9999999999             AA        AA
```

CLASS=G,   JOB 1649
1500K

CLIENT TUGC PROJECT COMANCHE PEAK UNIT #2
SUBJECT CTH-2-10146

COMPUTER PROGRAM USED STRUDL (DYNAMIC)
PREPARED BY: K. REDDY DATE 1-22-86
CHECKED BY: [signature] DATE 1-22-86
REF. CALC. BOOK NO. PRINTOUT BOOK NO.

```
0.06SEC SRB     0MIN 00.00SEC VIRT      52K SYS     368K
*****************************************************************************
                                                                            *
MAND DATA ACQUISITION SYSTEM                                                *
                                                                            *
VIRT SYS  USED      368K    PAGE INS              2  STEP TCB    00.00.00.06 *
VIRT CORE USED       52K    PAGE OUTS             0  JOB  TCB    00.00.00.16 *
SWAPS/PAGES      0/    0    SRB TIME    00.00.00.00  CONDITION CODE     0000 *
TRANS ACT TIME 00.00.00.45                           OCCUPANCY   00.00.00.00 *
                                                                            *
*****************************************************************************
     EXCP STATISTICS                                                        *
                                                                            *
XCP COUNT       UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT *
```

8603210035-12

```
STRUDL '2-10146'  'COMANCHE PEAK CABLE TRAY DESIGN ; 2-

        PPPPDPPPPPP            SSSSSSSSSSS   TTTTTTTTT
       PPPPD DPPPPP           SSSSSSSSSSS   TTTTTTTTT
      PPPPD  DPPPP           SS                TT
     PPPPD   DPPP           SS                TT
    PPPPD    DPP  HHHHH    SSSSSSSSSSS       TT
   PPPPD     DP  HHHHH    SSSSSSSSSSS       TT
  PPPPDDDDDDDD                     SS      TT        R
 PPPPPPPPPPPP                     SS      TT        RR
PP                      SSSSSSSSSSS      TT        RR
PP                     SSSSSSSSSSS      TT        RR

                 ****************************************
                 *
                 *            P-DELTA STRUDL
                 *
                 *             VERSION 1085
                 *
                 *        A PROPRIETARY PRODUCT OF
                 *
                 *            P-DELTA, INC.
                 *           42 ST. ANN ROAD
                 *      QUINCY, MASSACHUSETTS 02170
                 *          TEL. (617) 472-8533
                 *
                 *     COPYRIGHT (C) 1982,1983,1984,19
                 *         ALL RIGHTS RESERVED
                 *
                 *        17:32:55       1/07/86
                 *
                 ****************************************

$ BY  K. REDDY   LAST UPDATE 01/07/86  TIME 09:40
LIMIT MAX  JOI     TO  100  MEM  TO  100  LOA  TO

TYPE SPACE FRAME

ALPHANUMERIC IDENTIFIER TREATMENT BY CHARACTER COMPARIS

UNITS INCHES, KIPS,DEGREES, FAHRENEIT, LBM, SECONDS

JOINT COORDINATES

1          0.0        0.0  0.0

2          0.0       16.0  0.0

3          0.0       31.0  0.0

4          0.0       54.571          0.0

5          7.134    0.0    0.0

6         25.134    0.0    0.0
```

146F'

CTH-2-10146

ATTACHMENT G

SHEET 2 OF 4

```
  RRRRRRRRRRR    UU        UU   DDDDDDDDDDD    LL
 RRRRRRRRRRRR   UU        UU   DDDDDDDDDDDD   LL
 RR        RR  UU        UU   DD         DD  LL
RR        RR  UU        UU   DD         DD  LL
RRRRRRRRRRR  UU        UU   DD         DD  LL
RRRRRRRRRR  UU        UU   DD         DD  LL
R        UU        UU   DD         DD  LL
RR       UU        UU   DD         DD  LL
 RR      UUUUUUUUUUU   DDDDDDDDDDDD   LLLLLLLLLLL
  RR    UUUUUUUUUUU   DDDDDDDDDDDD   LLLLLLLLLLL

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******
```

25

TI
APERTURE
CARD

Also Available On
Aperture Card

8603210035-13

```
        000000000000  KK        KK
       000000000000  KK       KK
      00        00  KK      KK
     00        00  KK     KK
    00        00  KK    KK
   00        00  KKKKKKK        R
  00        00  KKKKKKK        RR
 00        00  KK     KK      RR
00        00  KK      KK     RR
00        00  KK       KK    RR
000000000000  KK        KK  RR
000000000000  KK        KK  RR

  JJJJJJJJJJ   9999999999   777777777
  JJJJJJJJJJ  999999999999  777777777
      JJ      99        99  77       7
      JJ      99        99          77
      JJ      99        99         77
      JJ      999999999999        77
      JJ      999999999999        77
      JJ                99        77
JJ    JJ                99        77
JJ    JJ      99        99        77
JJJJJJJJ      999999999999        77
 JJJJJJ        9999999999         77
```

001 001 R0259   K.

```
1    //OKREDD JOB HE66YECA000CP3306297,'K.REDDY',
     // MSGCLASS=A,TIME=60,MSGLEVEL=(0,0),REGION=
```

CTH-2-10146

ATTACHMENT 4

SHEET 3 OF 4

```
 RRRRRRRRRRR     EEEEEEEEEEEE   DDDDDDDDD        DDDDDDDDD
RRRRRRRRRRRR    EEEEEEEEEEEE   DDDDDDDDDD      DDDDDDDDDD
RR         RR   EE             DD       DD     DD       DD
R          RR   EE             DD       DD     DD       DD
           RR   EE             DD       DD     DD       DD
RRRRRRRRRR      EEEEEEEE       DD       DD     DD       DD
RRRRRRR         EEEEEEEE       DD       DD     DD       DD
 RR             EE             DD       DD     DD       DD
 RR             EE             DD       DD     DD       DD
 RR             EE             DD       DD     DD       DD
 RR             EEEEEEEEEEEE   DDDDDDDDDD      DDDDDDDDDD
 RR             EEEEEEEEEEEE   DDDDDDDDD       DDDDDDDDD

77        11        2222222222        AAAAAAAAAA
         111       222222222222      AAAAAAAAAAAA
        1111       22        22      AA        AA
          11                 22      AA        AA
          11                 22      AA        AA
          11                22       AAAAAAAAAAAA
          11               22        AAAAAAAAAAAA
          11              22         AA        AA
          11             22          AA        AA
          11            22           AA        AA
      1111111111   222222222222      AA        AA
      1111111111   222222222222      AA        AA
```

EDDY   ROOM   11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*

11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*

LASS=C,   JOB 9712
OOK

TI APERTURE CARD

Also Available On Aperture Card

CLIENT TUGC   PROJECT COMANCHE PEAK UNIT #2

SUBJECT CTH-2-101A6

COMPUTER PROGRAM USED STRUDL (STATIC)

PREPARED BY: K. REDDY   DATE 1-22-86

CHECKED BY: B Banerjee   DATE 1-22-86

REF. CALC. BOOK NO. .... PRINTOUT BOOK NO. ....

8603210035-14

```
*** PSUICES V5M5 ***     COMANCHE PEAK CABLE TRAY DESI

STRUDL '2-10146'  'COMANCHE PEAK CABLE TRAY DESIGN ; 2

          PPPPDPPPPPP                 SSSSSSSSSSS   TTTTTTTT
         PPPPD DPPPPP                SSSSSSSSSSS   TTTTTTTTT
        PPPPD  DPPPP                SS                  TT
       PPPPD   DPPP                SS                  TT
      PPPPD    DPP   HHHHH    SSSSSSSSSSS            TT
     PPPPD     DP   HHHHH   SSSSSSSSSSS            TT
    PPPPDDDDDDDD                       SS          TT
   PPPPPPPPPPPP                       SS         TT        R
  PP                        SSSSSSSSSSS        TT        RR
 PP                        SSSSSSSSSSS        TT        RR

                 ******************************************
                 *
                 *               P-DELTA STRUDL
                 *
                 *               VERSION 1085
                 *
                 *          A PROPRIETARY PRODUCT OF
                 *
                 *               P-DELTA, INC.
                 *             42 ST.  ANN ROAD
                 *          QUINCY, MASSACHUSETTS 02170
                 *            TEL. (617) 472-8533
                 *
                 *         COPYRIGHT (C) 1982,1983,1984,1
                 *            ALL RIGHTS RESERVED
                 *
                 *          11:30:00       1/13/86
                 *
                 ******************************************

$ BY  K. REDDY   LAST UPDATE 01/13/86  TIME 12:05
LIMIT MAX  JOI     TO  100  MEM  TO  100  LOA  TO

TYPE SPACE FRAME

ALPHANUMERIC IDENTIFIER TREATMENT BY CHARACTER COMPARI

UNITS INCHES, KIPS,DEGREES, FAHRENEIT, LBM, SECONDS

JOINT COORDINATES

1           0.0          0.0  0.0

2           0.0         16.0  0.0

3           0.0         31.0  0.0

4           0.0         54.571          0.0

5           7.134      0.0     0.0

6          25.134      0.0  -  0.0
```

/ 2-101465 11.40.00.84

D146S'

CTH-2-10146

T RRRRRRRRRRR UU UU DDDDDDDDDDD LL
RRRRRRRRRRRR UU UU DDDDDDDDDDDD LL
RR RR UU UU DD DD LL
RR RR UU UU DD DD LL
RRRRRRRRRRRR UU UU DD DD LL
RRRRRRRRRRR UU UU DD DD LL
RR UU UU DD DD LL
RR UU UU DD DD LL
RR UUUUUUUUUU DDDDDDDDDDDD LLLLLLLLLLL
RR UUUUUUUUUU DDDDDDDDDDDD LLLLLLLLLLL

ATTACHMENT G
SHEET A OF A

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5 *
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25

ON

TI
APERTURE
CARD

Also Available On
Aperture Card

8603210035-15

ATTACHMENT 4

SHEET 1 OF 2

CTH-2-10146

TRANSMITTAL #
PAGE 1 OF 2

FOOTPRINT LOAD TRANSMITTAL FORM

TO: TNE ENGINEERING SUPPORT

The following Footprint Loads are hereby transmitted for processing in accordance with TNE-AD-4:

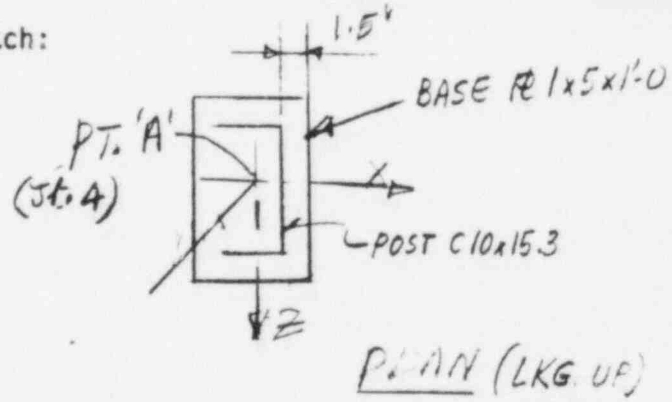
1. Support No. 2-10146
2. Support Rev. 02
3. Support installed [✓] not installed [N/A]
4. Footprint Loads have been previously supplied [N/A] YES [✓] NO
5. Footprint Loads:

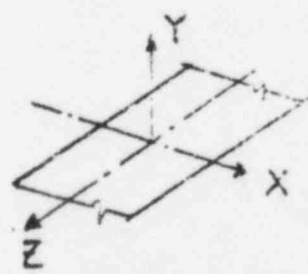
PT. 'A' (JT. 4)

	F = (KIPS)			M = (FT-KIPS)		
	FX	FY	FZ	MX	MY	MZ
Design	0.354	1.722	0.249	0.928	0	0.649
Faulted	0.481	2.026	0.374	1.392	0	0.881

Loads are: Conservative [✓] Refined [N/A]

6. Prepared By: K. Reddy Date 1-21-86
   Checked By: B Banerjee Date 1-21-86
7. Attachment Size: X = 5 in. Z = 12 in.
8. Sketch:





9. Special Instructions: Distribute copy to TNE Civil/WEB

10. Acknowledgement of Receipt:
    Please acknowledge the receipt of this transmittal by signing, dating, and returning a copy of this form to ________
    Originator

____
Discipline

Received ________ Date ________
TNE Engineering Support

CTH-2-10146

TRANSMITTAL #
PAGE 2 OF 2

FOOTPRINT LOAD TRANSMITTAL FORM

TO: TNE ENGINEERING SUPPORT

The following Footprint Loads are hereby transmitted for processing in accordance with TNE-AD-4:

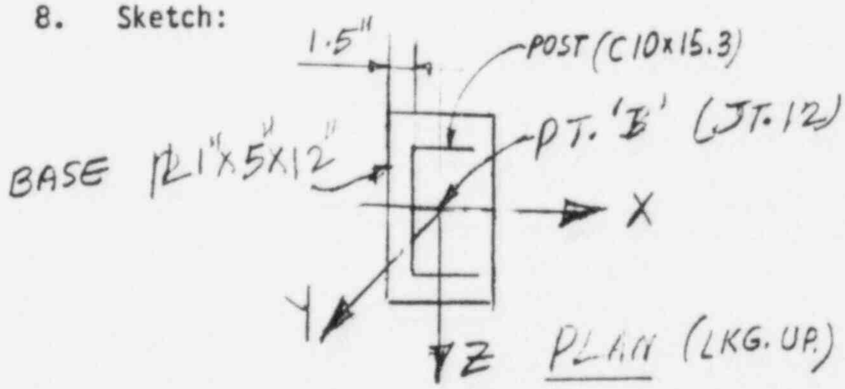
1. Support No. 2-10146
2. Support Rev. 02
3. Support installed [✓] not installed [N/A]
4. Footprint Loads have been previously supplied [N/A] YES [✓] NO
5. Footprint Loads:

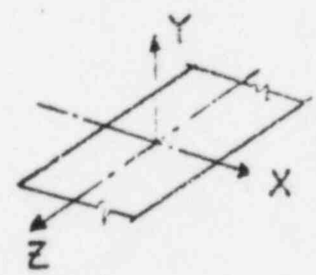
PT 'B' (JT. 12)

	F = (KIPS)			M = (FT-KIPS)		
	FX	FY	FZ	MX	MY	MZ
Design	0.358	1.987	0.313	1.140	0	0.650
Faulted	0.487	2.340	0.475	1.710	0	0.884

Loads are: Conservative [✓] Refined [N/A]

6. Prepared By: K. Reddy Date 1-21-86
   Checked By: B Banerjee Date 1-21-86
7. Attachment Size: X = 5 in. Z = 12 in.
8. Sketch:





9. Special Instructions: Distribute copy to TNE Civil/WEB

10. Acknowledgement of Receipt:
Please acknowledge the receipt of this transmittal by signing, dating, and returning a copy of this form to ______
Originator

______
Discipline

Received ______ Date ______
TNE Engineering Support

CTH-2-10146

ATTACHMENT I

SHEET 1 OF 2

EBASCO

Interoffice Correspondence

DATE May 24, 1985 FILE REF SAG.TUG2.439

TO R. O'Neill OFFICE LOCATION 86 WTC

FROM R. Alexandru/E. Birgy E.B. OFFICE LOCATION 82 WTC

SUBJECT TEXAS UTILITIES GENERATING CO.
COMANCHE PEAK UNIT NO. 2
CABLE TRAY HANGER DESIGN REVIEW
PASSED AS-BUILT HANGERS SFGD BLDG.

Enclosed please find passed as built marked-up Cable Tray Hanger Design Drawings, Rev. A, for your correction and resubmittal.

Design Drawing No.

1. CTH-2-12868
2. CTH-2-10171
3. CTH-2-10368
4. CTH-2-10146
5. CTH-2-
6. CTH-2-
7. CTH-2-
8. CTH-2-
9. CTH-2-
10. CTH-2-

cc:

J. Santamaria
Y. Oktay
J. Padalino
E. Birgy
R. Alexandru
SAG.TUG2.439

ATTACHMENT I
SHEET 2 OF 2

CTH-2-10146 (REV.

DB-1A-222

SR.NO	COMMENTS	RESOLUTION
1	WHERE IS 1" PL WELDED TO EMBEDDED PL DIMENSIONALLY	CEILING HAS LARGE ST'L. EMB. PL.

RECEIVED
APR 24 198?
R. ALEXANDRU

CTH-2-10146

EBASCO SERVICES INCORPORATED

CALCULATION COVER SHEET

ATTACHMENT ...

SHEET 1 OF 22

CLIENT TEXAS UTILITIES GENERATING CO. OFS NO. 3317

PROJECT COMANCHE PEAK UNIT NO. 2 DEPT NO. 549

SUBJECT CABLE TRAY HANGER

CALCULATION NO. CTH-2-10146 NUMBER OF SHEETS 15

PROBLEM AS-BUILT REVIEW R/B N/A, SFGD ✓, DG/B N/A, AUX/B N/A

DESIGNED AND INSTALLED N/A

APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.

SUPERSEDED

CONTAINS ASSUMPTIONS WHICH REQUIRE CONFIRMATION* YES N/A NO ✓

ASSUMPTIONS CONFIRMED ON N/A BY N/A

REV. NO.	SHEET NOS.	CALCULATION BY: NAME	DATE	CHECKED BY: NAME	DATE	OPTIONAL	REVIEWED OR APPROVED BY: NAME	DATE
00	1-15	P. PATADIA	5/15/85	P.L. PATEL	5-17-85			

PRELIMINARY ☐ N/A FINAL ☑ SUPERSEDES CALC NO. N/A

* CONFIRMATION OF DESIGN DATA TO BE VERIFIED BY FIELD.

CTH-2-10146

EBASCO SERVICES INCORPORATED

BY P. PATADIA DATE 5/3/85 SHEET 1 OF 15

CH. BY P.L. PATEL DATE 5-17-85 OFS NO. 3317.002 DEPT. NO. 549

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Steam Electric Station Unit No.# 2

SUBJECT Standard Format for Seismic Design Calculation

I. DESIGN DATA

1. CTH No. 2-10146

2. Location: Building SAFE GUARD ELEV. 810'-6"

3. Type of Support: Transverse N/A
   Longitudinal ✓
   Multidirectional N/A

4. Size of Cable Tray: TRAY 1 (12"x4"), TRAY 2 (18"x4")
   Unit Wt. = 51 #/FT 74 #/FT

5. Span Length = 6'-2" (TRAY 1), 3'-10" (TRAY 2)

6. Total Cable Tray Wt = 315# (TRAY 1) 284# (TRAY 2)

7. Seismic design "g" value AT EL. 831'-6" USED FOR DESIGN

   SSE (H = 1.5 x 1.16 = 1.74; V = 1.5 x 1.809 = 2.714)
   OBE (H = 1.5x 1.141 = 1.712; V = 1.5x 1.30 = 1.95)
   THESE VALUES ARE REVISED AFTER FREQUENCY ANALYSIS. SEE PAGE 4

   $\frac{SSE\ 'H'}{OBE\ 'H'} = \frac{1.74}{1.712} = 1.02 < 1.60$ $\frac{SSE(1+V)}{OBE(1+V)} = \frac{1+2.714}{1+1.95} = 1.26 < 1.6$ ∴ OBE GOVERNS.

8. No. of Earthquake Components to be considered = 3 ✓, 2 N/A, 1 N/A

9. Anchorage

   Strip Plate N/A

   Larger Embedded Plate ✓

   Surface Plate N/A, Hilti-Kwik Bolt N/A
   Richmond Insert N/A
   Hilti Super-Kwik Bolt N/A

10. Type of Mounting: Ceiling Mounted ✓
    Wall Mounted N/A
    Steel Mounted N/A
    Floor Mounted N/A

881/8-81

BY P. PATADIA DATE 5/14/85 SHEET 2 OF 15

CHKD. BY ________ DATE ________ OFS NO. 3317.002 DEPT. NO. 549

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Steam Electric Station Unit No. #2

SUBJECT Standard Format for Seismic Design Calculation

II. ANALYSIS METHOD

1. Computer PSDI-STRUDL Run no. J4688A (DYNAMIC ANALYSIS) Date 5/8/85
   J298A (STATIC ANALYSIS) 5/14/85
2. Hand N/A

III. DESIGN CALCULATION INCLUDES

1. Member Stress Evaluation ✓
2. Member Connection Detail Evaluation and ✓
3. Anchorage Evaluation ✓

IV. CONCLUSION

1. CTH is Adequate ☑
2. CTH is Adequate with conditions as noted on drawing ☐ N/A
3. CTH is Adequate as Modified ☐ N/A

ATTACHMENT J

SHEET 4 OF 28

CTH-2-10146

EBASCO SERVICES INCORPORATED

BY P. PATADIA DATE 5/6/85

SHEET 3 OF 15

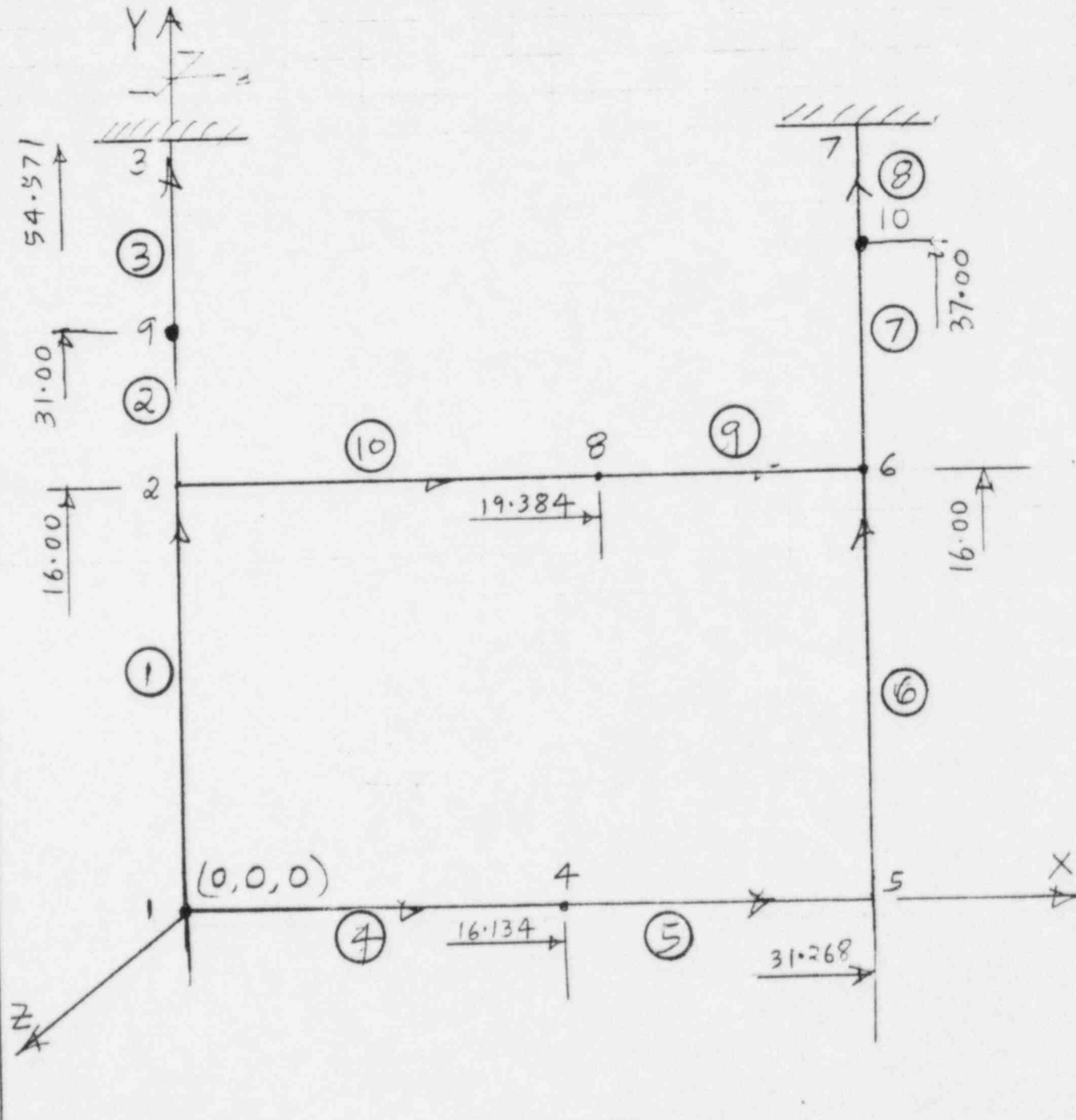
CHKD. BY P.L.Patel DATE 5-17-85

OFS NO. 3317.002 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO

PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS



RESULTS ARE TAKEN FROM THE DYNAMIC ANALYSIS RUN # J 4688A DATED 5-8-85 AND SYSTEM FREQUENCY CALCULATED. THESE SYSTEM FREQUENCY IS THEN PLOTTED ON RESPONSE SPECTRA CURVE FOR THE SEISMIC 'g' VALUES.

FREQUENCY OF STRUCTURE FROM DYNAMIC ANALYSIS

- IN 'x' DIRECTION —— 24 HZ
- IN 'y' DIRECTION —— 119 HZ
- IN 'z' DIRECTION —— 63 HZ

FOR CABLE TRAYS 18"x4" FROM TABLE 4 FOR 6'-2" SPAN

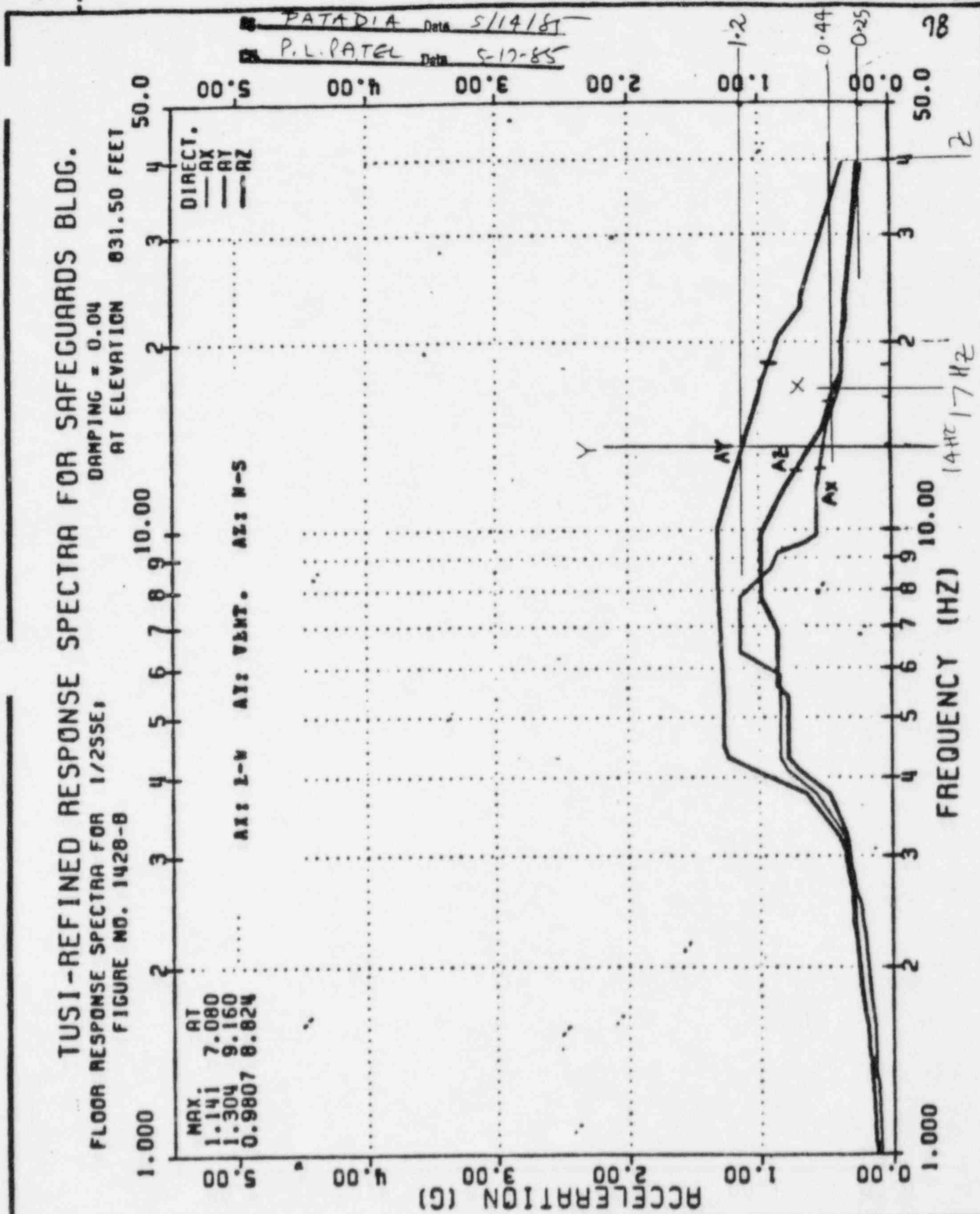
$f_H = 25.09$
$f_V = 14.15$

FOR LONG. SPAN FROM TABLE 3 FOR 6'-2" SPAN
USE 10'-0" SPAN FOR 18"x4" TRAY — $f_L = 93.56$

SUPPORT f_{nx} —— $\frac{1}{f_{nx}^2} = \frac{1}{24^2} + \frac{1}{25.09^2} = 17.34$ Hz

SUPPORT f_{ny} —— $\frac{1}{f_{ny}^2} = \frac{1}{119^2} + \frac{1}{14.15^2} = 14.05$

SUPPORT f_{nz} —— $\frac{1}{f_{nz}^2} = \frac{1}{63^2} + \frac{1}{93.56^2} = 52.25$ Hz



FSB-1C, Rev. 1

TUSI-SAFEGUARDS BLDG.

REFINED RESPONSE SPECTRA

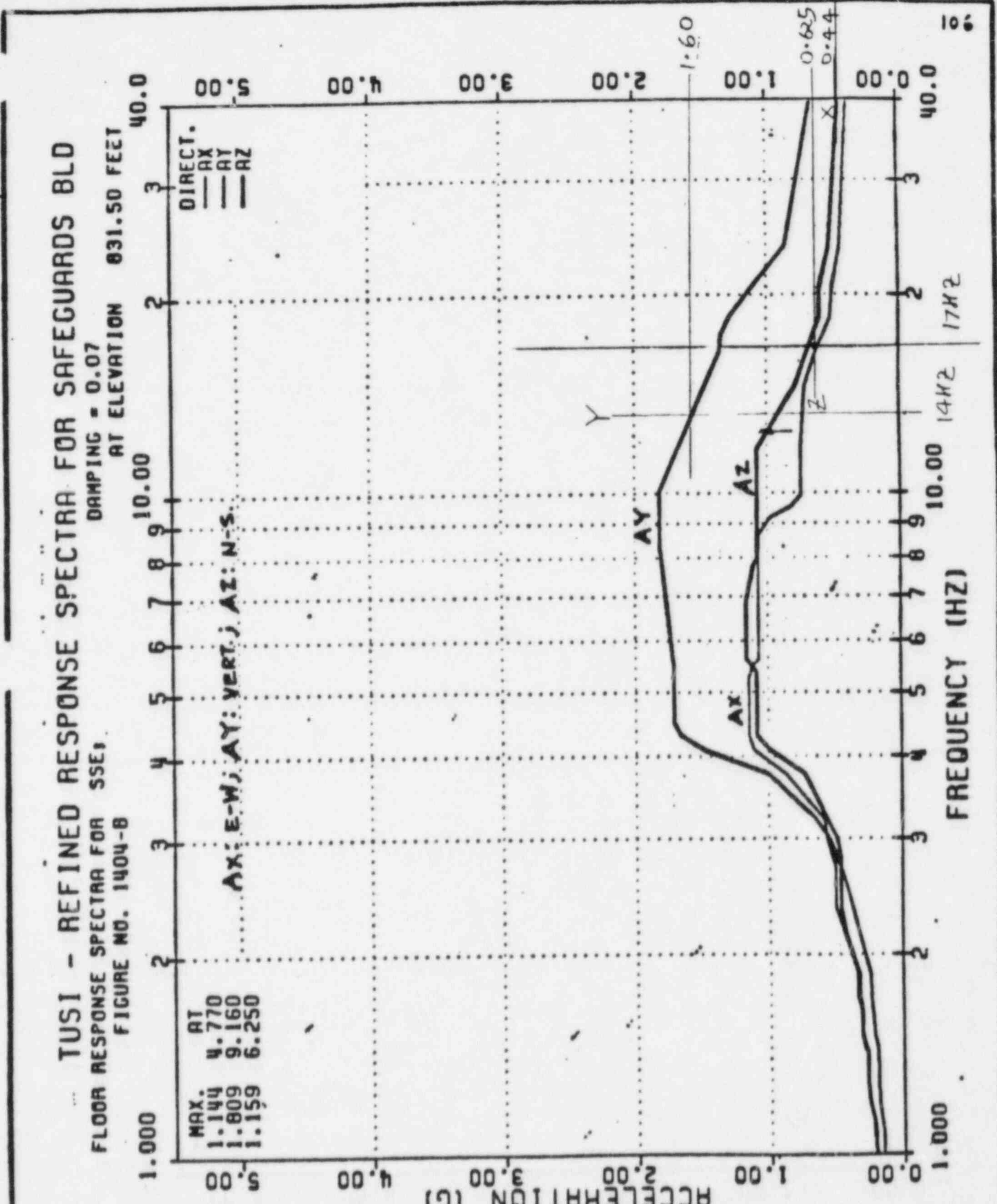
GIBBS & HILL, INC.
ENGINEERS, DESIGNERS, CONSTRUCTORS

JOB NO. 2323

FIGURE-1428-B

By PATADIA Date 5/14/85 **ATTACHMENT I** CPE-2-10146

Ch'd P.L. Patel Date 5/17/85 SHEET 7 OF 28 SHT 6 OF 15



TUSI-SAFEGUARDS BLDG.	
REFINED RESPONSE SPECTRA	
GIBBS & HILL, INC.	2323-046-94ES
JOB NO. 2323	FIGURE-1404-B

FSR-1C, Rev 2

DESIGN OBE 'g' VALUE REF. SH. 21

$g_x = 0.44 \times 1.25 = 0.55$

$g_Y = 1.20 \times 1.25 = 1.50$

$g_z = 0.25 \times 1.25 = 0.31$

USE $g_x = g_z = 0.55$, $g_Y = 1.50$

DESIGN SSE 'g' VALUE REF. SH. 22

$g_x = 0.625 \times 1.25 = 0.78$

$g_Y = 1.60 \times 1.25 = 2.00$

$g_z = 0.44 \times 1.25 = 0.55$

USE $g_x = g_z = .78$, $g_Y = 2.00$

$$\frac{\text{SSE H}}{\text{OBE H}} = \frac{0.78}{0.55} = 1.42 < 1.60$$

$$\frac{\text{SSE}(1+V)}{\text{OBE}(1+V)} = \frac{1+2.00}{1+1.50} = 1.20 < 1.60$$

∴ USE OBE 'g' VALUES

USE g (VERT) — 1.50, g(HOR) & g(LAT) — 0.55

g (HOR & LAT) — 0.55 (CONSERVATIVE)

CHECK [C10×15.3 (MEMBER # 3 & 8)

FORCES LISTED BELOW ARE FROM STRUDL OUT PUT. MAX. ABSOLUTE VALUE OF ENVELOPE LOADS USED TO CHECK THE MEMBER C10×15.3.

MAX. FORCES WILL BE USED WITH OBE ALLOWABLES FOR JT. 3 OR 7

MAX. FORCES & MOMENTS — Fx = 380#, FY = 1322#

Fz = 408#, Mx = 16,600 in#, My = 544 in#

Mz = 8156 in #

C 10×15.3 $A = 4.49\ in^2$, $S_x = 13.5\ in^3$

$S_z = 1.16\ in^3$ $t_f = 0.436\ in$, $t_w = 0.24\ in$

$d = 10.0''$ $b_f = 2.6''$ $J = 0.211\ in^4$ $C_w = 45.5\ in^6$

CTH-2-10146

BY P. PATADIA DATE 5/15/85 SHEET 8 OF 15

CHKD. BY P.L. Patel DATE 5/17/85 OFS NO. 3317002 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT

$$\frac{Kl}{r} = \frac{2 \times 56}{0.713} = 157 \qquad Fa = 6060 \text{ Psi}$$

$$fa = \frac{1322}{4.49} = 294 \text{ Psi} \qquad \frac{fa}{Fa} = \frac{294}{6060} = 0.05$$

$$\sigma_B = \frac{M_x}{S_x} + \frac{M_z}{S_z} = \frac{16600}{13.5} + \frac{8156}{1.16} = 8261 \text{ Psi}$$

WARPING NORMAL STRESS IS TO BE ADDED TO σ_B.

CHECK WARPING NORMAL STRESS — REF ROARK STRESS-STRAIN FORMULA BOOK TABLE 22 (1b)

$$\text{MAX. } \sigma_x = \frac{hb}{2} \cdot \frac{h+3b}{h+6b} E\theta''$$

$$h = 9.564'',\ b = 2.48'' \quad E = 29 \times 10^6$$

$$\sigma_x = \frac{9.564 \times 2.48}{2} \cdot \left(\frac{9.564 + 3 \times 2.48}{9.564 + 6 \times 2.48}\right) \times 29 \times 10^6 \times \theta'' = 239.25 \times 10^6 \times \theta''$$

$$\beta = \sqrt{\frac{GJ}{EC_w}} = \sqrt{\frac{11.2 \times 10^3 \times 0.21}{29 \times 10^3 \times 45.6}} = 0.0422$$

$$\text{MAX } \theta'' = \frac{T_0}{C_w E \beta} \tanh \beta l$$

$$T_0 = 544 \text{ in\#},\ C_w = 45.6,\ E = 29 \times 10^3$$

$$\beta = 0.422,\ l = 38''$$

$$\theta'' = \frac{544}{45.6 \times 29 \times 10^6 \times 0.0422} \tanh .0422 \times 38$$

$$= 8.99 \times 10^{-6}$$

$$\text{MAX } \sigma_x = 239.25 \times 10^6 \times 8.99 \times 10^{-6}$$

$$= 2151 \text{ Psi}$$

$\Sigma \sigma_B = 8261 + 2151 = 10412$ Psi
< 21600 Psi $\therefore$ OK

INTER ACTION

$$\frac{f_a}{F_a} + \frac{\sigma_B}{F_b} < 1.00$$

$$\frac{294}{6060} + \frac{10412}{21600} = 0.53 < 1.00$$

$\therefore$ OK

CHECK SHEAR

$F_x = 380^{\#}$, $F_Z = 408^{\#}$, $M_Y = 544$ in$^{\#}$

WARPING SHEAR STRESS

ROARK STRESS STRAIN FORMULA

$$\text{MAX } \tau_2 = \frac{h b^2}{4}\left[\frac{h+3b}{h+6b}\right]^2 E\theta'''$$

$h = 10.00 - .436 = 9.564$, $b = 2.6 - \frac{.24}{2} = 2.48''$

$$\tau_2 = \frac{9.564 \times 2.48^2}{4}\left[\frac{9.564 + 3\times 2.48}{9.564 + 6\times 2.48}\right]^2 E\theta''' = 7.12\,E\theta'''$$

$$\text{MAX } \theta''' = \tau_0 / C_w E = 544/(45.6 \times 29\times 10^6) = 0.412 \times 10^{-6}$$

$$\text{MAX } \tau_2 = 7.12 E\theta''' = 7.12 \times 29\times 10^6 \times .412\times 10^{-6} = 85 \text{ Psi}$$

$\text{MAX } \tau_1 = tG\theta'$, $t = 0.24$, $G = 11.2\times 10^6$

$$\theta' = \frac{\tau_0}{C_w E \beta^2}\left(1 - \frac{1}{\cosh \beta l}\right), \quad \beta = 0.0422, \; l = 38'', \; C_w = 45.6$$

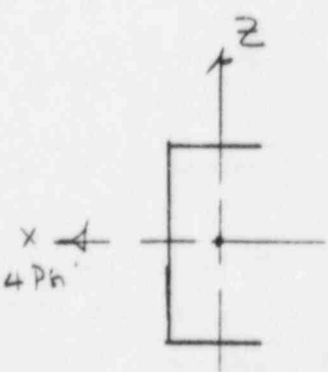
$$= \frac{544}{45.6 \times 29\times 10^6 \times .0422^2}\left\{1 - \frac{1}{\cosh \times 0.0422 \times 38}\right\} = 141.7 \times 10^{-6}$$

$$\text{MAX } \tau_1 = 0.436 \times 11.2\times 10^6 \times 141.7\times 10^{-6}$$
$$= 692 \text{ Psi}$$

$$f_{vx} = \frac{F_Y}{2 b_f t_f} = \frac{380}{2\times 2.6 \times 0.436} = 168 \text{ Psi}$$

$$f_t = \frac{M_Y t_f}{J} = \frac{544 \times .436}{0.211} = 1124 \text{ Psi}$$

$$f_{vz} = \frac{F_z}{d t_w} = 408/(10 \times .24) = 170 \text{ Psi}$$

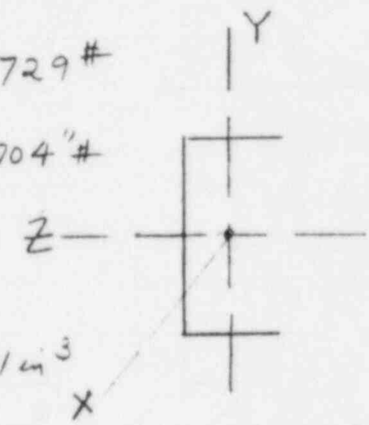


$$f_v = f_{vz} + f_t + \tau_{ws} = 170 + 1124 + 692 = 1986 \text{ Psi}$$
< 14400 Psi $\therefore$ OK

$\therefore$ C 10X15.3 IS ADEQUATE.

BY P. PATADIA DATE 5/11/85 SHEET 10 OF 15
CHKD. BY P.L. PATEL DATE 5-12-85 OFS NO. 3317.002 DEPT. NO. 549
CLIENT TEXAS UTILITIES GENERATING CO.
PROJECT COMANCHE PEAK UNIT 2
SUBJECT CABLE TRAY HANGERS

CHECK MEMBER [8x11.5 (MEMBER 4, 5, 9, 10)
ENVELOPE LOADS ARE TAKEN FROM LOAD CASE 1001, 1002, 2001, 2002.
FROM STRUDL OUTPUT. PG# 20&22



$F_x = 380^\#$, $F_y = 170^\#$ $F_z = 729^\#$

$M_x = 366''\#$ $M_y = 6749''\#$ $M_z = 1704''\#$

PROPERTIES OF C8x11.5

$A = 3.38\ in^2$, $S_z = 8.14\ in^3$, $S_y = .781\ in^3$

$J = 0.131\ in^4$, $r_y = 0.625$, $d = 8.0''$ $C_w = 16.5\ in^6$

$\bar{x} = 0.571\ in$ $e_0 = .807\ in$ $t_w = .220$, $t_f = 0.390$, $b_f = 2.26\ in$

$$\frac{Kl}{r_y} = \frac{1 \times 31.268}{.625} = 50 \qquad F_a = 18350\ Psi$$

$$f_a = \frac{380}{3.38} = 113\ Psi, \qquad \frac{f_a}{F_a} = \frac{113}{18350} = 0.006$$

$$\sigma_B = \frac{M_z}{S_z} + \frac{M_y}{S_y} = \frac{1704}{8.14} + \frac{6749}{0.781} = 8851\ Psi$$

CHECK WARPING NORMAL STRESS FOR C8x11.5
REF: — ROARK HANDBOOK TABLE 22 (1g)

$$MAX\ \theta'' = \frac{T_0}{2C_w E B} \cdot \tanh \frac{Bl}{4}$$

$$B = \sqrt{\frac{GJ}{EC_w}} = \sqrt{\frac{11.2 \times 10^3 \times 0.13}{29 \times 10^3 \times 16.5}} = 0.0552$$

$C_w = 16.5$, $E = 29 \times 10^6\ Psi$ $l = 30''$, $T_0 = 366''\#$

$$\theta'' = \frac{366}{2\times16.5\times29\times10^6\times.0552} \qquad \text{TANH } .0552\times30$$

$$= \frac{883\times.92968}{2\times16.5\times29\times10^6\times.0552} = 6.441\times10^{-6}$$

$$= 6.441\times10^{-6}$$

$$\text{MAX } \sigma_x = \frac{hb}{2}\left(\frac{h+3b}{h+6b}\right)E\theta''$$

$h = 8.0-0.39 = 7.61''$, $b = 2.26-0.11 = 2.15''$

$$\sigma_x = \frac{7.61\times2.15}{2}\left\{\frac{7.61+3\times2.15}{7.61+6\times2.15}\right\}\times29\times10^6\times6.441\times10^{-6}$$

$$= 1048 \text{ PSI}$$

$$\therefore \Sigma\sigma_B = 8851+1048$$

$$= 9899 \text{ PSI}$$

$$< 21600 \text{ PSI}$$

INTERACTION

$$\frac{113}{18350}+\frac{9899}{21600} = 0.465 < 1.00$$

$\therefore$ O.K

SHEAR

WARPING SHEAR STRESS

$$\text{MAX. } \tau_1 = tG\theta' \qquad t = 0.390,\ G = 11.2\times10^6$$

$$\theta' = \frac{T_0}{C_W EB^2}\left[1-\frac{1}{\cosh\frac{Bl}{4}}\right] \qquad l = 30'',\ T_0 = 366,\ C_W = 16.5$$

$B = .0552$ (FROM SHT 11)

$$\theta' = \frac{366}{16.5\times29\times10^6\times.0552^2}\left[1-\frac{1}{\cosh\frac{.0552\times30}{4}}\right] = 20.1\times10^{-6}$$

$$\text{MAX } \tau_1 = 0.39\times11.2\times10^6\times20.1\times10^{-6} = 88 \text{ PSI}$$

$$\text{MAX } \tau_2 = \frac{hb^2}{4}\left[\frac{h+3b}{h+6b}\right]^2 E\theta''' \quad : h = 7.61'',\ b = 2.15''$$

$T_0 = 366$, $C_W = 16.5$, $E = 29\times10^6$

$$\theta''' = \frac{T_0}{2C_W E} = \frac{366}{2\times16.5\times29\times10^6} = 0.382\times10^{-6}$$

$$\tau_2 = 46 \text{ PSI}$$

BY P. PATADIA DATE 5-10-85 SHEET 12 OF 15

CHKD. BY [signature] DATE 5-17-85 OFS NO. 3317.002 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS

$$f_{vz} = \frac{F_z}{2 b_f t_f} = \frac{729}{2 \times 2.26 \times 0.39} = 414 \text{ Psi}$$

$$f_{vy} = \frac{F_y}{d \cdot t_w} = \frac{170}{8 \times 0.22} = 97 \text{ Psi}$$

$$f_t = \frac{M_x t}{J} = \frac{366 \times 0.39}{0.131} = 1090 \text{ Psi}$$

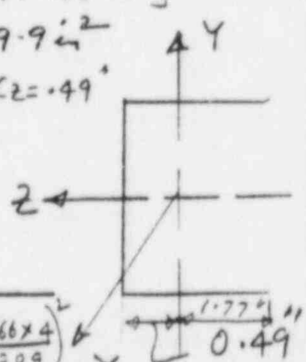
$$\text{TOTAL SHEAR} = f_{vz} + f_t + \tau_{ws}$$
$$= 414 + 1090 + 88$$
$$= 1592 \text{ Psi} < 14400 \text{ Psi} \therefore \text{OK}$$

$\therefore$ C 8×11.5 IS ADEQUATE.

<u>CHECK WELD BETWEEN C 8×11.5 & C 10×15.3</u>

WELD PROPERTIES OF C 8×11.5 FROM WELDING FORMULAS AND TABLES FOR STRUCTURAL & MECHANICAL ENGINEERS

<u>WELD PROPERTIES</u> – $A_w = 23.8$ in, $S_z = 49.9$ in^2
$S_Y = 5.62$ in^2, $J = 209$ in^3, $C_z = .49''$



FORCES & MOMENTS FROM SK. 10

$F_x = 380^{\#}$ $F_Y = 170^{\#}$ $F_z = 729^{\#}$

$M_x = 366''^{\#}$ $M_Y = 6749''^{\#}$ $M_z = 1704''^{\#}$

$$f = \sqrt{\left(\frac{380}{23.8} + \frac{1704}{49.9} + \frac{6749}{5.62}\right)^2 + \left(\frac{170}{23.8} + \frac{366 \times 1.77}{209}\right)^2 + \left(\frac{729}{23.8} + \frac{366 \times 4}{209}\right)^2}$$

$$= \sqrt{1251^2 + 11^2 + 38^2} = 1252^{\#}/\text{in}$$

$$t_w = \frac{1252}{.707 \times 21000} = 0.09'' < 0.1875'' \text{ (INSTALLED WELD)}$$
$\therefore$ OK

<u>CHECK WELD BETWEEN EMBD. PL & 1"×5"×12" PL (JOINTS 3 OR 7)</u>

CTH-2-10146

BY P. PATADIA DATE 5/10/85 SHEET 13 OF 15

CHKD. BY C.L. PATEL DATE 5-17-85 OFS NO. 3317.002 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS

PROPERTIES OF WELD BETWEEN EMBD PL & 1"×5"×12" PL

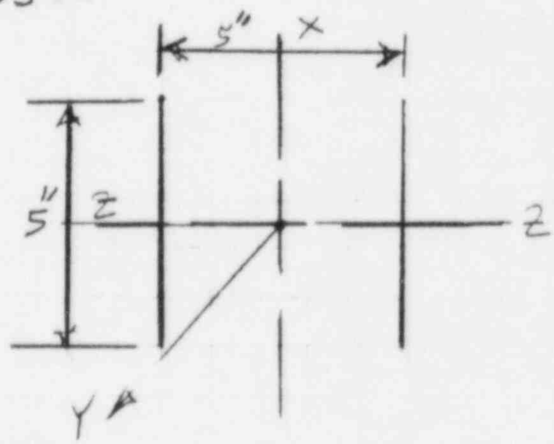
$A_W = 2 \times 5 = 10 \text{ in}$

$$S_Z = \frac{5^2}{3} = 8.33 \text{ in}^2$$

$$S_X = 5 \times 5 = 25.0 \text{ in}^2$$

$$J = \frac{2}{3} \times 5^3 = 83.33 \text{ in}^3$$

FORCES & MOMENTS FROM SHT. # 7 JOINTS 3 OR 7



$F_X = 380\#$, $F_Y = 1322\#$, $F_Z = 408\#$

$M_X = 16600 \text{ in}\#$, $M_Y = 544 \text{ in}\#$, $M_Z = 8156 \text{ in}\#$

$$f = \sqrt{\left(\frac{1322}{10} + \frac{8156}{8.33} + \frac{16600}{25.0}\right)^2 + \left(\frac{380}{10} + \frac{1322 \times 2.5}{83.33}\right)^2 + \left(\frac{408}{10} + \frac{1322 \times 2.5}{83.33}\right)^2}$$

$$= \sqrt{1776^2 + 78^2 + 81^2} = 1780\#/\text{in}$$

$$t_w = \frac{1780}{.707 \times 21000} = 0.12" < 0.1875 \left(\tfrac{3}{16}"\right)$$

MIN INSTALLED WELD.

BY COMPARISION WITH ABOVE CALC, WELD BETWEEN C10×15.3 & PL 1"×5"×12" IS ADEQUATE

CTH-2-10146

BY P. PATADIA DATE 5/10/85 SHEET 14 OF 15

CHKD. BY P.L. Patel DATE 5-12-85 OFS NO. 3317.002 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO. / COMANCHE PEAK ... CO.

PROJECT CABLE TRAY HANGERS

SUBJECT

CHECKING PL 1" × 5" × 12"

FORCE ON WELD = 1780#/in

MOMENT AT FLANGE / inch

$= 1780 \times 1 = 1780$ #in/in

S PL/in $= \frac{b t^2}{6}$

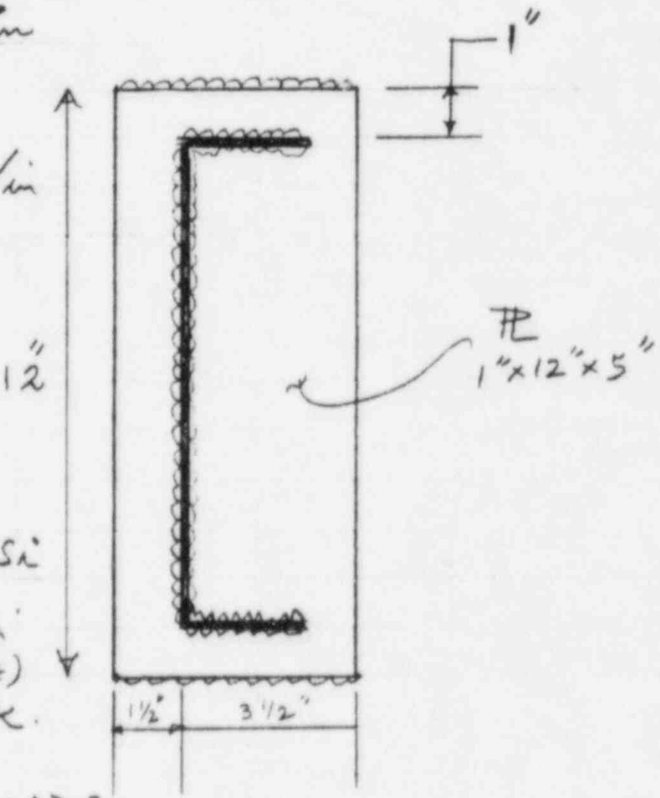
$= \frac{1 \times 1^2}{6}$

$= .167 \text{ in}^3$

σ_B PL $= \frac{1780}{.167} = 10659$ Psi

< 27000 Psi (ALLOWABLE)

∴ 1" × 5" × 12" PL IS O.K.



FOOT PRINT LOADS

FROM STRUDL OUT PUT

FORCES & MOMENTS	OBE	SSE
Fx	± 0.270 K	± 0.380 K
Fy	± 1.021 K	± 1.322 K
Fz	± 0.287 K	± 0.408 K
Mx	± 11.690 "K	± 16.600 "K
My	± 0.383 "K	± 0.544 "K
Mz	± 5.788 "K	± 8.156 "K

TEXAS UTILITIES GENERATING CO. ATTACHMENT 𝓍 CTH-2-10146
COMANCHE PEAK UNIT 2 SHEET 16 OF 20
CABLE TRAY HANGERS

SHT. 15 OF L5

1. PREPARED BY: T PATADIA DATE 5/10/85
2. CHECKED BY: P. L. PATEL DATE 5-12-85
3. DISCIPLINE = SAG-CE
4. SUPPORT NUMBER = CTH-2-10146
5. SUPPORT REV = —
6. CPSL NUMBER = —
7. CPSL REVISION = —
8. LOCATION (DESIGN/AS BUILT) = SFG D
9. EMBEDDED PLATE NUMBER =
10. LENGTH DIM. (LEFT/BOTTOM) = ____ FT.
11. WIDTH DIM. = ____ FT.
12. ATTACHMENT (X) = ____ IN.
ATTACHMENT (Z) = ____ IN.

13. THIS SHEET IS ATTACHMENT _ OF A TOTAL OF __ ATTACHMENTS FOR THIS SUPT.

FORCES & MOMENTS AT JOINT 3 & 7 (WORST LOAD)

14.

LOADS	Fo(KIPS)			Mo(FT-KIPS)		
	FX	FY	FZ	MX	MY	MZ
DESIGN	±0.270	±1.021	±0.287	±0.925	±0.032	±0.482
FAULTED	±0.380	±1.322	±0.408	±1.383	±0.046	±0.68

15. LIST OF GANGED SUPPORTS:

1) ____
2) ____
3) ____
4) ____
5) ____
6) ____
7) ____
8) ____
9) ____
10) ____

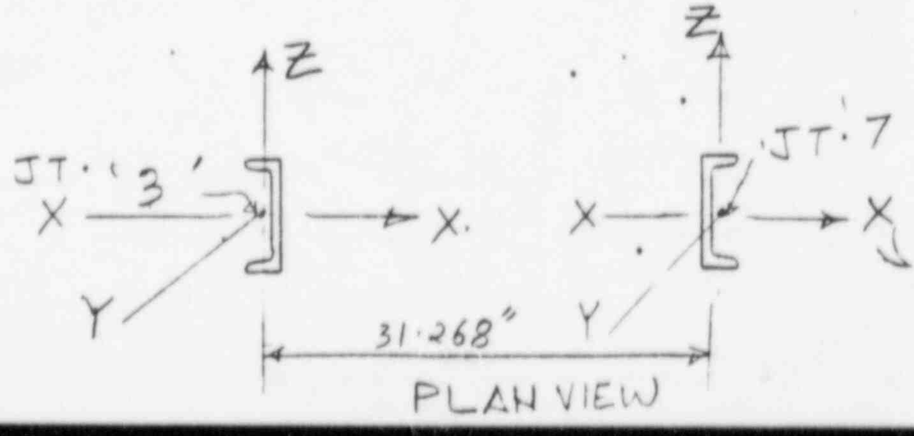
16.

REV.	DATE	PREPARED BY	CHECKED BY

17.

TRANSMITTAL RECORD	
REVISION	DATE

18. SKETCH



PLAN VIEW

CTH-2-1014-G
SH. 1 OF 1

CTH-2-10146

DB-1A-222

SR.NO	COMMENTS	RESOLUTION
1	WHERE IS 1" PL WELDED TO EMBEDDED PL DIMENSIONALLY	CEILING HAS LARGE ST'L. EMB. PL.

RECEIVED

APR 24 1985

R. ALEXANDRU

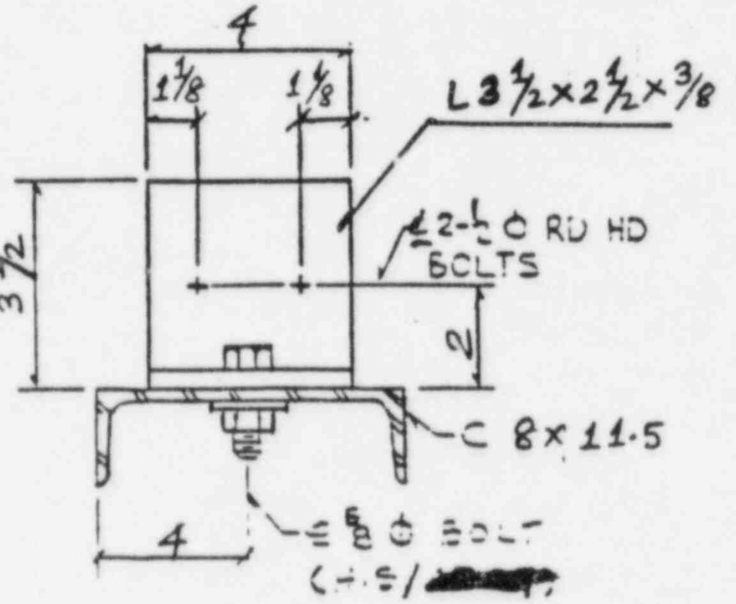
ATTACHMENT J

SHEET 18 OF 20

INFORMATION TRANSFERRED.
BY: P. K. Basu
CHKD: R. Chatterjee
DATE: 3-11-85

SUPPORT # CTH-2-10146
REV. # 01

SH. # 2 OF 3



TYPE M

FURNISH FOLLOWING INFO

	G TABLE		BEVEL WASHER	STANDARD WASHER	BOLT MARK H.S	BOLT MARK REGULAR
CLAMP #1	G1	1 1/2		✓	✓	
CLAMP #2	G2	1 1/2		✓	✓	
	G3					
	G4					
	G5					
	G6					
	G7					
	G8					
	G9					
	G10					

CTH-2-10146

ATTACHMENT J

SHEET 19 OF 20

VERIFY ALL INFO. FURNISHED

ANY DEVIATION SHALL BE NOTED

REVISED: 2/13/85

INFORMATION TRANSFERRED.

BY: P. K. Basu

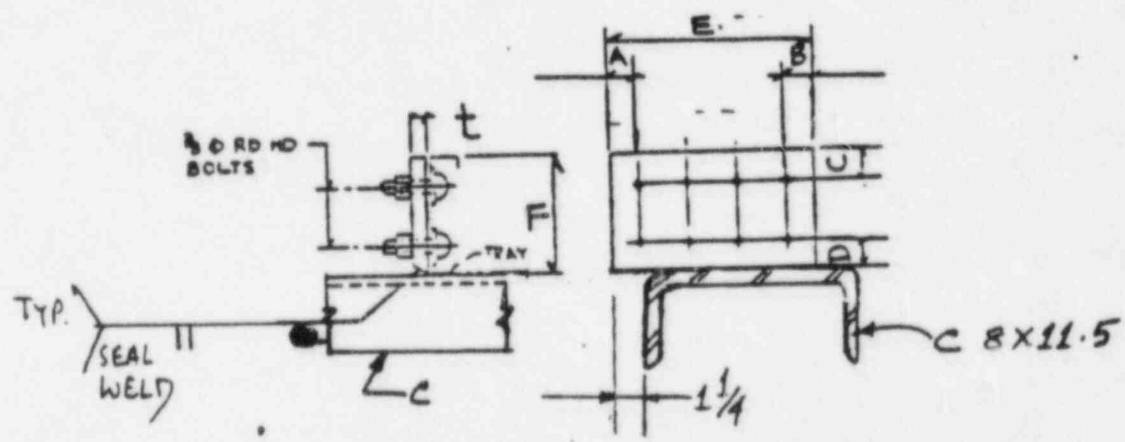
CHKD: R. Chatterjee

DATE: 3/11/85

SUPPORT # CTH-2-10146

REV. # 01

SH. # 3 OF 3



CLAMP TYPE- SPECIAL

(AT TRAY SPLICE)

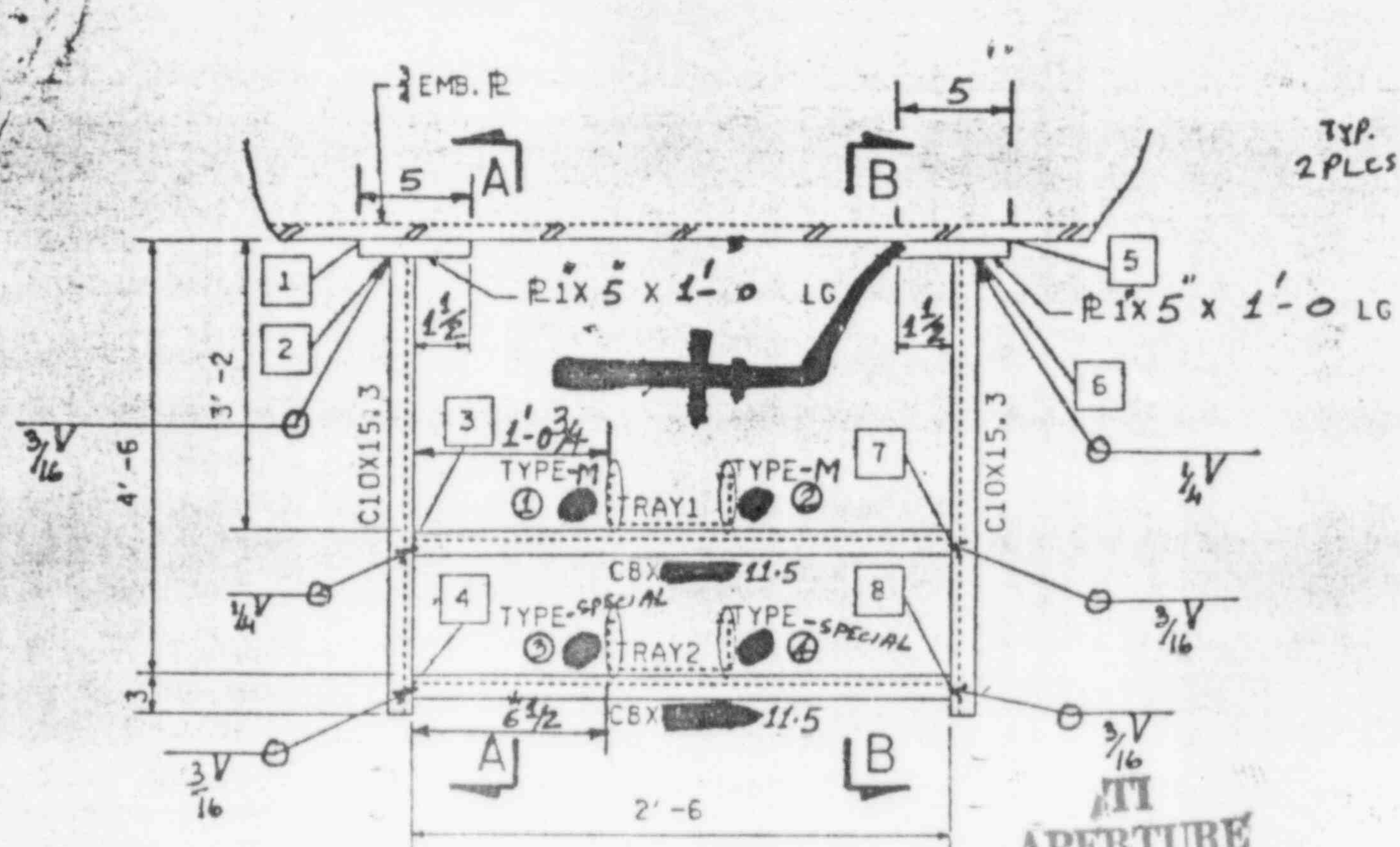
FURNISH THE FOLLOWING INFO:

CLAMP NOS	3	4						
A:	1/2	1/2						
B:	1/2	1/2						
C:	1	1						
D:	1	1						
E:	6	6						
F:	4	4						
PL THK t:	1/2	1/2						

RECEIVED

APR 24 1985

R. ALEXANDRU

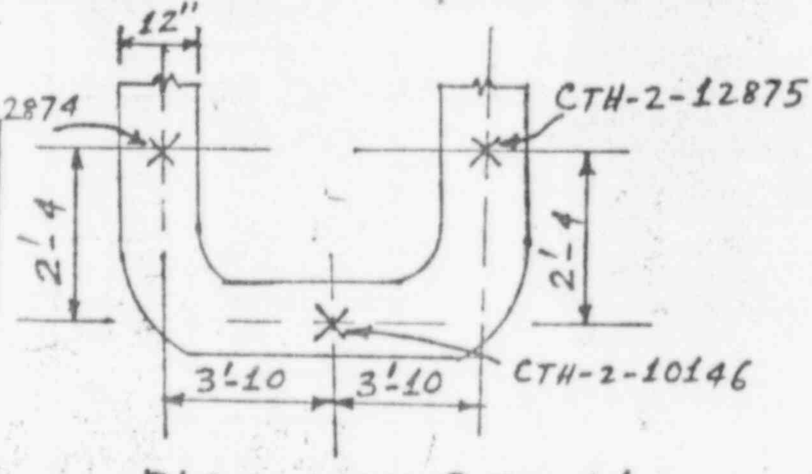


ELEVATION A-A

PASSED AS-BUILT

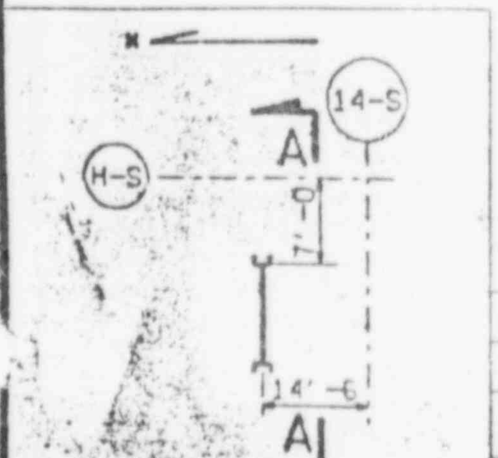
DONE BY P. PATADIA DATE 5/10/85

CHKD. BY P. L. PATEL DATE 5/17/85



PLAN- VIEW @ TRAY#1

N



ROOM NO. 83

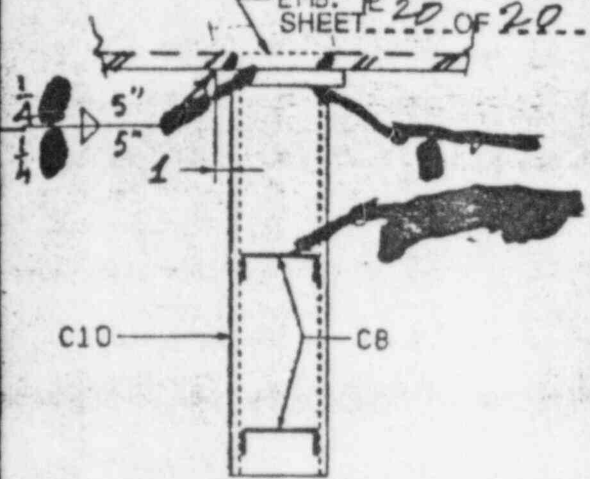
	SIZE	L1	CTH No	L2	CTH No	G DIM	BOLT MKG
						G4=	
						G3=	
TRAY 2	18X4	3'-10	12874	3'-10	12875	G2=	
TRAY 1	12X4	6'-2	12874	6'-2	12875	G1=	

TRAY SPANS

TRAY CLAMP

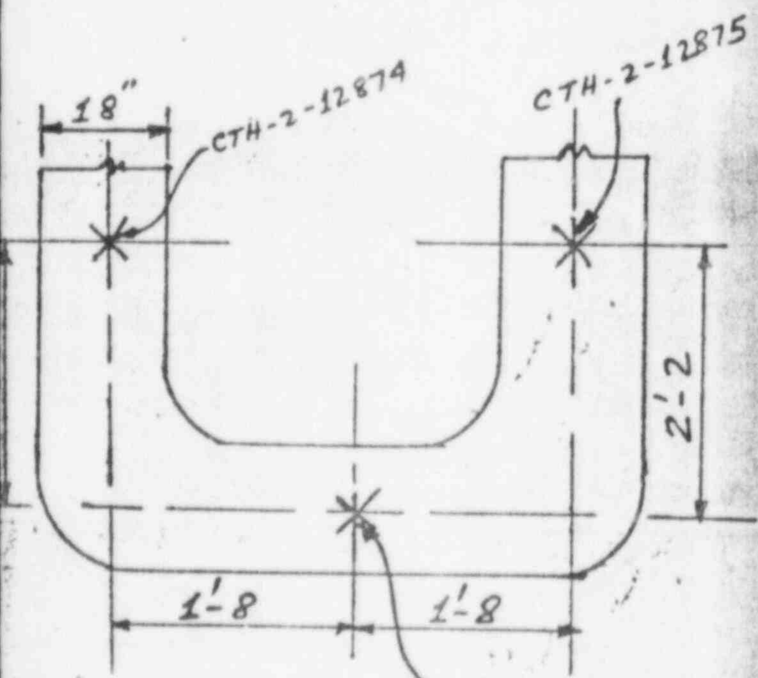
CTH-2-10146

ATTACHMENT __ SHEET 20 OF 28



ECT. A-A (AS SHOWN)

ECT. B-B (OPP. SHOWN)



PLAN VIEW @ TRAY #2

← N

NOTES: INFORMATION TRANSFERRED

[redacted]

BY: P.X. Basu

CHKD: R. Chatterjee

DATE: 3-11-85

TRANSFER COPY

□ INDICATES JOINT NUMBER.

O INDICATES CLAMP NUMBER.

APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.

LONGITUDNAL SUPPORT IS ASSUMED.

PRELIMINARY ISSUE
REV. A

REVIEWER: LAL THUKRAL 3/19/85

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
00	CH				THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-00159-10146 REV. 02, FSE-00255 (MAP), CMC-85847 REV. 00, REF DWG: 2323-E2-0716-S RC, REF DWG: 2323-S-0902 R5 (CASE L-B1)
01	PXB				"AS-BUILT"

RECEIVED
APR 24, 1985
R. ALEXANDRU

CLASS 1
(NUCLEAR SAFETY-RELATED)
SAFETY CLASS 1 SEISMIC CATEGORY 1
SAFETY CLASS 2 CLASS 1E
SAFETY CLASS 3 ASSOCIATED CIRCUITS

TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

CABLE TRAY HANGER

SH. #1 of 3

C.P.S.E.S. GLEN ROSE TEXAS

DWG. NO. CTH-2-10146

REV. 01

8603210035-16

BY K.REddy DATE 1-27-86 SHEET 1 OF 1

CHKD. BY BRangi DATE 1-27-86 OFS NO. 3306.221 DEPT. NO. 550

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Unit #2

SUBJECT Cable Tray Hangers CTH-2-10146

ATTACHMENT K

THIS IS SITE CALCULATION AND CONTAINS 20 PAGES

N/A Site calculation has been reviewed and accepted without comment.

✓ Site calculation has been reviewed with comments as noted below.

N/A Site calculation has been reviewed and the impact of the revisions are reflected on page of the main calculation.

1) TRAY SPANS HAVE BEEN REVISED:
TRAY 1 TO 6'-9½ ; TRAY 2 TO 4'-4½

2) CALC HAS BEEN REDONE TO REFLECT ABOVE CHANGES

3) NO IMPACT ON EXIST HANGER VERIFICATION

p1

PRF 1

CALCULATION COVER SHEET

CLIENT TEXAS UTILITIES GENERATING CO. DFS No. 3306.202

PROJECT COMANCHE PEAK STEAM ELECTRIC DEPT No. 653(SITE)

STATION UNIT #2 SAFEGUARDS BLDG.

SUBJECT CABLE TRAY HANGER DESIGN VERIFICATION

CALCULATION No. CTH-2-10146 NUMBER OF SHEETS 19

CONTAINS ASSUMPTIONS WHICH REQUIRE CONFIRMATION ☐ YES ☒ NO

ASSUMPTIONS CONFIRMED ON ______ BY ______

REV No.	SHEET NUMBERS	CALCULATION BY NAME	CALCULATION BY DATE	CHECKED BY NAME	CHECKED BY DATE	OPTIONAL	REVIEWED OR APPROVED BY NAME	REVIEWED OR APPROVED BY DATE
SR 01	REVISED CALC SH 1 & 2, REPLACED ATTACHMENT COVER SHEET, ADDED ATTACHMENT F AND UPDATED PACKAGE	R.L. Ban	12-18-85	T. Chang	12-19-85		D. Pershad	12/19/85
SR 00	CALCS 1 THRU 4 ATTACHMENTS 14	K. DESAI	10/9/85	P. S. Patel	10.10.85		D. Pershad	10/24/85

PRELIMINARY ☐ FINAL ☒ SUPERCEDES CALC No. ______

NOTE: For Original Calculation Completion dates & initials see package

CALCSHEET

p2

EBASCO SERVICES INC.

CTH-2-10146 Rev. SR C

SHEET 1 of 4

CLIENT: TEXAS UTILITIES GENERATING COMPANY

PROJECT: COMANCHE PEAK STEAM ELECTRIC STATION UNIT #2

SUBJECT: TABLE OF CONTENTS

REV SR01
RAB 12-18-85

Prepared By: K. DESAI Date 10/9/85

Checked BY: R.S. Patil Date 10.10.85

INPUT DOCUMENTATION (CTH)

CLIENT TEXAS UTILITIES GENERATING COMPANY OFS. No. 3306.202

PROJECT COMANCHE PEAK STEAM ELECTRIC DEPT No. 653 (Site)

STATION UNIT #2 SAFEGUARDS BUILDING

SUBJECT CABLE TRAY HANGER DESIGN VERIFICATION

Calculation No. CTH-2-10146 Rev. No. SR 00

Drawing No. CTH-2-10146 Rev. No. 02

I. Design Inputs

1. Seismic Design Criteria for Cable Tray Hangers;SAG-CP3-Rev. ~~02~~ 03 dated: ~~June 21, 1985.~~ AUG 26, 1985 — REV SR-01 RAB 12-18-85 — REV SR-01 RAB 12-18-85
2. Marked up Drawings
   Furnished by Task Force for Rev. 02
3. Copy of Drawing Rev. 01
4. Design Calculations from SAG-NY - CTH-2-10146 REV. 0
5. Other (Specify) N/A

II. Design Outputs

Computer Run No. N/A Dated: ___ Attachment: ___

Computer Run No. ___ Dated: ___ Attachment: ___

Computer Run No. ___ Dated: ___ Attachment: ___

Other (Specify) ___

III. References:

N/A

Prepared By: K. DESAI Date: 10/9/85

Approved By: T. Kuo Date: 10-23-85

EBASCO SERVICES INCORPORATED

BY K. DESAI DATE 10/9/85 SHEET 3 OF 4

CHKD. BY P Patel DATE 10.10.85 OFS NO. 3306.202 DEPT. NO. 653

CLIENT TUGCO

PROJECT COMANCHE PEAK UNIT # 2

SUBJECT CTH-2-10146 REV. (SR.0)

CTH-2-10146 DRAWING REVISED TO REV. 2

CABLE TRAY SPAN REVISED TO 6'-9½" TRAY-1
4'-4½ TRAY-2

DEAD WT. TRAY-1 6.792' X 51 = 346#

DEAD WT. TRAY-2 4.375 X 74 = 324#

LOADS ARE USED IN N.Y. CALC. ARE TRAY-1 = 315#
TRAY-2 = 284#
(SEE PAGE 1 OF 15)
ATT. 'A' N.Y. CALC.

D.L. 10% INCREASE IN TRAY-1
D.L. 14% INCREASE IN TRAY-2.

TOTAL 24% INCREASE IN LOADS. (CONSERVATIVE)

INTERACTION FOR C10 X 15.3 = (0.53 X .24) + .53 = 0.66 < 1 OK.
(SEE N.Y. CALC. SHT. 9)

INTERACTION FOR C8 X 11.5 = (0.465 X .24) + 0.465 = 0.58 < 1 OK
(SEE N.Y. CALC. SHT. 11)

WELD REQ'D = (0.12 X .25) + 0.12 = 0.15 < .1875 OK
(SEE N.Y. CALC SHT. 13)

∴ CTH IS ADEQUATE

EBASCO SERVICES INCORPORATED

BY K. DESAI DATE 10/9/85 SHEET 4 OF 4

CHKD. BY P.S.Patel DATE 10.10.85 OFS NO. 3306.202 DEPT. NO. 653

CLIENT TEXAS UTILITIES GENERATING COMPANY

PROJECT COMANCHE PEAK STEAM ELECTRIC STATION UNIT #2

SUBJECT AS-BUILT CABLE TRAY HANGER - SAFEGUARD BUILDING

SUPPORT NO. CTH-2-10146 REV. 02 ROOM NO. 83

FL. EL. 810'-6

CONCLUSION:

EVALUATION: QULIFICATION OF SUPPORT DUE TO INCREASE OF SPAN SEE SHT. 3 OF 4

SAPERATION BETWEEN WELDED ATTACHMENTS SHOWN ON THE EMBEDED PLATE DOES NOT AFFECT STRENGTH OF SUPPORT. EMBEDED PLATE TO BE ANALYZED BY EMBEDED PLATE ANALYSIS GROUP.

ALL OTHER CHANGES DOES NOT AFFECT STRENGTH OF SUPPORT

DISPOSITION: REV. # 02 OF DWG. IS ACCEPTABLE.

CTH-2-10146

ATTACHMENTS

(REV. SR01)

A.	DESIGN INPUT	9
B.	SIGNED OUT COPY	2
C.	COMPUTER RUN NO.	N/A
D.	HANGER LOAD SUMMARY FORM	LATER
E.	WORKSHEET FOR CALCULATION PACKAGE PREPARATION	2
F.	CHECKLIST FOR DESIGN VERIFICATION	1
	TOTAL	14

CTH-2-10146 P7

EBASCO SERVICES INCORPORATED

CALCULATION COVER SHEET

ATTACHMENT "A"

CLIENT TEXAS UTILITIES·GENERATING CO. OFS NO. 3317

PROJECT COMANCHE PEAK UNIT NO. 2 DEPT NO. 549

SUBJECT CABLE TRAY HANGER

CALCULATION NO. CTH-2- 10146 NUMBER OF SHEETS 15

PROGRAM AS-BUILT REVIEW R/B N/A, SFGD ✓, DG/B N/A, AUX/B N/A

DESIGNED AND INSTALLED N/A

APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.

CONTAINS ASSUMPTIONS WHICH REQUIRE CONFIRMATION* YES N/A NO ✓

ASSUMPTIONS CONFIRMED ON N/A BY N/A

REV. NO.	SHEET NOS.	CALCULATION BY NAME	DATE	CHECKED BY NAME	DATE	OPTIONAL	REVIEWED OR APPROVED BY NAME	DATE
00	1-15	P. PATADIA	5/15/85	P.L. Patel	5-17-85			

PRELIMINARY ☐ N/A FINAL ☑ SUPERSEDES CALC NO. N/A

* CONFIRMATION OF DESIGN DATA TO BE VERIFIED BY FIELD.

CTH-2-10146 P8

EBASCO SERVICES INCORPORATED

ATTACHMENT "A"

BY P. PATADIA DATE 5/3/85 SHEET 1 OF 15

CHKD. BY P.L. Poirez DATE 5-17-85 OFS NO. 3317.002 DEPT. NO. 542

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Steam Electric Station Unit No. 2

SUBJECT Standard Format for Seismic Design Calculation

I. DESIGN DATA

1. CTH No. 2-10146

2. Location: Building SAFE GUARD ELEV. 810'-6"

3. Type of Support: Transverse N/A
   Longitudinal ✓
   Multidirectional N/A

4. Size of Cable Tray: TRAY 1 (12"x4"), TRAY 2 (18"x4")
   Unit Wt. = 51#/FT 74#/FT

5. Span Length = 6'-2" (TRAY 1), 3'-10" (TRAY 2)

6. Total Cable Tray Wt = 315# (TRAY 1) 284# (TRAY 2)

7. Seismic design "g" value AT EL - 831'-6" USED FOR DESIGN

SSE (H = 1.5 x 1.16 = 1.74 (V = 1.5 x 1.809 = 2.714 OBE (H = 1.5x 1.141 = 1.712 (V = 1.5x 1.30 = 1.95 } THESE VALUES ARE REVISED AFTER FREQUENCY ANALYSIS SEE PAGE 4

$\frac{SSE\ 'H'}{OBE\ 'H'} = \frac{1.74}{1.712} = 1.02 < 1.60$ $\frac{SSE(1+V)}{OBE(1+V)} = \frac{1+2.714}{1+1.95} = 1.26 < 1.6$ ∴ OBE GOVERN

8. No. of Earthquake Components to be considered = 3 ✓, 2 N/A, 1 N/A

9. Anchorage

   Strip Plate N/A

   Larger Embedded Plate ✓

   Surface Plate N/A, Hilti-Kwik Bolt N/A
   Richmond Insert N/A
   Hilti Super-Kwik Bolt N/A

10. Type of Mounting: Ceiling Mounted ✓
    Wall Mounted N/A
    Steel Mounted N/A
    Floor Mounted N/A

EBASCO SERVICES INCORPORATED

ATTACHMENT "A"

BY P. PATADIA DATE 5/15/85 SHEET 9 OF 15

CHKD. BY P.L. Pates DATE 5.17.85 OFS NO. 3317.002 DEPT. NO. ~4

CLIENT ~~TEXAS UTILITIES GENERATING CO.~~

PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS

$$\Sigma \sigma_B = 8261 + 2151 = 10412 \text{ Psi} < 21600 \text{ Psi} \therefore OK$$

INTER ACTION

$$\frac{f_a}{F_a} + \frac{\sigma_B}{F_b} < 1.00$$

$$\frac{294}{6060} + \frac{10412}{21600} = 0.53 < 1.00$$

$\therefore$ OK

CHECK SHEAR

$F_x = 380^{\#}$, $F_Z = 408^{\#}$, $M_Y = 544 \text{ in}^{\#}$

ROARK

WARPING SHEAR STRESS

$$\text{MAX } \tau_2 = \frac{h b^2}{4}\left[\frac{h+3b}{h+6b}\right]^2 E\theta'''$$

$h = 10.00 - .436 = 9.564$, $b = 2.6 - \frac{.24}{2} = 2.48''$

$$\tau_2 = \frac{9.564 \times 2.48^2}{4}\left[\frac{9.564 + 3\times 2.48}{9.564 + 6\times 2.48}\right]^2 E\theta''' = 7.12\, E\theta'''$$

$$\text{MAX } \theta''' = T_0/C_w E = 544/(45.6 \times 29\times10^6) = 0.412\times10^{-6}$$

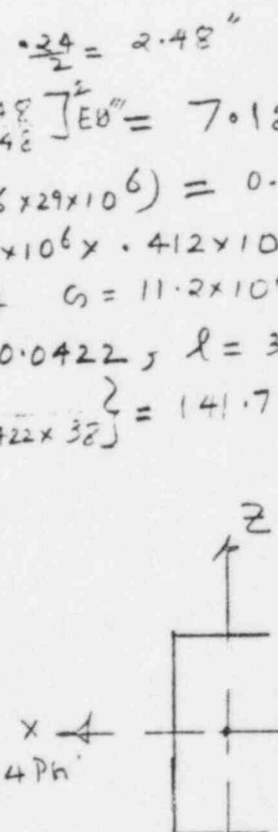
$$\text{MAX } \tau_2 = 7.12 E\theta''' = 7.12 \times 29\times10^6 \times .412\times10^{-6} = 85 \text{ Psi}$$

$\text{MAX } \tau_1 = tG\theta'$, $t = 0.24$, $G = 11.2\times10^6$

$$\theta' = \frac{T_0}{C_w E \beta^2}\left(1 - \frac{1}{\cosh \beta l}\right), \quad \beta = 0.0422, \; l = 38'', \; C_w = 45.6$$

$$= \frac{544}{45.6\times29\times10^6\times .0422^2}\left\{1 - \frac{1}{\cosh \times .0422\times38}\right\} = 141.7\times10^{-6}$$

$$\text{MAX } \tau_1 = 0.436 \times 11.2\times10^6 \times 141.7\times10^{-6} = 692 \text{ Psi}$$



$$f_{vx} = \frac{F_x}{2bt} = \frac{380}{2\times2.6\times0.436} = 168 \text{ Psi}$$

$$f_t = \frac{M_y t_f}{J} = \frac{544 \times .436}{0.211} = 1124 \text{ Psi}$$

$$f_{vz} = \frac{F_z}{d t_w} = 408/(10\times.24) = 170 \text{ Psi}$$

$$\Sigma V = f_{vz} + f_t + \tau_{ws} = 170 + 1124 + 692 = 1986 \text{ Psi} < 14400$$

$\therefore$ C 10X15.3 IS ADEQUATE.

EBASCO SERVICES INCORPORATED

BY P. PITADIA DATE 5/9/85 SHEET 11 OF 15

CHKD. BY P.I. Patel DATE 5-12-85 OFS NO. 3317.002 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT

$$\theta'' = \frac{366}{2 \times 16.5 \times 29 \times 10^6 \times .0552} \qquad \text{TANH } .0552 \times 30$$

$$= \frac{883 \times .92968}{2 \times 16.5 \times 29 \times 10^6 \times .0552} = 6.441 \times 10^{-6}$$

$$= 6.441 \times 10^{-6}$$

$$\text{MAX } \sigma_x = \frac{hb}{2}\left(\frac{h+3b}{h+6b}\right) E\theta''$$

$h = 8.0 - 0.39 = 7.61''$, $b = 2.26 - 0.11 = 2.15''$

$$\sigma_x = \frac{7.61 \times 2.15}{2}\left\{\frac{7.61 + 3 \times 2.15}{7.61 + 6 \times 2.15}\right\} \times 29 \times 10^6 \times 6.441 \times 10^{-6}$$

$$= 1048 \text{ Psi}$$

$$\therefore \Sigma \sigma_B = 8851 + 1048$$

$$= 9899 \text{ Psi}$$

$$< 21600 \text{ Psi}$$

INTERACTION

$$\frac{113}{18350} + \frac{9899}{21600} = 0.465 < 1.00$$

$\therefore$ O.K

SHEAR

WARPING SHEAR STRESS

$\text{MAX. } \tau_1 = tG\theta'$ $\qquad t = 0.390,\ G = 11.2 \times 10^6$

$$\theta' = \frac{T_0}{C_w E B^2}\left[1 - \frac{1}{\cosh \frac{B\ell}{4}}\right]$$

$\ell = 30'$ $T_0 = 366$ $C_w = 16.5$

$B = .0552$ (FROM SHT 11)

$$\theta' = \frac{366}{16.5 \times 29 \times 10^6 \times .0552^2}\left[1 - \frac{1}{\cosh \frac{.0552 \times 30}{4}}\right] = 20.1 \times 10^{-6}$$

$$\text{MAX } \tau_1 = 0.39 \times 11.2 \times 10^6 \times 20.1 \times 10^{-6} = 88 \text{ Psi}$$

$$\text{MAX } \tau_2 = \frac{hb^2}{4}\left[\frac{h+3b}{h+6b}\right]^2 E\theta'''$$

$h = 7.61''$, $b = 2.15''$

$T_0 = 366$, $C_w = 16.5$, $E = 29 \times 10^6$

$$\theta''' = \frac{T_0}{2 C_w E} = \frac{366}{2 \times 16.5 \times 29 \times 10^6} = 0.382 \times 10^{-6}$$

$$\tau_2 = 46 \text{ PSi}$$

EBASCO SERVICES INCORPORATED

CTH-2-1014 ATTACHMENT "A"

BY P. PATADIA DATE 5/10/85 SHEET 13 OF 15

CHKD. BY R.L. PATEL DATE 5-17-85 OFS NO. 3217.002 DEPT. NO.

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT

PROPERTIES OF WELD BETWEEN EMBD PL & 1"×5"×12" PL

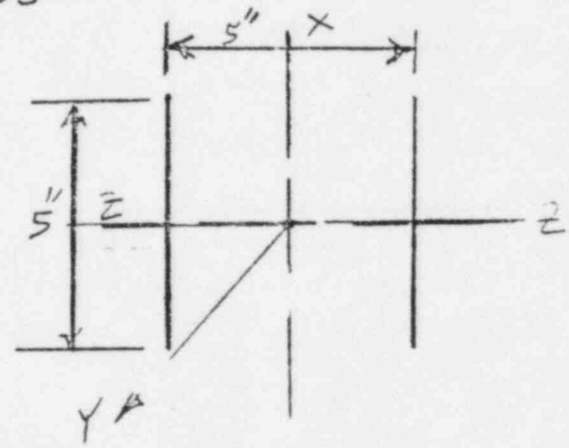
$A_W = 2 \times 5 = 10$ in

$S_Z = \frac{5^2}{3} = 8.33\ in^2$

$S_X = 5 \times 5 = 25.0\ in^2$

$J = \frac{2}{3} \times 5^3 = 83.33\ in^3$

FORCES & MOMENTS FROM SHT. # 7 JOINTS 3 OR 7



$F_X = 380^{\#}$, $F_Y = 1322^{\#}$, $F_Z = 408^{\#}$

$M_X = 16600$ in#, $M_Y = 544$ in#, $M_Z = 8156$ in#

$$f = \sqrt{\left(\frac{1322}{10} + \frac{8156}{8.33} + \frac{16600}{25.0}\right)^2 + \left(\frac{380}{10} + \frac{1322 \times 2.5}{83.33}\right)^2 + \left(\frac{408}{10} + \frac{1322 \times 2.5}{83.33}\right)^2}$$

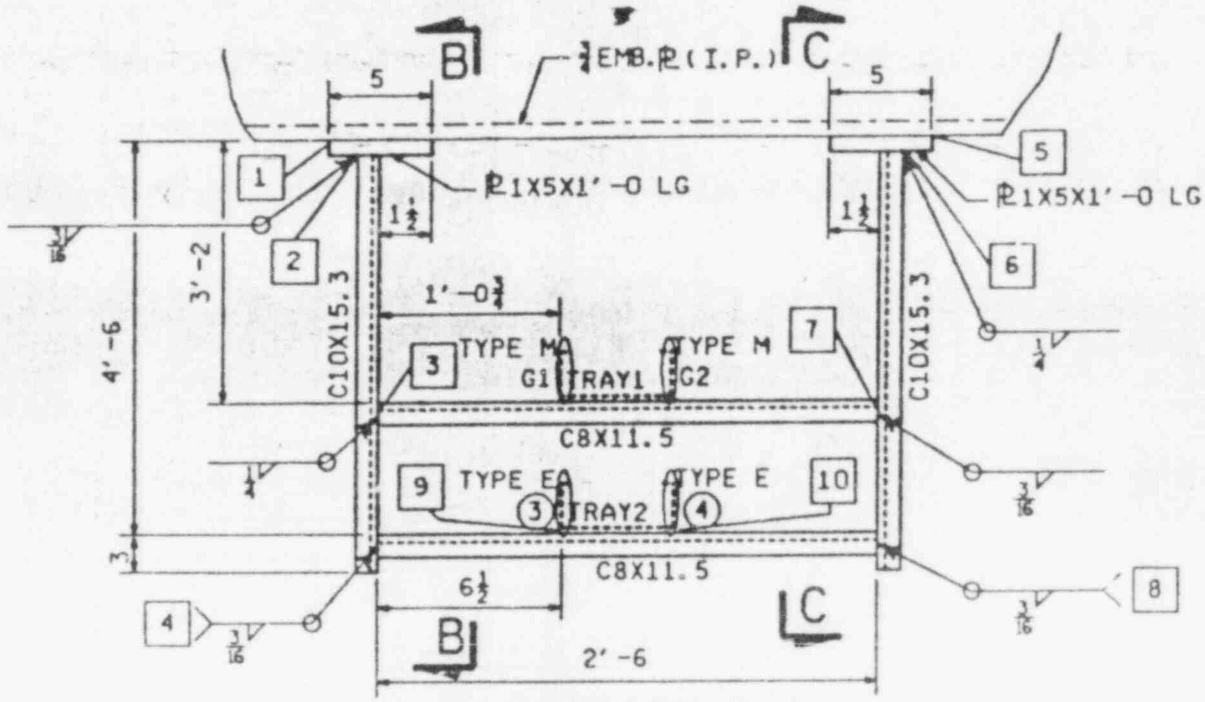
$$= \sqrt{1776^2 + 78^2 + 81^2} = 1780\ \#/in$$

$$t_w = \frac{1780}{.707 \times 21000} = 0.12" < 0.1875\ (3/16")$$

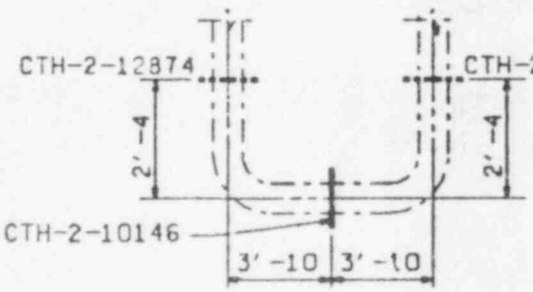
MIN INSTALLED WELD.

BY COMPARISION WITH ABOVE CALC, WELD BETWEEN C 10×15.3 & PL 1"×5"×12" IS ADEQUATE

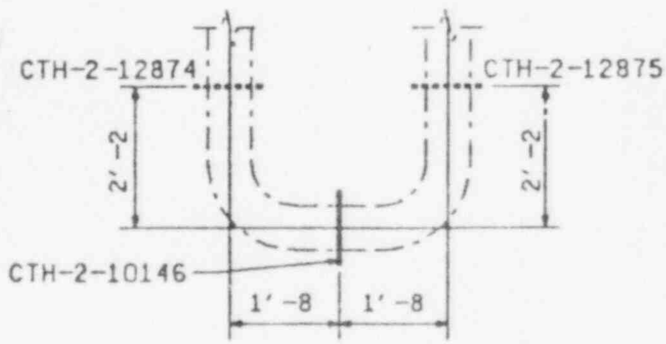
QS2:[214,007]101460l.DGN; 002
29-MAY-85 18:12:04
12 456789/0123456789/0123456789
0123456789/0123456789/0123456789/01234



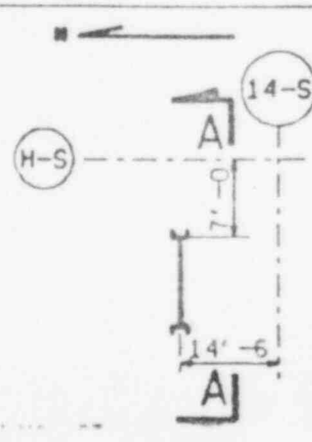
ELEVATION A-A



PLAN VIEW
TRAY#1



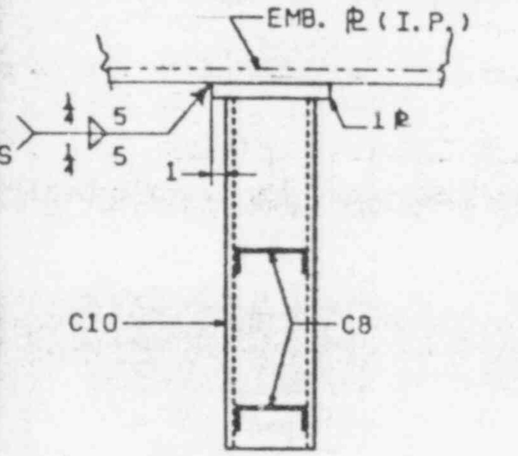
PLAN VIEW
TRAY#2



TRAY 2	18X4	SEE TRAY PLAN			
TRAY 1	12X4	SEE TRAY PLAN			
	SIZE	L1	CTH No	L2	CTH No

P12

ATTACHMENT "A"



SECT. B-B (AS SHOWN)
SECT. C-C (OPP. SHOWN)

NOTES:

1. FOR GENERAL NOTES SEE DRAWING CTH-2-NOTES.
2. APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.
3. LONGITUDINAL SUPPORT IS ASSUMED.

☐ INDICATES JOINT NUMBER.

FOR OFFICE AND ENGINEERING USE ONLY

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
00	CH	AN LL			THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-00159-10146 REV. 02, FSE-00255 (MAP), REFDWG: 2323-E2-0716-S R0 REFDWG: 2323-S-0902 R5 (CASE L-81)
01	PF	RCK	RL	YL RLR 6-4-85	AS BUILT

TI APERTURE CARD

Also Available On Aperture Card

TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

CABLE TRAY HANGER

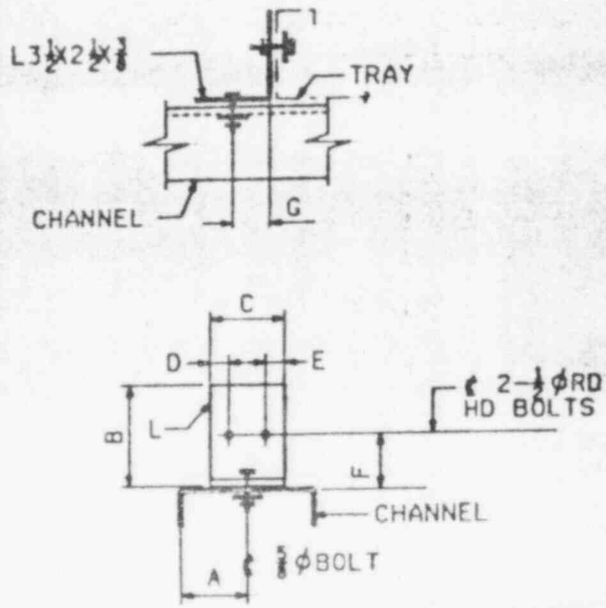
ORIGIN

SCALE

CLASS 1
(NUCLEAR SAFETY-RELATED)
SAFETY CLASS 1 SEISMIC CATEGORY 1
SAFETY CLASS 2 CLASS 1E

C.P.S.E.S.	DWG. NO.	REV.
	CTH-2-10146	01

8603210035-17



TYPE M

CLAMP NO.	A	B	C	D	E	F	G	BOLT MKG	WASH TYPE
G2	4	3½	4	1⅛	1⅛	2	1½	HS	F
G1	4	3½	4	1⅛	1⅛	2	1½	HS	F

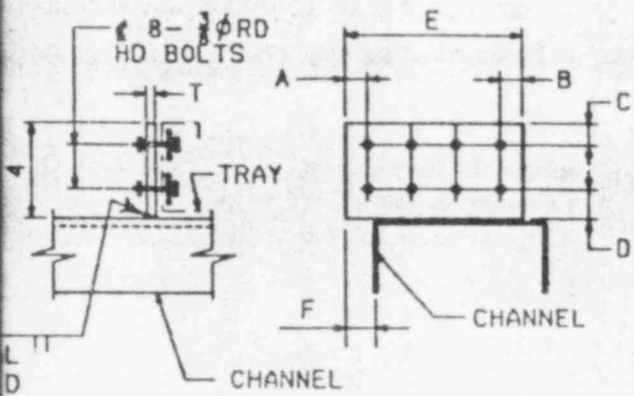
CLAMP TYPE M

TYP
SE
WE

QS2:[214.007]10146A01.DGN;001
29-MAY-85 18:13:10
12 456789/0123456789/0123456789
0123456789/0123456789/0123456789/01234

p13

ATTACHMENT "A"



TYPE E

CLAMP NO.	A	B	C	D	E	F	G	H	T
4	½	½	1	1	6	1¼	–	–	½
3	½	½	1	1	6	1¼	–	–	½

CLAMP TYPE E

FOR OFFICE AND ENGINEERING USE ONLY

NOTES:

FOR NOTES SEE SHEET 1.

TI APERTURE CARD

Also Available On Aperture Card

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
01	FS	RCK	RL	YL rla 6-4-85	AS BUILT

TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

CABLE TRAY HANGER

CLASS 1

(NUCLEAR SAFETY-RELATED)

SAFETY CLASS 1 SEISMIC CATEGORY 1

C. P. S. E. S. | DWG. NO. | REV.

ORIGIN

SCALE

8603210035-18

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29-MAY-85 18:12:04
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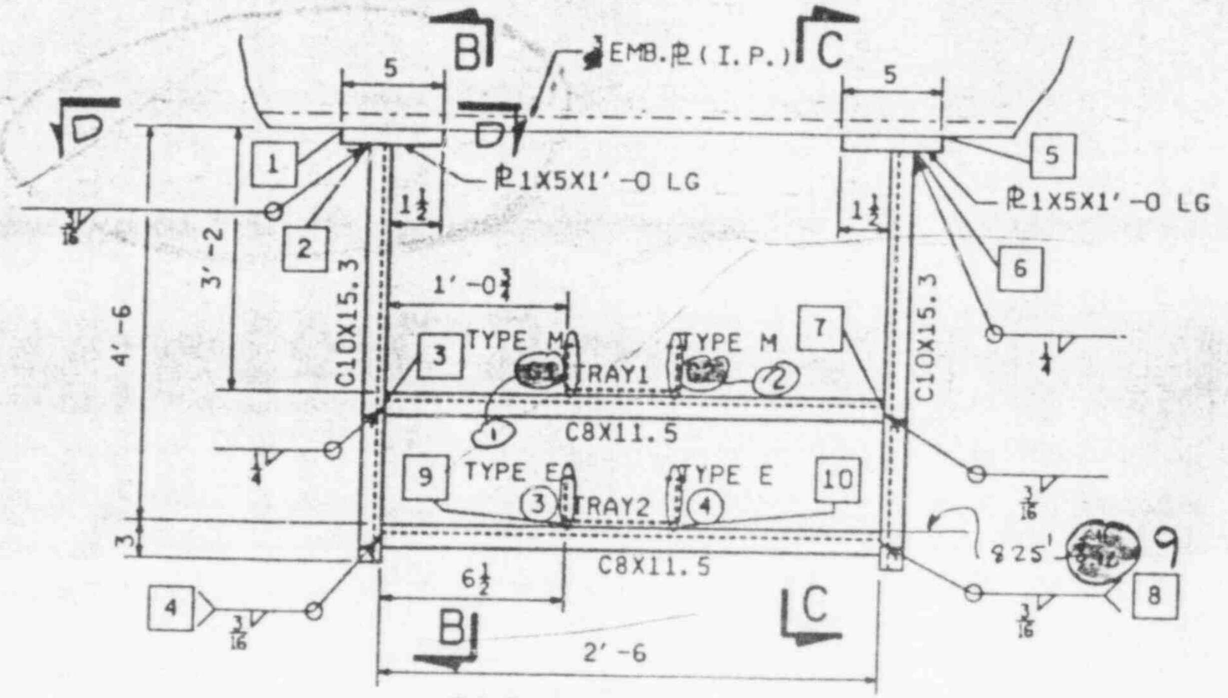
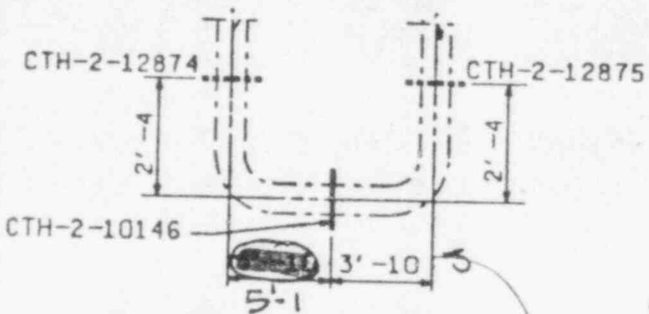
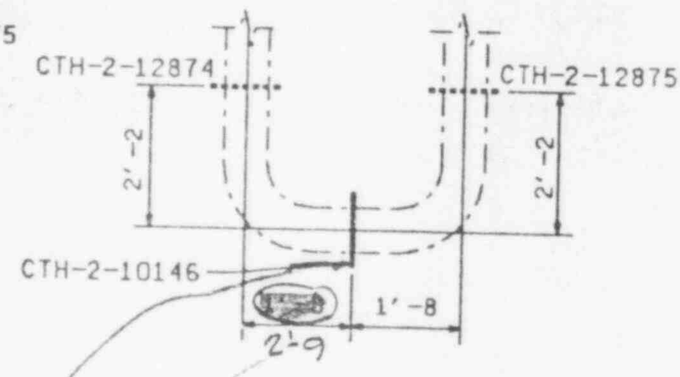
0123456789/0123456789/0123456789/01234



ELEVATION A-A

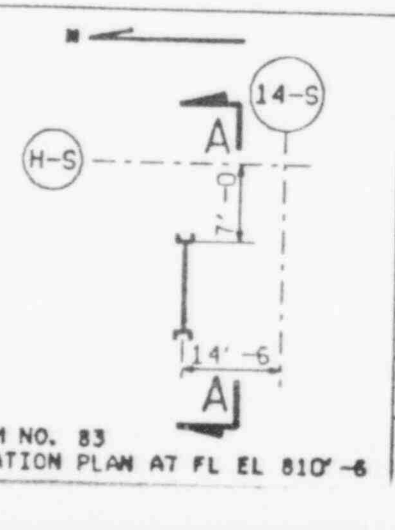


PLAN VIEW
TRAY#1



PLAN VIEW
TRAY#2

No THERMAL LOAD
1/10/86 HK (N.Y. OFFICE)



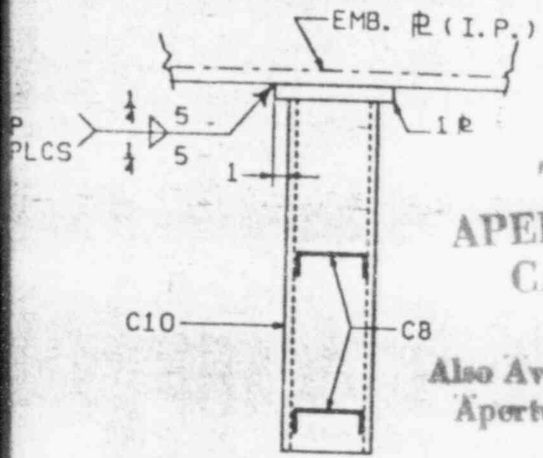
ROOM NO. 83
LOCATION PLAN AT FL EL 810'-6

TRAY 2	18X4	SEE TRAY PLAN			
TRAY 1	12X4	SEE TRAY PLAN			
	SIZE	L1	CTH No	L2	CTH No

TRAY SPANS

ATTACHMENT A p14

TRANSFER COPY

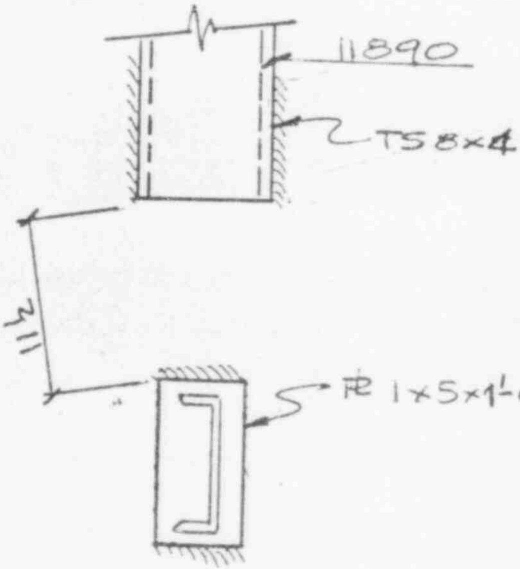


TI
APERTURE
CARD

Also Available On
Aperture Card

SECT. B-B (AS SHOWN)

SECT. C-C (OPP. SHOWN)



PLAN D-D

FOR OFFICE AND
ENGINEERING USE ONLY

NOTES:

1. FOR GENERAL NOTES SEE DRAWING CTH-2-NOTES.
2. APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.
3. LONGITUDINAL SUPPORT IS ASSUMED.

TRANSFER COPY BY
G. FISCHIONI 6/30/85
REVIEWED BY
D. Patel
7/15/85

☐ INDICATES JOINT NUMBER.

◯ INDICATES TRAY CLAMP №

* FIELD TO REPLACE EXIST. BOLT MK DC IN CLAMP ① WITH HS A-325 OR A-449

** FIELD TO UPGRADE WELD FROM EXISTING 1/8" FILLET TO 3/16" FILLET.

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
00	CH	AH LL			THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-00159-10146 REV. 02, FSE-00255 (MAP), REFDWG: 2323-E2-0716-S R0 REFDWG: 2323-S-0902 R5 (CASE L-B1)
01	PS	RCK	RL	YL KLR 6-4-85	AS BUILT
02	GF				~~[illegible]~~ REVISED AS NOTED

TEXAS UTILITIES
GENERATING CO.

EBASCO SERVICES INCORPORATED

SAFE

CABLE TRAY HANGER

CLASS 1
(NUCLEAR SAFETY-RELATED)
SAFETY CLASS 1 SEISMIC CATEGORY 1
SAFETY CLASS 2 CLASS 1E

C. P. S. E. S. GLEN ROSE | DWG. NO. CTH-2-10146 | REV.

ORIGIN

SCALE

8603210035-19

8.5

QS2:[214.007]10146A01.DGN; 001
29-MAY-85 18:13:10
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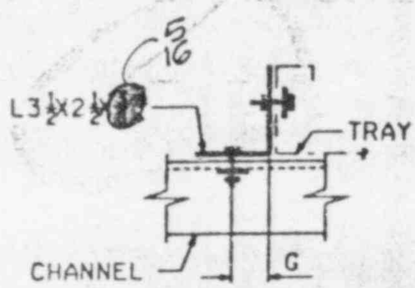
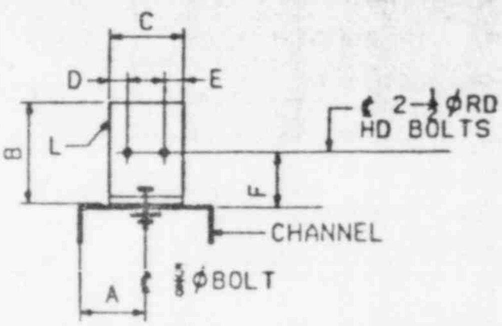




** TYP
(SEE NOTES)
TYP

TYPE M

STD

CLAMP NO.	A	B	C	D	E	F	G	BOLT MKG	WASH TYPE
G2 (12)	4	3½	4	1⅛	1⅛	2	1½	HS	F
G1 (1)	4	3½	4	1⅛	1⅛	2	1½	* HS	F

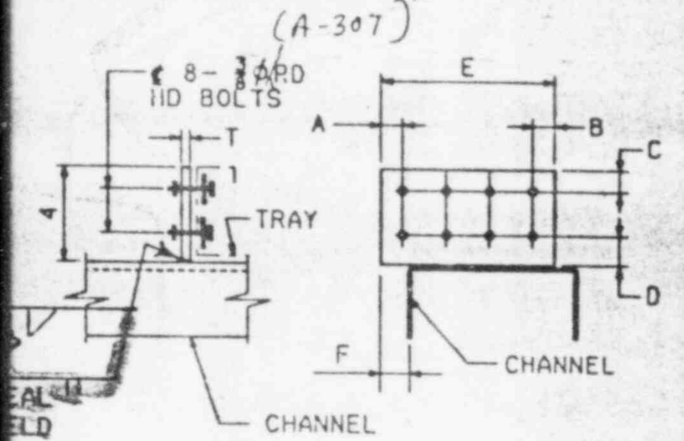
CLAMP TYPE M

.5"

P15

ATTACHMENT A

TRANSFER COPY



TYPE E

4	1/2	1/2	1	1	6	1 1/4	-	-	1/2
3	1/2	1/2	1	1	6	1 1/4	-	-	1/2
CLAMP NO.	A	B	C	D	E	F	G	H	T
CLAMP TYPE E									

NOTES:

FOR NOTES SEE SHEET 1.

TRANSFER COPY BY
G. FISCHIONI 6/30/85

TI
APERTURE
CARD

Also Available On
Aperture Card

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
01	FS	RCK	RL	YL FLR 6-4-85	AS BUILT
02	GF	DP			REV AS BUILT

FOR OFFICE AND
ENGINEERING USE ONLY

TEXAS UTILITIES
GENERATING CO.

EBASCO SERVICES INCORPORATED

SAFE

CABLE TRAY HANGER

501

9/4

SCALE

ORIGIN

CLASS 1
(NUCLEAR SAFETY-RELATED)
SAFETY CLASS 1 SEISMIC CATEGORY 1
SAFETY CLASS 2 CLASS 1E

C.P.S.E.S. GLEN ROSE | DWG. NO. | REV.

8603210035-20

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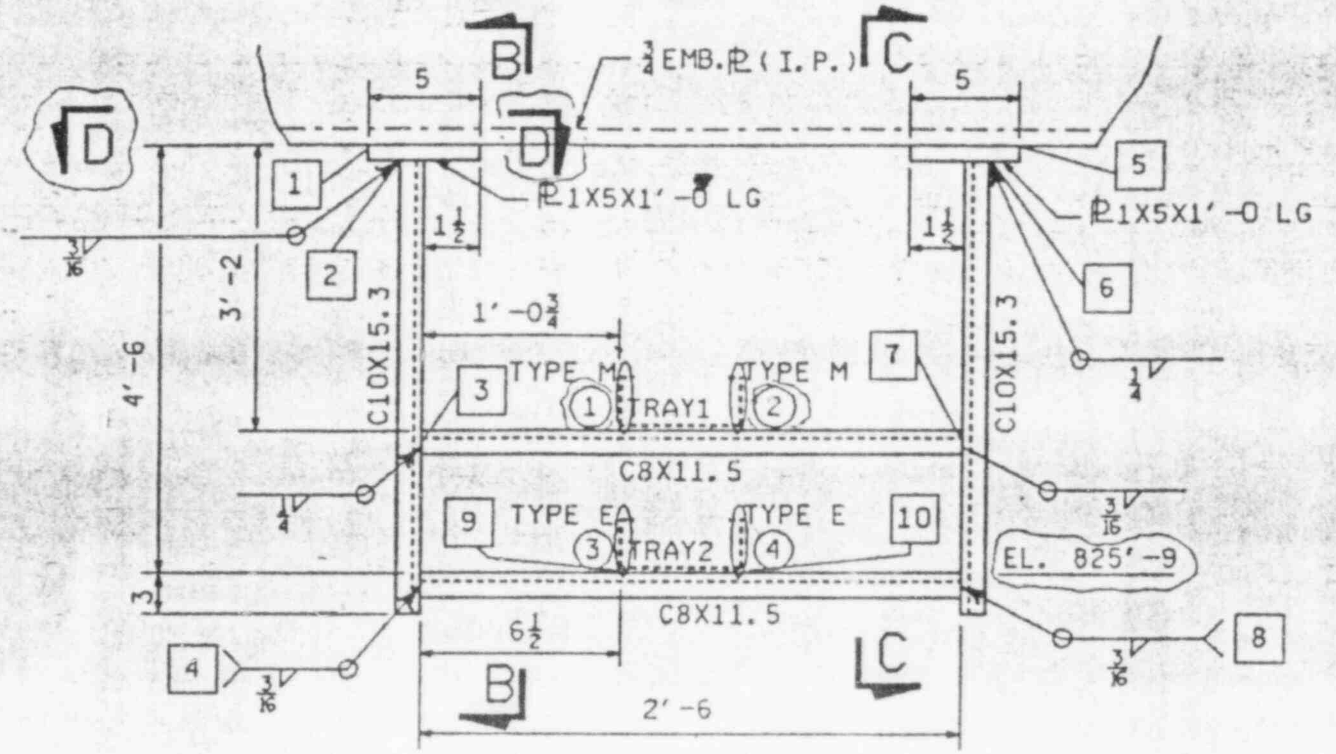
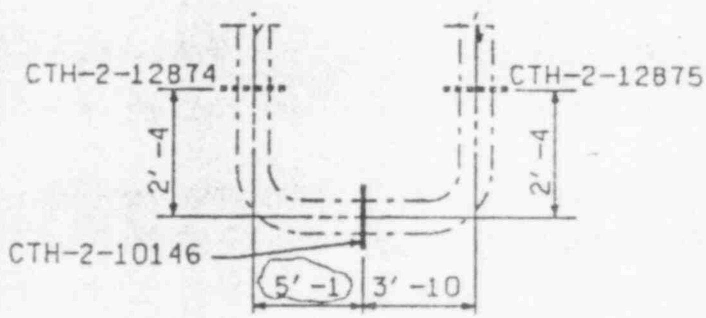
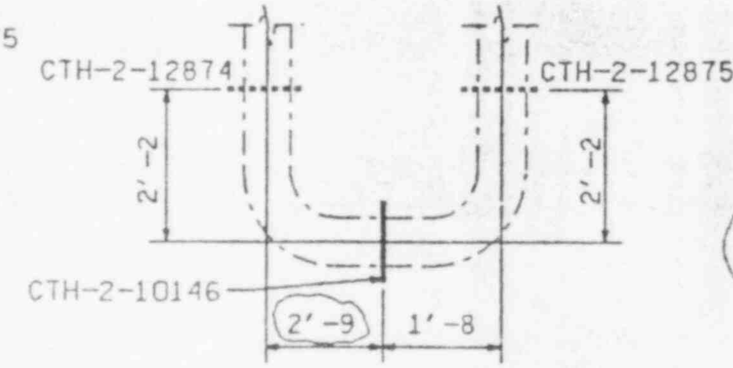
0123456789/0123456789/0123456789/01234



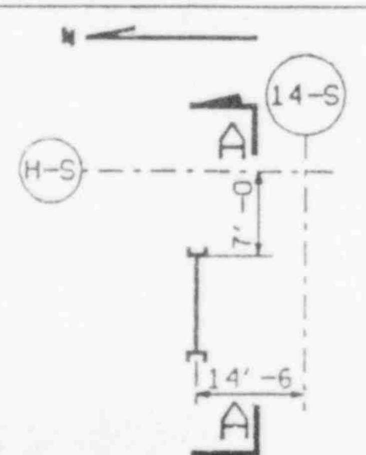
ELEVATION A-A



PLAN VIEW
TRAY#1



PLAN VIEW
TRAY#2

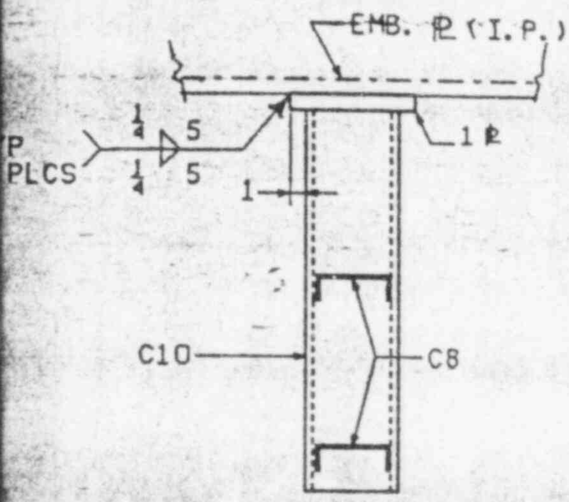


ROOM NO. 83

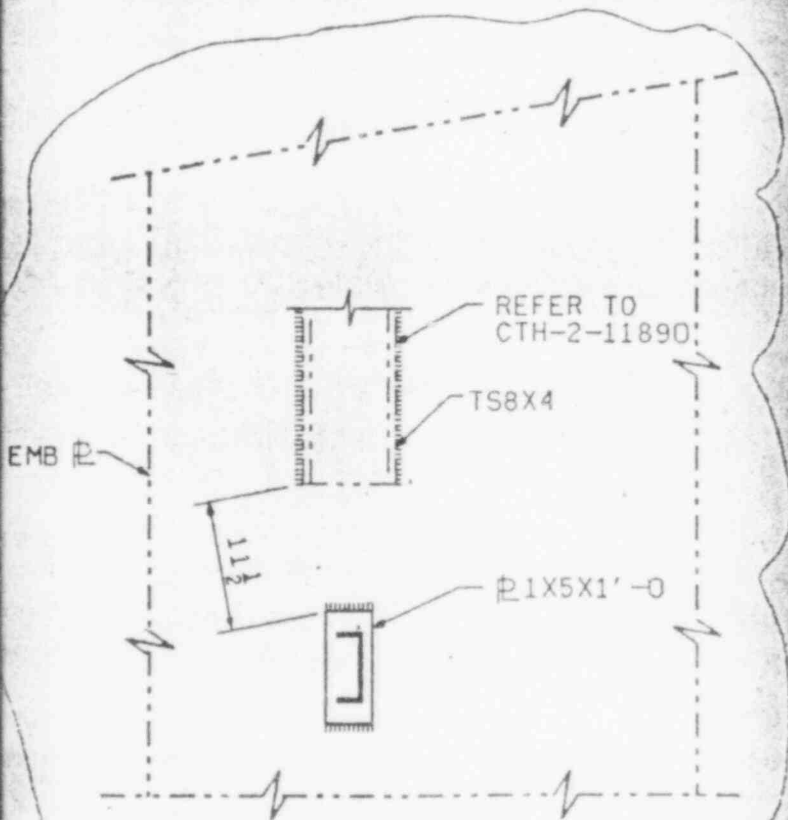
	SIZE	L1	CTH No	L2	CTH No
TRAY 2	18X4	SEE TRAY PLAN			
TRAY 1	12X4	SEE TRAY PLAN			

TRAY SPANS

ATTACHMENT B



SECT. B-B (AS SHOWN)
SECT. C-C (OPP. SHOWN)



PLAN D-D

NOTES:

1. FOR GENERAL NOTES SEE DRAWING CTH-2-NOTES.
2. APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.
3. LONGITUDINAL SUPPORT IS ASSUMED.
4. FIELD TO REPLACE EXISTING BOLT MARK DC IN CLAMP (1) WITH HS A-325 OR A-449.

□ INDICATES JOINT NUMBER.

○ INDICATES TRAY CLAMP NUMBER..

MODIFICATION(S) REQUIRED:

△1 FIELD TO UPGRADE WELD FROM EXISTING $\frac{1}{8}$ FILLET TO $\frac{3}{16}$ FILLET.

FOR OFFICE AND ENGINEERING USE ONLY

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
00	CS	AH LL			THIS DRAWING REVISED TO INCLUDE THE CONTENTS OF: FSE-00159-10146 REV. 02, FSE-00255 (MAP), REFDWG: 2323-E2-0716-S R0 REFDWG: 2323-S-0902 R5 (CASE L-B1)
01	PS	RCK	RL	YL PSA 6-4-85	AS BUILT
02	GF	KJO	PSF	OPR 10/24/85	MODIFIED AND REVISED AS NOTED

TEXAS UTILITIES GENERATING CO.

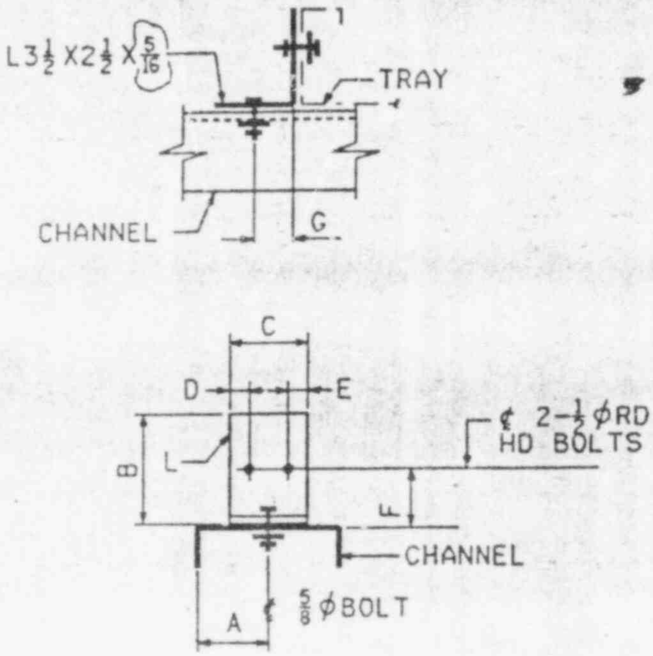
EBASCO SERVICES INCORPORATED

SAFEGUARDS BLDG UNIT #2
CABLE TRAY HANGER

CLASS 1
(NUCLEAR SAFETY-RELATED)
SAFETY CLASS 1 SEISMIC CATEGORY 1
SAFETY CLASS 2 CLASS 1E

C. P. S. E. S. GLEN ROSE	DWG. NO. CTH-2-10146	REV. 02

8603210035-21



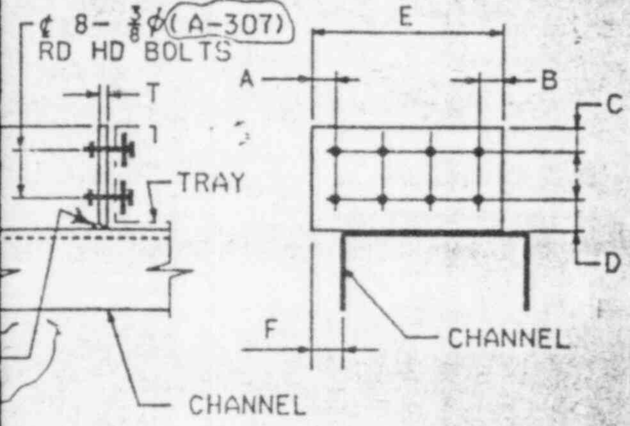
TYPE M

CLAMP NO.	A	B	C	D	E	F	G	BOLT MKG	WASH TYPE
2	4	$3\frac{1}{2}$	4	$1\frac{1}{8}$	$1\frac{1}{8}$	2	$1\frac{1}{2}$	HS	STD
1	4	$3\frac{1}{2}$	4	$1\frac{1}{8}$	$1\frac{1}{8}$	2	$1\frac{1}{2}$	□ HS	STD

CLAMP TYPE M

□ SEE NOTE 4 ON SHEET 1 OF 2

ATTACHMENT B P17



TYPE E

LAMP NO.	A	B	C	D	E	F	G	H	T
4	1/2	1/2	1	1	6	1 1/4	-	-	1/2
3	1/2	1/2	1	1	6	1 1/4	-	-	1/2

CLAMP TYPE E

NOTES:

FOR NOTES SEE SHEET 1.

MODIFICATION(S) REQUIRED:

SEE SHEET 1 OF 2.

FOR OFFICE AND ENGINEERING USE ONLY

REV.	DWN.	CKD.	DES. VER.	APPROVED DATE	REMARKS
01	PS	RCE	RL	YL PSA 6-4-85	AS BUILT
02	GF	KSD	PSP	DP 10/24/85	SEE SHT 1 OF 2

TEXAS UTILITIES GENERATING CO.

EBASCO SERVICES INCORPORATED

SAFEGUARDS BLDG UNIT#2
CABLE TRAY HANGER

CLASS 1
(NUCLEAR SAFETY-RELATED)

SAFETY CLASS 1	SEISMIC CATEGORY 1
SAFETY CLASS 2	CLASS 1E
SAFETY CLASS 3	ASSOCIATED CIRCUITS

C.P.S.E.S. GLEN ROSE TEXAS	DWG. NO. CTH-2-10146 SH 2 OF 2	REV. 02

8603210035-22

ATTACHMENT E

EBASCO SERVICES INCORPORATED

BY K. DESAI DATE 10/9/85

CHKD. BY P. [illegible] DATE 10.10.85

SHEET 1 OF 2

OFS NO. 3306.201 DEPT. NO. 653

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Steam Electric Station Unit # 2

SUBJECT Worksheet For Calculation Package Preparation CTH-2- 10146 REV. SR.

ITEM No.	ITEM	Preparer	Checker
1	Is the problem stated, clear and complete?	YES	YES
2.	Is Generic conduit support number w/revision number referenced?	N/A	NA
3.	Are modifications from generic support stated clear and complete?	N/A	NA
4.	Are design inputs clearly identified & complete?	YES	YES
5	Are assumptions clearly stated and acceptable?	N/A	NA
6	Are assumptions to be verified later identified, 'yes' box on cover sheet checked, and punchlisted?	NA	NA
7	Are references, including other calculations and sources listed?	YES	YES
8	Are formula and equations applicable, defined and referenced with the exception of AISC or Blodgett?	N/A	N/A
9	Is conclusion statement added, clear and correct?	YES	YES
10	Is the drawing revision number identified in the calculations?	YES	YES
11	Are all ~~checkers of the~~ comments by the checker incorporated or otherwise reconciled and documented?	YES	YES
12	As a minimum, is the run cover sheet completed and made as an attachment, and referenced in the calculation?	N/A	N/A
13	Are Task Force marked up prints signed, checked and dated?	YES	YES
14	Are all attachments identified and labeled?	YES	YES
15	Are superseded original calculations marked superseded?	N/A	NA
16	Are all calculation sheets initialed and dated?	YES	YES
17	Are all calculation sheets and attachments arranged properly?	YES	YES

ATTACHMENT E

EBASCO SERVICES INCORPORATED

BY K. DESAI DATE 10/9/85 SHEET 2 OF 2

CHKD. BY P.S.Bay DATE 10.10.85 OFS NO. 3306.201 DEPT. NO. 653

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Steam Electric Station Unit #2

SUBJECT Worksheet For Calculation Package Preparation CTH-2-10146 — REV. SR 0

ITEM No.	ITEM	Preparer	Checker
18	Is approval letter from N.Y.O allowing Site-SAG to sign-off the drawing made as Attachment?	N/A	NA
19	Is Footprint Load sheet (HLS Form) prepared, checked and made an Attachment?	LATER	LATER

0599(COM)/10-85

EBASCO SERVICES INCORPORATED

CHECKLIST FOR DESIGN VERIFICATION OF CABLE TRAY HANGERS AND CONDUIT SUPPORT DRAWINGS AND CALCULATIONS BY DESIGN REVIEW METHOD

TEXAS UTILITIES GENERATING CO.
COMANCHE PEAK PROJECTS

ATTACHMENT F
CTH-2-10146

DOCUMENT NUMBER	REVISION	DOCUMENT NUMBER	REVISION
DWG CTH-2-10146	02		
CALC CTH-2-10146	SR01		

QUESTIONS (SHALL BE ANSWERED BY THE INDEPENDENT VERIFIER)	CALCS	DRAWINGS
1. WERE THE INPUTS CORRECTLY SELECTED AND INCORPORATED INTO DESIGN?	YES	YES
2. ARE ASSUMPTIONS NECESSARY TO PERFORM THE DESIGN ACTIVITY ADEQUATELY DESCRIBED AND REASONABLE? WHERE NECESSARY ARE THE ASSUMPTIONS IDENTIFIED FOR SUBSEQUENT REVERIFICATIONS WHEN THE DETAILED DESIGN ACTIVITIES ARE COMPLETED?	YES	NA
3. ARE THE APPROPRIATE QUALITY AND QUALITY ASSURANCE REQUIREMENTS SPECIFIED?	YES	YES
4. ARE THE APPLICABLE CODES, STANDARDS AND REGULATORY REQUIREMENTS INCLUDING ISSUE AND ADDENDA PROPERLY IDENTIFIED AND ARE THEIR REQUIREMENTS FOR DESIGN MET?	YES	YES
5. HAVE FEASIBILITY AND PRACTICALITY OF CONSTRUCTION BEEN REVIEWED?	NA	YES
5a. HAS OPERATING EXPERIENCE BEEN CONSIDERED?	NA	NA
6. HAVE THE DESIGN INTERFACE REQUIREMENTS BEEN SATISIFIED?	NA	NA
7. WAS AN APPROPRIATE DESIGN METHOD USED?	YES	YES
8. IS THE OUTPUT REASONABLE COMPARED TO TO INPUTS?	YES	NA
9. ARE THE SPECIFIED PARTS, EQUIPMENT AND PROCESSES SUITABLE FOR THE REQUIRED APPLICATION?	YES	YES
10. ARE THE SPECIFIED MATERIALS COMPATIBLE WITH EACH OTHER AND THE DESIGN ENVIRONMENTAL CONDITIONS TO WHICH THE MATERIAL WILL BE EXPOSED?	YES	YES
11. HAVE ADEQUATE MAINTENANCE FEATURES AND REQUIREMENTS BEEN SPECIFIED?	NA	NA
12. ARE ACCESSIBILITY AND OTHER DESIGN PROVISIONS ADEQUATE FOR PERFORMANCE OF NEEDED MAINTENANCE AND REPAIR?	NA	NA
13. HAS ADEQUATE ACCESSIBILITY BEEN PROVIDED TO PERFORM THE IN SERVICE INSPECTION EXPECTED TO BE REQUIRED DURING THE PLANT LIFE?	NA	NA
14. HAS THE DESIGN PROPERLY CONSIDERED RADIATION EXPOSURE TO THE PUBLIC AND PLANT PERSONNEL?	NA	NA
15. ARE THE ACCEPTANCE CRITERIA INCORPORATED IN THE DESIGN DOCUMENTS SUFFICIENT TO ALLOW VERIFICATION THAT DESIGN REQUIREMENTS HAVE BEEN SATISFACTORILY ACCOMPLISHED?	YES	YES
16. HAVE ADEQUATE PREOPERATIONAL AND SUBSEQUENT PERIODIC TEST REQUIREMENTS BEEN APPROPRIATELY SPECIFIED?	NA	NA
17. ARE ADEQUATE HANDLING, STORAGE, CLEANING AND SHIPPING REQUIREMENTS SPECIFIED?	NA	NA
18. ARE ADEQUATE IDENTIFICATION REQUIREMENTS SPECIFIED?	YES	YES
19. ARE REQUIREMENTS FOR RECORD PREPARATION REVIEW, APPROVAL, RETENTION, ETC. ADEQUATELY SPECIFIED?	YES	YES
20. HAVE THE INDEPENDENT VERIFIER'S COMMENTS BEEN RESOLVED WITH THE PREPARER?	YES	YES

LEGEND: YES = ACCEPTABLE
NA = NOT APPLICABLE

T. Chang — INDEPENDENT VERIFIER SIGNATURE

12-19-85 — DATE

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      OOOOOOOOOOOO  KK         KK  RRRRRRRRRRR   EEEEEEEEEEEE  DDDDDDDDD    DDDDDDDDD
     OOOOOOOOOOOO  KK        KK   RRRRRRRRRRRR  EEEEEEEEEEEE  DDDDDDDDDD   DDDDDDDDDD
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     JJ     JJ       11    66        66        44   99        99     AA        AA
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*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
*A START JOB 1649 OKREDD    1        001 001 R0259    K. REDDY        ROOM    7.08.37 AM 08 JAN 86 R259.PR1 8301 START A*
```

```
1        //DKREDD JOB HE66YECA000CP3306297,'K.REDDY',CLASS=G,                    JOB 1649
         // MSGCLASS=A,TIME=60,MSGLEVEL=(0,0),REGION=1500K
```

CLIENT TUGC PROJECT COMANCHE PEAK UNIT #2

SUBJECT CTH-2-101AG

COMPUTER PROGRAM USED STRUDL (DYNAMIC)

PREPARED BY: K. REDDY DATE 1-22-86

CHECKED BY: BBanerjee DATE 1-22-86

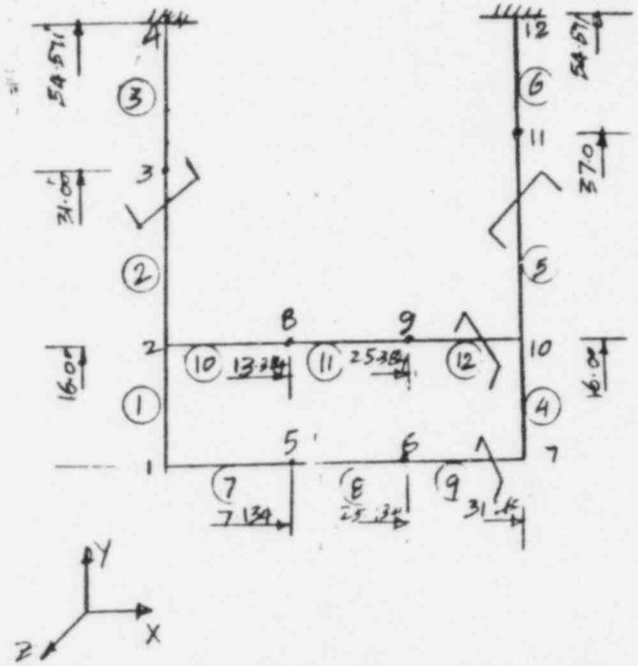
REF. CALC. BOOK NO. ______ PRINTOUT BOOK NO. ______

```
IEF142I OKREDD LOAD - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /LOAD     / START 86007.1732
IEF374I STEP /LOAD     / STOP  86007.1732 TCB    0MIN 00.05SEC SRB    0MIN 00.00SEC VIRT    44K SYS   304K
****************************************************************************************************************
*                                                                                                              *
*                                       KOMAND DATA ACQUISITION SYSTEM                                         *
*                                                                                                              *
* STEP NAME      LOAD         START TIME 17.32.42.00   VIRT SYS  USED     304K   PAGE INS           2  STEP TCB      00.00.00.05 *
* PGM NAME       IEBGENER     STOP  TIME 17.32.43.22   VIRT CORE USED      44K   PAGE OUTS          0  JOB  TCB      00.00.00.05 *
* DISPATCH PRTY 105           ELAP. TIME 00.00.01.22   SWAPS/PAGES     0/    0  SRB TIME   00.00.00.00  CONDITION CODE      0000 *
* PERF. GROUP          1      SRU                .38   TRANS ACT TIME 00.00.00.52                        OCCUPANCY     00.00.00.00 *
*                                                                                                              *
****************************************************************************************************************
*                                              EXCP STATISTICS                                                 *
*                                                                                                              *
* UNIT   EXCP COUNT    UNIT   EXCP COUNT    UNIT   EXCP COUNT    UNIT   EXCP COUNT    UNIT   EXCP COUNT    UNIT   EXCP COUNT *
*                                                                                                              *
*  734          2                                                                                              *
*                                                                                                              *
* EXCP TOTAL          2      VIO PAGE INS          0      VIO PAGE OUTS          0      PAGES SWAPPED IN          0 *
*                                                                                                              *
****************************************************************************************************************
IEF142I OKREDD PRINT - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /PRINT    / START 86007.1732
IEF374I STEP /PRINT    / STOP  86007.1732 TCB    0MIN 00.05SEC SRB    0MIN 00.00SEC VIRT    44K SYS   308K
****************************************************************************************************************
*                                                                                                              *
*                                       KOMAND DATA ACQUISITION SYSTEM                                         *
*                                                                                                              *
* STEP NAME      PRINT        START TIME 17.32.43.30   VIRT SYS  USED     308K   PAGE INS           0  STEP TCB      00.00.00.05 *
* PGM NAME       IEBGENER     STOP  TIME 17.32.44.16   VIRT CORE USED      44K   PAGE OUTS          0  JOB  TCB      00.00.00.10 *
* DISPATCH PRTY 105           ELAP. TIME 00.00.00.86   SWAPS/PAGES     0/    0  SRB TIME   00.00.00.00  CONDITION CODE      0000 *
* PERF. GROUP          1      SRU                .39   TRANS ACT TIME 00.00.00.56                        OCCUPANCY     00.00.00.00 *
*                                                                                                              *
****************************************************************************************************************
*                                              EXCP STATISTICS                                                 *
*                                                                                                              *
* UNIT   EXCP COUNT    UNIT   EXCP COUNT    UNIT   EXCP COUNT    UNIT   EXCP COUNT    UNIT   EXCP COUNT    UNIT   EXCP COUNT *
*                                                                                                              *
*  734          3                                                                                              *
*                                                                                                              *
* EXCP TOTAL          3      VIO PAGE INS          0      VIO PAGE OUTS          0      PAGES SWAPPED IN          0 *
*                                                                                                              *
****************************************************************************************************************
IEF142I OKREDD NEWS - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NEWS     / START 86007.1732
IEF374I STEP /NEWS     / STOP  86007.1732 TCB    0MIN 00.06SEC SRB    0MIN 00.00SEC VIRT    52K SYS   368K
****************************************************************************************************************
*                                                                                                              *
*                                       KOMAND DATA ACQUISITION SYSTEM                                         *
*                                                                                                              *
* STEP NAME      NEWS         START TIME 17.32.44.28   VIRT SYS  USED     368K   PAGE INS           2  STEP TCB      00.00.00.06 *
* PGM NAME       IEBGENER     STOP  TIME 17.32.45.31   VIRT CORE USED      52K   PAGE OUTS          0  JOB  TCB      00.00.00.16 *
* DISPATCH PRTY 105           ELAP. TIME 00.00.01.03   SWAPS/PAGES     0/    0  SRB TIME   00.00.00.00  CONDITION CODE      0000 *
* PERF. GROUP          1      SRU                .48   TRANS ACT TIME 00.00.00.45                        OCCUPANCY     00.00.00.00 *
*                                                                                                              *
****************************************************************************************************************
*                                              EXCP STATISTICS                                                 *
*                                                                                                              *
* UNIT   EXCP COUNT    UNIT   EXCP COUNT    UNIT   EXCP COUNT    UNIT   EXCP COUNT    UNIT   EXCP COUNT    UNIT   EXCP COUNT *
```

```
*  890           3     890           3      E92           0
*
* EXCP TOTAL          6       VIO PAGE INS          0       VIO PAGE OUTS           0       PAGES SWAPPED IN          0
*
*****************************************************************************************************************
IEF142I OKREDD HELP - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /HELP     / START 86007.1732
IEF374I STEP /HELP     / STOP  86007.1732 TCB     0MIN 00.05SEC SRB     0MIN 00.00SEC VIRT     48K SYS   368K
*****************************************************************************************************************
*                                                                                                               *
*                                         KOMAND DATA ACQUISITION SYSTEM                                        *
*                                                                                                               *
* STEP NAME      HELP          START TIME 17.32.45.44    VIRT SYS  USED     368K    PAGE INS            0  STEP TCB       00.00.00.05 *
* PGM NAME       IEBGENER      STOP  TIME 17.32.46.20    VIRT CORE USED      48K    PAGE OUTS           0  JOB  TCB       00.00.00.21 *
* DISPATCH PRTY 105            ELAP. TIME 00.00.00.76    SWAPS/PAGES      0/     0  SRB TIME    00.00.00.00  CONDITION CODE        0000 *
* PERF. GROUP           1      SRU                 .39   TRANS ACT TIME 00.00.00.29                          OCCUPANCY      00.00.00.00 *
*                                                                                                               *
*****************************************************************************************************************
*                                                 EXCP STATISTICS                                               *
*                                                                                                               *
* UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT *
*                                                                                                               *
*  890           3     892           0
*                                                                                                               *
* EXCP TOTAL          3       VIO PAGE INS          0       VIO PAGE OUTS           0       PAGES SWAPPED IN          0 *
*                                                                                                               *
*****************************************************************************************************************
IEF142I OKREDD STRUDL - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /STRUDL   / START 86007.1732
IEF374I STEP /STRUDL   / STOP  86007.1733 TCB     0MIN 02.52SEC SRB     0MIN 00.09SEC VIRT   1564K SYS   380K
*****************************************************************************************************************
*                                                                                                               *
*                                         KOMAND DATA ACQUISITION SYSTEM                                        *
*                                                                                                               *
* STEP NAME      STRUDL        START TIME 17.32.46.30    VIRT SYS  USED     380K    PAGE INS            0  STEP TCB       00.00.02.52 *
* PGM NAME       ICEX2         STOP  TIME 17.33.13.33    VIRT CORE USED  1,564K    PAGE OUTS           0  JOB  TCB       00.00.02.73 *
* DISPATCH PRTY 105            ELAP. TIME 00.00.27.03    SWAPS/PAGES      0/     0  SRB TIME    00.00.00.09  CONDITION CODE        0000 *
* PERF. GROUP           1      ARU               57.64   TRANS ACT TIME 00.00.24.02                          OCCUPANCY      00.00.00.00 *
*                                                                                                               *
*****************************************************************************************************************
*                                                 EXCP STATISTICS                                               *
*                                                                                                               *
* UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT *
*                                                                                                               *
*  588         136     E92           0     C61          39     C60          42     E90          51     E92          90 *
*  733          42     734           2     DA6           0     CA2           0
*                                                                                                               *
* EXCP TOTAL        402       VIO PAGE INS          0       VIO PAGE OUTS           0       PAGES SWAPPED IN          0 *
*                                                                                                               *
*****************************************************************************************************************
IEF375I  JOB /OKREDD   / START 86007.1732
IEF376I  JOB /OKREDD   / STOP  86007.1733 TCB     0MIN 02.73SEC SRB     0MIN 00.09SEC
*****************************************************************************************************************
*                                                                                                               *
*                                         KOMAND DATA ACQUISITION SYSTEM                                        *
*                                                                                                               *
*  JOB LOG NUMBER - OKREDD   86007 15.35.52.14              TCB TIME   00.00.02.73          SRB TIME          00.00.00.09 *
*                                                                                                               *
*  PROGRAMMER  K.REDDY                                      INIT DATE  01/07/86   86.007    INITIATION TIME     17.32.42.00 *
*
```

```
*  OS-VS2 REL  03.8                      PGN/SERVICE    1/     1.64     ELAPSED TIME          00.00.32.00  *
*  SYSTEM ID   8301                      CLASS          G               COMPLETION STATUS           C0000  *
****************************************************************************************************************
*                                   TOTAL MAINFRAME UNITS                                                      *
*                                SYSTEM RESOURCE UNITS (SRU)                 1.64                              *
*                                APPLICATION RESOURCE UNITS (ARU)           57.64                              *
****************************************************************************************************************
```

```
STRUDL '2-10146'  'COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146F'
$  BY  K. REDDY   LAST UPDATE 01/07/86  TIME 09:40
LIMIT MAX  JOI     TO  100  MEM  TO  100  LOA  TO          25
TYPE SPACE FRAME
ALPHANUMERIC IDENTIFIER TREATMENT BY CHARACTER COMPARISON
UNITS INCHES, KIPS, DEGREES, FAHRENEIT, LBM, SECONDS
JOINT COORDINATES
1           0.0           0.0   0.0
2           0.0          16.0   0.0
3           0.0          31.0   0.0
4           0.0          54.571          0.0
5           7.134      0.0      0.0
6          25.134      0.0      0.0
7          31.268      0.0      0.0
8          13.384     16.0      0.0
9          25.384     16.0      0.0
10         31.268     16.0      0.0
11         31.268     37.0      0.0
12         31.268     54.571    0.0
SUPPORT JOINTS
  4   12
MEMBER INCIDENCES
1   1       2
2   2       3
3   3       4
4   7      10
5  10      11
6  11      12
7   1       5
8   5       6
9   6       7
10  2       8
11  8       9
12  9      10
CONSTANTS
E 29.E3 ALL ; POISSON .3 ALL ; DENS 0.284 ALL
G 11.2E3 ALL ; CTE 0.0000065 ALL ; FYLD 36.0 ALL
CONSTANTS
DEN 0.554   1  2  4  5
DEN 0.585   7  8  9  10  11  12
CONSTANTS
BETA  270.0     1  2  3
BETA   90.0     4  TO  12
MEMBER PROPERTIES
 1  TO   6   TABLE 'STEELC1' 'C10X15'  TYPE 'CHANNEL'
 7  TO  12   TABLE 'STEELC1' 'C8X11'   TYPE 'CHANNEL'
PRINT STRUCTURAL DATA
PLOT DEVICE PRINTER WID 10 LEN 10
PLOT FORMAT TOLERANCE 5
PLOT PLANE Z EQUAL 0
INERTIA OF JOINTS LUMPED
INERTIA OF JOINTS FACTOR  1  ADD
 5   6      LINEAR X  162  Y  162  Z  244
 8   9      LINEAR X  173  Y  173  Z  287
GROUP '&RET' DEFINITION , JOINTS ALL ACTIVE
END OF GROUP DEFINITION
CHANGES
INERTIA OF JOINTS LUMPED
ADDITIONS
DYNAMIC DEGREES STATIC ; JOINTS
'&RET' XT ; END
```



CLIENT TUGC PROJECT COMANCHE PEAK UNIT #2

SUBJECT CTH-2-10146

COMPUTER PROGRAM USED STRUDL (DYNAMIC)

PREPARED BY: K. REDDY DATE 1-22-86

CHECKED BY: B.Banerjee DATE 1-22-86

REF. CALC. BOOK NO. ____ PRINTOUT BOOK NO. ____

```
MODAL ANALYSIS 5
LIST DYNAMIC EIGENVECTORS
LIST DYNAMIC NORM PART FACTORS
CHANGES
INERTIA OF JOINTS LUMPED
DYNAMIC DEGREES STATIC ; JOINTS
'&RET' YT ; END
UNIT CYCL ; ADDITION ; ASSEMBLE FOR DYNAMICS
MODAL ANALYSIS 5
LIST DYNAMIC EIGENVECTORS
LIST DYNAMIC NORM PART FACTORS
CHANGES
INERTIA OF JOINTS LUMPED
DYNAMIC DEGREES STATIC ; JOINTS
'&RET' ZT ; END
UNIT CYCL ; ADDITION ; ASSEMBLE FOR DYNAMICS
MODAL ANALYSIS 5
LIST DYNAMIC EIGENVECTORS
LIST DYNAMIC NORM PART FACTORS
UNITS DEGREES
FINISH NOMESSAGES
```

Version	PROC Name	PROCLIB	QA/APP	Installation Completed
V1185	STRUDL	$CSD.QALIB	QA	12/16/85
	STRUBASE	$CSD.QALIB	QA	12/16/85
V1085	STRUDL	$CSD.QALIB	QA	11/01/85
	STRUBASE	$CSD.QALIB	QA	11/01/85
V0985	STRUDL	$CSD.QALIB	QA	09/23/85
	STRUBASE	$CSD.QALIB	QA	09/23/85
V0385	STRU0385	$CSD.QALIB	QA	03/23/85
	BASE0385	$CSD.QALIB	QA	03/23/85

Vendor : P-Delta
Contact: Bom Virk
Phone : (617) 472-8533

NOTE:
For more information on how to run STRUDL, code HELP=STRUDL on your EXEC card.

```
*******************************************************************************
*******************************************************************************
*****                                                                    *****
*****                                                                    *****
*****     NOTICE TO ALL STRUDL USERS:                                    *****
*****                                                                    *****
*****       All versions of STRUDL prior to V0985 will be deleted        *****
*****       from the system as of December 1, 1985.  This will           *****
*****       include versions executed by PROCs LSTRUDL, SPBASE,          *****
*****       STRU0385 and BASE0385.                                       *****
*****                                                                    *****
*****                                                                    *****
*****       If you have any questions about this, please call            *****
*****       UCCEL IBM Customer Services at 1-800-527-6003.               *****
*****                                                                    *****
*****                                                                    *****
*****                                                                    *****
*****                                                                    *****
*******************************************************************************
*******************************************************************************
```

* PSUICES V5M5 ***

```
P S U I C E S

VERSION 5  MODIFICATION 5

A PROPRIETARY PRODUCT OF

PROJECT SOFTWARE AND DEVELOPMENT, INC.
14 STORY STREET
CAMBRIDGE, MASSACHUSETTS 02138
TEL. 617-661-1444

COPYRIGHT (C) 1986
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RUN DATE = 01/07/86
DYNAMIC CORE (VIRTUAL)  1429504 BYTES
370/083   VS2  REL 03.8I
```

THIS IS OVERALL RUN NO. 85

MONTH TO DATE STATISTICS FOR PASSWORD 'EBSTCP ' (EXCLUSIVE OF THIS RUN).

ENTRIES	82
COMPLETIONS	82
RECORDED CPU TIME	6MIN 16 SEC
RECORDED EXCPS	51077

STRUDL '2-10146' 'COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146F'

```
        PPPPDPPPPPP              SSSSSSSSSSS   TTTTTTTTTTT   RRRRRRRRRRR   UU        UU   DDDDDDDDDDD   LL
       PPPPD DPPPPP             SSSSSSSSSSS   TTTTTTTTTTT   RRRRRRRRRRRR  UU        UU   DDDDDDDDDDDD  LL
      PPPPD  DPPPP             SS                 TT        RR        RR  UU        UU   DD         DD  LL
     PPPPD   DPPP             SS                 TT        RR        RR  UU        UU   DD         DD  LL
    PPPPD    DPP   HHHHH   SSSSSSSSSSS          TT        RRRRRRRRRRRR  UU        UU   DD         DD  LL
   PPPPD     DP    HHHHH   SSSSSSSSSSS          TT        RRRRRRRRRRR   UU        UU   DD         DD  LL
  PPPPDDDDDDDD                      SS          TT        RRRR          UU        UU   DD         DD  LL
 PPPPPPPPPPPP                       SS          TT        RR  RR        UU        UU   DD         DD  LL
PP                         SSSSSSSSSSS          TT        RR    RR      UUUUUUUUUUU   DDDDDDDDDDDD  LLLLLLLLLLL
PP                        SSSSSSSSSSS          TT        RR      RR    UUUUUUUUUUU   DDDDDDDDDDD   LLLLLLLLLLL
```

```
****************************************************
*                                                  *
*                P-DELTA STRUDL                    *
*                                                  *
*                 VERSION 1085                     *
*                                                  *
*          A PROPRIETARY PRODUCT OF                *
*                                                  *
*                P-DELTA, INC.                     *
*               42 ST. ANN ROAD                    *
*         QUINCY, MASSACHUSETTS 02170              *
*            TEL. (617) 472-8533                   *
*                                                  *
*     COPYRIGHT (C) 1982,1983,1984,1985            *
*            ALL RIGHTS RESERVED                   *
*                                                  *
*          17:32:55        1/07/86                 *
*                                                  *
****************************************************
```

* BY K. REDDY   LAST UPDATE 01/07/86 TIME 09:40
LIMIT MAX JOI   TO 100 MEM TO 100 LOA TO   25

TYPE SPACE FRAME

ALPHANUMERIC IDENTIFIER TREATMENT BY CHARACTER COMPARISON

UNITS INCHES, KIPS, DEGREES, FAHRENEIT, LBM, SECONDS

JOINT COORDINATES

1	0.0	0.0	0.0
2	0.0	16.0	0.0
3	0.0	31.0	0.0
4	0.0	54.571	0.0
5	7.134	0.0	0.0
6	25.134	0.0	0.0

```
7         31.268     0.0     0.0
8         13.384    16.0     0.0
9         25.384    16.0     0.0
10        31.268    16.0     0.0
11        31.268    37.0     0.0
12        31.268    54.571   0.0
SUPPORT JOINTS
  4   12
MEMBER INCIDENCES
1   1     2
2   2     3
3   3     4
4   7     10
5   10    11
6   11    12
7   1     5
8   5     6
9   6     7
10  2     8
11  8     9
12  9     10
CONSTANTS
E 29.E3 ALL ; POISSON .3 ALL ; DENS 0.284 ALL
G 11.2E3 ALL ; CTE 0.0000065 ALL ; FYLD 36.0 ALL
CONSTANTS
DEN 0.554   1  2  4  5
DEN 0.585   7  8  9  10  11  12
CONSTANTS
BETA  270.0   1  2  3
BETA   90.0   4  TO  12
```

```
MEMBER PROPERTIES
 1  TO   6  TABLE 'STEELC1' 'C10X15'  TYPE 'CHANNEL'
 7  TO  12  TABLE 'STEELC1' 'C8X11'   TYPE 'CHANNEL'
PRINT STRUCTURAL DATA
```

```
*****************************************
*  PROBLEM DATA FROM INTERNAL STORAGE   *
*****************************************
```

JOB ID - 2-10146   JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146F

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	DEG	FAH	SEC	LBM

*********** STRUCTURAL DATA **********

JOINT COORDINATES-------------------------------------/-CONDITION-/--STATUS--/

JOINT	X	Y	Z	CONDITION	STATUS
1	0.0	0.0	0.0		ACTIVE
2	0.0	16.000	0.0		ACTIVE
3	0.0	31.000	0.0		ACTIVE
4	0.0	54.571	0.0	SUPPORT	ACTIVE
5	7.134	0.0	0.0		ACTIVE
6	25.134	0.0	0.0		ACTIVE
7	31.268	0.0	0.0		ACTIVE
8	13.384	16.000	0.0		ACTIVE
9	25.384	16.000	0.0		ACTIVE
10	31.268	16.000	0.0		ACTIVE
11	31.268	37.000	0.0		ACTIVE
12	31.268	54.571	0.0	SUPPORT	ACTIVE

JOINT RELEASES--------------------------------/ELASTIC SUPPORT RELEASES--------------------------------/

JOINT	FORCE	MOMENT	THETA 1	THETA 2	THETA 3	KFX	KFY	KFZ	KMX	KMY	KMZ

MEMBER INCIDENCES----------/ LENGTH PROJECTIONS ON GLOBAL AXES----/ RELEASES---------------------/ STATUS--/

MEMBER	START	END	LENGTH	X	Y	Z	START FORCE	START MOMENT	END FORCE	END MOMENT	STATUS		
1	1	2	16.000	0.0	16.000	0.0					ACTIVE	SPACE	FRAME
2	2	3	15.000	0.0	15.000	0.0					ACTIVE	SPACE	FRAME
3	3	4	23.571	0.0	23.571	0.0					ACTIVE	SPACE	FRAME
4	7	10	16.000	0.0	16.000	0.0					ACTIVE	SPACE	FRAME
5	10	11	21.000	0.0	21.000	0.0					ACTIVE	SPACE	FRAME
6	11	12	17.571	0.0	17.571	0.0					ACTIVE	SPACE	FRAME
7	1	5	7.134	7.134	0.0	0.0					ACTIVE	SPACE	FRAME
8	5	6	18.000	18.000	0.0	0.0					ACTIVE	SPACE	FRAME
9	6	7	6.134	6.134	0.0	0.0					ACTIVE	SPACE	FRAME
10	2	8	13.384	13.384	0.0	0.0					ACTIVE	SPACE	FRAME
11	8	9	12.000	12.000	0.0	0.0					ACTIVE	SPACE	FRAME
12	9	10	5.884	5.884	0.0	0.0							

ELEMENT INCIDENCES---/

ELEMENT	NODES

MEMBER PROPERTIES---/

MEM/SEQ.LEN	TYPE TABLE	AX	AY YD FLTK	AZ ZD WBTK	IX OD RY	IY ID RZ	IZ BFX	BY RAD	BZ ALP	YC TYP	ZC SPA	EY GEN	EZ IYZ
1	TABLE	4.490	2.400	1.511	0.211	2.280	67.400	1.160	13.500	5.000	1.966	0.0	0.0
	STEELC1 C10X15		10.000	2.600	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.436	0.240	0.713	3.870							
2	TABLE	4.490	2.400	1.511	0.211	2.280	67.400	1.160	13.500	5.000	1.966	0.0	0.0
	STEELC1 C10X15		10.000	2.600	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.436	0.240	0.713	3.870							
3	TABLE	4.490	2.400	1.511	0.211	2.280	67.400	1.160	13.500	5.000	1.966	0.0	0.0
	STEELC1 C10X15		10.000	2.600	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.436	0.240	0.713	3.870							
4	TABLE	4.490	2.400	1.511	0.211	2.280	67.400	1.160	13.500	5.000	1.966	0.0	0.0
	STEELC1 C10X15		10.000	2.600	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.436	0.240	0.713	3.870							
5	TABLE	4.490	2.400	1.511	0.211	2.280	67.400	1.160	13.500	5.000	1.966	0.0	0.0
	STEELC1 C10X15		10.000	2.600	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.436	0.240	0.713	3.870							
6	TABLE	4.490	2.400	1.511	0.211	2.280	67.400	1.160	13.500	5.000	1.966	0.0	0.0
	STEELC1 C10X15		10.000	2.600	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.436	0.240	0.713	3.870							
7	TABLE	3.380	1.760	1.175	0.131	1.320	32.600	0.781	8.140	4.000	1.689	0.0	0.0
	STEELC1 C8X11		8.000	2.260	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.390	0.220	0.625	3.110							
8	TABLE	3.380	1.760	1.175	0.131	1.320	32.600	0.781	8.140	4.000	1.689	0.0	0.0
	STEELC1 C8X11		8.000	2.260	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.390	0.220	0.625	3.110							
9	TABLE	3.380	1.760	1.175	0.131	1.320	32.600	0.781	8.140	4.000	1.689	0.0	0.0
	STEELC1 C8X11		8.000	2.260	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.390	0.220	0.625	3.110							
10	TABLE	3.380	1.760	1.175	0.131	1.320	32.600	0.781	8.140	4.000	1.689	0.0	0.0
	STEELC1 C8X11		8.000	2.260	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.390	0.220	0.625	3.110							
11	TABLE	3.380	1.760	1.175	0.131	1.320	32.600	0.781	8.140	4.000	1.689	0.0	0.0
	STEELC1 C8X11		8.000	2.260	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.390	0.220	0.625	3.110							
12	TABLE	3.380	1.760	1.175	0.131	1.320	32.600	0.781	8.140	4.000	1.689	0.0	0.0

```
        STEELC1  CBX11          8.000   2.260    0.0     0.0     0.0     0.0     0.0   CHANNEL  0.0  YES    0.0
                                0.390   0.220    0.625   3.110

MEMBER CONSTANTS---------------------------------------------------------------------------------------/
CONSTANT  STANDARD VALUE   DOMAIN.          VALUE        MEMBER LIST


   E         0.290000E 05    ALL

   G         0.112000E 05    ALL

  CTE        0.650000E-05    ALL

DENSITY      0.284000E 00    ALL BUT
                                         0.554000E 00  1       2       4       5
                                         0.585000E 00  7       8       9       10      11      12

POISSON      0.300000E 00    ALL

  FYLD       0.360000E 02    ALL

  BETA       0.0             ALL BUT
                                         0.270000E 03  1       2       3
                                         0.900000E 02  4       5       6       7       8       9
                                                        10      11      12

 CBETA       0.0             ALL

  FULT       0.600000E 02    ALL

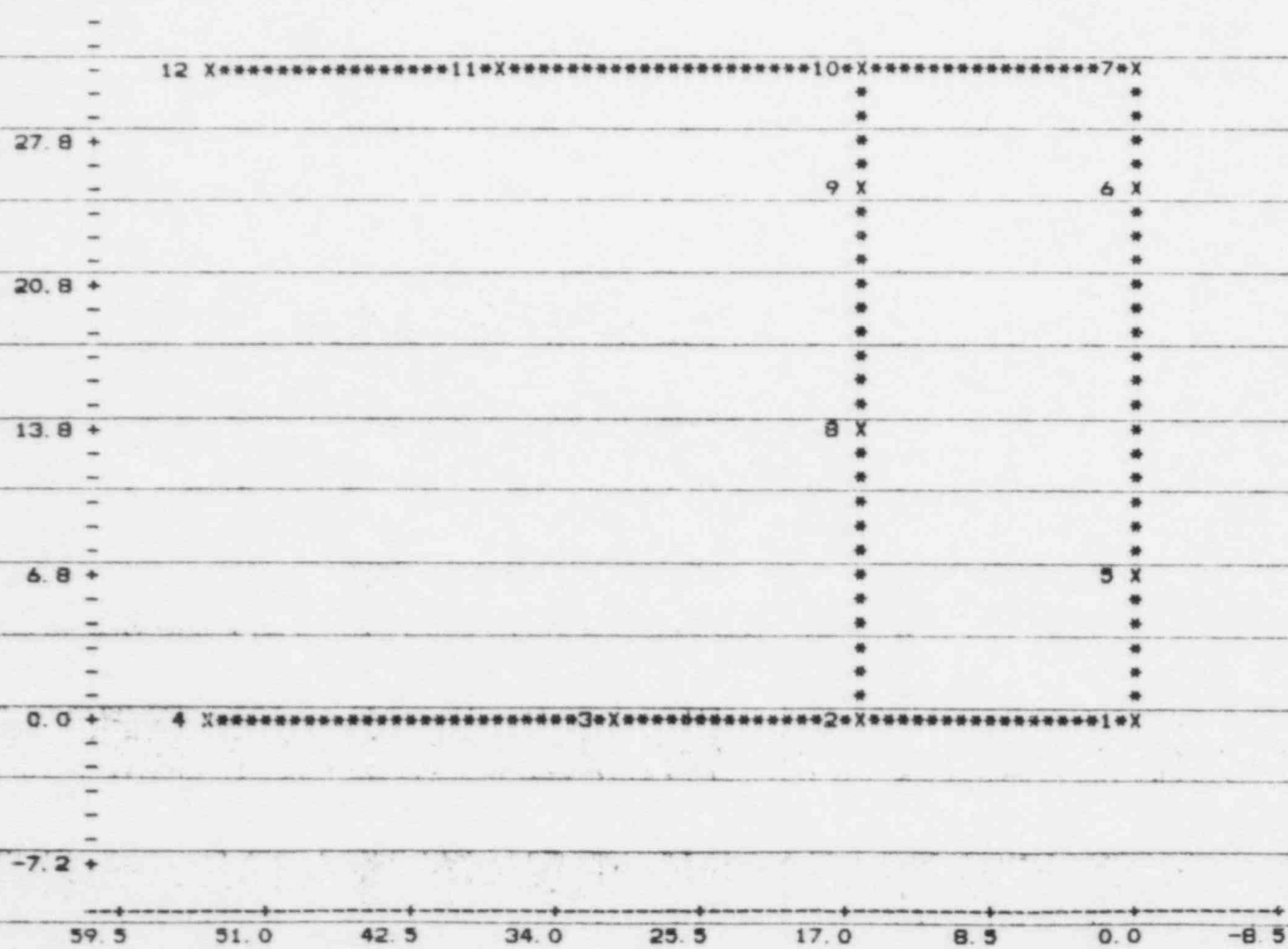

**************************************
*  END OF DATA FROM  INTERNAL STORAGE  *
**************************************
```

```
PLOT DEVICE PRINTER WID 10 LEN 10
PLOT FORMAT TOLERANCE 5
PLOT PLANE Z EQUAL 0
```

HORIZONTAL SCALE   8.500 UNITS PER INCH

VERTICAL SCALE   7.000 UNITS PER INCH

ORIENTATION



INERTIA OF JOINTS LUMPED

INERTIA OF JOINTS FACTOR 1 ADD

5 6 LINEAR X 162 Y 162 Z 244

8 9 LINEAR X 173 Y 173 Z 287

GROUP '&RET' DEFINITION ; JOINTS ALL ACTIVE

END OF GROUP DEFINITION

CHANGES

INERTIA OF JOINTS LUMPED

ADDITIONS

DYNAMIC DEGREES STATIC ; JOINTS

'&RET' XT ; END

UNIT CYCL ; ADDITION ; ASSEMBLE FOR DYNAMICS

CORRESPONDENCE BETWEEN INTERNAL AND PHYSICAL DEGREES OF FREEDOM

DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT
1	DX	1	2	DX	2	3	DX	3	4	DX	5	5	DX	6	6	DX	7
7	DX	8	8	DX	9	9	DX	10	10	DX	11						

LOCATION OF DYNAMIC DEGREES OF FREEDOM IN ORIGINAL MATRIX

1	7	13	19	25	31	37	43	49	55

LOCATION OF CONDENSED DEGREES OF FREEDOM IN ORIGINAL MATRIX

2	3	4	5	6	8	9	10	11	12	14	15	16	17	18	20	21	22	23	24
26	27	28	29	30	32	33	34	35	36	38	39	40	41	42	44	45	46	47	48
50	51	52	53	54	56	57	58	59	60										

MODAL ANALYSIS 5

EIGENVALUES

MODE-------EIGENVALUE-------FREQUENCY--------PERIOD---/

1	1.599377D 02	1.264665D 01	7.907224D-02
2	5.068089D 03	7.119051D 01	1.404680D-02
3	4.516555D 04	2.125219D 02	4.705393D-03
4	5.344405D 04	2.311797D 02	4.325635D-03
5	4.962594D 05	7.044568D 02	1.419532D-03

LIST DYNAMIC EIGENVECTORS

****
RESULTS OF LATEST ANALYSIS
****

JOB ID - 2-10146 JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN , 2-10146F

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	CYCL	FAH	SEC	LBM

EIGENVECTORS

MODE 1

JOINT		DISPLACEMENT X DISP.	Y DISP.	Z DISP.	ROTATION X ROT.	Y ROT.	Z ROT.
1	GLOBAL	0.9997777	-0.0034749	0.0	0.0	0.0	0.0081160
2	GLOBAL	0.7944151	-0.0030354	0.0	0.0	0.0	0.0148859
3	GLOBAL	0.4443043	-0.0018550	0.0	0.0	0.0	0.0272461
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	1.0000000	0.0209541	0.0	0.0	0.0	0.0000685
6	GLOBAL	0.9999997	-0.0206454	0.0	0.0	0.0	0.0008979
7	GLOBAL	0.9998094	0.0034749	0.0	0.0	0.0	0.0080959
8	GLOBAL	0.7947524	0.0151072	0.0	0.0	0.0	-0.0059586
9	GLOBAL	0.7947397	-0.0404624	0.0	0.0	0.0	0.0018929
10	GLOBAL	0.7945846	0.0030354	0.0	0.0	0.0	0.0149114
11	GLOBAL	0.2806625	0.0013828	0.0	0.0	0.0	0.0257671
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

MODE 2

JOINT		DISPLACEMENT X DISP.	Y DISP.	Z DISP.	ROTATION X ROT.	Y ROT.	Z ROT.
1	GLOBAL	-0.8894790	0.0247670	0.0	0.0	0.0	-0.0918369
2	GLOBAL	0.9060683	0.0197063	0.0	0.0	0.0	-0.0579036
3	GLOBAL	1.0000000	0.0120426	0.0	0.0	0.0	0.0347210
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	-0.8956964	-0.2460215	0.0	0.0	0.0	0.0005381
6	GLOBAL	-0.8954563	0.2502007	0.0	0.0	0.0	-0.0097574
7	GLOBAL	-0.8899769	-0.0247670	0.0	0.0	0.0	-0.0929010
8	GLOBAL	0.9182323	-0.0625766	0.0	0.0	0.0	0.0219934
9	GLOBAL	0.9175978	0.1446422	0.0	0.0	0.0	-0.0071953
10	GLOBAL	0.9118435	-0.0197063	0.0	0.0	0.0	-0.0563380
11	GLOBAL	0.7105980	-0.0689772	0.0	0.0	0.0	0.0499005
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

MODE 3

JOINT		DISPLACEMENT X DISP.	Y DISP.	Z DISP.	ROTATION X ROT.	Y ROT.	Z ROT.
1	GLOBAL	0.0115484	0.0001676	0.0	0.0	0.0	-0.0053246
2	GLOBAL	-0.0318754	0.0003638	0.0	0.0	0.0	0.0206964
3	GLOBAL	-0.4390008	0.0002223	0.0	0.0	0.0	0.0065487
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	0.0104958	-0.0383748	0.0	0.0	0.0	-0.0048843
6	GLOBAL	0.0061767	-0.0538363	0.0	0.0	0.0	0.0056611
7	GLOBAL	0.0043731	-0.0001676	0.0	0.0	0.0	0.0123418
8	GLOBAL	-0.0236686	0.1997033	0.0	0.0	0.0	0.0064592
9	GLOBAL	-0.0136594	0.1462965	0.0	0.0	0.0	-0.0175438
10	GLOBAL	-0.0080295	-0.0003638	0.0	0.0	0.0	-0.0331957
11	GLOBAL	1.0000000	-0.0001657	0.0	0.0	0.0	0.0188042
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

MODE 4

JOINT		DISPLACEMENT X DISP.	Y DISP.	Z DISP.	ROTATION X ROT.	Y ROT.	Z ROT.
1	GLOBAL	0.0211779	0.0007586	0.0	0.0	0.0	0.0172770
2	GLOBAL	-0.0552844	0.0014435	0.0	0.0	0.0	-0.0396700
3	GLOBAL	1.0000000	0.0008821	0.0	0.0	0.0	-0.0240028
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	0.0239969	0.0636744	0.0	0.0	0.0	0.0024432
6	GLOBAL	0.0266096	-0.0111555	0.0	0.0	0.0	-0.0020484
7	GLOBAL	0.0258086	-0.0007586	0.0	0.0	0.0	0.0071983
8	GLOBAL	-0.0742108	-0.1509756	0.0	0.0	0.0	0.0071587
9	GLOBAL	-0.0813445	-0.0137169	0.0	0.0	0.0	0.0075807
10	GLOBAL	-0.0797539	-0.0014435	0.0	0.0	0.0	-0.0063711
11	GLOBAL	0.3755515	-0.0006576	0.0	0.0	0.0	0.0033323
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

MODE 5

JOINT		DISPLACEMENT X DISP.	Y DISP.	Z DISP.	ROTATION X ROT.	Y ROT.	Z ROT.
1	GLOBAL	1.0000000	0.0001339	0.0	0.0	0.0	0.0619227
2	GLOBAL	0.0531384	0.0001441	0.0	0.0	0.0	0.0288349
3	GLOBAL	0.0190818	0.0000880	0.0	0.0	0.0	-0.0048695
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	0.9030855	0.3406106	0.0	0.0	0.0	0.0335600
6	GLOBAL	-0.9138996	0.3038570	0.0	0.0	0.0	-0.0375148
7	GLOBAL	-0.9936813	-0.0001339	0.0	0.0	0.0	-0.0615758
8	GLOBAL	0.0252635	0.2290918	0.0	0.0	0.0	0.0048471
9	GLOBAL	-0.0308201	0.1472895	0.0	0.0	0.0	-0.0189239
10	GLOBAL	-0.0404178	-0.0001441	0.0	0.0	0.0	-0.0313617
11	GLOBAL	-0.0141769	-0.0000656	0.0	0.0	0.0	0.0052226
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

LIST DYNAMIC NORM PART FACTORS

****

* PARTICIPATION FACTORS COMPUTED FROM LATEST MODAL ANALYSIS *

****

JOB ID - 2-10146 JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146F

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	CYCL	FAH	SEC	LBM

PARTICIPATION FACTORS AS COMPUTED FROM NORMALIZED MODES (OUTPUT IN INTERNAL UNITS)

/--MODE--/	DISPLACEMENT X DISP.	DISPLACEMENT Y DISP.	DISPLACEMENT Z DISP.	ROTATION X ROT.	ROTATION Y ROT.	ROTATION Z ROT.
1	0.21818902D 01	-0.12067322D-01	0.0	0.0	0.0	0.0
2	-0.33773538D 00	-0.40956381D-01	0.0	0.0	0.0	0.0
3	0.43275822D-01	0.13028878D 00	0.0	0.0	0.0	0.0
4	0.54813521D-01	-0.58780080D-01	0.0	0.0	0.0	0.0
5	-0.17114377D-03	0.50142602D 00	0.0	0.0	0.0	0.0

CHANGES

INERTIA OF JOINTS LUMPED

DYNAMIC DEGREES STATIC ; JOINTS

'&RET' YT ; END

UNIT CYCL ; ADDITION ; ASSEMBLE FOR DYNAMICS

CORRESPONDENCE BETWEEN INTERNAL AND PHYSICAL DEGREES OF FREEDOM

DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT
1	DY	1	2	DY	2	3	DY	3	4	DY	5	5	DY	6	6	DY	7
7	DY	8	8	DY	9	9	DY	10	10	DY	11						

LOCATION OF DYNAMIC DEGREES OF FREEDOM IN ORIGINAL MATRIX

2 8 14 20 26 32 38 44 50 56

LOCATION OF CONDENSED DEGREES OF FREEDOM IN ORIGINAL MATRIX

1 3 4 5 6 7 9 10 11 12 13 15 16 17 18 19 21 22 23 24

```
  25   27   28   29   30   31   33   34   35   36   37   39   40   41   42   43   45   46   47   48
  49   51   52   53   54   55   57   58   59   60
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MODAL ANALYSIS 5

EIGENVALUES

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MODE-------EIGENVALUE-------FREQUENCY--------PERIOD---/

   1      6.979326D 03    8.354236D 01    1.196996D-02
   2      1.167280D 04    1.080408D 02    9.255756D-03
   3      2.400710D 04    1.549422D 02    6.454010D-03
   4      3.885244D 04    1.971102D 02    5.073298D-03
   5      3.728480D 05    6.106128D 02    1.637697D-03
```

LIST DYNAMIC EIGENVECTORS

****
RESULTS OF LATEST ANALYSIS
****

JOB ID - 2-10146   JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN , 2-10146F

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	CYCL	FAH	SEC	LBM

EIGENVECTORS

MODE 1

JOINT		DISPLACEMENT X DISP.	DISPLACEMENT Y DISP.	DISPLACEMENT Z DISP.	ROTATION X ROT.	ROTATION Y ROT.	ROTATION Z ROT.
1	GLOBAL	-0.0405543	0.0235486	0.0	0.0	0.0	-0.0156885
2	GLOBAL	-0.0288005	0.0247742	0.0	0.0	0.0	0.0314905
3	GLOBAL	-0.1977495	0.0151653	0.0	0.0	0.0	-0.0039239
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	-0.0416448	-0.0873708	0.0	0.0	0.0	-0.0113215
6	GLOBAL	-0.0467959	-0.0605355	0.0	0.0	0.0	0.0123929
7	GLOBAL	-0.0480157	0.0299639	0.0	0.0	0.0	0.0142878
8	GLOBAL	-0.0281058	1.0000000	0.0	0.0	0.0	0.0276734
9	GLOBAL	-0.0241828	0.4646454	0.0	0.0	0.0	-0.0786170
10	GLOBAL	-0.0242746	0.0310327	0.0	0.0	0.0	-0.0352195
11	GLOBAL	0.1416843	0.0141647	0.0	0.0	0.0	0.0086041
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

MODE 2

JOINT		DISPLACEMENT X DISP.	DISPLACEMENT Y DISP.	DISPLACEMENT Z DISP.	ROTATION X ROT.	ROTATION Y ROT.	ROTATION Z ROT.
1	GLOBAL	0.1264333	0.0938843	0.0	0.0	0.0	0.0745319
2	GLOBAL	0.0283203	0.0680914	0.0	0.0	0.0	-0.0112509
3	GLOBAL	0.0723376	0.0417292	0.0	0.0	0.0	0.0009036
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	0.1233332	1.0000000	0.0	0.0	0.0	0.1028003
6	GLOBAL	0.1085445	0.7656181	0.0	0.0	0.0	-0.1036186
7	GLOBAL	0.1044632	0.0864991	0.0	0.0	0.0	-0.0589649
8	GLOBAL	0.0333524	0.1022961	0.0	0.0	0.0	0.0014366
9	GLOBAL	0.0479164	0.0487821	0.0	0.0	0.0	-0.0024304
10	GLOBAL	0.0507942	0.0633153	0.0	0.0	0.0	0.0129580
11	GLOBAL	-0.0379268	0.0289379	0.0	0.0	0.0	-0.0012335
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

MODE 3

JOINT		/---DISPLACEMENT--- X DISP.	Y DISP.	Z DISP.---//	---ROTATION--- X ROT.	Y ROT	Z ROT.---/
1	GLOBAL	0.9972566	0.0332860	0.0	0.0	0.0	0.0417709
2	GLOBAL	0.4535823	0.0242003	0.0	0.0	0.0	0.0217227
3	GLOBAL	0.1756757	0.0148756	0.0	0.0	0.0	0.0141724
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	0.9990808	0.2792808	0.0	0.0	0.0	0.0007966
6	GLOBAL	1.0000000	-0.3658254	0.0	0.0	0.0	0.0155853
7	GLOBAL	0.9989575	-0.0636842	0.0	0.0	0.0	0.0475702
8	GLOBAL	0.4474168	-0.0792854	0.0	0.0	0.0	-0.0179469
9	GLOBAL	0.4486737	-0.1713471	0.0	0.0	0.0	0.0034790
10	GLOBAL	0.4519933	-0.0496015	0.0	0.0	0.0	0.0253450
11	GLOBAL	0.0888692	-0.0227490	0.0	0.0	0.0	0.0099377
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

MODE 4

JOINT		/---DISPLACEMENT--- X DISP.	Y DISP.	Z DISP.---//	---ROTATION--- X ROT.	Y ROT.	Z ROT.---/
1	GLOBAL	0.9978057	-0.0143224	0.0	0.0	0.0	-0.0075706
2	GLOBAL	0.7886174	-0.0062152	0.0	0.0	0.0	0.0299044
3	GLOBAL	0.3562840	-0.0038343	0.0	0.0	0.0	0.0259714
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	0.9984369	-0.1312140	0.0	0.0	0.0	-0.0010740
6	GLOBAL	1.0000000	0.1753145	0.0	0.0	0.0	-0.0163825
7	GLOBAL	0.9994977	-0.0344015	0.0	0.0	0.0	-0.0218104
8	GLOBAL	0.7866143	0.2093649	0.0	0.0	0.0	-0.0411983
9	GLOBAL	0.7856802	-0.4685520	0.0	0.0	0.0	0.0202918
10	GLOBAL	0.7879701	-0.0458224	0.0	0.0	0.0	0.0526040
11	GLOBAL	0.1150555	-0.0211043	0.0	0.0	0.0	0.0152712
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

MODE 5

JOINT		/---DISPLACEMENT--- X DISP.	Y DISP.	Z DISP.---//	---ROTATION--- X ROT.	Y ROT.	Z ROT.---/
1	GLOBAL	1.0000000	-0.4396191	0.0	0.0	0.0	0.0488091
2	GLOBAL	0.4793199	-0.3946728	0.0	0.0	0.0	0.0378652
3	GLOBAL	0.1675390	-0.2651602	0.0	0.0	0.0	0.0204687
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	0.9815772	0.0162329	0.0	0.0	0.0	0.0418720
6	GLOBAL	0.9874016	-0.0050746	0.0	0.0	0.0	0.0022264
7	GLOBAL	0.9946737	0.0835946	0.0	0.0	0.0	0.0272658
8	GLOBAL	0.5371251	0.0059907	0.0	0.0	0.0	0.0127301
9	GLOBAL	0.5036215	-0.0029608	0.0	0.0	0.0	0.0004009
10	GLOBAL	0.4859757	0.0741999	0.0	0.0	0.0	0.0209374
11	GLOBAL	0.1098726	0.0377480	0.0	0.0	0.0	0.0129337
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

LIST DYNAMIC NORM PART FACTORS

****
* PARTICIPATION FACTORS COMPUTED FROM LATEST MODAL ANALYSIS *
****

JOB ID - 2-10146   JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146F

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	CYCL	FAH	SEC	LBM

PARTICIPATION FACTORS AS COMPUTED FROM NORMALIZED MODES (OUTPUT IN INTERNAL UNITS)

/--MODE--/	X DISP. (DISPLACEMENT)	Y DISP. (DISPLACEMENT)	Z DISP. (DISPLACEMENT)	X ROT. (ROTATION)	Y ROT. (ROTATION)	Z ROT. (ROTATION)
1	-0.857883950-01	0.68501105D 00	0.0	0.0	0.0	0.0
2	0.18184052D 00	0.96558349D 00	0.0	0.0	0.0	0.0
3	0.46425764D 01	-0.24921518D 00	0.0	0.0	0.0	0.0
4	-0.45821351D 01	0.24708357D 00	0.0	0.0	0.0	0.0
5	-0.40176696D 01	0.18313485D 00	0.0	0.0	0.0	0.0

CHANGES

INERTIA OF JOINTS LUMPED

DYNAMIC DEGREES STATIC ; JOINTS

'&RET' ZT ; END

UNIT CYCL ; ADDITION ; ASSEMBLE FOR DYNAMICS

CORRESPONDENCE BETWEEN INTERNAL AND PHYSICAL DEGREES OF FREEDOM

DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT
1	DZ	1	2	DZ	2	3	DZ	3	4	DZ	5	5	DZ	6	6	DZ	7
7	DZ	8	8	DZ	9	9	DZ	10	10	DZ	11						

LOCATION OF DYNAMIC DEGREES OF FREEDOM IN ORIGINAL MATRIX
3 9 15 21 27 33 39 45 51 57
LOCATION OF CONDENSED DEGREES OF FREEDOM IN ORIGINAL MATRIX
1 2 4 5 6 7 8 10 11 12 13 14 16 17 18 19 20 22 23 24

```
25   26   28   29   30   31   32   34   35   36   37   38   40   41   42   43   44   46   47   48
49   50   52   53   54   55   56   58   59   60
```

MODAL ANALYSIS 5

EIGENVALUES

MODE	EIGENVALUE	FREQUENCY	PERIOD
1	7.560041D 02	2.749553D 01	3.636951D-02
2	2.136593D 03	4.622330D 01	2.163409D-02
3	1.588792D 04	1.260473D 02	7.933520D-03
4	6.282115D 04	2.506415D 02	3.989758D-03
5	1.584290D 05	3.980314D 02	2.512362D-03

LIST DYNAMIC EIGENVECTORS

****
RESULTS OF LATEST ANALYSIS
****

JOB ID - 2-10146   JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146F

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	CYCL	FAH	SEC	LBM

EIGENVECTORS

MODE 1

JOINT		X DISP.	Y DISP.	Z DISP	X ROT.	Y ROT.	Z ROT.
		/------DISPLACEMENT		------//	------	ROTATION------	/
1	GLOBAL	0.0	0.0	0.7883737	-0.0194066	-0.0083738	0.0
2	GLOBAL	0.0	0.0	0.4731327	-0.0181398	-0.0055206	0.0
3	GLOBAL	0.0	0.0	0.2103585	-0.0139568	-0.0033737	0.0
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	0.0	0.0	0.8533885	-0.0205393	-0.0079014	0.0
6	GLOBAL	0.0	0.0	0.9740897	-0.0233972	-0.0055202	0.0
7	GLOBAL	0.0	0.0	1.0000000	-0.0243712	-0.0051152	0.0
8	GLOBAL	0.0	0.0	0.5496284	-0.0201844	-0.0045527	0.0
9	GLOBAL	0.0	0.0	0.5929236	-0.0220176	-0.0030509	0.0
10	GLOBAL	0.0	0.0	0.6045746	-0.0229165	-0.0027404	0.0
11	GLOBAL	0.0	0.0	0.1637769	-0.0143949	-0.0012484	0.0
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

MODE 2

JOINT		X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
		/------DISPLACEMENT		------//	------	ROTATION------	/
1	GLOBAL	0.0	0.0	1.0000000	-0.0249510	0.0559324	0.0
2	GLOBAL	0.0	0.0	0.5937115	-0.0231208	0.0341823	0.0
3	GLOBAL	0.0	0.0	0.2626901	-0.0175678	0.0208890	0.0
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	0.0	0.0	0.6075404	-0.0149294	0.0565573	0.0
6	GLOBAL	0.0	0.0	-0.4367860	0.0103564	0.0573589	0.0
7	GLOBAL	0.0	0.0	-0.7837715	0.0189733	0.0570941	0.0
8	GLOBAL	0.0	0.0	0.1368119	-0.0055620	0.0343478	0.0
9	GLOBAL	0.0	0.0	-0.2794815	0.0101811	0.0340940	0.0
10	GLOBAL	0.0	0.0	-0.4759715	0.0179005	0.0338975	0.0
11	GLOBAL	0.0	0.0	-0.1299242	0.0113356	0.0154420	0.0
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

MODE 3

JOINT		X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
		/-----	DISPLACEMENT	-----//	-----	ROTATION	-----/
1	GLOBAL	0.0	0.0	-0.1793237	0.0295534	0.0338963	0.0
2	GLOBAL	0.0	0.0	0.3509743	0.0142385	-0.0416063	0.0
3	GLOBAL	0.0	0.0	0.3085847	-0.0058249	-0.0254259	0.0
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	0.0	0.0	-0.4887383	0.0336753	0.0278999	0.0
6	GLOBAL	0.0	0.0	-0.7152586	0.0440754	-0.0047023	0.0
7	GLOBAL	0.0	0.0	-0.5692806	0.0476195	-0.0105917	0.0
8	GLOBAL	0.0	0.0	1.0000000	0.0194801	-0.0082140	0.0
9	GLOBAL	0.0	0.0	0.6918625	0.0241798	0.0402220	0.0
10	GLOBAL	0.0	0.0	0.2721003	0.0264842	0.0492121	0.0
11	GLOBAL	0.0	0.0	0.2473391	-0.0069928	0.0224185	0.0
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

MODE 4

JOINT		X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
		/-----	DISPLACEMENT	-----//	-----	ROTATION	-----/
1	GLOBAL	0.0	0.0	0.4406929	-0.0655854	0.0170673	0.0
2	GLOBAL	0.0	0.0	-0.7286122	-0.0338305	-0.0121947	0.0
3	GLOBAL	0.0	0.0	-0.7203047	0.0110377	-0.0074522	0.0
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	0.0	0.0	0.4408000	-0.0321154	0.0281213	0.0
6	GLOBAL	0.0	0.0	-0.5262197	0.0523335	0.0235334	0.0
7	GLOBAL	0.0	0.0	-0.4530106	0.0811118	0.0124428	0.0
8	GLOBAL	0.0	0.0	-0.6927559	-0.0022436	-0.0595169	0.0
9	GLOBAL	0.0	0.0	0.8009275	0.0260771	-0.0765182	0.0
10	GLOBAL	0.0	0.0	1.0000000	0.0399637	-0.0640188	0.0
11	GLOBAL	0.0	0.0	0.7079159	-0.0250785	-0.0291637	0.0
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

MODE 5

JOINT		X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
		/-----	DISPLACEMENT	-----//	-----	ROTATION	-----/
1	GLOBAL	0.0	0.0	0.2229287	0.0422157	0.0314976	0.0
2	GLOBAL	0.0	0.0	0.9772457	0.0212654	0.0781425	0.0
3	GLOBAL	0.0	0.0	1.0000000	-0.0176897	0.0477534	0.0
4	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
5	GLOBAL	0.0	0.0	-0.1259605	0.0334093	0.0202084	0.0
6	GLOBAL	0.0	0.0	0.0067459	0.0111898	-0.0141584	0.0
7	GLOBAL	0.0	0.0	0.1335794	0.0036179	-0.0161853	0.0
8	GLOBAL	0.0	0.0	-0.1963322	0.0124249	0.0315104	0.0
9	GLOBAL	0.0	0.0	0.0798271	0.0044986	-0.0142767	0.0
10	GLOBAL	0.0	0.0	0.2025814	0.0006121	-0.0161874	0.0
11	GLOBAL	0.0	0.0	0.1328495	-0.0050401	-0.0073742	0.0
12	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0

LIST DYNAMIC NORM PART FACTORS

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**************************************************************
* PARTICIPATION FACTORS COMPUTED FRCM LATEST MODAL ANALYSIS *
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```

JOB ID -   2-10146   JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN , 2-10146F

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	CYCL	FAH	SEC	LBM

PARTICIPATION FACTORS AS COMPUTED FROM NORMALIZED MODES (OUTPUT IN INTERNAL UNITS)

/--MODE--/	----DISPLACEMENT----			----ROTATION----		
	X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
1	0.0	0.0	0.24834689D 01	0.0	0.0	0.0
2	0.0	0.0	0.53259570D-01	0.0	0.0	0.0
3	0.0	0.0	-0.60144326D 00	0.0	0.0	0.0
4	0.0	0.0	0.56341182D-01	0.0	0.0	0.0
5	0.0	0.0	0.10417619D 00	0.0	0.0	0.0

UNITS DEGREES

FINISH NOMESSAGES

GOOD-BYE

THIS RUN HAS BEEN 'COMPLETED' AND FULLY ACCOUNTED FOR 'EBSTCP '

CPU SECONDS

	RUN	LAST INTERVAL
EXECUTING	2.41	2.41

EXCP'S

DATASET	TOTAL RUN	LAST INTERVAL
STEPLIB	135	0
SYS01486	0	0
DD0	35	0
DD1	42	0
DD2	51	0
DD3	90	0
DD5	29	0
FT05F001	0	0
FT06F001	0	0
FT07F001	0	0
FT08F001	0	0
FT10F001	0	0
ICE3DUMP	0	0
SYSUDUMP	0	0
TOTAL	382	0
I/O EXCPS	2	0

DATE	OVERALL ENTRY NO.	MONTH ENTRY NO.	MACHINE TYPE	OS VERSION	SUBSYSTEM VERSION	COMPLETION CODE	I	MONTH TO DATE (INCLUDING THIS RUN) CPU TIME	EXCPS
07JAN86	85	83	3083	03.81	9-	0000	I	379.33	51459

DISK STATISTICS WITH 3 BUFFERS OF 18432 BYTES (DISKOPT=X0004)

DIRECT ACCESS	EXCP'S	PERCENT	BLOCKSIZE	BLOCKS IN FILE	M-BYTES TRANSFERRED
DISK WRITES	21	10.71			
DISK REA	175	89.29			
IN LAST BUFFER	8	4.57			
JUST MISSED	3	1.71			
EXTRA FINDS	187	106.86			
DDNAME			BLOCKSIZE	BLOCKS IN FILE	M-BYTES TRANSFERRED
DD1	4	2.04	800	38	0.003200
DD2	51	26.02	800	1918	0.040800
DD3	90	45.92	1320	441	0.118800
DD5	42	21.43	800	1140	0.033600
DDO	9	4.59	18432	30	0.165888
				TOTAL	0.362288

```
            OOOOOOOOOOOO  KK        KK  RRRRRRRRRRR   EEEEEEEEEEEE  DDDDDDDDD      DDDDDDDDD
           OOOOOOOOOOOO  KK       KK  RRRRRRRRRRR   EEEEEEEEEEEE  DDDDDDDDD      DDDDDDDDD
          OO        OO  KK      KK   RR        RR  EE            DD       DD   DD       DD
         OO        OO  KK     KK    RR        RR  EE            DD       DD   DD       DD
        OO        OO  KK    KK     RR        RR  EE            DD       DD   DD       DD
       OO        OO  KKKKKK       RRRRRRRRRRR   EEEEEEEE      DD       DD   DD       DD
      OO        OO  KKKKKK       RRRRRRRRRR    EEEEEEEE      DD       DD   DD       DD
     OO        OO  KK    KK     RR    RR      EE            DD       DD   DD       DD
    OO        OO  KK     KK    RR     RR     EE            DD       DD   DD       DD
   OO        OO  KK      KK   RR      RR    EE            DD       DD   DD       DD
  OOOOOOOOOOOO  KK       KK  RR       RR   EEEEEEEEEEEE  DDDDDDDDD   DDDDDDDDD
 OOOOOOOOOOOO  KK        KK RR        RR  EEEEEEEEEEEE  DDDDDDDDD   DDDDDDDDD


      JJJJJJJJJ        11        6666666666        444      9999999999            AAAAAAAAAA
      JJJJJJJJJ       111       666666666666      4444     999999999999          AAAAAAAAAAAA
             JJ      1111       66        66     44 44     99        99          AA        AA
             JJ        11       66              44  44     99        99          AA        AA
             JJ        11       66             44   44     99        99          AA        AA
             JJ        11       66666666666   4444444444   999999999999          AAAAAAAAAAAA
             JJ        11       666666666666  44444444444  999999999999          AAAAAAAAAAAA
             JJ        11       66        66        44               99          AA        AA
       JJ    JJ        11       66        66        44               99          AA        AA
       JJ    JJ        11       66        66        44     99        99          AA        AA
       JJJJJJJJ    1111111111   666666666666        44     999999999999          AA        AA
        JJJJJJ     1111111111    6666666666         44      9999999999           AA        AA
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A END JOB 1649 OKREDD 1 001 001 R0259 K. REDDY ROOM 7. 11. 37 AM 08 JAN 86 R259. PR1 8301 END A
A END JOB 1649 OKREDD 1 001 001 R0259 K. REDDY ROOM 7. 11. 37 AM 08 JAN 86 R259. PR1 8301 END A
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A END JOB 1649 OKREDD 1 001 001 R0259 K. REDDY ROOM 7. 11. 37 AM 08 JAN 86 R259. PR1 8301 END A

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    OOOOOOOOOOOO  KK       KK  RRRRRRRRRRR   EEEEEEEEEEEE  DDDDDDDDD     DDDDDDDDD
   OOOOOOOOOOOO  KK       KK  RRRRRRRRRRRR  EEEEEEEEEEEE  DDDDDDDDDD    DDDDDDDDDD
  OO        OO  KK      KK   RR        RR  EE            DD       DD   DD       DD
 OO        OO  KK     KK    RR        RR  EE            DD       DD   DD       DD
OO        OO  KK    KK     RR        RR  EE            DD       DD   DD       DD
OO        OO  KKKKKK      RRRRRRRRRRRR  EEEEEEEE      DD       DD   DD       DD
OO        OO  KKKKKK      RRRRRRRRRRR   EEEEEEEE      DD       DD   DD       DD
OO        OO  KK    KK    RR     RR     EE            DD       DD   DD       DD
OO        OO  KK     KK   RR      RR    EE            DD       DD   DD       DD
OO        OO  KK      KK  RR       RR   EE            DD       DD   DD       DD
OOOOOOOOOOOO  KK       KK RR        RR  EEEEEEEEEEEE  DDDDDDDDDD    DDDDDDDDDD
OOOOOOOOOOOO  KK       KK RR        RR  EEEEEEEEEEEE  DDDDDDDDD     DDDDDDDDD

 JJJJJJJJJJ   9999999999   777777777777      11      2222222222       AAAAAAAAAA
 JJJJJJJJJJ  999999999999  777777777777     111     222222222222     AAAAAAAAAAAA
     JJ      99        99  77        77    1111     22        22     AA        AA
     JJ      99        99           77       11               22     AA        AA
     JJ      99        99          77        11               22     AA        AA
     JJ      999999999999         77         11              22      AAAAAAAAAAAA
     JJ      999999999999        77          11             22       AAAAAAAAAAAA
     JJ                99        77          11           22         AA        AA
 JJ  JJ                99        77          11         22           AA        AA
 JJ  JJ      99        99        77          11       22             AA        AA
 JJJJJJJ     999999999999        77      1111111111  222222222222    AA        AA
  JJJJJ       9999999999         77      1111111111  222222222222    AA        AA
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*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
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*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
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*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
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*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
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*A START JOB 9712 OKREDD  1  001 001 R0259  K. REDDY  ROOM  11.53.13 AM 13 JAN 86 R259.PR1 8301 START A*
```

// MSGCLASS=A TIME=60,MSGLEVEL=(0,0),REGION=1500K

CLIENT TUGC PROJECT COMANCHE PEAK UNIT #2

SUBJECT CTH-2-10146

COMPUTER PROGRAM USED STRUDL (STATIC)

PREPARED BY: K. REDDY DATE 1-22-86

CHECKED BY: B. Banyi DATE 1-22-86

REF. CALC. BOOK NO. PRINTOUT BOOK NO.

```
IEF142I OKREDD LOAD - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /LOAD     / START 86013.1129
IEF374I STEP /LOAD     / STOP  86013.1129 TCB    OMIN 00.06SEC SRB    OMIN 00.00SEC VIRT    44K SYS   220K
***********************************************************************************************************************
*                                                                                                                     *
*                                        KOMAND DATA ACQUISITION SYSTEM                                               *
*                                                                                                                     *
* STEP NAME      LOAD         START TIME 11.29.49.88    VIRT SYS  USED     220K    PAGE INS              0  STEP TCB        00.00.00.06 *
* PGM NAME       IEBGENER     STOP  TIME 11.29.50.79    VIRT CORE USED      44K    PAGE OUTS             0  JOB  TCB        00.00.00.06 *
* DISPATCH PRTY 105           ELAP. TIME 00.00.00.91    SWAPS/PAGES      0/     0  SRB TIME    00.00.00.00  CONDITION CODE         0000 *
* PERF. GROUP          1      SRU               .46     TRANS ACT TIME 00.00.00.51                          OCCUPANCY       00.00.00.00 *
*                                                                                                                     *
***********************************************************************************************************************
*                                              EXCP STATISTICS                                                        *
*                                                                                                                     *
* UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT *
*                                                                                                                     *
*  460           3                                                                                                    *
*                                                                                                                     *
* EXCP TOTAL          3       VIO PAGE INS          0       VIO PAGE OUTS          0       PAGES SWAPPED IN          0 *
*                                                                                                                     *
***********************************************************************************************************************
IEF142I OKREDD PRINT - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /PRINT    / START 86013.1129
IEF374I STEP /PRINT    / STOP  86013.1129 TCB    OMIN 00.06SEC SRB    OMIN 00.00SEC VIRT    44K SYS   244K
***********************************************************************************************************************
*                                                                                                                     *
*                                        KOMAND DATA ACQUISITION SYSTEM                                               *
*                                                                                                                     *
* STEP NAME      PRINT        START TIME 11.29.50.89    VIRT SYS  USED     244K    PAGE INS              0  STEP TCB        00.00.00.06 *
* PGM NAME       IEBGENER     STOP  TIME 11.29.51.42    VIRT CORE USED      44K    PAGE OUTS             0  JOB  TCB        00.00.00.12 *
* DISPATCH PRTY 105           ELAP. TIME 00.00.00.53    SWAPS/PAGES      0/     0  SRB TIME    00.00.00.00  CONDITION CODE         0000 *
* PERF. GROUP          1      SRU               .47     TRANS ACT TIME 00.00.00.27                          OCCUPANCY       00.00.00.00 *
*                                                                                                                     *
***********************************************************************************************************************
*                                              EXCP STATISTICS                                                        *
*                                                                                                                     *
* UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT *
*                                                                                                                     *
*  C60           4                                                                                                    *
*                                                                                                                     *
* EXCP TOTAL          4       VIO PAGE INS          0       VIO PAGE OUTS          0       PAGES SWAPPED IN          0 *
*                                                                                                                     *
***********************************************************************************************************************
IEF142I OKREDD NEWS - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /NEWS     / START 86013.1129
IEF374I STEP /NEWS     / STOP  86013.1129 TCB    OMIN 00.06SEC SRB    OMIN 00.00SEC VIRT    52K SYS   224K
***********************************************************************************************************************
*                                                                                                                     *
*                                        KOMAND DATA ACQUISITION SYSTEM                                               *
*                                                                                                                     *
* STEP NAME      NEWS         START TIME 11.29.51.54    VIRT SYS  USED     224K    PAGE INS              1  STEP TCB        00.00.00.06 *
* PGM NAME       IEBGENER     STOP  TIME 11.29.52.58    VIRT CORE USED      52K    PAGE OUTS             0  JOB  TCB        00.00.00.18 *
* DISPATCH PRTY 105           ELAP. TIME 00.00.01.04    SWAPS/PAGES      0/     0  SRB TIME    00.00.00.00  CONDITION CODE         0000 *
* PERF. GROUP          1      SRU               .48     TRANS ACT TIME 00.00.00.40                          OCCUPANCY       00.00.00.00 *
*                                                                                                                     *
***********************************************************************************************************************
*                                              EXCP STATISTICS                                                        *
*                                                                                                                     *
* UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT *
```

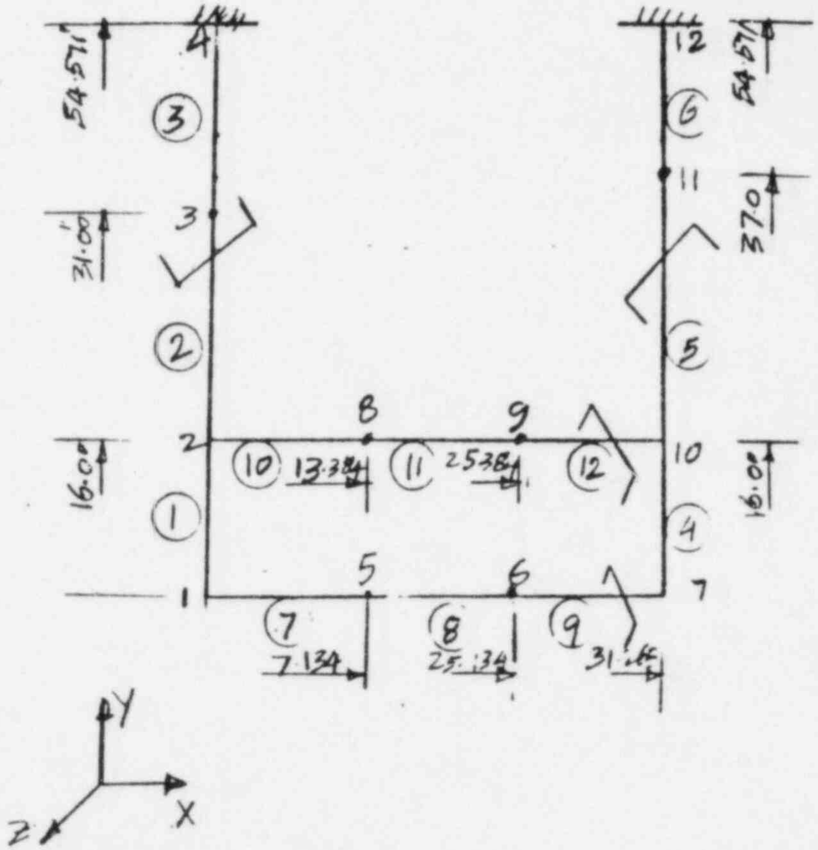
```
*
*  890           3     890           3     892            0
*
* EXCP TOTAL          6       VIO PAGE INS          0       VIO PAGE OUTS           0       PAGES SWAPPED IN          0        *
*                                                                                                                             *
*******************************************************************************************************************************
IEF142I OKREDD HELP - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /HELP    / START 86013.1129
IEF374I STEP /HELP    / STOP  86013.1129 TCB    0MIN 00.05SEC SRB    0MIN 00.00SEC VIRT    48K SYS   224K
*******************************************************************************************************************************
*                                                                                                                             *
*                                               KOMAND DATA ACQUISITION SYSTEM                                                *
*                                                                                                                             *
* STEP NAME     HELP          START TIME 11.29.52.68    VIRT SYS  USED     224K    PAGE INS              0  STEP TCB      00.00.00.05 *
* PGM NAME      IEBGENER      STOP  TIME 11.29.53.47    VIRT CORE USED      48K    PAGE OUTS             0  JOB  TCB      00.00.00.23 *
* DISPATCH PRTY 105           ELAP. TIME 00.00.00.79    SWAPS/PAGES      0/     0  SRB TIME    00.00.00.00  CONDITION CODE       0000 *
* PERF. GROUP          1      SRU                .39    TRANS ACT TIME 00.00.00.30                          OCCUPANCY     00.00.00.00 *
*                                                                                                                             *
*******************************************************************************************************************************
*                                                         EXCP STATISTICS                                                     *
*                                                                                                                             *
* UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT *
*                                                                                                                             *
*  890           3     892            0                                                                                       *
*                                                                                                                             *
* EXCP TOTAL          3       VIO PAGE INS          0       VIO PAGE OUTS           0       PAGES SWAPPED IN          0        *
*                                                                                                                             *
*******************************************************************************************************************************
IEF142I OKREDD STRUDL - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /STRUDL  / START 86013.1129
IEF374I STEP /STRUDL  / STOP  86013.1130 TCB    0MIN 03.32SEC SRB    0MIN 00.19SEC VIRT  1564K SYS   312K
*******************************************************************************************************************************
*                                                                                                                             *
*                                               KOMAND DATA ACQUISITION SYSTEM                                                *
*                                                                                                                             *
* STEP NAME     STRUDL        START TIME 11.29.53.62    VIRT SYS  USED     312K    PAGE INS              0  STEP TCB      00.00.03.32 *
* PGM NAME      ICEX2         STOP  TIME 11.30.21.81    VIRT CORE USED  1,564K    PAGE OUTS             0  JOB  TCB      00.00.03.55 *
* DISPATCH PRTY 105           ELAP. TIME 00.00.28.19    SWAPS/PAGES      0/     0  SRB TIME    00.00.00.19  CONDITION CODE       0000 *
* PERF. GROUP          1      ARU              81.41    TRANS ACT TIME 00.00.25.54                          OCCUPANCY     00.00.00.00 *
*                                                                                                                             *
*******************************************************************************************************************************
*                                                         EXCP STATISTICS                                                     *
*                                                                                                                             *
* UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT *
*                                                                                                                             *
*  DBB          85     E92            0     461           39     734           91     890          489     E92          100 *
*  733          40     460            3     CA2            0     72D            0                                             *
*                                                                                                                             *
* EXCP TOTAL        847       VIO PAGE INS          0       VIO PAGE OUTS           0       PAGES SWAPPED IN          0        *
*                                                                                                                             *
*******************************************************************************************************************************
IEF375I  JOB /OKREDD  / START 86013.1129
IEF376I  JOB /OKREDD  / STOP  86013.1130 TCB    0MIN 03.55SEC SRB    0MIN 00.19SEC
*******************************************************************************************************************************
*                                                                                                                             *
*                                               KOMAND DATA ACQUISITION SYSTEM                                                *
*                                                                                                                             *
*  JOB LOG NUMBER - OKREDD   86013 11.29.44.45              TCB TIME   00.00.03.55           SRB TIME            00.00.00.19  *
*                                                                                                                             *
*  PROGRAMMER  K.REDDY                                      INIT DATE  01/13/86   86.013     INITIATION TIME     11.29.49.88  *
*                                                                                                                             *
```

ACCTQ DATA HE66YECA000CP3306297	TERM DATE	01/13/86	[redacted]	TERMINATION TIME	11.30.22.57
OS-VS2 REL 03.8	PGN/SERVICE	1/	1.80	ELAPSED TIME	00.00.32.69
SYSTEM ID 8301	CLASS	C		COMPLETION STATUS	C0000

TOTAL MAINFRAME UNITS

SYSTEM RESOURCE UNITS (SRU)	1.80
APPLICATION RESOURCE UNITS (ARU)	81.41

```
STRUDL 'Z-1014S'     COMANCHE PEAK CABLE TRAY DESIGN , Z-1014GS
$ BY  K. REDDY   LAST UPDATE 01/13/86  TIME 12:05
LIMIT MAX  JOI      TO  100  MEM  TO  100  LOA  TO            25
TYPE SPACE FRAME
ALPHANUMERIC IDENTIFIER TREATMENT BY CHARACTER COMPARISON
UNITS INCHES, KIPS,DEGREES, FAHRENEIT, LBM, SECONDS
JOINT COORDINATES
1            0.0          0.0  0.0
2            0.0         16.0  0.0
3            0.0         31.0  0.0
4            0.0         54.571          0.0
5            7.134     0.0     0.0
6           25.134     0.0     0.0
7           31.268     0.0     0.0
8           13.384    16.0     0.0
9           25.384    16.0     0.0
10          31.268    16.0     0.0
11          31.268    37.0     0.0
12          31.268    54.571   0.0
SUPPORT JOINTS
  4   12
MEMBER INCIDENCES
1  1     2
2  2     3
3  3     4
4  7    10
5  10   11
6  11   12
7  1     5
8  5     6
9  6     7
10 2     8
11 8     9
12 9    10
CONSTANTS
E 29.E3 ALL ; POISSON .3 ALL ; DENS 0.284 ALL
G 11.2E3 ALL ; CTE 0.0000065 ALL ; FYLD 36.0 ALL
CONSTANTS
DEN 0.554    1  2  4  5
DEN 0.585    7  8  9  10  11  12
CONSTANTS
BETA  270.0     1  2  3
BETA   90.0     4  TO  12
MEMBER PROPERTIES
 1  TO   6   TABLE 'STEELC1' 'C10X15'  TYPE 'CHANNEL'
 7  TO  12   TABLE 'STEELC1' 'C8X11'   TYPE 'CHANNEL'
LOADING  1  'DEAD LOAD'
DEAD LOAD COMP GLO Y -1 BY JOINTS
JOINT LOADS                       -.162     CONSERVATIVE, HENCE O.K TO USE
 5  6         F Y  -0.612                         HIGHER VALUE
 8  9         F Y  -0.173
LOADING  2  'OBE NEG VERT SEIS'
DEAD LOAD COMP GLO Y -1.50  BY JOINTS
JOINT LOADS
 5  6         F Y  -0.243
 8  9         F Y  -0.260
LOADING  3  'OBE POS HOR TRANS SEIS'
DEAD LOAD COMP GLO X 0.7 BY JOINTS
JOINT LOADS
 5  6         M Z  -.065
 8  9         M Z  -.069
```



CLIENT TUGC PROJECT COMANCHE PEAK UNIT #2

SUBJECT CTH-2-1016

COMPUTER PROGRAM USED STRUDL (STATIC)

PREPARED BY: K. REDDY DATE 1-22-86

CHECKED BY: [signature] DATE 1-22-86

REF. CALC. BOOK NO. ______ PRINTOUT BOOK NO. ______

```
 1  7      F X  0.113
 2  10     F X  0.121
LOADING  4  'OBE POS HOR LONG SEIS'
DEAD LOAD COMP GLO Z 0.4 BY JOINTS
JOINT LOADS
 5  6      F Z  0.097  M X  -0.068
 8  9      F Z  0.115  M X  -0.08
LOADING COMBINATION  6        'SSE NEG VERT SEIS' COMPONENTS -
2  1.37
LOADING COMBINATION  7        'SSE POS HOR TRANS SEIS' COMPONENTS -
3  1.36
LOADING COMBINATION  8        'SSE POS HOR LONG SEIS' COMPONENTS -
4  1.5
PRINT STRUCTURAL DATA
PRINT LOADING DATA
STIFFNESS ANALYSIS REDUCE BAND
LOADING COMBINATION  234  'OBE SRSS 2 3 4' RMS -
2 3 4
LOADING COMBINATION  678  'SSE SRSS 6 7 8' RMS -
6 7 8
STRESS RESULTS ARE TO BE COMBINED AT STRESS LEVEL
LOADING COMBINATION  1001  'DL+SRSS 234' COMPONENTS -
1 1. 234 1.
LOADING COMBINATION  1002  'DL-SRSS 234' COMPONENTS -
1 1. 234 -1.
LOADING COMBINATION  2001  'DL+SRSS 678' COMPONENTS -
1 1. 678 1.
LOADING COMBINATION  2002  'DL-SRSS 678' COMPONENTS -
1 1. 678 -1.
LOAD LIST -
6 7 8
COMBINE ALL
LOADS LIST -
  234  -
  678
GENERATE RESULTS
LOAD LIST -
1001 1002 2001 2002
COMBINE ALL
LOAD LIST -
ALL
OUTPUT DECIMAL      3
OUTPUT BY JOINTS , OUTPUT BY MEMBERS
LIST DISPLACEMENTS, REACTIONS, FORCES
SECTION FR NS 2  0.0  1.0
GROUP '&LM' DEFINITION
MEMBERS  ALL
END OF GROUP DEFINITION
LIST SECTION STRESS MEMBERS '&LM'
$ LIST OVERALL STRESS
LOAD LIST  1001  1002
LIST FORCES ENVELOPE ALL
LOAD LIST  2001  2002
LIST FORCES ENVELOPE ALL
PARAMETERS
'CODE' 'AISC' ALL ; 'VERSION' '69U1' ALL
'TORSION' 'YES' ALL ; 'CB' 1.0 ALL
'ASF' 1.6 LOADINGS  2001 2002
'FBMAX' 1.0 ALL
'FACMAX' 1.0 ALL
'FATMAX' 1.0 ALL
```

```
'FSHMAX' 0.55 ALL
PARAMETERS
'LY' 16.00   MEM  1  4
'LY' 38.571  MEM  2  3  5  6
'LY' 31.268  MEM  7  TO  12
'LZ' 54.571  MEM  1  TO  6
'LZ' 31.268  MEM  7  TO  12
'CMY' 0.85   MEM  1  TO  12
'CMZ' 0.85   MEM  7  TO  12
'CMZ' 1.0    MEM  1  TO  6
'KZ'  1.55   MEM  1  TO  6
'UNLCF' 31.268  MEM  7  TO  12
LOAD LIST - -
1001 1002 2001 2002
CHECK CODE -
ALL   -
GENERATING TRACE  6  RESULTS FOR FAILING MEMBERS
FINISH NOMESSAGES?
```

Version	PROC Name	PROCLIB	GA/APP	Installation Completed
V1185	STRUDL	$CSD.GALIB	GA	12/16/85
	STRUBASE	$CSD.GALIB	GA	12/16/85
V1085	STRUDL	$CSD.GALIB	GA	11/01/85
	STRUBASE	$CSD.GALIB	GA	11/01/85
V0985	STRUDL	$CSD.GALIB	GA	09/23/85
	STRUBASE	$CSD.GALIB	GA	09/23/85
V0385	STRU0385	$CSD.GALIB	GA	03/23/85
	BASE0385	$CSD.GALIB	GA	03/23/85

Vendor : P-Delta
Contact: Som Virk
Phone : (617) 472-8533

NOTE:
For more information on how to run STRUDL, code HELP=STRUDL
on your EXEC card.

```
*********************************************************************
*********************************************************************
*****                                                           *****
*****                                                           *****
*****     NOTICE TO ALL STRUDL USERS:                           *****
*****                                                           *****
*****       All versions of STRUDL prior to V0985 will be deleted *****
*****       from the system as of December 1, 1985.  This will   *****
*****       include versions executed by PROCs LSTRUDL, SPBASE,  *****
*****       STRU0385 and BASE0385.                               *****
*****                                                           *****
*****                                                           *****
*****       If you have any questions about this, please call    *****
*****       UCCEL IBM Customer Services at 1-800-527-6003.       *****
*****                                                           *****
*****                                                           *****
*****                                                           *****
*****                                                           *****
*********************************************************************
*********************************************************************
```

```
P S U I C E S

VERSION 5  MODIFICATION 5

A PROPRIETARY PRODUCT OF

PROJECT SOFTWARE AND DEVELOPMENT, INC.
14 STORY STREET
CAMBRIDGE, MASSACHUSETTS 02138
TEL. 617-661-1444
```



```
RUN DATE = 01/13/86
DYNAMIC CORE (VIRTUAL)  1429504 BYTES
370/083   VS2  REL 03.8I
```

THIS IS OVERALL RUN NO. 248

MONTH TO DATE STATISTICS FOR PASSWORD 'EBSTCP ' (EXCLUSIVE OF THIS RUN).

ENTRIES	245
COMPLETIONS	245
RECORDED CPU TIME	15MIN 28 SEC
RECORDED EXCPS	144557

STRUDL '2-10146' 'COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146S'

```
         PPPPDPPPPPP             SSSSSSSSSSS   TTTTTTTTTTT   RRRRRRRRRRR   UU        UU   DDDDDDDDDDD   LL
        PPPPD DPPPPP            SSSSSSSSSSS   TTTTTTTTTTT   RRRRRRRRRRRR  UU        UU   DDDDDDDDDDDD  LL
       PPPPD  DPPPP            SS                 TT        RR         RR  UU        UU   DD         DD  LL
      PPPPD   DPPP            SS                 TT        RR         RR  UU        UU   DD         DD  LL
     PPPPD    DPP   HHHHH    SSSSSSSSSSS        TT        RRRRRRRRRRRR  UU        UU   DD         DD  LL
    PPPPD     DP   HHHHH    SSSSSSSSSSS        TT        RRRRRRRRRRRR  UU        UU   DD         DD  LL
   PPPPDDDDDDDD                       SS      TT        RRRR          UU        UU   DD         DD  LL
  PPPPPPPPPPPP                       SS      TT        RR  RR        UU        UU   DD         DD  LL
 PP                       SSSSSSSSSSS       TT        RR    RR      UUUUUUUUUUU   DDDDDDDDDDDD  LLLLLLLLLLL
PP                       SSSSSSSSSSS       TT        RR      RR    UUUUUUUUUUU   DDDDDDDDDDDD  LLLLLLLLLLL
```

```
**************************************************
*                                                *
*                 P-DELTA STRUDL                 *
*                                                *
*                  VERSION 1085                  *
*                                                *
*           A PROPRIETARY PRODUCT OF             *
*                                                *
*                P-DELTA, INC.                   *
*              42 ST. ANN ROAD                   *
*         QUINCY, MASSACHUSETTS 02170            *
*             TEL. (617) 472-8333                *
*                                                *
*      COPYRIGHT (C) 1982,1983,1984,1985         *
*             ALL RIGHTS RESERVED                *
*                                                *
*           11:30:00        1/13/86              *
*                                                *
**************************************************
```

$ BY K. REDDY   LAST UPDATE 01/13/86 TIME 12:05
LIMIT MAX JOI   TO 100 MEM TO 100 LOA TO   25

TYPE SPACE FRAME

ALPHANUMERIC IDENTIFIER TREATMENT BY CHARACTER COMPARISON

UNITS INCHES, KIPS, DEGREES, FAHRENEIT, LBM, SECONDS

JOINT COORDINATES

1	0.0	0.0	0.0
2	0.0	16.0	0.0
3	0.0	31.0	0.0
4	0.0	54.571	0.0
5	7.134	0.0	0.0
6	25.134	0.0	0.0

```
7          31.268     0.0     0.0
8          13.384    16.0     0.0
9          25.384    16.0     0.0
10         31.268    16.0     0.0
11         31.268    37.0     0.0
12         31.268    54.571   0.0
SUPPORT JOINTS   -
  4   12
MEMBER INCIDENCES
1   1     2
2   2     3
3   3     4
4   7    10
5  10    11
6  11    12
7   1     5
8   5     6
9   6     7
10  2     8
11  8     9
12  9    10
CONSTANTS
E 29.E3 ALL ; POISSON .3 ALL ; DENS 0.284 ALL
G 11.2E3 ALL ; CTE 0.0000065 ALL ; FYLD 36.0 ALL
CONSTANTS
DEN 0.554   1  2  4  5
DEN 0.585   7  8  9  10  11  12
CONSTANTS
BETA  270.0    1  2  3
BETA   90.0    4  TO  12
```

```
MEMBER PROPERTIES
 1  TO   6  TABLE 'STEELC1' 'C10X15'  TYPE 'CHANNEL'
 7  TO  12  TABLE 'STEELC1' 'C8X11'   TYPE 'CHANNEL'
LOADING  1  'DEAD LOAD'
DEAD LOAD COMP GLO Y -1 BY JOINTS
JOINT LOADS
 5  6      F Y  -0.612
 8  9      F Y  -0.173
LOADING  2  'OBE NEG VERT SEIS'
DEAD LOAD COMP GLO Y -1.50  BY JOINTS
JOINT LOADS
 5  6      F Y  -0.243
 8  9      F Y  -0.260
LOADING  3  'OBE POS HOR TRANS SEIS'
DEAD LOAD COMP GLO X 0.7 BY JOINTS
JOINT LOADS
 5  6      M Z  -.065
 8  9      M Z  -.069
 1  7      F X  0.113
 2  10     F X  0.121
LOADING  4  'OBE POS HOR LONG SEIS'
DEAD LOAD COMP GLO Z 0.4 BY JOINTS
JOINT LOADS
 5  6      F Z  0.097  M X  -0.068
 8  9      F Z  0.115  M X  -0.08
LOADING COMBINATION  6       'SSE NEG VERT SEIS' COMPONENTS -
2  1.37
LOADING COMBINATION  7       'SSE POS HOR TRANS SEIS' COMPONENTS -
3  1.36
LOADING COMBINATION  8       'SSE POS HOR LONG SEIS' COMPONENTS -
4  1.5
```

PRINT STRUCTURAL DATA

****
* PROBLEM DATA FROM INTERNAL STORAGE *
****

JOB ID - 2-10146   JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146S

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	DEG	FAH	SEC	LBM

********** STRUCTURAL DATA **********

JOINT COORDINATES-----------------------------------/-CONDITION-/--STATUS--/

JOINT	X	Y	Z	CONDITION	STATUS
1	0.0	0.0	0.0		ACTIVE
2	0.0	16.000	0.0		ACTIVE
3	0.0	31.000	0.0		ACTIVE
4	0.0	54.571	0.0	SUPPORT	ACTIVE
5	7.134	0.0	0.0		ACTIVE
6	25.134	0.0	0.0		ACTIVE
7	31.268	0.0	0.0		ACTIVE
8	13.384	16.000	0.0		ACTIVE
9	25.384	16.000	0.0		ACTIVE
10	31.268	16.000	0.0		ACTIVE
11	31.268	37.000	0.0		ACTIVE
12	31.268	54.571	0.0	SUPPORT	ACTIVE

JOINT RELEASES-----------------------------------/ELASTIC SUPPORT RELEASES---/

JOINT	FORCE	MOMENT	THETA 1	THETA 2	THETA 3	KFX	KFY	KFZ	KMX	KMY	KMZ

MEMBER INCIDENCES----------/ LENGTH PROJECTIONS ON GLOBAL AXES----/ RELEASES---------------------/ STATUS--/

MEMBER	START	END	LENGTH	X	Y	Z	START FORCE	START MOMENT	END FORCE	END MOMENT	STATUS		
1	1	2	16.000	0.0	16.000	0.0					ACTIVE	SPACE	FRAME
2	2	3	15.000	0.0	15.000	0.0					ACTIVE	SPACE	FRAME
3	3	4	23.571	0.0	23.571	0.0					ACTIVE	SPACE	FRAME
4	7	10	16.000	0.0	16.000	0.0					ACTIVE	SPACE	FRAME
5	10	11	21.000	0.0	21.000	0.0					ACTIVE	SPACE	FRAME
6	11	12	17.571	0.0	17.571	0.0					ACTIVE	SPACE	FRAME
7	1	5	7.134	7.134	0.0	0.0					ACTIVE	SPACE	FRAME
8	5	6	18.000	18.000	0.0	0.0					ACTIVE	SPACE	FRAME
9	6	7	6.134	6.134	0.0	0.0					ACTIVE	SPACE	FRAME
10	2	8	13.384	13.384	0.0	0.0					ACTIVE	SPACE	FRAME
11	8	9	12.000	12.000	0.0	0.0					ACTIVE	SPACE	FRAME
12	9	10	5.884	5.884	0.0	0.0					ACTIVE	SPACE	FRAME

ELEMENT INCIDENCES
ELEMENT   NODES

MEMBER PROPERTIES

MEM/SEQ,LEN	TYPE / TABLE	AX	AY / YD / FLTK	AZ / ZD / WBTK	IX / OD / RY	IY / ID / RZ	IZ / SFX	SY / RAD	SZ / ALP	YC / TYP	ZC / SPA	EY / GEN	EZ / IYZ
1	TABLE	4.490	2.400	1.511	0.211	2.280	67.400	1.160	13.500	5.000	1.966	0.0	0.0
	STEELC1 C1[illegible]		10.000	2.600	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.436	0.240	0.713	3.870							
2	TABLE	4.490	2.400	1.511	0.211	2.280	67.400	1.160	13.500	5.000	1.966	0.0	0.0
	STEELC1 C10X15		10.000	2.600	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.436	0.240	0.713	3.870							
3	TABLE	4.490	2.400	1.511	0.211	2.280	67.400	1.160	13.500	5.000	1.966	0.0	0.0
	STEELC1 C10X15		10.000	2.600	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.436	0.240	0.713	3.870							
4	TABLE	4.490	2.400	1.511	0.211	2.280	67.400	1.160	13.500	5.000	1.966	0.0	0.0
	STEELC1 C10X15		10.000	2.600	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.436	0.240	0.713	3.870							
5	TABLE	4.490	2.400	1.511	0.211	2.280	67.400	1.160	13.500	5.000	1.966	0.0	0.0
	STEELC1 C10X15		10.000	2.600	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.436	0.240	0.713	3.870							
6	TABLE	4.490	2.400	1.511	0.211	2.280	67.400	1.160	13.500	5.000	1.966	0.0	0.0
	STEELC1 C10X15		10.000	2.600	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.436	0.240	0.713	3.870							
7	TABLE	3.380	1.760	1.175	0.131	1.320	32.600	0.781	8.140	4.000	1.689	0.0	0.0
	STEELC1 C8X11		8.000	2.260	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.390	0.220	0.625	3.110							
8	TABLE	3.380	1.760	1.175	0.131	1.320	32.600	0.781	8.140	4.000	1.689	0.0	0.0
	STEELC1 C8X11		8.000	2.260	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.390	0.220	0.625	3.110							
9	TABLE	3.380	1.760	1.175	0.131	1.320	32.600	0.781	8.140	4.000	1.689	0.0	0.0
	STEELC1 C8X11		8.000	2.260	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.390	0.220	0.625	3.110							
10	TABLE	3.380	1.760	1.175	0.131	1.320	32.600	0.781	8.140	4.000	1.689	0.0	0.0
	STEELC1 C8X11		8.000	2.260	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.390	0.220	0.625	3.110							
11	TABLE	3.380	1.760	1.175	0.131	1.320	32.600	0.781	8.140	4.000	1.689	0.0	0.0
	STEELC1 C8X11		8.000	2.260	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.390	0.220	0.625	3.110							
12	TABLE	3.380	1.760	1.175	0.131	1.320	32.600	0.781	8.140	4.000	1.689	0.0	0.0

```
      STEELC1  C8X11          8.000    2.260    0.0      0.0      0.0      0.0      0.0     CHANNEL  0.0  YES    0.0
                              0.390    0.220    0.625    3.110

MEMBER CONSTANTS-------------------------------------------------------------------------------------------------------/
CONSTANT   STANDARD VALUE   DOMAIN,          VALUE         MEMBER LIST


   E        0.290000E 05    ALL

   G        0.112000E 05    ALL

  CTE       0.650000E-05    ALL

DENSITY     0.284000E 00    ALL BUT
                                      0.554000E 00   1      2      4      5
                                      0.585000E 00   7      8      9      10     11     12


POISSON     0.300000E 00    ALL

  FYLD      0.360000E 02    ALL

  BETA      0.0             ALL BUT
                                      0.270000E 03   1      2      3
                                      0.900000E 02   4      5      6      7      8      9
                                                     10     11     12

  CBETA     0.0             ALL

  FULT      0.600000E 02    ALL


 ****************************************
 *  END OF DATA FROM  INTERNAL STORAGE  *
 ****************************************
```

PRINT LOADING DATA

```
*****************************************
*  PROBLEM DATA FROM INTERNAL STORAGE  *
*****************************************
JOB ID -   2-10146        JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN , 2-10146S

ACTIVE UNITS -  LENGTH       WEIGHT       ANGLE       TEMPERATURE      TIME         MASS
                 INCH          KIPF         DEG           FAH            SEC          LBM


        ********** LOADING DATA **********


LOADING - 1            DEAD LOAD                                                      STATUS - ACTIVE

 /----------NON-SELECTIVE DEAD LOAD COMPONENTS GIVEN----------/

  COMPONENTS : X    0.0    Y  -1.0000 Z   0.0      BY  JOINTS   GLOBAL

 MEMBER AND ELEMENT LOADS----------------------------------------------------------------------------------------/
 MEMBER/ELEMENT

 JOINT LOADS-----------------------------------/ -----------------------------------/
 JOINT      STEP   FORCE X          Y           Z       MOMENT X          Y          Z
 5                    0.0        -0.612        0.0              0.0        0.0        0.0
 6                    0.0        -0.612        0.0              0.0        0.0        0.0
 8                    0.0        -0.173        0.0              0.0        0.0        0.0
 9                    0.0        -0.173        0.0              0.0        0.0        0.0

 JOINT DISPLACEMENTS---------------------------/ -----------------------------------/
 JOINT      STEP   DISP. X          Y           Z       ROT.   X          Y          Z

 JOINT FORCE ASSUMPTIONS -------------------------------------------------------------------------------/

 JOINT      THETA  1        2        3     FORCE X          Y          Z      MOMENT X          Y          Z
 NO ASSUMPTIONS GIVEN FOR THIS LOADING


 MEMBER FORCE ASSUMPTIONS -----------------------/     -----------------------------------/

 MEMBER        COMPONENT   DISTANCE     VALUE         COMPONENT   DISTANCE     VALUE
 NO ASSUMPTIONS GIVEN FOR THIS LOADING


 LOADING - 2            OBE NEG VERT SEIS                                             STATUS - ACTIVE

  /----------NON-SELECTIVE DEAD LOAD COMPONENTS GIVEN----------/

   COMPONENTS : X    0.0    Y  -1.5000 Z   0.0      BY  JOINTS   GLOBAL
```

```
MEMBER AND ELEMENT LOADS--------------------------------------------------------------------------/
MEMBER/ELEMENT

JOINT LOADS---------------------------------------/ ------------------------------------/
JOINT     STEP    FORCE X          Y           Z        MOMENT X          Y           Z
5                       0.0       -0.243       0.0             0.0         0.0         0.0
6                       0.0       -0.243       0.0             0.0         0.0         0.0
8                       0.0       -0.260       0.0             0.0         0.0         0.0
9                       0.0       -0.260       0.0             0.0         0.0         0.0

JOINT DISPLACEMENTS-------------------------------/ ------------------------------------/
JOINT     STEP    DISP. X          Y           Z        ROT.    X           Y           Z

JOINT FORCE ASSUMPTIONS ----------------------------------------------------------------------/

JOINT     THETA  1        2        3     FORCE X          Y          Z       MOMENT X          Y          Z
NO ASSUMPTIONS GIVEN FOR THIS LOADING

MEMBER FORCE ASSUMPTIONS ---------------------/    ------------------------------------/

MEMBER       COMPONENT   DISTANCE     VALUE          COMPONENT   DISTANCE     VALUE
NO ASSUMPTIONS GIVEN FOR THIS LOADING


LOADING - 3           OBE POS HOR TRANS [illegible]                                   STATUS - ACTIVE

/----------NON-SELECTIVE DEAD LOAD COMPONENTS GIVEN----------/

 COMPONENTS ; X   0.7000 Y   0.0   Z   0.0     BY  JOINTS   GLOBAL

MEMBER AND ELEMENT LOADS--------------------------------------------------------------------------/
MEMBER/ELEMENT

JOINT LOADS---------------------------------------/ ------------------------------------/
JOINT     STEP    FORCE X          Y           Z        MOMENT X          Y           Z
1                       0.113      0.0         0.0             0.0         0.0         0.0
2                       0.121      0.0         0.0             0.0         0.0         0.0
5                       0.0        0.0         0.0             0.0         0.0        -0.065
6                       0.0        0.0         0.0             0.0         0.0        -0.065
7                       0.113      0.0         0.0             0.0         0.0         0.0
8                       0.0        0.0         0.0             0.0         0.0        -0.069
9                       0.0        0.0         0.0             0.0         0.0        -0.069
10                      0.121      0.0         0.0             0.0         0.0         0.0

JOINT DISPLACEMENTS-------------------------------/ ------------------------------------/
JOINT     STEP    DISP. X          Y           Z        ROT.    X           Y           Z

JOINT FORCE ASSUMPTIONS ----------------------------------------------------------------------/
```

JOINT THETA 1 2 3 FORCE X Y Z MOMENT X Y Z
NO ASSUMPTIONS GIVEN FOR THIS LOADING

MEMBER FORCE ASSUMPTIONS ----------------------/ ---------------------------------/

MEMBER COMPONENT DISTANCE VALUE COMPONENT DISTANCE VALUE
NO ASSUMPTIONS GIVEN FOR THIS LOADING

LOADING - 4   OBE POS HOR LONG SEIS   STATUS - ACTIVE

/----------NON-SELECTIVE DEAD LOAD COMPONENTS GIVEN----------/

COMPONENTS : X 0.0 Y 0.0 Z 0.4000 BY JOINTS GLOBAL

MEMBER AND ELEMENT LOADS--/
MEMBER/ELEMENT

JOINT LOADS------------------------------------/ ------------------------------------/

JOINT	STEP	FORCE X	Y	Z	MOMENT X	Y	Z
5		0.0	0.0	0.097	-0.068	0.0	0.0
6		0.0	0.0	0.097	-0.068	0.0	0.0
8		0.0	0.0	0.115	-0.080	0.0	0.0
9		0.0	0.0	0.115	-0.080	0.0	0.0

JOINT DISPLACEMENTS----------------------------/ ------------------------------------/
JOINT STEP DISP. X Y Z ROT. X Y Z

JOINT FORCE ASSUMPTIONS --/

JOINT THETA 1 2 3 FORCE X Y Z MOMENT X Y Z
NO ASSUMPTIONS GIVEN FOR THIS LOADING

MEMBER FORCE ASSUMPTIONS ----------------------/ ---------------------------------/

MEMBER COMPONENT DISTANCE VALUE COMPONENT DISTANCE VALUE
NO ASSUMPTIONS GIVEN FOR THIS LOADING

LOADING - 6   SSE NEG VERT SEIS   STATUS - ACTIVE

COMBINATION GIVEN - 2 1.370

LOADING - 7   SSE POS HOR TRANS SEIS   STATUS - ACTIVE

COMBINATION QIVEN -   3   1.360

LOADING - 8   SSE POS HOR LONQ SEIS   STATUS - ACTIVE

COMBINATION QIVEN -   4   1.500

```
****************************************
*  END OF DATA FROM  INTERNAL STORAGE  *
****************************************
```

STIFFNESS ANALYSIS REDUCE BAND

BANDWIDTH USING INITIAL JOINT NUMBERING :

THE MAXIMUM BANDWIDTH IS   5 AND OCCURS AT JOINT 8
THE AVERAGE BANDWIDTH IS   1.700
THE STANDARD DEVIATION OF THE BANDWIDTH IS   1.494

BANDWIDTH AFTER INTERNALLY RENUMBERING STRUCTURE :

THE MAXIMUM BANDWIDTH IS   2 AND OCCURS AT JOINT 2
THE AVERAGE BANDWIDTH IS   1.500
THE STANDARD DEVIATION OF THE BANDWIDTH IS   0.850

```
***********************************************************
* TOTAL DEAD WEIGHT OF STRUCTURE =  0.345261999D 00 KIPF *
***********************************************************
```

LOADING COMBINATION 234 'OBE SRSS 2 3 4' RMS -
2 3 4

LOADING COMBINATION 678 'SSE SRSS 6 7 8' RMS -
6 7 8

STRESS RESULTS ARE TO BE COMBINED AT STRESS LEVEL

LOADING COMBINATION 1001 'DL+SRSS 234' COMPONENTS -
1 1. 234 1.

LOADING COMBINATION 1002 'DL-SRSS 234' COMPONENTS -
1 1. 234 -1.

LOADING COMBINATION 2001 'DL+SRSS 678' COMPONENTS -
1 1. 678 1.

LOADING COMBINATION 2002 'DL-SRSS 678' COMPONENTS -
1 1. 678 -1.

LOAD LIST -
6 7 8

COMBINE ALL

```
LOADS LIST -
  234  -
  678

GENERATE RESULTS

LOAD LIST -
1001 1002 2001 2002

COMBINE ALL

LOAD LIST -
ALL

OUTPUT DECIMAL      3

OUTPUT BY JOINTS ; OUTPUT BY MEMBERS

LIST DISPLACEMENTS, REACTIONS, FORCES
```

****
RESULTS OF LATEST ANALYSIS
****

JOB ID - 2-10146   JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN , 2-10146S

ACTIVE UNITS - LENGTH INCH · WEIGHT KIPF · ANGLE DEG · TEMPERATURE FAH · TIME SEC · MASS LBM

MEMBER FORCES

MEMBER	LOADING	JOINT	AXIAL (FORCES)	SHEAR Y (FORCES)	SHEAR Z (FORCES)	TORSION(CG) (MOMENTS)	MOMENT Y (MOMENTS)	MOMENT Z (MOMENTS)
1								
	1	1	-0.646	0.0	-0.251	0.0	2.870	0.0
		2	0.646	0.0	0.251	0.0	1.149	0.0
	2	1	-0.315	0.0	-0.160	0.0	1.356	0.0
		2	0.315	0.0	0.160	0.0	1.196	0.0
	3	1	-0.160	0.0	-0.148	0.0	2.564	0.0
		2	0.160	0.0	0.148	0.0	-0.194	0.0
	4	1	0.0	-0.114	0.0	-0.002	0.0	0.067
		2	0.0	0.114	0.0	0.002	0.0	-1.897
	6	1	-0.432	0.0	-0.219	0.0	1.857	0.0
		2	0.432	0.0	0.219	0.0	1.639	0.0
	7	1	-0.218	0.0	-0.201	0.0	3.487	0.0
		2	0.218	0.0	0.201	0.0	-0.264	0.0
	8	1	0.0	-0.172	0.0	-0.002	0.0	0.101
		2	0.0	0.172	0.0	0.002	0.0	-2.845
	234	1	0.354	0.114	0.218	0.002	2.900	0.067
		2	0.354	0.114	0.218	0.002	1.212	1.897
	678	1	0.484	0.172	0.297	0.002	3.951	0.101
		2	0.484	0.172	0.297	0.002	1.660	2.845
	1001	1	-0.292	0.114	-0.034	0.002	5.771	0.067
		2	0.999	0.114	0.469	0.002	2.361	1.897
	1002	1	-0.999	-0.114	-0.469	-0.002	-0.030	-0.067
		2	0.292	-0.114	0.034	-0.002	-0.063	-1.897
	2001	1	-0.162	0.172	0.046	0.002	6.821	0.101
		2	1.129	0.172	0.548	0.002	2.810	2.845
	2002	1	-1.129	-0.172	-0.548	-0.002	-1.081	-0.101
		2	0.162	-0.172	-0.046	-0.002	-0.511	-2.845
2								
	1	2	-0.843	0.0	-0.001	0.0	-0.003	0.0
		3	0.843	0.0	0.001	0.0	0.017	0.0
	2	2	-0.611	0.0	-0.016	0.0	0.382	0.0
		3	0.611	0.0	0.016	0.0	-0.139	0.0
	3	2	-0.471	0.0	-0.319	0.0	5.105	0.0
		3	0.471	0.0	0.319	0.0	-0.326	0.0
	4	2	0.0	-0.230	0.0	-0.002	0.0	1.959

		3	0.0	0.230	0.0	0.002	0.0	-5.402
	6	2	-0.837	0.0	-0.022	0.0	0.523	0.0
		3	0.837	0.0	0.022	0.0	-0.190	0.0
	7	2	-0.640	0.0	-0.433	0.0	6.942	0.0
		3	0.640	0.0	0.433	0.0	-0.443	0.0
	8	2	0.0	-0.344	0.0	-0.003	0.0	2.938
		3	0.0	0.344	0.0	0.003	0.0	-8.102
	234	2	0.771	0.230	0.319	0.002	5.119	1.959
		3	0.771	0.230	0.319	0.002	0.354	5.402
	678	2	1.054	0.344	0.434	0.003	6.962	2.938
		3	1.054	0.344	0.434	0.003	0.482	8.102
	1001	2	-0.071	0.230	0.318	0.002	5.116	1.959
		3	1.614	0.230	0.320	0.002	0.371	5.402
	1002	2	-1.614	-0.230	-0.320	-0.002	-5.122	-1.959
		3	0.071	-0.230	-0.318	-0.002	-0.338	-5.402
	2001	2	0.211	0.344	0.433	0.003	6.959	2.938
		3	1.896	0.344	0.435	0.003	0.499	8.102
	2002	2	-1.896	-0.344	-0.435	-0.003	-6.965	-2.938
		3	-0.211	-0.344	-0.433	-0.003	-0.466	-8.102
3								
	1	3	-0.876	0.0	-0.001	0.0	-0.017	0.0
		4	0.876	0.0	0.001	0.0	0.039	0.0
	2	3	-0.662	0.0	-0.016	0.0	0.139	0.0
		4	0.662	0.0	0.016	0.0	0.243	0.0
	3	3	-0.471	0.0	-0.342	0.0	0.326	0.0
		4	0.471	0.0	0.342	0.0	7.739	0.0
	4	3	0.0	-0.243	0.0	-0.002	0.0	5.402
		4	0.0	0.243	0.0	0.002	0.0	-11.129
	6	3	-0.906	0.0	-0.022	0.0	0.190	0.0
		4	0.906	0.0	0.022	0.0	0.333	0.0
	7	3	-0.640	0.0	-0.465	0.0	0.443	0.0
		4	0.640	0.0	0.465	0.0	10.525	0.0
	8	3	0.0	-0.364	0.0	-0.003	0.0	8.102
		4	0.0	0.364	0.0	0.003	0.0	-16.694
	234	3	0.812	0.243	0.343	0.002	0.354	5.402
		4	0.812	0.243	0.343	0.002	7.743	11.129
	678	3	1.110	0.364	0.466	0.003	0.482	8.102
		4	1.110	0.364	0.466	0.003	10.530	16.694
	1001	3	-0.065	0.243	0.342	0.002	0.337	5.402
		4	1.688	0.243	0.343	0.002	7.782	11.129
	1002	3	-1.688	-0.243	-0.343	-0.002	-0.371	-5.402
		4	0.065	-0.243	-0.342	-0.002	-7.704	-11.129
	2001	3	0.233	0.364	0.465	0.003	0.466	8.102
		4	1.986	0.364	0.467	0.003	10.569	16.694
	2002	3	-1.986	-0.364	-0.467	-0.003	-0.499	-8.102
		4	-0.233	-0.364	-0.465	-0.003	-10.492	-16.694
4								
	1	7	-0.680	0.0	-0.251	0.0	2.791	0.0
		10	0.680	0.0	0.251	0.0	1.228	0.0
	2	7	-0.323	0.0	-0.160	0.0	1.237	0.0
		10	0.323	0.0	0.160	0.0	1.315	0.0
	3	7	0.160	0.0	0.149	0.0	-2.568	0.0
		10	-0.160	0.0	-0.149	0.0	0.184	0.0
	4	7	0.0	0.120	0.0	-0.003	0.0	-0.069
		10	0.0	-0.120	0.0	0.003	0.0	1.994
	6	7	-0.443	0.0	-0.219	0.0	1.695	0.0
		10	0.443	0.0	0.219	0.0	1.801	0.0
	7	7	0.218	0.0	0.203	0.0	-3.493	0.0

		10	-0.218	0.0	-0.203	0.0	0.250	0.0
	8	7	0.0	0.180	0.0	-0.004	0.0	-0.103
		10	0.0	-0.180	0.0	0.004	0.0	2.990
	234	7	0.361	0.120	0.218	0.003	2.851	0.069
		10	0.361	0.120	0.218	0.003	1.328	1.994
	678	7	0.493	0.180	0.298	0.004	3.882	0.103
		10	0.493	0.180	0.298	0.004	1.819	2.990
	1001	7	-0.319	0.120	-0.033	0.003	5.642	0.069
		10	1.040	0.120	0.469	0.003	2.556	1.994
	1002	7	-1.040	-0.120	-0.469	-0.003	-0.059	-0.069
		10	0.319	-0.120	0.033	-0.003	-0.099	-1.994
	2001	7	-0.186	0.180	0.047	0.004	6.673	0.103
		10	1.173	0.180	0.549	0.004	3.047	2.990
	2002	7	-1.173	-0.180	-0.549	-0.004	-1.091	-0.103
		10	0.186	-0.180	-0.047	-0.004	-0.590	-2.990
5								
	1	10	-0.975	0.0	-0.001	0.0	0.044	0.0
		11	0.975	0.0	0.001	0.0	-0.025	0.0
	2	10	-0.767	0.0	-0.016	0.0	0.453	0.0
		11	0.767	0.0	0.016	0.0	-0.113	0.0
	3	10	0.471	0.0	0.323	0.0	-5.126	0.0
		11	-0.471	0.0	-0.323	0.0	-1.657	0.0
	4	10	0.0	0.294	0.0	-0.001	0.0	-2.092
		11	0.0	-0.294	0.0	0.001	0.0	8.259
	6	10	-1.051	0.0	-0.022	0.0	0.621	0.0
		11	1.051	0.0	0.022	0.0	-0.155	0.0
	7	10	0.640	0.0	0.439	0.0	-6.972	0.0
		11	-0.640	0.0	-0.439	0.0	-2.254	0.0
	8	10	0.0	0.441	0.0	-0.001	0.0	-3.137
		11	0.0	-0.441	0.0	0.001	0.0	12.389
	234	10	0.900	0.294	0.323	0.001	5.146	2.092
		11	0.900	0.294	0.323	0.001	1.661	8.259
	678	10	1.230	0.441	0.440	0.001	7.000	3.137
		11	1.230	0.441	0.440	0.001	2.259	12.389
	1001	10	-0.075	0.294	0.322	0.001	5.191	2.092
		11	1.875	0.294	0.324	0.001	1.637	8.259
	1002	10	-1.875	-0.294	-0.324	-0.001	-5.102	-2.092
		11	0.075	-0.294	-0.322	-0.001	-1.686	-8.259
	2001	10	0.255	0.441	0.439	0.001	7.044	3.137
		11	2.206	0.441	0.441	0.001	2.235	12.389
	2002	10	-2.206	-0.441	-0.441	-0.001	-6.955	-3.137
		11	-0.255	-0.441	-0.439	-0.001	-2.284	-12.389
6								
	1	11	-1.013	0.0	-0.001	0.0	0.025	0.0
		12	1.013	0.0	0.001	0.0	-0.008	0.0
	2	11	-0.823	0.0	-0.016	0.0	0.113	0.0
		12	0.823	0.0	0.016	0.0	0.171	0.0
	3	11	0.471	0.0	0.349	0.0	1.657	0.0
		12	-0.471	0.0	-0.349	0.0	-7.792	0.0
	4	11	0.0	0.309	0.0	-0.001	0.0	-8.259
		12	0.0	-0.309	0.0	0.001	0.0	13.682
	6	11	-1.128	0.0	-0.022	0.0	0.155	0.0
		12	1.128	0.0	0.022	0.0	0.234	0.0
	7	11	0.640	0.0	0.475	0.0	2.254	0.0
		12	-0.640	0.0	-0.475	0.0	-10.598	0.0
	8	11	0.0	0.463	0.0	-0.001	0.0	-12.389
		12	0.0	-0.463	0.0	0.001	0.0	20.523
	234	11	0.948	0.309	0.350	0.001	1.661	8.259

		12	0.948	0.309	0.350	0.001	7.794	13.682
	678	11	1.297	0.463	0.475	0.001	2.259	12.389
		12	1.297	0.463	0.475	0.001	10.600	20.523
	1001	11	-0.065	0.309	0.349	0.001	1.686	8.259
		12	1.961	0.309	0.350	0.001	7.786	13.682
	1002	11	-1.961	-0.309	-0.350	-0.001	-1.637	-8.259
		12	0.065	-0.309	-0.349	-0.001	-7.802	-13.682
	2001	11	0.284	0.463	0.474	0.001	2.284	12.389
		12	2.309	0.463	0.476	0.001	10.592	20.523
	2002	11	-2.309	-0.463	-0.476	-0.001	-2.235	-12.389
		12	-0.284	-0.463	-0.474	-0.001	-10.608	-20.523
7								
	1	1	-0.251	0.0	-0.619	0.0	2.870	0.0
		5	0.251	0.0	0.619	0.0	1.544	0.0
	2	1	-0.160	0.0	-0.275	0.0	1.356	0.0
		5	0.160	0.0	0.275	0.0	0.605	0.0
	3	1	-0.016	0.0	-0.160	0.0	2.564	0.0
		5	0.016	0.0	0.160	0.0	-1.423	0.0
	4	1	0.0	-0.104	0.0	0.067	0.0	-0.002
		5	0.0	0.104	0.0	-0.067	0.0	-0.737
	6	1	-0.219	0.0	-0.376	0.0	1.857	0.0
		5	0.219	0.0	0.376	0.0	0.829	0.0
	7	1	-0.022	0.0	-0.218	0.0	3.487	0.0
		5	0.022	0.0	0.218	0.0	-1.935	0.0
	8	1	0.0	-0.155	0.0	0.101	0.0	-0.002
		5	0.0	0.155	0.0	-0.101	0.0	-1.106
	234	1	0.160	0.104	0.318	0.067	2.900	0.002
		5	0.160	0.104	0.318	0.067	1.546	0.737
	678	1	0.220	0.155	0.435	0.101	3.951	0.002
		5	0.220	0.155	0.435	0.101	2.105	1.106
	1001	1	-0.091	0.104	-0.301	0.067	5.771	0.002
		5	0.412	0.104	0.937	0.067	3.090	0.737
	1002	1	-0.412	-0.104	-0.937	-0.067	-0.030	-0.002
		5	0.091	-0.104	0.301	-0.067	-0.002	-0.737
	2001	1	-0.032	0.155	-0.184	0.101	6.821	0.002
		5	0.471	0.155	1.054	0.101	3.649	1.106
	2002	1	-0.471	-0.155	-1.054	-0.101	-1.081	-0.002
		5	0.032	-0.155	0.184	-0.101	-0.561	-1.106
8								
	1	5	-0.251	0.0	0.018	0.0	-1.544	0.0
		6	0.251	0.0	-0.018	0.0	1.220	0.0
	2	5	-0.160	0.0	0.005	0.0	-0.605	0.0
		6	0.160	0.0	-0.005	0.0	0.506	0.0
	3	5	0.001	0.0	-0.160	0.0	1.358	0.0
		6	-0.001	0.0	0.160	0.0	1.522	0.0
	4	5	0.0	0.003	0.0	-0.001	0.0	0.737
		6	0.0	-0.003	0.0	0.001	0.0	-0.677
	6	5	-0.219	0.0	0.007	0.0	-0.829	0.0
		6	0.219	0.0	-0.007	0.0	0.694	0.0
	7	5	0.002	0.0	-0.218	0.0	1.847	0.0
		6	-0.002	0.0	0.218	0.0	2.070	0.0
	8	5	0.0	0.005	0.0	-0.001	0.0	1.106
		6	0.0	-0.005	0.0	0.001	0.0	-1.015
	234	5	0.160	0.003	0.160	0.001	1.486	0.737
		6	0.160	0.003	0.160	0.001	1.604	0.677
	678	5	0.219	0.005	0.218	0.001	2.024	1.106
		6	0.219	0.005	0.218	0.001	2.183	1.015
	1001	5	-0.092	0.003	0.178	0.001	-0.058	0.737

		6	0.411	0.003	0.142	0.001	2.824	0.677
	1002	5	-0.411	-0.003	-0.142	-0.001	-3.031	-0.737
		6	0.092	-0.003	-0.178	-0.001	-0.384	-0.677
	2001	5	-0.033	0.005	0.236	0.001	0.480	1.106
		6	0.470	0.005	0.200	0.001	3.403	1.015
	2002	5	-0.470	-0.005	-0.200	-0.001	-3.568	-1.106
		6	0.033	-0.005	-0.236	-0.001	-0.963	-1.015
9								
	1	6	-0.251	0.0	0.654	0.0	-1.220	0.0
		7	0.251	0.0	-0.654	0.0	-2.791	0.0
	2	6	-0.160	0.0	0.284	0.0	-0.506	0.0
		7	0.160	0.0	-0.284	0.0	-1.237	0.0
	3	6	0.018	0.0	-0.160	0.0	-1.587	0.0
		7	-0.018	0.0	0.160	0.0	2.568	0.0
	4	6	0.0	0.110	0.0	-0.069	0.0	0.677
		7	0.0	-0.110	0.0	0.069	0.0	-0.003
	6	6	-0.219	0.0	0.389	0.0	-0.694	0.0
		7	0.219	0.0	-0.389	0.0	-1.695	0.0
	7	6	0.024	0.0	-0.218	0.0	-2.158	0.0
		7	-0.024	0.0	0.218	0.0	3.493	0.0
	8	6	0.0	0.165	0.0	-0.103	0.0	1.015
		7	0.0	-0.165	0.0	0.103	0.0	-0.004
	234	6	0.160	0.110	0.326	0.069	1.666	0.677
		7	0.160	0.110	0.326	0.069	2.851	0.003
	678	6	0.220	0.165	0.446	0.103	2.267	1.015
		7	0.220	0.165	0.446	0.103	3.882	0.004
	1001	6	-0.091	0.110	0.980	0.069	0.446	0.677
		7	0.412	0.110	-0.328	0.069	0.059	0.003
	1002	6	-0.412	-0.110	0.328	-0.069	-2.885	-0.677
		7	0.091	-0.110	-0.980	-0.069	-5.642	-0.003
	2001	6	-0.031	0.165	1.100	0.103	1.047	1.015
		7	0.471	0.165	-0.208	0.103	1.091	0.004
	2002	6	-0.471	-0.165	0.208	-0.103	-3.487	-1.015
		7	0.031	-0.165	-1.100	-0.103	-6.673	-0.004
10								
	1	2	0.250	0.0	-0.145	0.0	1.147	0.0
		8	-0.250	0.0	0.145	0.0	0.796	0.0
	2	2	0.143	0.0	-0.218	0.0	1.578	0.0
		8	-0.143	0.0	0.218	0.0	1.341	0.0
	3	2	-0.013	0.0	-0.311	0.0	4.911	0.0
		8	0.013	0.0	0.311	0.0	-0.752	0.0
	4	2	0.0	-0.094	0.0	0.062	0.0	-0.001
		8	0.0	0.094	0.0	-0.062	0.0	-1.263
	6	2	0.196	0.0	-0.299	0.0	2.162	0.0
		8	-0.196	0.0	0.299	0.0	1.837	0.0
	7	2	-0.018	0.0	-0.423	0.0	6.679	0.0
		8	0.018	0.0	0.423	0.0	-1.023	0.0
	8	2	0.0	-0.142	0.0	0.093	0.0	-0.001
		8	0.0	0.142	0.0	-0.093	0.0	-1.895
	234	2	0.144	0.094	0.380	0.062	5.158	0.001
		8	0.144	0.094	0.380	0.062	1.537	1.263
	678	2	0.197	0.142	0.518	0.093	7.020	0.001
		8	0.197	0.142	0.518	0.093	2.102	1.895
	1001	2	0.394	0.094	0.234	0.062	6.305	0.001
		8	-0.106	0.094	0.525	0.062	2.333	1.263
	1002	2	0.106	-0.094	-0.525	-0.062	-4.011	-0.001
		8	-0.394	-0.094	-0.234	-0.062	-0.741	-1.263
	2001	2	0.447	0.142	0.372	0.093	8.167	0.001

		8	-0.053	0.142	0.663	0.093	2.898	1.895
	2002	2	0.053	-0.142	-0.663	-0.093	-5.873	-0.001
		8	-0.447	-0.142	-0.372	-0.093	-1.307	-1.895
11	1	8	0.250	0.0	0.053	0.0	-0.796	0.0
		9	-0.250	0.0	-0.053	0.0	0.161	0.0
	2	8	0.143	0.0	0.080	0.0	-1.341	0.0
		9	-0.143	0.0	-0.080	0.0	0.386	0.0
	3	8	0.004	0.0	-0.311	0.0	0.683	0.0
		9	-0.004	0.0	0.311	0.0	3.045	0.0
	4	8	0.0	0.031	0.0	-0.018	0.0	[illegible]
		9	0.0	-0.031	0.0	0.018	0.0	-0.896
	6	8	0.196	0.0	0.109	0.0	-1.837	0.0
		9	-0.196	0.0	-0.109	0.0	0.529	0.0
	7	8	0.006	0.0	-0.423	0.0	0.929	0.0
		9	-0.006	0.0	0.423	0.0	4.141	0.0
	8	8	0.0	0.046	0.0	-0.027	0.0	1.895
		9	0.0	-0.046	0.0	0.027	0.0	-1.344
	234	8	0.143	0.031	0.321	0.018	1.505	1.263
		9	0.143	0.031	0.321	0.018	3.069	0.896
	678	8	0.196	0.046	0.436	0.027	2.058	1.895
		9	0.196	0.046	0.436	0.027	4.175	1.344
	1001	8	0.394	0.031	0.374	0.018	0.709	1.263
		9	-0.107	0.031	0.268	0.018	3.230	0.896
	1002	8	0.107	-0.031	-0.268	-0.018	-2.301	-1.263
		9	-0.394	-0.031	-0.374	-0.018	-2.909	-0.896
	2001	8	0.447	0.046	0.489	0.027	1.262	1.895
		9	-0.054	0.046	0.383	0.027	4.336	1.344
	2002	8	0.054	-0.046	-0.383	-0.027	-2.854	-1.895
		9	-0.447	-0.046	-0.489	-0.027	-4.014	-1.344
12	1	9	0.250	0.0	0.244	0.0	-0.161	0.0
		10	-0.250	0.0	-0.244	0.0	-1.273	0.0
	2	9	0.143	0.0	0.366	0.0	-0.386	0.0
		10	-0.143	0.0	-0.366	0.0	-1.768	0.0
	3	9	0.017	0.0	-0.311	0.0	-3.114	0.0
		10	-0.017	0.0	0.311	0.0	4.942	0.0
	4	9	0.0	0.153	0.0	-0.098	0.0	0.896
		10	0.0	-0.153	0.0	0.098	0.0	0.002
	6	9	0.196	0.0	0.502	0.0	-0.529	0.0
		10	-0.196	0.0	-0.502	0.0	-2.422	0.0
	7	9	0.023	0.0	-0.423	0.0	-4.235	0.0
		10	-0.023	0.0	0.423	0.0	6.722	0.0
	8	9	0.0	0.229	0.0	-0.147	0.0	1.344
		10	0.0	-0.229	0.0	0.147	0.0	0.003
	234	9	0.144	0.153	0.480	0.098	3.138	0.896
		10	0.144	0.153	0.480	0.098	5.249	0.002
	678	9	0.198	0.229	0.656	0.147	4.268	1.344
		10	0.198	0.229	0.656	0.147	7.145	0.003
	1001	9	0.395	0.153	0.724	0.098	2.977	0.896
		10	-0.106	0.153	0.237	0.098	3.976	0.002
	1002	9	0.106	-0.153	-0.237	-0.098	-3.299	-0.896
		10	-0.395	-0.153	-0.724	-0.098	-6.522	-0.002
	2001	9	0.448	0.229	0.899	0.147	4.107	1.344
		10	-0.053	0.229	0.412	0.147	5.872	0.003
	2002	9	0.053	-0.229	-0.412	-0.147	-4.429	-1.344
		10	-0.448	-0.229	-0.899	-0.147	-8.418	-0.003

REACTIONS AT SUPPORT JOINTS

JOINT		LOADING	FORCES X FORCE	FORCES Y FORCE	FORCES Z FORCE	MOMENTS X MOMENT	MOMENTS Y MOMENT	MOMENTS Z MOMENT
4	GLOBAL	1	-0.001	0.891	0.0	0.0	0.0	-0.039
		2	-0.016	0.684	0.0	0.0	0.0	-0.243
		3	-0.353	0.471	0.0	0.0	0.0	-7.739
		4	0.0	0.0	-0.249	11.129	0.002	0.0
		6	-0.022	0.937	0.0	0.0	0.0	-0.333
		7	-0.480	0.640	0.0	0.0	0.0	-10.525
		8	0.0	0.0	-0.374	16.694	0.003	0.0
		234	0.353	0.830	0.249	11.129	0.002	7.743
		678	0.480	1.135	0.374	16.694	0.003	10.530
		1001	0.352	1.722	0.249	11.129	0.002	7.704
		1002	-0.354	0.061	-0.249	-11.129	-0.002	-7.782
		2001	0.479	2.026	0.374	16.694	0.003	10.492
		2002	-0.481	-0.243	-0.374	-16.694	-0.003	-10.569
12	GLOBAL	1	0.001	1.024	0.0	0.0	0.0	-0.008
		2	0.016	0.840	0.0	0.0	0.0	0.171
		3	-0.357	-0.471	0.0	0.0	0.0	-7.792
		4	0.0	0.0	-0.313	13.682	0.001	0.0
		6	0.022	1.151	0.0	0.0	0.0	0.234
		7	-0.486	-0.640	0.0	0.0	0.0	-10.598
		8	0.0	0.0	-0.470	20.523	0.001	0.0
		234	0.357	0.963	0.313	13.682	0.001	7.794
		678	0.486	1.317	0.470	20.523	0.001	10.600
		1001	0.358	1.987	0.313	13.682	0.001	7.786
		1002	-0.356	0.061	-0.313	-13.682	-0.001	-7.802
		2001	0.487	2.340	0.470	20.523	0.001	10.592
		2002	-0.485	-0.293	-0.470	-20.523	-0.001	-10.608

JOINT DISPLACEMENTS - SUPPORTS

JOINT		LOADING	DISPLACEMENTS X DISP	DISPLACEMENTS Y DISP	DISPLACEMENTS Z DISP	ROTATIONS X ROT	ROTATIONS Y ROT	ROTATIONS Z ROT
4	GLOBAL	1	0.0	0.0	0.0	0.0	0.0	0.0
		2	0.0	0.0	0.0	0.0	0.0	0.0
		3	0.0	0.0	0.0	0.0	0.0	0.0
		4	0.0	0.0	0.0	0.0	0.0	0.0
		6	0.0	0.0	0.0	0.0	0.0	0.0
		7	0.0	0.0	0.0	0.0	0.0	0.0
		8	0.0	0.0	0.0	0.0	0.0	0.0
		234	0.0	0.0	0.0	0.0	0.0	0.0
		678	0.0	0.0	0.0	0.0	0.0	0.0
		1001	0.0	0.0	0.0	0.0	0.0	0.0
		1002	0.0	0.0	0.0	0.0	0.0	0.0
		2001	0.0	0.0	0.0	0.0	0.0	0.0

	2002	0.0	0.0	0.0	0.0	0.0	0.0
12	GLOBAL						
	1	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	0.0
	234	0.0	0.0	0.0	0.0	0.0	0.0
	678	0.0	0.0	0.0	0.0	0.0	0.0
	1001	0.0	0.0	0.0	0.0	0.0	0.0
	1002	0.0	0.0	0.0	0.0	0.0	0.0
	2001	0.0	0.0	0.0	0.0	0.0	0.0
	2002	0.0	0.0	0.0	0.0	0.0	0.0

JOINT DISPLACEMENTS - FREE JOINTS

JOINT	LOADING	/----------DISPLACEMENTS---------- X DISP	Y DISP	Z DISP --------//	----------ROTATIONS---------- X ROT	Y ROT	Z ROT ----------/
1	GLOBAL						
	1	0.000	-0.000	0.0	0.0	0.0	-0.011
	2	0.001	-0.000	0.0	0.0	0.0	-0.003
	3	0.048	-0.000	0.0	0.0	0.0	0.021
	4	0.0	0.0	0.006	-0.008	-0.003	0.0
	6	0.001	-0.000	0.0	0.0	0.0	-0.005
	7	0.065	-0.000	0.0	0.0	0.0	0.029
	8	0.0	0.0	0.008	-0.012	-0.004	0.0
	234	0.048	0.000	0.006	0.008	0.003	0.022
	678	0.065	0.000	0.008	0.012	0.004	0.029
	1001	0.048	-0.000	0.006	0.008	0.003	0.010
	1002	-0.048	-0.001	-0.006	-0.008	-0.003	-0.033
	2001	0.066	0.000	0.008	0.012	0.004	0.018
	2002	-0.065	-0.001	-0.008	-0.012	-0.004	-0.041
2	GLOBAL						
	1	0.000	-0.000	0.0	0.0	0.0	0.001
	2	0.000	-0.000	0.0	0.0	0.0	-0.002
	3	0.039	-0.000	0.0	0.0	0.0	0.040
	4	0.0	0.0	0.003	-0.007	-0.002	0.0
	6	0.001	-0.000	0.0	0.0	0.0	-0.003
	7	0.052	-0.000	0.0	0.0	0.0	0.055
	8	0.0	0.0	0.005	-0.011	-0.003	0.0
	234	0.039	0.000	0.003	0.007	0.002	0.040
	678	0.052	0.000	0.005	0.011	0.003	0.055
	1001	0.039	-0.000	0.003	0.007	0.002	0.041
	1002	-0.038	-0.000	-0.003	-0.007	-0.002	-0.040
	2001	0.053	0.000	0.005	0.011	0.003	0.056
	2002	-0.052	-0.001	-0.005	-0.011	-0.003	-0.054
3	GLOBAL						
	1	0.000	-0.000	0.0	0.0	0.0	0.001
	2	0.001	-0.000	0.0	0.0	0.0	0.001
	3	0.022	-0.000	0.0	0.0	0.0	0.076
	4	0.0	0.0	0.002	-0.006	-0.001	0.0
	6	0.001	-0.000	0.0	0.0	0.0	0.001
	7	0.030	-0.000	0.0	0.0	0.0	0.103

		8	0.0	0.0	0.002	-0.009	-0.002	0.0
		234	0.022	0.000	0.002	0.006	0.001	0.076
		678	0.030	0.000	0.002	0.009	0.002	0.103
		1001	0.022	-0.000	0.002	0.006	0.001	0.076
		1002	-0.022	-0.000	-0.002	-0.006	-0.001	-0.073
		2001	0.030	0.000	0.002	0.009	0.002	0.104
		2002	-0.029	-0.000	-0.002	-0.009	-0.002	-0.102
5	GLOBAL							
		1	0.000	-0.003	0.0	0.0	0.0	-0.018
		2	0.001	-0.001	0.0	0.0	0.0	-0.007
		3	0.048	0.001	0.0	0.0	0.0	0.000
		4	0.0	0.0	0.006	-0.026	-0.003	0.0
		6	0.001	-0.002	0.0	0.0	0.0	-0.010
		7	0.065	0.001	0.0	0.0	0.0	0.000
		8	0.0	0.0	0.009	-0.040	-0.004	0.0
		234	0.048	0.002	0.006	0.026	0.003	0.007
		678	0.065	0.002	0.009	0.040	0.004	0.010
		1001	0.048	-0.001	0.006	0.026	0.003	-0.011
		1002	-0.048	-0.005	-0.006	-0.026	-0.003	-0.026
		2001	0.066	-0.001	0.009	0.040	0.004	-0.008
		2002	-0.065	-0.005	-0.009	-0.040	-0.004	-0.028
6	GLOBAL							
		1	0.000	-0.003	0.0	0.0	0.0	0.019
		2	0.001	-0.001	0.0	0.0	0.0	0.008
		3	0.048	-0.001	0.0	0.0	0.0	0.002
		4	0.0	0.0	0.007	-0.026	-0.002	0.0
		6	0.001	-0.002	0.0	0.0	0.0	0.010
		7	0.065	-0.001	0.0	0.0	0.0	0.003
		8	0.0	0.0	0.010	-0.039	-0.003	0.0
		234	0.048	0.002	0.007	0.026	0.002	0.008
		678	0.065	0.002	0.010	0.039	0.003	0.011
		1001	0.048	-0.001	0.007	0.026	0.002	0.027
		1002	-0.048	-0.004	-0.007	-0.026	-0.002	0.011
		2001	0.066	-0.001	0.010	0.039	0.003	0.030
		2002	-0.065	-0.005	-0.010	-0.039	-0.003	0.008
7	GLOBAL							
		1	0.000	-0.000	0.0	0.0	0.0	0.012
		2	0.001	-0.000	0.0	0.0	0.0	0.004
		3	0.048	0.000	0.0	0.0	0.0	0.021
		4	0.0	0.0	0.007	-0.009	-0.002	0.0
		6	0.001	-0.000	0.0	0.0	0.0	0.006
		7	0.065	0.000	0.0	0.0	0.0	0.029
		8	0.0	0.0	0.010	-0.014	-0.002	0.0
		234	0.048	0.000	0.007	0.009	0.002	0.022
		678	0.065	0.000	0.010	0.014	0.002	0.030
		1001	0.049	-0.000	0.007	0.009	0.002	0.033
		1002	-0.048	-0.001	-0.007	-0.009	-0.002	-0.010
		2001	0.066	0.000	0.010	0.014	0.002	0.041
		2002	-0.065	-0.001	-0.010	-0.014	-0.002	-0.018
8	GLOBAL							
		1	0.000	-0.001	0.0	0.0	0.0	-0.003
		2	0.000	-0.002	0.0	0.0	0.0	-0.005
		3	0.039	0.001	0.0	0.0	0.0	-0.016
		4	0.0	0.0	0.004	-0.040	-0.002	0.0
		6	0.001	-0.003	0.0	0.0	0.0	-0.006
		7	0.052	0.001	0.0	0.0	0.0	-0.022
		8	0.0	0.0	0.006	-0.060	-0.002	0.0
		234	0.039	0.002	0.004	0.040	0.002	0.017

		678	0.052	0.003	0.006	0.060	0.002	0.023
		1001	0.039	0.001	0.004	0.040	0.002	0.014
		1002	-0.038	-0.004	-0.004	-0.040	-0.002	-0.020
		2001	0.053	0.002	0.006	0.060	0.002	0.020
		2002	-0.052	-0.005	-0.006	-0.060	-0.002	-0.026
9	GLOBAL							
		1	0.000	-0.001	0.0	0.0	0.0	0.006
		2	0.000	-0.001	0.0	0.0	0.0	0.011
		3	0.039	-0.002	0.0	0.0	0.0	0.005
		4	0.0	0.0	0.004	-0.031	-0.001	0.0
		6	0.001	-0.002	0.0	0.0	0.0	0.015
		7	0.052	-0.003	0.0	0.0	0.0	0.007
		8	0.0	0.0	0.006	-0.047	-0.001	0.0
		234	0.039	0.002	0.004	0.031	0.001	0.012
		678	0.052	0.003	0.006	0.047	0.001	0.016
		1001	0.039	0.001	0.004	0.031	0.001	0.018
		1002	-0.038	-0.003	-0.004	-0.031	-0.001	-0.006
		2001	0.053	0.002	0.006	0.047	0.001	0.022
		2002	-0.052	-0.004	-0.006	-0.047	-0.001	-0.010
10	GLOBAL							
		1	0.000	-0.000	0.0	0.0	0.0	0.001
		2	0.000	-0.000	0.0	0.0	0.0	0.005
		3	0.039	0.000	0.0	0.0	0.0	0.040
		4	0.0	0.0	0.004	-0.009	-0.001	0.0
		6	0.001	-0.000	0.0	0.0	0.0	0.006
		7	0.052	0.000	0.0	0.0	0.0	0.055
		8	0.0	0.0	0.006	-0.013	-0.001	0.0
		234	0.039	0.000	0.004	0.009	0.001	0.041
		678	0.052	0.000	0.006	0.013	0.001	0.055
		1001	0.039	-0.000	0.004	0.009	0.001	0.042
		1002	-0.038	-0.001	-0.004	-0.009	-0.001	-0.040
		2001	0.053	0.000	0.006	0.013	0.001	0.056
		2002	-0.052	-0.001	-0.006	-0.013	-0.001	-0.054
11	GLOBAL							
		1	0.000	-0.000	0.0	0.0	0.0	0.000
		2	-0.000	-0.000	0.0	0.0	0.0	-0.000
		3	0.014	0.000	0.0	0.0	0.0	0.072
		4	0.0	0.0	0.001	-0.006	-0.000	0.0
		6	-0.000	-0.000	0.0	0.0	0.0	-0.001
		7	0.019	0.000	0.0	0.0	0.0	0.098
		8	0.0	0.0	0.002	-0.008	-0.000	0.0
		234	0.014	0.000	0.001	0.006	0.000	0.072
		678	0.019	0.000	0.002	0.008	0.000	0.098
		1001	0.014	-0.000	0.001	0.006	0.000	0.072
		1002	-0.014	-0.000	-0.001	-0.006	-0.000	-0.072
		2001	0.019	0.000	0.002	0.008	0.000	0.098
		2002	-0.019	-0.000	-0.002	-0.008	-0.000	-0.098

8	0.0	0.0	0.002	-0.009	-0.002	0.0

SECTION FR NS 2 0.0 1.0

GROUP '&LM' DEFINITION

MEMBERS ALL

END OF GROUP DEFINITION

LIST SECTION STRESS MEMBERS '&LM'

****
RESULTS OF LATEST ANALYSIS
****

JOB ID -   2-10146   JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN , 2-10146S

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	DEG	FAH	SEC	LBM

INTERNAL MEMBER RESULTS - SECTIONAL STRESSES

***** MEMBER 1   ***** SECTION STRESSES

- DISTANCE - FROM START	AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
LOADING 1	DEAD LOAD						
0.0 FR	0.144	0.0	0.166	-2.475	0.0	-2.475	-2.331
1.000FR	0.144	0.0	0.166	0.991	0.0	0.991	1.135
LOADING 2	OBE NEG VERT SEIS						
0.0 FR	0.070	0.0	0.106	-1.169	0.0	-1.169	-1.099
1.000FR	0.070	0.0	0.106	1.032	0.0	1.032	1.102
LOADING 3	OBE POS HOR TRANS SEIS						
0.0 FR	0.036	0.0	0.098	-2.211	0.0	-2.211	-2.175
1.000FR	0.036	0.0	0.098	-0.167	0.0	-0.167	-0.131
LOADING 4	OBE POS HOR LONG SEIS						
0.0 FR	0.0	0.048	0.0	0.0	0.005	0.005	0.005
1.000FR	0.0	0.048	0.0	0.0	0.141	0.141	0.141
LOADING 6	SSE NEG VERT SEIS						
0.0 FR	0.096	0.0	0.145	-1.601	0.0	-1.601	-1.505
1.000FR	0.096	0.0	0.145	1.413	0.0	1.413	1.510
LOADING 7	SSE POS HOR TRANS SEIS						
0.0 FR	0.048	0.0	0.133	-3.007	0.0	-3.007	-2.958
1.000FR	0.048	0.0	0.133	-0.227	0.0	-0.227	-0.179

	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	0.071	0.0	0.0	0.007	0.007	0.007
1.000FR	0.0	0.071	0.0	0.0	0.211	0.211	0.211
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.079	0.048	0.144	2.501	0.005	2.501	2.437
1.000FR	0.079	0.048	0.144	1.045	0.141	1.055	1.119
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.108	0.071	0.197	3.407	0.007	3.407	3.319
1.000FR	0.108	0.071	0.197	1.432	0.211	1.447	1.535
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.223	0.048	0.310	1.605	0.005	1.605	1.814
1.000FR	0.223	0.048	0.310	2.036	0.141	2.046	2.253
	LOADING 1002	DL-SRSS 234					
0.0 FR	0.065	-0.048	0.022	-4.976	-0.005	-4.976	-4.768
1.000FR	0.065	-0.048	0.022	-0.657	-0.141	-0.685	-0.487
	LOADING 2001	DL+SRSS 678					
0.0 FR	0.252	0.071	0.363	1.897	0.007	1.897	2.130
1.000FR	0.252	0.071	0.363	2.423	0.211	2.438	2.670
	LOADING 2002	DL-SRSS 678					
0.0 FR	0.036	-0.071	-0.030	-5.882	-0.007	-5.882	-5.650
1.000FR	0.036	-0.071	-0.030	-0.781	-0.211	-0.827	-0.610

***** MEMBER 2   ***** SECTION STRESSES

- DISTANCE - FROM START	STRESS AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.188	0.0	0.001	0.002	0.0	0.002	0.190
1.000FR	0.188	0.0	0.001	0.014	0.0	0.014	0.202
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.136	0.0	0.011	-0.329	0.0	-0.329	0.242
1.000FR	0.136	0.0	0.011	-0.120	0.0	-0.120	0.175
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	0.105	0.0	0.211	-4.402	0.0	-4.402	-4.297
1.000FR	0.105	0.0	0.211	-0.281	0.0	-0.281	0.195
	LOADING 4	OBE POS HOR LONG SEIS					

0.0 FR	0.0	0.096	0.0	0.0	0.145	0.145	0.145
1.000FR	0.0	0.096	0.0	0.0	0.400	0.400	0.400
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.186	0.0	0.015	-0.451	0.0	-0.451	0.332
1.000FR	0.186	0.0	0.015	-0.164	0.0	-0.164	0.239
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	0.143	0.0	0.287	-5.986	0.0	-5.986	-5.844
1.000FR	0.143	0.0	0.287	-0.382	0.0	-0.382	0.266
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	0.143	0.0	0.0	0.218	0.218	0.218
1.000FR	0.0	0.143	0.0	0.0	0.600	0.600	0.600
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.172	0.096	0.211	4.414	0.145	4.416	4.304
1.000FR	0.172	0.096	0.211	0.305	0.400	0.503	0.478
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.235	0.143	0.287	6.003	0.218	6.007	5.854
1.000FR	0.235	0.143	0.287	0.416	0.600	0.730	0.699
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.359	0.096	0.212	4.416	0.145	4.419	4.494
1.000FR	0.359	0.096	0.212	0.320	0.400	0.518	0.661
	LOADING 1002	DL-SRSS 234					
0.0 FR	0.016	-0.096	-0.210	-4.412	-0.145	-4.414	-4.114
1.000FR	0.016	-0.096	-0.210	-0.291	-0.400	-0.489	-0.295
	LOADING 2001	DL+SRSS 678					
0.0 FR	0.422	0.143	0.288	6.005	0.218	6.009	6.044
1.000FR	0.422	0.143	0.288	0.430	0.600	0.745	0.882
	LOADING 2002	DL-SRSS 678					
0.0 FR	-0.047	-0.143	-0.286	-6.001	-0.218	-6.005	-5.664
1.000FR	-0.047	-0.143	-0.286	-0.401	-0.600	-0.716	-0.516

***** MEMBER 3   ***** SECTION STRESSES

- DISTANCE - FROM START	STRESS AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.195	0.0	0.001	0.014	0.0	0.014	0.210
1.000FR	0.195	0.0	0.001	0.034	0.0	0.034	0.229

	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.147	0.0	0.011	-0.120	0.0	-0.120	0.186
1.000FR	0.147	0.0	0.011	0.209	0.0	0.209	0.357
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	0.105	0.0	0.226	-0.281	0.0	-0.281	0.195
1.000FR	0.105	0.0	0.226	6.673	0.0	6.673	6.778
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	0.101	0.0	0.0	0.400	0.400	0.400
1.000FR	0.0	0.101	0.0	0.0	0.824	0.824	0.824
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.202	0.0	0.015	-0.164	0.0	-0.164	0.255
1.000FR	0.202	0.0	0.015	0.287	0.0	0.287	0.489
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	0.143	0.0	0.308	-0.382	0.0	-0.382	0.266
1.000FR	0.143	0.0	0.308	9.076	0.0	9.076	9.218
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	0.152	0.0	0.0	0.600	0.600	0.600
1.000FR	0.0	0.152	0.0	0.0	1.237	1.237	1.237
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.181	0.101	0.227	0.305	0.400	0.503	0.483
1.000FR	0.181	0.101	0.227	6.677	0.824	6.727	6.837
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.247	0.152	0.308	0.416	0.600	0.730	0.704
1.000FR	0.247	0.152	0.308	9.080	1.237	9.164	9.314
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.376	0.101	0.227	0.320	0.400	0.518	0.673
1.000FR	0.376	0.101	0.227	6.710	0.824	6.761	7.066
	LOADING 1002	DL-SRSS 234					
0.0 FR	0.014	-0.101	-0.226	-0.291	-0.400	-0.489	-0.292
1.000FR	0.014	-0.101	-0.226	-6.643	-0.824	-6.694	-6.609
	LOADING 2001	DL+SRSS 678					
0.0 FR	0.442	0.152	0.309	0.430	0.600	0.745	0.895
1.000FR	0.442	0.152	0.309	9.114	1.237	9.198	9.542
	LOADING 2002	DL-SRSS 678					

0.0 FR	-0.052	-0.152	-0.308	-0.401	-0.600	-0.716	-0.514
1.000FR	-0.052	-0.152	-0.308	-9.047	-1.237	-9.130	-9.085

***** MEMBER 4   ***** SECTION STRESSES

DISTANCE FROM START	STRESS AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.151	0.0	0.166	-2.407	0.0	-2.407	-2.255
1.000FR	0.151	0.0	0.166	1.059	0.0	1.059	1.211
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.072	0.0	0.106	-1.067	0.0	-1.067	-0.995
1.000FR	0.072	0.0	0.106	1.134	0.0	1.134	1.206
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	-0.036	0.0	-0.099	2.214	0.0	2.214	2.179
1.000FR	-0.036	0.0	-0.099	0.159	0.0	0.159	0.123
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	-0.050	0.0	0.0	0.005	0.005	-0.005
1.000FR	0.0	-0.050	0.0	0.0	0.148	0.148	-0.148
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.099	0.0	0.145	-1.462	0.0	-1.462	-1.363
1.000FR	0.099	0.0	0.145	1.553	0.0	1.553	1.652
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	-0.048	0.0	-0.134	3.012	0.0	3.012	2.963
1.000FR	-0.048	0.0	-0.134	0.216	0.0	0.216	0.168
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	-0.075	0.0	0.0	0.008	0.008	-0.008
1.000FR	0.0	-0.075	0.0	0.0	0.222	0.222	-0.222
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.080	0.050	0.144	2.458	0.005	2.458	2.395
1.000FR	0.080	0.050	0.144	1.145	0.148	1.154	1.221
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.110	0.075	0.197	3.348	0.008	3.348	3.262
1.000FR	0.110	0.075	0.197	1.568	0.222	1.584	1.675
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.232	0.050	0.311	1.569	0.005	1.569	1.785
1.000FR	0.232	0.050	0.311	2.204	0.148	2.214	2.432

	LOADING 1002	DL-SRSS 234					
0.0 FR	0.071	-0.050	0.022	-4.865	-0.005	-4.865	-4.651
1.000FR	0.071	-0.050	0.022	-0.711	-0.148	-0.739	-0.530
	LOADING 2001	DL+SRSS 678					
0.0 FR	0.261	0.075	0.363	1.856	0.008	1.856	2.096
1.000FR	0.261	0.075	0.363	2.627	0.222	2.643	2.886
	LOADING 2002	DL-SRSS 678					
0.0 FR	0.042	-0.075	-0.031	-5.754	-0.008	-5.754	-5.517
1.000FR	0.042	-0.075	-0.031	-0.847	-0.222	-0.894	-0.664

***** MEMBER 5 ***** SECTION STRESSES

DISTANCE FROM START	STRESS AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.217	0.0	0.001	-0.038	0.0	-0.038	0.230
1.000FR	0.217	0.0	0.001	-0.021	0.0	-0.021	0.224
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.171	0.0	0.011	-0.391	0.0	-0.391	0.297
1.000FR	0.171	0.0	0.011	-0.098	0.0	-0.098	0.202
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	-0.105	0.0	-0.214	4.420	0.0	4.420	4.316
1.000FR	-0.105	0.0	-0.214	-1.429	0.0	-1.429	-1.534
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	-0.122	0.0	0.0	0.155	0.155	-0.155
1.000FR	0.0	-0.122	0.0	0.0	0.612	0.612	-0.612
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.234	0.0	0.015	-0.536	0.0	-0.536	0.407
1.000FR	0.234	0.0	0.015	-0.134	0.0	-0.134	0.277
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	-0.143	0.0	-0.291	6.012	0.0	6.012	5.869
1.000FR	-0.143	0.0	-0.291	-1.943	0.0	-1.943	-2.086
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	-0.184	0.0	0.0	0.232	0.232	-0.232
1.000FR	0.0	-0.184	0.0	0.0	0.918	0.918	-0.918
	LOADING 234	OBE SRSS 2 3 4					

0.0 FR	0.200	0.122	0.214	4.438	0.155	4.440	4.324
1.000FR	0.200	0.122	0.214	1.432	0.612	1.558	1.653
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.274	0.184	0.291	6.036	0.232	6.040	5.882
1.000FR	0.274	0.184	0.291	1.948	0.918	2.153	2.281
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.418	0.122	0.215	4.399	0.155	4.402	4.503
1.000FR	0.418	0.122	0.215	1.411	0.612	1.536	1.849
	LOADING 1002	DL-SRSS 234					
0.0 FR	0.017	-0.122	-0.213	-4.476	-0.155	-4.479	-4.145
1.000FR	0.017	-0.122	-0.213	-1.454	-0.612	-1.579	-1.457
	LOADING 2001	DL+SRSS 678					
0.0 FR	0.491	0.184	0.292	5.997	0.232	6.002	6.061
1.000FR	0.491	0.184	0.292	1.927	0.918	2.132	2.477
	LOADING 2002	DL-SRSS 678					
0.0 FR	-0.057	-0.184	-0.290	-6.074	-0.232	-6.078	-5.703
1.000FR	-0.057	-0.184	-0.290	-1.969	-0.918	-2.175	-2.085

***** MEMBER 6 ***** SECTION STRESSES

- DISTANCE - FROM START	STRESS AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.226	0.0	0.001	-0.021	0.0	-0.021	0.232
1.000FR	0.226	0.0	0.001	-0.007	0.0	-0.007	0.228
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.183	0.0	0.011	-0.098	0.0	-0.098	0.215
1.000FR	0.183	0.0	0.011	0.147	0.0	0.147	0.331
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	-0.105	0.0	-0.231	-1.429	0.0	-1.429	-1.534
1.000FR	-0.105	0.0	-0.231	-6.719	0.0	-6.719	-6.824
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	-0.129	0.0	0.0	0.612	0.612	-0.612
1.000FR	0.0	-0.129	0.0	0.0	1.013	1.013	-1.013
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.251	0.0	0.015	-0.134	0.0	-0.134	0.294

1.000FR	0.251	0.0	0.015	0.202	0.0	0.202	0.453
LOADING 7	SSE POS HOR TRANS SEIS						
0.0 FR	-0.143	0.0	-0.314	-1.944	0.0	-1.944	-2.086
1.000FR	-0.143	0.0	-0.314	-9.138	0.0	-9.138	-9.281
LOADING 8	SSE POS HOR LONG SEIS						
0.0 FR	0.0	-0.193	0.0	0.0	0.918	0.918	-0.918
1.000FR	0.0	-0.193	0.0	0.0	1.520	1.520	-1.520
LOADING 234	OBE SRSS 2 3 4						
0.0 FR	0.211	0.129	0.231	1.432	0.612	1.558	1.654
1.000FR	0.211	0.129	0.231	6.721	1.013	6.797	6.907
LOADING 678	SSE SRSS 6 7 8						
0.0 FR	0.289	0.193	0.315	1.948	0.918	2.153	2.282
1.000FR	0.289	0.193	0.315	9.140	1.520	9.266	9.415
LOADING 1001	DL+SRSS 234						
0.0 FR	0.437	0.129	0.232	1.411	0.612	1.536	1.858
1.000FR	0.437	0.129	0.232	6.714	1.013	6.790	7.125
LOADING 1002	DL-SRSS 234						
0.0 FR	0.014	-0.129	-0.231	-1.454	-0.612	-1.579	-1.449
1.000FR	0.014	-0.129	-0.231	-6.728	-1.013	-6.804	-6.688
LOADING 2001	DL+SRSS 678						
0.0 FR	0.514	0.193	0.315	1.927	0.918	2.132	2.486
1.000FR	0.514	0.193	0.315	9.133	1.520	9.259	9.634
LOADING 2002	DL-SRSS 678						
0.0 FR	-0.063	-0.193	-0.314	-1.969	-0.918	-2.175	-2.078
1.000FR	-0.063	-0.193	-0.314	-9.147	-1.520	-9.273	-9.197

***** MEMBER 7 ***** SECTION STRESSES

- DISTANCE - FROM START	STRESS: AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
LOADING 1	DEAD LOAD						
0.0 FR	0.074	0.0	0.527	-3.673	0.0	-3.673	-3.598
1.000FR	0.074	0.0	0.527	1.976	0.0	1.976	2.050
LOADING 2	OBE NEG VERT SEIS						
0.0 FR	0.047	0.0	0.234	-1.735	0.0	-1.735	-1.687
1.000FR	0.047	0.0	0.234	0.774	0.0	0.774	0.821

DISTANCE							
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	0.005	0.0	0.136	-3.281	0.0	-3.281	-3.276
1.000FR	0.005	0.0	0.136	-1.820	0.0	-1.820	-1.816
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	0.059	0.0	0.0	0.000	0.000	-0.000
1.000FR	0.0	0.059	0.0	0.0	0.091	0.091	0.091
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.065	0.0	0.320	-2.376	0.0	-2.376	-2.312
1.000FR	0.065	0.0	0.320	1.060	0.0	1.060	1.125
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	0.007	0.0	0.185	-4.462	0.0	-4.462	-4.455
1.000FR	0.007	0.0	0.185	-2.476	0.0	-2.476	-2.469
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	0.088	0.0	0.0	0.000	0.000	-0.000
1.000FR	0.0	0.088	0.0	0.0	0.136	0.136	0.136
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.047	0.059	0.271	3.711	0.000	3.711	3.685
1.000FR	0.047	0.059	0.271	1.978	0.091	1.980	1.995
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.065	0.088	0.370	5.055	0.000	5.055	5.019
1.000FR	0.065	0.088	0.370	2.693	0.136	2.697	2.717
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.122	0.059	0.797	2.496	0.000	2.496	2.597
1.000FR	0.122	0.059	0.797	3.954	0.091	3.956	4.045
	LOADING 1002	DL-SRSS 234					
0.0 FR	0.027	-0.059	0.256	-7.384	-0.000	-7.384	-7.283
1.000FR	0.027	-0.059	0.256	-1.337	-0.091	-1.343	-1.256
	LOADING 2001	DL+SRSS 678					
0.0 FR	0.139	0.088	0.897	2.951	0.000	2.951	3.062
1.000FR	0.139	0.088	0.897	4.669	0.136	4.673	4.767
	LOADING 2002	DL-SRSS 678					
0.0 FR	0.009	-0.088	0.157	-8.728	-0.000	-8.728	-8.618
1.000FR	0.009	-0.088	0.157	-1.579	-0.136	-1.589	-1.497

***** MEMBER 8   ***** SECTION STRESSES

|- DISTANCE --|------------------------ STRESS ------------------------|

1.000FR	0.251	0.0	0.015	0.202	0.0	0.202	0.453
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	-0.143	0.0	-0.314	-1.944	0.0	-1.944	-2.086
1.000FR	-0.143	0.0	-0.314	-9.138	0.0	-9.138	-9.281
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	-0.193	0.0	0.0	0.918	0.918	-0.918
1.000FR	0.0	-0.193	0.0	0.0	1.520	1.520	-1.520
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.211	0.129	0.231	1.432	0.612	1.558	1.654
1.000FR	0.211	0.129	0.231	6.721	1.013	6.797	6.907
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.289	0.193	0.315	1.948	0.918	2.153	2.282
1.000FR	0.289	0.193	0.315	9.140	1.520	9.266	9.415
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.437	0.129	0.232	1.411	0.612	1.536	1.858
1.000FR	0.437	0.129	0.232	6.714	1.013	6.790	7.125
	LOADING 1002	DL-SRSS 234					
0.0 FR	0.014	-0.129	-0.231	-1.454	-0.612	-1.579	-1.449
1.000FR	0.014	-0.129	-0.231	-6.728	-1.013	-6.804	-6.688
	LOADING 2001	DL+SRSS 678					
0.0 FR	0.514	0.193	0.315	1.927	0.918	2.132	2.486
1.000FR	0.514	0.193	0.315	9.133	1.520	9.259	9.634
	LOADING 2002	DL-SRSS 678					
0.0 FR	-0.063	-0.193	-0.314	-1.969	-0.918	-2.175	-2.078
1.000FR	-0.063	-0.193	-0.314	-9.147	-1.520	-9.273	-9.197

***** MEMBER 7 ***** SECTION STRESSES

DISTANCE FROM START	AXIAL	Y SHEAR	Z SHEAR	STRESS Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.074	0.0	0.527	-3.673	0.0	-3.673	-3.598
1.000FR	0.074	0.0	0.527	1.976	0.0	1.976	2.050
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.047	0.0	0.234	-1.735	0.0	-1.735	-1.687
1.000FR	0.047	0.0	0.234	0.774	0.0	0.774	0.821

	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	0.005	0.0	0.136	-3.281	0.0	-3.281	-3.276
1.000FR	0.005	0.0	0.136	-1.820	0.0	-1.820	-1.816
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	0.059	0.0	0.0	0.000	0.000	-0.000
1.000FR	0.0	0.059	0.0	0.0	0.091	0.091	0.091
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.065	0.0	0.320	-2.376	0.0	-2.376	-2.312
1.000FR	0.065	0.0	0.320	1.060	0.0	1.060	1.125
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	0.007	0.0	0.185	-4.462	0.0	-4.462	-4.455
1.000FR	0.007	0.0	0.185	-2.476	0.0	-2.476	-2.469
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	0.088	0.0	0.0	0.000	0.000	-0.000
1.000FR	0.0	0.088	0.0	0.0	0.136	0.136	0.136
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.047	0.059	0.271	3.711	0.000	3.711	3.685
1.000FR	0.047	0.059	0.271	1.978	0.091	1.980	1.995
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.065	0.088	0.370	5.055	0.000	5.055	5.019
1.000FR	0.065	0.088	0.370	2.693	0.136	2.697	2.717
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.122	0.059	0.797	2.496	0.000	2.496	2.597
1.000FR	0.122	0.059	0.797	3.954	0.091	3.956	4.045
	LOADING 1002	DL-SRSS 234					
0.0 FR	0.027	-0.059	0.256	-7.384	-0.000	-7.384	-7.283
1.000FR	0.027	-0.059	0.256	-1.337	-0.091	-1.343	-1.256
	LOADING 2001	DL+SRSS 678					
0.0 FR	0.139	0.088	0.897	2.951	0.000	2.951	3.062
1.000FR	0.139	0.088	0.897	4.669	0.136	4.673	4.767
	LOADING 2002	DL-SRSS 678					
0.0 FR	0.009	-0.088	0.157	-8.728	-0.000	-8.728	-8.618
1.000FR	0.009	-0.088	0.157	-1.579	-0.136	-1.589	-1.497

***** MEMBER 8   ***** SECTION STRESSES

- DISTANCE -	STRESS

FROM START	AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND COMBINED	BEND AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.074	0.0	-0.015	1.976	0.0	1.976	2.050
1.000FR	0.074	0.0	-0.015	1.561	0.0	1.561	1.635
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.047	0.0	-0.005	0.774	0.0	0.774	0.821
1.000FR	0.047	0.0	-0.005	0.648	0.0	0.648	0.695
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	-0.000	0.0	0.136	-1.737	0.0	-1.737	-1.738
1.000FR	-0.000	0.0	0.136	1.947	0.0	1.947	1.947
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	-0.002	0.0	0.0	0.091	0.091	0.091
1.000FR	0.0	-0.002	0.0	0.0	0.083	0.083	0.083
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.065	0.0	-0.006	1.060	0.0	1.060	1.125
1.000FR	0.065	0.0	-0.006	0.888	0.0	0.888	0.952
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	-0.000	0.0	0.185	-2.363	0.0	-2.363	-2.363
1.000FR	-0.000	0.0	0.185	2.648	0.0	2.648	2.648
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	-0.003	0.0	0.0	0.136	0.136	0.136
1.000FR	0.0	-0.003	0.0	0.0	0.125	0.125	0.125
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.047	0.002	0.136	1.902	0.091	1.904	1.924
1.000FR	0.047	0.002	0.136	2.052	0.083	2.054	2.069
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.065	0.003	0.185	2.590	0.136	2.593	2.621
1.000FR	0.065	0.003	0.185	2.793	0.125	2.796	2.817
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.122	0.002	0.121	3.878	0.091	3.880	3.974
1.000FR	0.122	0.002	0.121	3.613	0.083	3.615	3.704
	LOADING 1002	DL-SRSS 234					
0.0 FR	0.027	-0.002	-0.152	-1.311	-0.091	-1.317	-1.225
1.000FR	0.027	-0.002	-0.152	-1.221	-0.083	-1.226	-1.139

	LOADING 2001	DL+SRSS 678					
0.0 FR	0.139	0.003	0.170	4.566	0.136	4.569	4.671
1.000FR	0.139	0.003	0.170	4.354	0.125	4.357	4.452
	LOADING 2002	DL-SRSS 678					
0.0 FR	0.010	-0.003	-0.201	-1.544	-0.136	-1.554	-1.455
1.000FR	0.010	-0.C'3	-0.201	-1.472	-0.125	-1.480	-1.388

***** MEMBER 9 ***** SECTION STRESSES

- DISTANCE -- FROM START	AXIAL	Y SHEAR	Z SHEAR	STRESS Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.074	0.0	-0.556	1.561	0.0	1.561	1.635
1.000FR	0.074	0.0	-0.556	-3.571	0.0	-3.571	-3.497
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.047	0.0	-0.242	0.648	0.0	0.648	0.695
1.000FR	0.047	0.0	-0.242	-1.583	0.0	-1.583	-1.536
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	-0.005	0.0	0.136	2.030	0.0	2.030	2.025
1.000FR	-0.005	0.0	0.136	3.286	0.0	3.286	3.281
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	-0.062	0.0	0.0	0.083	0.083	0.083
1.000FR	0.0	-0.062	0.0	0.0	0.000	0.000	0.000
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.065	0.0	-0.331	0.888	0.0	0.888	0.952
1.000FR	0.065	0.0	-0.331	-2.169	0.0	-2.169	-2.104
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	-0.007	0.0	0.185	2.761	0.0	2.761	2.754
1.000FR	-0.007	0.0	0.185	4.469	0.0	4.469	4.462
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	-0.094	0.0	0.0	0.125	0.125	0.125
1.000FR	0.0	-0.094	0.0	0.0	0.000	0.000	0.000
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.047	0.062	0.278	2.131	0.083	2.133	2.143
1.000FR	0.047	0.062	0.278	3.648	0.000	3.648	3.623
	LOADING 678	SSE SRSS 6 7 8					

DISTANCE FROM START	AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
0.0 FR	0.065	0.094	0.350	2.901	0.125	2.903	2.917
1.000FR	0.065	0.094	0.380	4.968	0.000	4.968	4.933
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.122	0.062	-0.279	3.692	0.083	3.694	3.778
1.000FR	0.122	0.062	-0.279	2.441	0.000	2.441	2.541
	LOADING 1002	DL-SRSS 234					
0.0 FR	0.027	-0.062	-0.834	-1.248	-0.083	-1.253	-1.171
1.000FR	0.027	-0.062	-0.834	-7.219	-0.000	-7.219	-7.120
	LOADING 2001	DL+SRSS 678					
0.0 FR	0.139	0.094	-0.177	4.461	0.125	4.464	4.552
1.000FR	0.139	0.094	-0.177	2.887	0.000	2.887	2.997
	LOADING 2002	DL-SRSS 678					
0.0 FR	0.009	-0.094	-0.936	-1.508	-0.125	-1.516	-1.431
1.000FR	0.009	-0.094	-0.936	-8.539	-0.000	-8.539	-8.430

***** MEMBER 10 ***** SECTION STRESSES

- DISTANCE - FROM START	AXIAL	Y SHEAR	Z SHEAR	Y BENDING (STRESS)	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	-0.074	0.0	0.124	-1.467	0.0	-1.467	-1.541
1.000FR	-0.074	0.0	0.124	1.018	0.0	1.018	0.944
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	-0.042	0.0	0.186	-2.019	0.0	-2.019	-2.062
1.000FR	-0.042	0.0	0.186	1.715	0.0	1.715	1.673
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	0.004	0.0	0.264	-6.284	0.0	-6.284	-6.280
1.000FR	0.004	0.0	0.264	-0.963	0.0	-0.963	-0.959
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	0.054	0.0	0.0	0.000	0.000	-0.000
1.000FR	0.0	0.054	0.0	0.0	0.155	0.155	0.155
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	-0.058	0.0	0.254	-2.766	0.0	-2.766	-2.824
1.000FR	-0.058	0.0	0.254	2.350	0.0	2.350	2.292
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	0.005	0.0	0.360	-8.546	0.0	-8.546	-8.540
1.000FR	0.005	0.0	0.360	-1.309	0.0	-1.309	-1.304

	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	0.080	0.0	0.0	0.000	0.000	-0.000
1.000FR	0.0	0.080	0.0	0.0	0.233	0.233	0.233
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.043	0.054	0.323	6.600	0.000	6.600	6.610
1.000FR	0.043	0.054	0.323	1.967	0.155	1.973	1.935
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.058	0.080	0.440	8.982	0.000	8.982	8.995
1.000FR	0.058	0.080	0.440	2.690	0.233	2.700	2.647
	LOADING 1001	DL+SRSS 234					
0.0 FR	-0.031	0.054	0.447	5.133	0.000	5.133	5.068
1.000FR	-0.031	0.054	0.447	2.986	0.155	2.992	2.879
	LOADING 1002	DL-SRSS 234					
0.0 FR	-0.117	-0.054	-0.199	-8.067	-0.000	-8.067	-8.151
1.000FR	-0.117	-0.054	-0.199	-1.009	-0.155	-1.027	-1.139
	LOADING 2001	DL+SRSS 678					
0.0 FR	-0.016	0.080	0.564	7.515	0.000	7.515	7.454
1.000FR	-0.016	0.080	0.564	3.709	0.233	3.719	3.592
	LOADING 2002	DL-SRSS 678					
0.0 FR	-0.132	-0.080	-0.317	-10.450	-0.000	-10.450	-10.537
1.000FR	-0.132	-0.080	-0.317	-1.672	-0.233	-1.682	-1.703

***** MEMBER 11   ***** SECTION STRESSES

- DISTANCE -- FROM START	STRESS AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	-0.074	0.0	-0.045	1.018	0.0	1.018	0.944
1.000FR	-0.074	0.0	-0.045	0.206	0.0	0.206	-0.144
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	-0.042	0.0	-0.068	1.715	0.0	1.715	1.673
1.000FR	-0.042	0.0	-0.068	0.494	0.0	0.494	0.451
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	-0.001	0.0	0.264	-0.874	0.0	-0.874	-0.876
1.000FR	-0.001	0.0	0.264	3.896	0.0	3.896	3.895
	LOADING 4	OBE POS HOR LONG SEIS					

0.0 FR	0.0	-0.017	0.0	0.0	0.155	0.155	0.155
1.000FR	0.0	-0.017	0.0	0.0	0.110	0.110	0.110
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	-0.058	0.0	-0.093	2.350	0.0	2.350	2.292
1.000FR	-0.058	0.0	-0.093	0.676	0.0	0.676	0.618
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	-0.002	0.0	0.360	-1.189	0.0	-1.189	-1.191
1.000FR	-0.002	0.0	0.360	5.299	0.0	5.299	5.297
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	-0.026	0.0	0.0	0.233	0.233	0.233
1.000FR	0.0	-0.026	0.0	0.0	0.165	0.165	0.165
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.042	0.017	0.273	1.925	0.155	1.932	1.895
1.000FR	0.042	0.017	0.273	3.927	0.110	3.929	3.923
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.058	0.026	0.371	2.634	0.233	2.644	2.593
1.000FR	0.058	0.026	0.371	5.342	0.165	5.345	5.336
	LOADING 1001	DL+SRSS 234					
0.0 FR	-0.032	0.017	0.228	2.944	0.155	2.950	2.839
1.000FR	-0.032	0.017	0.228	4.133	0.110	4.135	4.054
	LOADING 1002	DL-SRSS 234					
0.0 FR	-0.116	-0.017	-0.318	-0.995	-0.155	-1.014	-1.124
1.000FR	-0.116	-0.017	-0.318	-3.722	-0.110	-3.723	-3.791
	LOADING 2001	DL+SRSS 678					
0.0 FR	-0.016	0.026	0.326	3.652	0.233	3.663	3.538
1.000FR	-0.016	0.026	0.326	5.548	0.165	5.550	5.467
	LOADING 2002	DL-SRSS 678					
0.0 FR	-0.132	-0.026	-0.416	-1.615	-0.233	-1.626	-1.649
1.000FR	-0.132	-0.026	-0.416	-5.136	-0.165	-5.139	-5.204

***** MEMBER 12   ***** SECTION STRESSES

- DISTANCE -- FROM START	STRESS AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	-0.074	0.0	-0.207	0.206	0.0	0.206	-0.144

1.000FR	-0.074	0.0	-0.207	-1.629	0.0	-1.629	-1.703
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	-0.042	0.0	-0.312	0.494	0.0	0.494	0.451
1.000FR	-0.042	0.0	-0.312	-2.263	0.0	-2.263	-2.305
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	-0.005	0.0	0.264	3.985	0.0	3.985	3.980
1.000FR	-0.005	0.0	0.264	6.324	0.0	6.324	6.319
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	-0.087	0.0	0.0	0.110	0.110	0.110
1.000FR	0.0	-0.087	0.0	0.0	0.000	0.000	-0.000
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	-0.058	0.0	-0.427	0.676	0.0	0.676	0.618
1.000FR	-0.058	0.0	-0.427	-3.100	0.0	-3.100	-3.158
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	-0.007	0.0	0.360	5.419	0.0	5.419	5.412
1.000FR	-0.007	0.0	0.360	8.600	0.0	8.600	8.594
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	-0.130	0.0	0.0	0.165	0.165	0.165
1.000FR	0.0	-3.130	0.0	0.0	0.000	0.000	-0.000
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.043	0.087	0.409	4.015	0.110	4.017	4.007
1.000FR	0.043	0.087	0.409	6.716	0.000	6.716	6.726
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.058	0.130	0.558	5.461	0.165	5.464	5.450
1.000FR	0.058	0.130	0.558	9.142	0.000	9.142	9.155
	LOADING 1001	DL+SRSS 234					
0.0 FR	-0.031	0.087	0.201	4.221	0.110	4.222	4.138
1.000FR	-0.031	0.087	0.201	5.086	0.000	5.088	5.023
	LOADING 1002	DL-SRSS 234					
0.0 FR	-0.117	-0.087	-0.616	-3.810	-0.110	-3.811	-3.875
1.000FR	-0.117	-0.087	-0.616	-8.345	-0.000	-8.345	-8.429
	LOADING 2001	DL+SRSS 678					
0.0 FR	-0.016	0.130	0.351	5.667	0.165	5.669	5.582
1.000FR	-0.016	0.130	0.351	7.513	0.000	7.513	7.453
	LOADING 2002	DL-SRSS 678					

0.0 FR	-0.133	-0.130	-0.765	-5.256	-0.165	-5.258	-5.319
1.000FR	-0.133	-0.130	-0.765	-10.771	-0.000	-10.771	-10.858

OVERALL MAXIMUM STRESSES OCCUR AS FOLLOWS

STRESS			APPEARING IN MEMBER	AT SECTION	FOR LOAD	OPTION
MAXIMUM AXIAL STRESS	=	0.51430	6	17.5710	2001	2
MAXIMUM SHEAR Y STRESS	=	-0.19289	6	17.5710	8	2
MAXIMUM SHEAR Z STRESS	=	-0.93600	9	6.1340	2002	2
MAXIMUM Y BENDING TENSION	=	9.14197	12	5.8840	678	2
MAXIMUM Z BENDING TENSION	=	1.52021	6	17.5710	8	2
MAXIMUM Y BENDING COMPRESSION	=	-10.77061	12	5.8840	2002	2
MAXIMUM Z BENDING COMPRESSION	=	-1.52021	6	17.5710	8	2
MAXIMUM COMBINED BENDING TENSION	=	9.26592	6	17.5710	678	2
MAXIMUM COMB. BEND. COMPESSION	=	10.77061	12	5.8840	2002	2
MAXIMUM ABS. COMBINED BENDING	=	10.77061	12	5.8840	2002	2
MAXIMUM COMB. AXIAL AND BENDING	=	-10.85819	12	5.8840	2002	2

WHERE,

OPTION=1 - SECTION IS UNSYMMETRIC AND ITS 'TYPE' IS NOT KNOWN. BENDING Y AND Z MAY NOT BE COMBINED AND FURTHERMORE BENDING STRESSES MAY NOT BE COMBINED WITH AXIAL STRESSES.

2 - BENDING Y IS COMBINED WITH BENDING Z BY TAKING SIGN OF STRESSES (COMPRESSION OR TENSION) INTO ACCOUNT. ALSO COMBINED BENDING STRESS IS FURTHER COMBINED WITH AXIAL STRESS WITH PROPER SIGNS.

* LIST OVERALL STRESS
LOAD LIST 1001 1002

LIST FORCES ENVELOPE ALL

*** PSUICES V5M5 ***   COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146S

11:30:00.84

****
RESULTS OF LATEST ANALYSIS
****

JOB ID - 2-10146   JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146S

ACTIVE UNITS - LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
INCH	KIPF	DEG	FAH	SEC	LBM

INTERNAL MEMBER RESULTS - FORCE ENVELOPES

MEMBER 1   FORCE ENVELOPE.

DISTANCE FROM START	FORCE AXIAL	FORCE Y SHEAR	FORCE Z SHEAR	MOMENT TORSION	MOMENT Y BENDING	MOMENT Z BENDING
0.0 FR	0.999	0.114	0.469	0.002	0.030	0.067
	1001	1001	1001	1001	1001	1001
	0.292	-0.114	0.034	-0.002	-5.771	-0.067
	1002	1002	1002	1002	1002	1002
1.000	0.999	0.114	0.469	0.002	2.361	1.897
	1001	1001	1001	1001	1001	1001
	0.292	-0.114	0.034	-0.002	-0.063	-1.897
	1002	1002	1002	1002	1002	1002

MEMBER 2   FORCE ENVELOPE.

DISTANCE FROM START	FORCE AXIAL	FORCE Y SHEAR	FORCE Z SHEAR	MOMENT TORSION	MOMENT Y BENDING	MOMENT Z BENDING
0.0 FR	1.614	0.230	0.320	0.002	5.122	1.959
	1001	1001	1001	1001	1001	1001
	0.071	-0.230	-0.318	-0.002	-5.116	-1.959
	1002	1002	1002	1002	1002	1002
1.000	1.614	0.230	0.320	0.002	0.371	5.402
	1001	1001	1001	1001	1001	1001
	0.071	-0.230	-0.318	-0.002	-0.338	-5.402
	1002	1002	1002	1002	1002	1002

MEMBER 3   FORCE ENVELOPE.

DISTANCE FROM START	FORCE AXIAL	FORCE Y SHEAR	FORCE Z SHEAR	MOMENT TORSION	MOMENT Y BENDING	MOMENT Z BENDING
0.0 FR	1.688	0.243	0.343	0.002	0.371	5.402
	1001	1001	1001	1001	1001	1001
	0.065	-0.243	-0.342	-0.002	-0.337	-5.402
	1002	1002	1002	1002	1002	1002
1.000	1.688	0.243	0.343	0.002	7.782	11.129

1001	1001	1001	1001	1001	1001
0.065	-0.243	-0.342	-0.002	-7.704	-11.129
1002	1002	1002	1002	1002	1002

MEMBER 4   FORCE ENVELOPE.

DISTANCE FROM START	FORCE: AXIAL	FORCE: Y SHEAR	FORCE: Z SHEAR	MOMENT: TORSION	MOMENT: Y BENDING	MOMENT: Z BENDING
0.0 FR	1.040	0.120	0.469	0.003	0.059	0.069
	1001	1001	1001	1001	1001	1001
	0.319	-0.120	0.033	-0.003	-5.642	-0.069
	1002	1002	1002	1002	1002	1002
1.000	1.040	0.120	0.469	0.003	2.556	1.994
	1001	1001	1001	1001	1001	1001
	0.319	-0.120	0.033	-0.003	-0.099	-1.994
	1002	1002	1002	1002	1002	1002

MEMBER 5   FORCE ENVELOPE.

DISTANCE FROM START	FORCE: AXIAL	FORCE: Y SHEAR	FORCE: Z SHEAR	MOMENT: TORSION	MOMENT: Y BENDING	MOMENT: Z BENDING
0.0 FR	1.875	0.294	0.324	0.001	5.102	2.092
	1001	1001	1001	1001	1001	1001
	0.075	-0.294	-0.322	-0.001	-5.191	-2.092
	1002	1002	1002	1002	1002	1002
1.000	1.875	0.294	0.324	0.001	1.637	8.259
	1001	1001	1001	1001	1001	1001
	0.075	-0.294	-0.322	-0.001	-1.686	-8.259
	1002	1002	1002	1002	1002	1002

MEMBER 6   FORCE ENVELOPE.

DISTANCE FROM START	FORCE: AXIAL	FORCE: Y SHEAR	FORCE: Z SHEAR	MOMENT: TORSION	MOMENT: Y BENDING	MOMENT: Z BENDING
0.0 FR	1.961	0.309	0.350	0.001	1.637	8.259
	1001	1001	1001	1001	1001	1001
	0.065	-0.309	-0.349	-0.001	-1.686	-8.259
	1002	1002	1002	1002	1002	1002
1.000	1.961	0.309	0.350	0.001	7.786	13.682
	1001	1001	1001	1001	1001	1001
	0.065	-0.309	-0.349	-0.001	-7.802	-13.682
	1002	1002	1002	1002	1002	1002

MEMBER 7   FORCE ENVELOPE.

DISTANCE FROM START	FORCE: AXIAL	FORCE: Y SHEAR	FORCE: Z SHEAR	MOMENT: TORSION	MOMENT: Y BENDING	MOMENT: Z BENDING
0.0 FR	0.412	0.104	0.937	0.067	0.030	0.002
	1001	1001	1001	1001	1001	1001
	0.091	-0.104	0.301	-0.067	-5.771	-0.002
	1002	1002	1002	1002	1002	1002
1.000	0.412	0.104	0.937	0.067	3.090	0.737
	1001	1001	1001	1001	1001	1001
	0.091	-0.104	0.301	-0.067	-0.002	-0.737
	1002	1002	1002	1002	1002	1002

MEMBER 8   FORCE ENVELOPE.

DISTANCE   /------------------ FORCE ------------------//------------------ MOMENT ------------------/

FROM START		AXIAL	Y SHEAR	Z SHEAR	TORSION	Y BENDING	Z BENDING
0.0	FR	0.411	0.003	0.142	0.001	3.031	0.737
		1001	1001	1001	1001	1001	1001
		0.092	-0.003	-0.178	-0.001	0.058	-0.737
		1002	1002	1002	1002	1002	1002
1.000		0.411	0.003	0.142	0.001	2.824	0.677
		1001	1001	1001	1001	1001	1001
		0.092	-0.003	-0.178	-0.001	-0.384	-0.677
		1002	1002	1002	1002	1002	1002

MEMBER 9   FORCE ENVELOPE.

DISTANCE FROM START		/------ FORCE ------ AXIAL	Y SHEAR	Z SHEAR //------ MOMENT ------ TORSION	Y BENDING	Z BENDING /
0.0	FR	0.412	0.110	-0.328	0.069	2.885	0.677
		1001	1001	1001	1001	1001	1001
		0.091	-0.110	-0.980	-0.069	-0.446	-0.677
		1002	1002	1002	1002	1002	1002
1.000		0.412	0.110	-0.328	0.069	0.059	0.003
		1001	1001	1001	1001	1001	1001
		0.091	-0.110	-0.980	-0.069	-5.642	-0.003
		1002	1002	1002	1002	1002	1002

MEMBER 10   FORCE ENVELOPE.

DISTANCE FROM START		/------ FORCE ------ AXIAL	Y SHEAR	Z SHEAR //------ MOMENT ------ TORSION	Y BENDING	Z BENDING /
0.0	FR	-0.106	0.094	0.525	0.062	4.011	0.001
		1001	1001	1001	1001	1001	1001
		-0.394	-0.094	-0.234	-0.062	-6.305	-0.001
		1002	1002	1002	1002	1002	1002
1.000		-0.106	0.094	0.525	0.062	2.333	1.263
		1001	1001	1001	1001	1001	1001
		-0.394	-0.094	-0.234	-0.062	-0.741	-1.263
		1002	1002	1002	1002	1002	1002

MEMBER 11   FORCE ENVELOPE.

DISTANCE FROM START		/------ FORCE ------ AXIAL	Y SHEAR	Z SHEAR //------ MOMENT ------ TORSION	Y BENDING	Z BENDING /
0.0	FR	-0.107	0.031	0.268	0.018	2.301	1.263
		1001	1001	1001	1001	1001	1001
		-0.394	-0.031	-0.374	-0.018	-0.709	-1.263
		1002	1002	1002	1002	1002	1002
1.000		-0.107	0.031	0.268	0.018	3.230	0.896
		1001	1001	1001	1001	1001	1001
		-0.394	-0.031	-0.374	-0.018	-2.909	-0.896
		1002	1002	1002	1002	1002	1002

MEMBER 12   FORCE ENVELOPE.

DISTANCE FROM START		/------ FORCE ------ AXIAL	Y SHEAR	Z SHEAR //------ MOMENT ------ TORSION	Y BENDING	Z BENDING /
0.0	FR	-0.106	0.153	0.237	0.098	3.299	0.896
		1001	1001	1001	1001	1001	1001
		-0.395	-0.153	-0.724	-0.098	-2.977	-0.896
		1002	1002	1002	1002	1002	1002

1.000	-0.106	0.153	0.237	0.098	3.976	0.002
	1001	1001	1001	1001	1001	1001
	-0.395	-0.153	-0.724	-0.098	-6.522	-0.002
	1002	1002	1002	1002	1002	1002

OVERALL MAXIMUM FORCES OCCUR AS FOLLOWS

FORCE		APPEARING IN MEMBER	AT SECTION	FOR LOAD
MAXIMUM AXIAL FORCE =	1.96075	6	17.5710	1001
MAXIMUM SHEAR Y FORCE =	-0.30862	6	17.5710	1002
MAXIMUM SHEAR Z FORCE =	-0.98007	9	6.1340	1002
MAXIMUM TORSIONAL MOMENT =	-0.09795	12	5.8840	1002
MAXIMUM Y BENDING MOMENT =	-7.80226	6	17.5710	1002
MAXIMUM Z BENDING MOMENT =	-13.68185	6	17.5710	1002

LOAD LIST 2001 2002

LIST FORCES ENVELOPE ALL

****
RESULTS OF LATEST ANALYSIS
****

JOB ID - 2-10146 JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146S

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	DEG	FAH	SEC	LBM

INTERNAL MEMBER RESULTS - FORCE ENVELOPES

MEMBER 1 FORCE ENVELOPE.

DISTANCE FROM START	FORCE AXIAL	FORCE Y SHEAR	FORCE Z SHEAR	MOMENT TORSION	MOMENT Y BENDING	MOMENT Z BENDING
0.0 FR	1.129	0.172	0.548	0.002	1.081	0.101
	2001	2001	2001	2001	2001	2001
	0.162	-0.172	-0.046	-0.002	-6.821	-0.101
	2002	2002	2002	2002	2002	2002
1.000	1.129	0.172	0.548	0.002	2.810	2.845
	2001	2001	2001	2001	2001	2001
	0.162	-0.172	-0.046	-0.002	-0.511	-2.845
	2002	2002	2002	2002	2002	2002

MEMBER 2 FORCE ENVELOPE.

DISTANCE FROM START	FORCE AXIAL	FORCE Y SHEAR	FORCE Z SHEAR	MOMENT TORSION	MOMENT Y BENDING	MOMENT Z BENDING
0.0 FR	1.896	0.344	0.435	0.003	6.965	2.938
	2001	2001	2001	2001	2001	2001
	-0.211	-0.344	-0.433	-0.003	-6.959	-2.938
	2002	2002	2002	2002	2002	2002
1.000	1.896	0.344	0.435	0.003	0.499	8.102
	2001	2001	2001	2001	2001	2001
	-0.211	-0.344	-0.433	-0.003	-0.466	-8.102
	2002	2002	2002	2002	2002	2002

MEMBER 3 FORCE ENVELOPE.

DISTANCE FROM START	FORCE AXIAL	FORCE Y SHEAR	FORCE Z SHEAR	MOMENT TORSION	MOMENT Y BENDING	MOMENT Z BENDING
0.0 FR	1.986	0.364	0.467	0.003	0.499	8.102
	2001	2001	2001	2001	2001	2001
	-0.233	-0.364	-0.465	-0.003	-0.466	-8.102
	2002	2002	2002	2002	2002	2002
1.000	1.986	0.364	0.467	0.003	10.569	16.694

[redacted]

	AXIAL	Y SHEAR	Z SHEAR	TORSION	Y BENDING	Z BENDING
	2001	2001	2001	2001	2001	2001
	-0.233	-0.364	-0.465	-0.003	-10.492	-16.694
	2002	2002	2002	2002	2002	2002

MEMBER 4   FORCE ENVELOPE.

DISTANCE FROM START	AXIAL (FORCE)	Y SHEAR (FORCE)	Z SHEAR (FORCE)	TORSION (MOMENT)	Y BENDING (MOMENT)	Z BENDING (MOMENT)
0.0 FR	1.173	0.180	0.549	0.004	1.091	0.103
	2001	2001	2001	2001	2001	2001
	0.186	-0.180	-0.047	-0.004	-6.673	-0.103
	2002	2002	2002	2002	2002	2002
1.000	1.173	0.180	0.549	0.004	3.047	2.990
	2001	2001	2001	2001	2001	2001
	0.186	-0.180	-0.047	-0.004	-0.590	-2.990
	2002	2002	2002	2002	2002	2002

MEMBER 5   FORCE ENVELOPE.

DISTANCE FROM START	AXIAL (FORCE)	Y SHEAR (FORCE)	Z SHEAR (FORCE)	TORSION (MOMENT)	Y BENDING (MOMENT)	Z BENDING (MOMENT)
0.0 FR	2.206	0.441	0.441	0.001	6.955	3.137
	2001	2001	2001	2001	2001	2001
	-0.255	-0.441	-0.439	-0.001	-7.044	-3.137
	2002	2002	2002	2002	2002	2002
1.000	2.206	0.441	0.441	0.001	2.235	12.389
	2001	2001	2001	2001	2001	2001
	-0.255	-0.441	-0.439	-0.001	-2.284	-12.389
	2002	2002	2002	2002	2002	2002

MEMBER 6   FORCE ENVELOPE.

DISTANCE FROM START	AXIAL (FORCE)	Y SHEAR (FORCE)	Z SHEAR (FORCE)	TORSION (MOMENT)	Y BENDING (MOMENT)	Z BENDING (MOMENT)
0.0 FR	2.309	0.463	0.476	0.001	2.235	12.389
	2001	2001	2001	2001	2001	2001
	-0.284	-0.463	-0.474	-0.001	-2.284	-12.389
	2002	2002	2002	2002	2002	2002
1.000	2.309	0.463	0.476	0.001	10.592	20.523
	2001	2001	2001	2001	2001	2001
	-0.284	-0.463	-0.474	-0.001	-10.608	-20.523
	2002	2002	2002	2002	2002	2002

MEMBER 7   FORCE ENVELOPE.

DISTANCE FROM START	AXIAL (FORCE)	Y SHEAR (FORCE)	Z SHEAR (FORCE)	TORSION (MOMENT)	Y BENDING (MOMENT)	Z BENDING (MOMENT)
0.0 FR	0.471	0.155	1.054	0.101	1.081	0.002
	2001	2001	2001	2001	2001	2001
	0.032	-0.155	0.184	-0.101	-6.821	-0.002
	2002	2002	2002	2002	2002	2002
1.000	0.471	0.155	1.054	0.101	3.649	1.106
	2001	2001	2001	2001	2001	2001
	0.032	-0.155	0.184	-0.101	-0.561	-1.106
	2002	2002	2002	2002	2002	2002

MEMBER 8   FORCE ENVELOPE.

DISTANCE   /------------------- FORCE --------------------//-------------------- MOMENT --------------------/

FROM START	AXIAL	Y SHEAR	Z SHEAR	TORSION	Y BENDING	Z BENDING
0.0 FR	0.470	0.005	0.200	0.001	3.568	1.106
	2001	2001	2001	2001	2001	2001
	0.033	-0.005	-0.236	-0.001	-0.480	-1.106
	2002	2002	2002	2002	2002	2002
1.000	0.470	0.005	0.200	0.001	3.403	1.015
	2001	2001	2001	2001	2001	2001
	0.033	-0.005	-0.236	-0.001	-0.963	-1.015
	2002	2002	2002	2002	2002	2002

MEMBER 9 FORCE ENVELOPE

DISTANCE FROM START	/------ FORCE ------ AXIAL	Y SHEAR	Z SHEAR	//------ MOMENT ------ TORSION	Y BENDING	Z BENDING /
0.0 FR	0.471	0.165	-0.208	0.103	3.487	1.015
	2001	2001	2001	2001	2001	2001
	0.031	-0.165	-1.100	-0.103	-1.047	-1.015
	2002	2002	2002	2002	2002	2002
1.000	0.471	0.165	-0.208	0.103	1.091	0.004
	2001	2001	2001	2001	2001	2001
	0.031	-0.165	-1.100	-0.103	-6.673	-0.004
	2002	2002	2002	2002	2002	2002

MEMBER 10 FORCE ENVELOPE

DISTANCE FROM START	/------ FORCE ------ AXIAL	Y SHEAR	Z SHEAR	//------ MOMENT ------ TORSION	Y BENDING	Z BENDING /
0.0 FR	-0.053	0.142	0.663	0.093	5.873	0.001
	2001	2001	2001	2001	2001	2001
	-0.447	-0.142	-0.372	-0.093	-8.167	-0.001
	2002	2002	2002	2002	2002	2002
1.000	-0.053	0.142	0.663	0.093	2.898	1.895
	2001	2001	2001	2001	2001	2001
	-0.447	-0.142	-0.372	-0.093	-1.307	-1.895
	2002	2002	2002	2002	2002	2002

MEMBER 11 FORCE ENVELOPE

DISTANCE FROM START	/------ FORCE ------ AXIAL	Y SHEAR	Z SHEAR	//------ MOMENT ------ TORSION	Y BENDING	Z BENDING /
0.0 FR	-0.054	0.046	0.383	0.027	2.854	1.895
	2001	2001	2001	2001	2001	2001
	-0.447	-0.046	-0.489	-0.027	-1.262	-1.895
	2002	2002	2002	2002	2002	2002
1.000	-0.054	0.046	0.383	0.027	4.336	1.344
	2001	2001	2001	2001	2001	2001
	-0.447	-0.046	-0.489	-0.027	-4.014	-1.344
	2002	2002	2002	2002	2002	2002

MEMBER 12 FORCE ENVELOPE

DISTANCE FROM START	/------ FORCE ------ AXIAL	Y SHEAR	Z SHEAR	//------ MOMENT ------ TORSION	Y BENDING	Z BENDING /
0.0 FR	-0.053	0.229	0.412	0.147	4.429	1.344
	2001	2001	2001	2001	2001	2001
	-0.448	-0.229	-0.899	-0.147	-4.107	-1.344
	2002	2002	2002	2002	2002	2002

1.000	-0.053	0.229	0.412	0.147	5.872	0.003
	2001	2001	2001	2001	2001	2001
	-0.448	-0.229	-0.899	-0.147	-8.418	-0.003
	2002	2002	2002	2002	2002	2002

OVERALL MAXIMUM FORCES OCCUR AS FOLLOWS

FORCE		APPEARING IN MEMBER	AT SECTION	FOR LOAD
MAXIMUM AXIAL FORCE =	2.30922	6	17.5710	2001
MAXIMUM SHEAR Y FORCE =	-0.46293	6	17.5710	2002
MAXIMUM SHEAR Z FORCE =	-1.09998	9	6.1340	2002
MAXIMUM TORSIONAL MOMENT =	-0.14693	12	5.8840	2002
MAXIMUM Y BENDING MOMENT =	-10.60823	6	17.5710	2002
MAXIMUM Z BENDING MOMENT =	-20.32278	6	17.5710	2002

PARAMETERS

'CODE' 'AISC' ALL ; 'VERSION' '69U1' ALL

'TORSION' 'YES' ALL ; 'CB' 1.0 ALL

'ASF' 1.6 LOADINGS 2001 2002

'FBMAX' 1.0 ALL

'FACMAX' 1.0 ALL

'FATMAX' 1.0 ALL

'FSHMAX' 0.55 ALL

PARAMETERS

'LY' 16.00 MEM 1 4

'LY' 38.571 MEM 2 3 5 6

'LY' 31.268 MEM 7 TO 12

'LZ' 54.571 MEM 1 TO 6

'LZ' 31.268 MEM 7 TO 12

'CMY' 0.85 MEM 1 TO 12

'CMZ' 0.85 MEM 7 TO 12

'CMZ' 1.0 MEM 1 TO 6

'KZ' 1.55 MEM 1 TO 6

'UNLCF' 31.268 MEM 7 TO 12

LOAD LIST -
1001 1002 2001 2002

CHECK CODE -
ALL -
GENERATING TRACE 6 RESULTS FOR FAILING MEMBERS

****
* STRUDL CODE CHECK RESULTS *
****

JOB ID - 2-10146   JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146S

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	DEG	FAH	SEC	LBM

MEMBER / LOAD	PROFILE / TABLE	RESULT / SECTION	CONTROLLING CHECKS PRIMARY / SECONDARY	RATIO(P) / RATIO(S)	CONTROLLING SECTION STRESSES AXIAL / TORSION	SHEAR Y / BEND. Y	SHEAR Z / BEND. Z	CODE / TYPE
1	C10X15	PASS	MOM. Y-C	0.230	0.07	-0.06	0.03	AISC
1002	STEELC1	0.0	PAR1.6.2	0.111	0.00	-4.98	-0.00	CHANNEL
2	C10X15	PASS	CSLNDRNS	0.270	0.36	0.11	0.27	AISC
1001	STEELC1	0.0	PAR1.6.2	0.228	0.00	4.42	0.15	CHANNEL
3	C10X15	PASS	PAR1.6.2	0.366	0.38	0.12	0.29	AISC
1001	STEELC1	23.57	MOM ZY-T	0.349	0.00	6.71	0.82	CHANNEL
4	C10X15	PASS	MOM. Y-C	0.225	0.07	-0.06	0.03	AISC
1002	STEELC1	0.0	PAR1.6.2	0.120	0.01	-4.86	-0.01	CHANNEL
5	C10X15	PASS	CSLNDRNS	0.270	0.42	0.14	0.27	AISC
1001	STEELC1	0.0	PAR1.6.2	0.230	0.00	4.40	0.15	CHANNEL
6	C10X15	PASS	PAR1.6.2	0.378	0.44	0.15	0.30	AISC
1001	STEELC1	17.57	MOM YZ-C	0.358	0.00	6.71	1.01	CHANNEL
7	C8X11	PASS	MOM. Y-C	0.342	0.03	-0.07	0.33	AISC
1002	STEELC1	0.0	TSLNDRNS	0.208	0.20	-7.38	-0.00	CHANNEL
8	C8X11	PASS	TSLNDRNS	0.208	0.12	0.00	0.15	AISC
1001	STEELC1	0.0	PAR1.6.2	0.189	0.00	3.88	0.09	CHANNEL
9	C8X11	PASS	MOM. Y-C	0.334	0.03	-0.07	-1.06	AISC
1002	STEELC1	6.13	TSLNDRNS	0.208	0.21	-7.22	-0.00	CHANNEL
10	C8X11	PASS	FM 1.6-2	0.380	-0.12	-0.06	-0.25	AISC
1002	STEELC1	0.0	MOM. Y-C	0.373	0.18	-8.07	-0.00	CHANNEL
11	C8X11	PASS	CSLNDRNS	0.250	-0.03	0.02	0.29	AISC
1001	STEELC1	12.00	MOM ZY-T	0.196	0.05	4.13	0.11	CHANNEL
12	C8X11	PASS	FM 1.6-2	0.393	-0.12	-0.10	-0.78	AISC
1002	STEELC1	5.88	MOM. Y-C	0.386	0.29	-8.35	-0.00	CHANNEL

**** STRUDL MESSAGE - NO MEMBERS IN THE LIST TO GENERATE CODE CHECK RESULTS WITH SECONDARY TRACE 6

********** FOLLOWING IS A SUMMARY OF THE CODE CHECKS PERFORMED ABOVE **********

ALL   12 MEMBERS, THAT ARE CHECKED, PASSED CODE CHECKS.

FINISH NOMESSAGES?

GOOD-BYE

*** PSUICES V5M5 *** COMANCHE PEAK CABLE TRAY DESIGN ; 2-10146S

SUMMARY OF ERRORS FOR THIS JOB	ERROR NUMBER	NUMBER OF ERRORS
	208	6

THIS RUN HAS BEEN 'COMPLETED' AND FULLY ACCOUNTED FOR 'EBSTCP '

CPU SECONDS

	RUN	LAST INTERVAL
EXECUTING	3.21	3.21

EXCP'S

DATASET	TOTAL RUN	LAST INTERVAL
STEPLIB	84	0
SYS00401	0	0
DD0	35	0
DD1	91	0
DD2	489	0
DD3	100	0
DD5	27	0
FT05F001	0	0
FT06F001	0	0
FT07F001	0	0
FT08F001	0	0
FT10F001	0	0
ICESDUMP	0	0
SYSUDUMP	0	0
TOTAL	826	0
I/O EXCPS	3	0

DATE	OVERALL ENTRY NO.	MONTH ENTRY NO.	MACHINE TYPE	OS VERSION	SUBSYSTEM VERSION	COMPLETION CODE	I	MONTH TO DATE (INCLUDING THIS RUN) CPU TIME	EXCPS
13JAN86	248	246	3083	03.8I	9-	0000	I	931.55	145383

DISK STATISTICS WITH 3 BUFFERS OF 18432 BYTES (DISKOPT=X0004)

	DIRECT ACCESS EXCP'S	PERCENT			
DISK WRITES	20	2.89			
DISK READS	671	97.11			
IN LAST BUFFER	12	1.79			
JUST MISSED	160	23.85			
EXTRA FINDS	286	42.62			
DDNAME			BLOCKSIZE	BLOCKS IN FILE	M-BYTES TRANSFERRED
DD1	53	7.67	800	38	0.042400
DD2	489	70.77	800	1918	0.391200
DD3	100	14.47	1320	441	0.132000
DD5	40	5.79	800	1140	0.032000
DD0	9	1.30	18432	30	0.165888
				TOTAL	0.763488

```
 OOOOOOOOOOOO  KK       KK   RRRRRRRRRRRR   EEEEEEEEEEEE  DDDDDDDDD      DDDDDDDDD
OO          OO  KK      KK    RR          RR  EE              DD          DD    DD           DD
OO          OO  KK     KK     RR          RR  EE              DD          DD    DD           DD
OO          OO  KK    KK      RR          RR  EE              DD          DD    DD           DD
OO          OO  KKKKKKK       RRRRRRRRRRRR    EEEEEEEE        DD          DD    DD           DD
OO          OO  KKKKKKK       RRRRRRRRRRR     EEEEEEEE        DD          DD    DD           DD
OO          OO  KK     KK     RR      RR      EE              DD          DD    DD           DD
OO          OO  KK      KK    RR       RR     EE              DD          DD    DD           DD
OO          OO  KK      KK    RR        RR    EE              DD          DD    DD           DD
OOOOOOOOOOOO  KK        KK    RR         RR   EEEEEEEEEEEE  DDDDDDDDDD     DDDDDDDDDD
OOOOOOOOOOOO  KK        KK    RR          RR  EEEEEEEEEEEE  DDDDDDDDD      DDDDDDDDD

      JJJJJJJJJJ   9999999999    777777777777      11       2222222222          AAAAAAAAAA
      JJJJJJJJJJ  999999999999   77777777777      111      222222222222        AAAAAAAAAAAA
              JJ  99          99  77          77   1111      22          22        AA          AA
              JJ  99          99             77      11                  22        AA          AA
              JJ  99          99            77       11                  22        AA          AA
              JJ  999999999999           77          11                 22         AAAAAAAAAAAA
              JJ  999999999999           77          11               22           AAAAAAAAAAAA
              JJ              99         77          11             22             AA          AA
   JJ         JJ              99         77          11           22               AA          AA
   JJ         JJ  99          99         77          11         22                 AA          AA
   JJJJJJJJ       999999999999           77       1111111111   222222222222        AA          AA
     JJJJJJ        9999999999            77       1111111111   222222222222        AA          AA
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*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
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*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
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*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
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*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
*A END JOB 9712 OKREDD 1 001 001 R0259 K. REDDY ROOM 12.00.21 PM 13 JAN 86 R259.PR1 8301 END A*
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ATTACHMENT 5
SHEET 1 OF 12

EBASCO

Interoffice Correspondence

DATE July 11, 1985 FILE REF SAG.TUG2.901

TO R Alexandru OFFICE LOCATION 82nd Floor

Z.T. Shi P.K. Hsueh

FROM Z T Shi/P K Hsueh OFFICE LOCATION 87th Floor

SUBJECT TEXAS UTILITIES GENERATING CO.
COMANCHE PEAK SES UNIT NO. 2
TORSIONAL PROPERTIES OF COMPOSITE
CHANNELS SECTIONS

Ref: Memo from Z T Shi/N S Huang to R Alexandru "Shear Center Locations of Composite Channels" dated on June 10, 1985.

The computer program to compute torsional properties for composite channel sections has been developed and ligitimately verified.

Attached is a summary of torsional properties for those composite channel sections chosen in reference memo. In addition, a sample problem was given to illustrate how the warping normal and warping shear stresses can be determined using the attached torsional properties.

The program was written in Basic and can be run in IBM P.C. or compatible model. If any composite channel sections or sections other than those listed are needed. Please contact the writers (x 2295), and we will make it available as soon as possible.

ZTS:PKH:SH
Attachment:

(1) A table of torsional properties for composite channels sections.
(2) A sample problem
(3) Referance memo

cc: R C Iotti
J Padalino
Y Oktay
Y Latifaoglu
G Trillo
C R Wang
Z T Shi
SAG.File

CLIENT Texas Utility Generating Co.

PROJECT Comanche Peak Unit 2

SUBJECT WARPING Constant and Warping Function of Composite Channels

SECTIONS		D_y	SHEAR CENTER (IN)		J	C_w	$a = \sqrt{\frac{E \cdot C_w}{GJ}}$	NORMALIZED WARPING FU			
A	B	(IN)	e_y	e_z	(IN^4)	(IN^6)	(IN)	W_{n1}	W_{n2}	W_{n3}	W_{n4}
6]8.2	6]8.2	3.837	0.698	0.494	0.197	20.62	16.51	-3.55	+1.35	-1.45	+3.95
6]8.2	6]8.2	3.00	0.664	0.480	0.197	20.97	16.65	-4.71	+1.64	-1.07	+2.87
6]8.2	6]8.2	2.00	0.626	0.476	0.197	22.87	17.39	-6.08	+2.03	-0.66	+1.52
6]8.2	6]8.2	1.00	0.585	0.487	0.197	26.38	18.68	-7.39	+2.46	-0.30	+0.15
6]8.2	6]8.2	0.443	0.560	0.498	0.197	29.03	19.59	-8.10	+2.72	-0.10	-0.62
6]8.2	6]8.2	2.524	0.645	0.476	0.197	21.67	16.93	-5.37	+1.82	-0.87	+2.23
6]8.2	6]8.2	2.324	0.638	0.475	0.197	22.08	17.09	-5.64	+1.90	-0.79	+1.97
6]8.2	6]8.2	2.424	0.642	0.475	0.197	21.87	17.01	-5.51	+1.86	-0.83	+2.10
6]8.2	6]8.2	2.624	0.649	0.476	0.197	21.49	16.86	-5.23	+1.78	-0.91	+2.37
8]11.5	6]8.2	5.790	0.832	0.716	0.247	25.91	16.51	-3.75	+2.38	-1.64	+4.30
8]11.5	6]8.2	4.00	0.662	0.708	0.247	30.31	17.86	-6.18	+3.43	-0.55	+1.91
8]11.5	6]8.2	5.00	0.756	0.710	0.247	26.74	16.77	-4.82	+2.83	-1.15	+3.26
8]11.5	6]8.2	3.00	0.569	0.712	0.247	36.70	19.65	-7.52	+4.04	+0.04	+0.55
8]11.5	6]8.2	2.00	0.473	0.721	0.247	45.87	21.97	-8.83	+4.67	+0.62	-0.81
8]11.5	6]8.2	1.00	0.374	0.733	0.247	57.79	24.66	-10.12	+5.31	+1.20	-2.17
8]11.5	6]8.2	0.49	0.321	0.739	0.247	64.92	26.14	-10.78	+5.64	+1.49	-2.86
6]8.2	4]5.4	4.165	0.741	0.616	0.137	6.07	10.75	-2.67	+1.71	-0.55	+1.73
6]8.2	4]5.4	4.00	0.716	0.615	0.137	6.20	10.87	-2.84	+1.79	-0.46	+1.57
6]8.2	4]5.4	3.00	0.570	0.616	0.137	7.83	12.21	-3.87	+2.31	+0.06	+0.06
6]8.2	4]5.4	2.00	0.422	0.631	0.137	10.80	14.34	-4.87	+2.86	+0.56	-0.52
6]8.2	4]5.4	1.00	0.263	0.657	0.137	15.07	16.94	-5.82	+3.44	+1.04	-1.57
6]8.2	4]5.4	0.435	0.168	0.672	0.137	18.04	18.53	-6.35	+3.77	+1.32	-2.15

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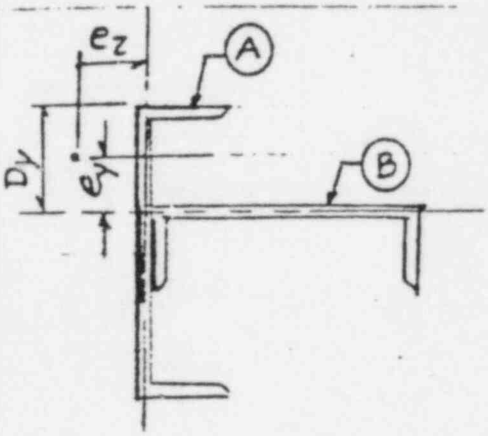
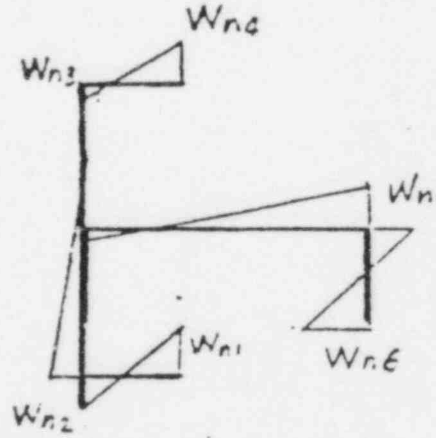
SHEET ____ OF ____

OFS NO. 3306·221 DEPT. NO. 549
BY P.K. Hsueh DATE 7-9-85
CHECKED BY ZTS DATE 7-10-85

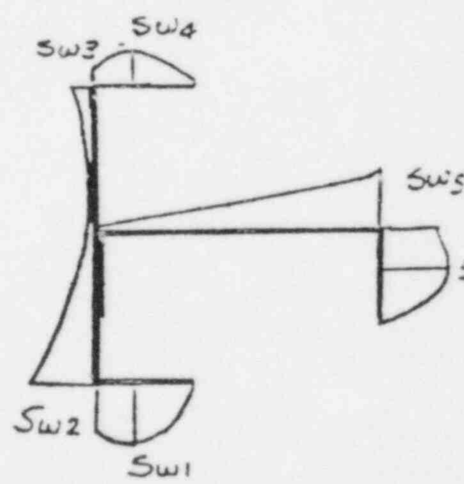
NCTION Wns		WARPING STATICAL MOMENT $S_{\omega s}$					
W_{n5}	W_{n6}	$S_{\omega 1}$	$S_{\omega 2}$	$S_{\omega 3}$	$S_{\omega 4}$	$S_{\omega 5}$	$S_{\omega 6}$
-3.78	+7.91	-0.803	-0.688	-0.781	-0.903	-1.291	-1.672
-3.65	+8.01	-1.091	-0.958	-0.561	-0.652	-1.362	-1.718
-3.50	+8.15	-1.422	-1.264	-0.269	-0.332	-1.450	-1.779
-3.36	+8.32	-1.732	-1.540	-	-	-1.547	-1.849
-3.28	+8.41	-1.893	-1.680	+0.225	+0.231	-1.601	-1.884
-3.58	+8.08	-1.251	-1.107	-0.425	-0.502	-1.405	-1.748
-3.55	+8.10	-1.318	-1.169	-0.367	-0.438	-1.421	-1.759
-3.57	+8.09	-1.285	-1.139	-0.397	-0.471	-1.412	-1.752
-3.59	+8.06	-1.218	-1.077	-0.455	-0.534	-1.396	-1.741
-4.01	+8.10	-0.961	-0.574	-1.115	-1.305	-1.278	-1.692
-3.20	+8.90	-1.666	-1.154	-0.573	-0.624	-1.779	-2.043
-3.65	+8.45	-1.274	-0.834	-0.883	-1.009	-1.500	-1.843
-2.76	+9.34	-2.049	-1.458	-0.250	-0.252	-2.054	-2.251
-2.33	+9.79	-2.422	-1.745	+0.080	+0.193	-2.331	-2.470
-1.90	+10.24	-2.783	-2.017	+0.408	+0.587	-2.606	-2.695
-1.67	+10.48	-2.966	-2.154	+0.574	+0.789	-2.749	-2.821
-2.25	+4.57	-0.508	-0.300	-0.371	-0.412	-0.513	-0.677
-2.16	+4.65	-0.544	-0.378	-0.346	-0.378	-0.549	-0.701
-1.68	+5.13	-0.757	-0.486	-0.184	-0.186	-0.762	-0.853
-1.22	+5.62	-0.958	-0.627	-0.010	-0.070	-0.971	-1.019
-0.77	+6.11	-1.142	-0.743	+0.165	+0.293	-1.179	-1.198
-0.51	+6.39	-1.242	-0.803	+0.260	+0.416	-1.296	-1.305



TYP COMPOSITE SECT.



TYP Wns DIAGRAM



TYP Sws DIAGRAM

EBASCO SERVICES INCORPORATED

BY PKH DATE 7-2-85 SHEET 1 OF 5

CHKD. BY ZTS DATE 7-2-85 OFS NO. 3306.221 DEPT. NO. 549

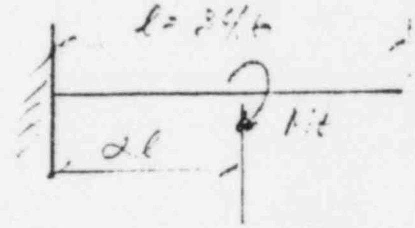
CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2 CABLE TRAY HANGERS

SUBJECT Attachment 2

SAMPLE PROBLEM

Given: Boundary Condition one end Fixed and one end Free



$l = 34.6''$

$\alpha = 0.5$

$M_t = 100$ lb-in

From output $a = 17.29$ $\quad l/a = 34.6/17.29 = 2$

Enter graph on p48 of the Reference*

at Fixed end $z/l = 0$

$$\phi''\left(\frac{GJ}{M_t} \cdot a\right) = 0.675$$

a) max normal warping stress at pt "h" of the section

$$\sigma_{(h)} = E\, W_{s0}\, \phi'' = E\, W_{s0}\; 0.675\, M_t/(GJa)$$

$$= 29\times10^3 \cdot 8.22 \times 0.675 \cdot \frac{100}{11.9\times10^3 \times 0.197 \times 17.29}$$

$$= 367.6 \text{ psi}$$

* "Torsion Analysis of Rolled Steel Sections" By Bethlehem Steel

581/8-81

b) Warping Shear Stress

Enter graph on page 4.9

$$\left[\phi''' \frac{GJ}{M} \cdot a^2\right]_{MAX} = -1.0 \quad at \ z/l = 0.$$

$$\tau = \cdot E \frac{S_{w}}{t} \phi'''$$

$$= \cdot E \frac{S_{w}}{t} \frac{-1.0 \times M}{GJa^2}$$

$$= -29 \times 10^3 \times (-1.81) \cdot \frac{1}{0.233} \frac{(-1.0) \cdot 100}{11.9 \times 10^3 \times 0.197 \times 17.29^2}$$

$= -11.84$ psi @ Element 7

$$\tau = -29 \times 10^3 \times (-1.49) \frac{1}{0.2} \frac{(-1.0) \times 100}{11.9 \times 10^3 \times 0.197 \times 17.29^2}$$

$= 30.82$ psi @ Element 6

Likewise the warping normal and shearing stresses at other points of the section can be calculated.

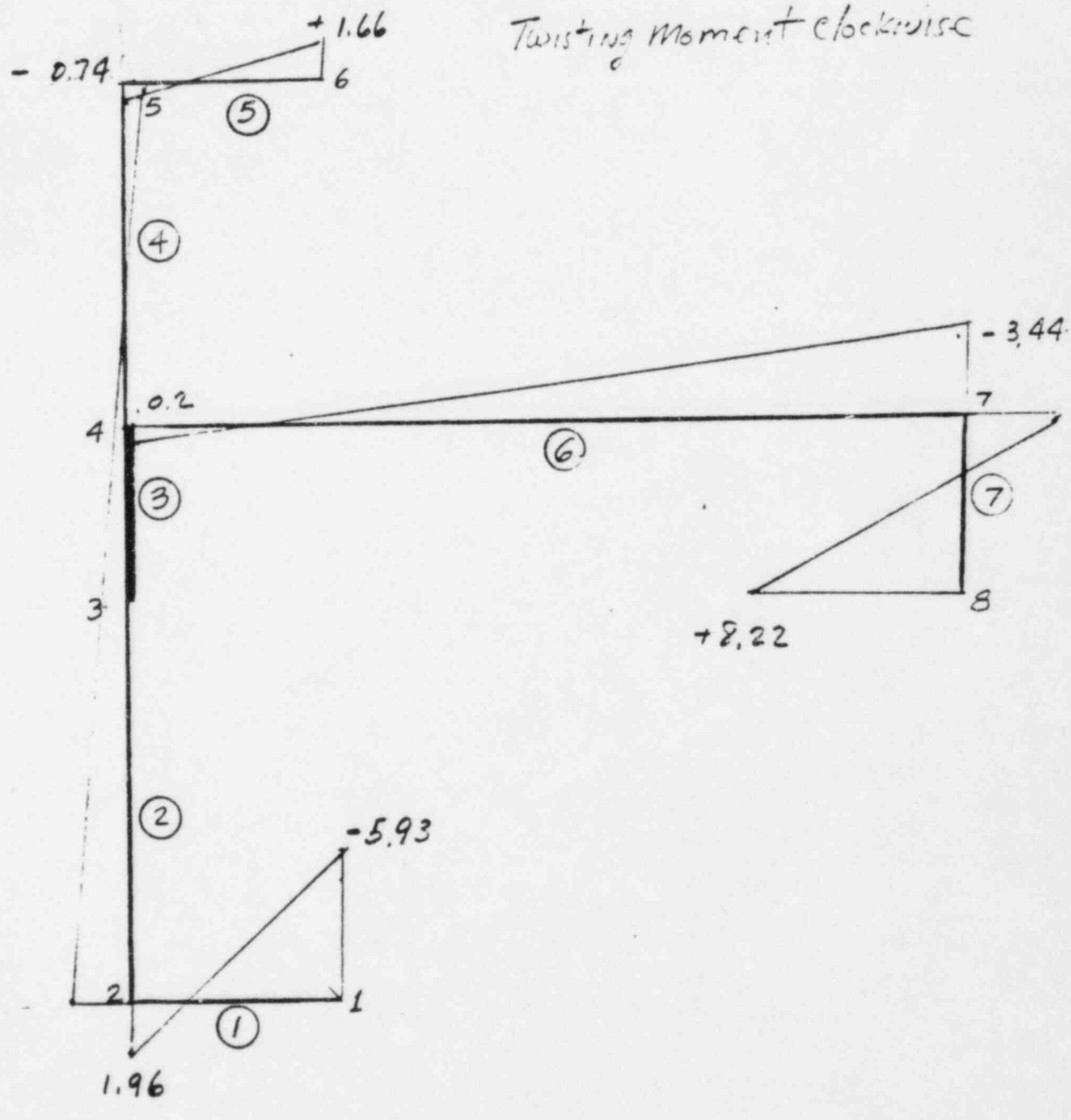
```
UN .
6C8.2 AND 6C8.2 COMPOSITE CHANNELS W/DY=  2.1
NPUT DATA:
A) VERTICAL CHANNEL:Tf=      .343         Tw=              .2
f=            1.92         Dw=             6
B) HORIZONTAL CHANNEL:Tf=    .343         Tw=              .2
f=            1.92         Dw=             6
EX=           .4786         EY=            .6102
AREA =        4.76          DY =           2.1
ARPING CONSTANT CW=         22.60587      IN-6
ORSIONAL CONSTANT J=        .196614        IN-4
a^2=E*CW/(G*J)=  298.9373  OR    a=       17.2898
ORMALIZED WARPING FUNCTION Wns VALUE AT END PTS. OF THE ELEMENT
LEMENT          Wns AT i        Wns AT j
1              -5.933158       1.963276
2               1.963276       1.049868
3               1.049868       .1788161
4               .1788163      -.7441638
5              -.7441635       1.655142
6               .1788163      -3.438754
7              -3.438751       8.222168
ARPING STATICAL MOMENT Sws AT END PTS. AND MAX. PT.OF THE ELEMENT
LEMENT             SWA             SWB         SWMAX/SWMIN     AT LOCATION
1                  0            -1.239119      -1.391478        1.367497
5              -.2843426         0             -.3563857        8.041488
7              -1.493047         0             -1.809569        12.01371
END OF PROGRAM
k
```

6] 8.2 AND 6]8.2 w/Dy = 2.1

Sign Convention: + Compression
- tension

(N) DESIGNATED ELEMENT NUMBER

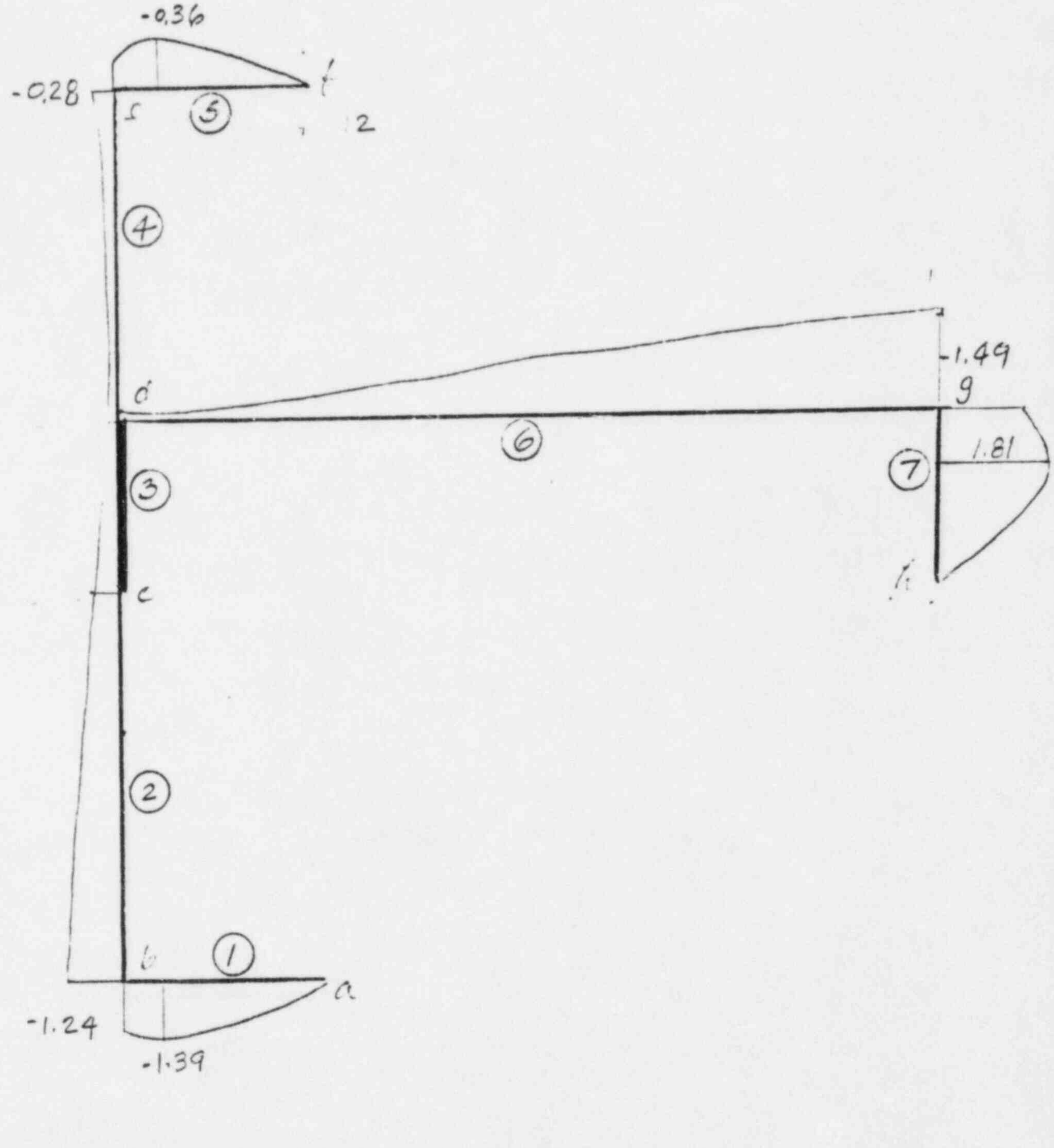
Twisting Moment clockwise



Normalized warping function W_{ns}

Normal warping stress = $E \cdot W_{ns} \phi''$

FOR 6]8.2 AND 6]8.2 WITH Dy = 2.1"



WARPING STATICAL MOMENT $S_{\omega o}$ DIAGRAM

Warping Shear Stress $\tau = -E \frac{S_{\omega o}}{t} \phi'''$

EBASCO Interoffice Correspondence

Attachment 3

DATE June 10, 1985 FILE REF SAG.TUG2.567

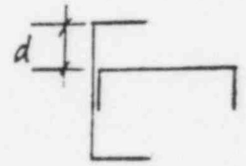
TO R Alexandru OFFICE LOCATION 82

Z.T. Shi NS Huang

FROM Z T Shi/N S Huang OFFICE LOCATION 82

SUBJECT TEXAS UTILITIES GENERATING CO.
COMANCHE PEAK SES UNIT NO. 2
SHEAR CENTER LOCATION OF COMPOSITE CHANNELS

Attached is a summary of shear center locations for the following composite sections which consist of two channels:



1. C6 x 8.2 and C6 x 8.2
2. C8 x 11.5 and C6 x 8.2
3. C6 x 8.2 and C4 x 5.4

Due to variation of distance d, the above composite sections represent twenty-two different sections, which should cover most of such composite section used in Comanche Peak Unit No. 2 project.

Please note:

1. The attached summary results also include the information of C. G, and the area moment of inertia with respect to principal axes as indicated by Ipyy and Ipzz.

2. The above information was determined by a computer program which is written in Basic and can be run on IBM p c's and other compatible models.

3. If the shear center location is needed for the composite section other than those listed above, please forward the geometrical configuration to the writers and the information can be obtained within half an hour.

ZTS:NSH:sh

cc: R. C. Iotti
J. Padalino
Y. Oktay ✓
Y. Latifaoglu
G. Trillo
C.R. Wang
Z.T. Shi
SAG.File

EBASCO SERVICES INCORPORATED

BY C. Wu DATE 5/9/85 SHEET 1 OF 2

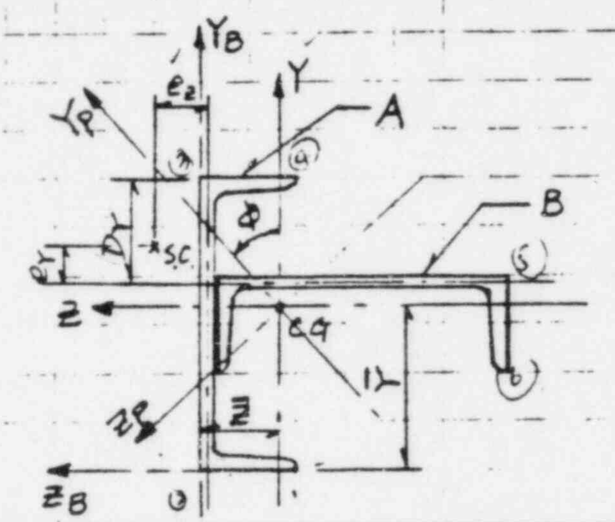
CHKD. BY [illegible] DATE 6/7/85 OFS NO. 3317-002 DEPT. NO. 549

CLIENT TEXAS UTILITIES GENERATING CO.

COMANCHE PEAK UNIT 2

PROJECT CABLE TRAY HANGERS

SUBJECT Summary of Shear Center Location of Composite Channels



$$I_{yy} = \int y^2 dA$$

$$I_{zz} = \int z^2 dA$$

$$I_{yz} = \int yz\, dA$$

Sections		D_Y in	Composite C.G.					Composite S.C.	
A	B		$\bar{Y}$ in	$\bar{Z}$ in	I_{YY} in^4	I_{ZZ} in^4	I_{YZ} in^4	e_Y in	e_Z in
C6x8.2	C6x8.2	3.837	2.344	-1.888	15.946	22.088	4.100	0.698	0.494
C6x8.2	C6x8.2	3.00	2.762	-1.888	14.164	22.088	1.486	0.664	0.480
C6x8.2	C6x8.2	2.00	3.262	-1.888	14.221	22.088	-1.636	0.626	0.476
C6x8.2	C6x8.2	1.00	3.762	-1.888	16.659	22.088	-4.759	0.585	0.487
C6x8.2	C6x8.2	0.443	4.041	-1.888	19.048	22.088	-6.498	0.560	0.498
C6x8.2	C6x8.2	2.524	3.000	-1.888	13.895	22.088	0.00	0.645	0.476
C6x8.2	C6x8.2	2.324	3.100	-1.888	13.942	22.088	-0.625	0.638	0.475
C6x8.2	C6x8.2	2.424	3.050	-1.888	13.906	22.088	-0.312	0.642	0.475
C6x8.2	C6 8.2	2.624	2.950	-1.888	13.906	22.088	0.312	0.649	0.476
C8x11.5	C6x8.2	5.790	3.059	-1.715	40.433	23.894	8.115	0.832	0.716
C8x11.5	C6x8.2	4.000	3.802	-1.715	33.603	23.894	1.705	0.662	0.708
C8x11.5	C6x8.2	5.000	3.387	-1.715	36.319	23.894	5.286	0.756	0.710
C8x11.5	C6x8.2	3.000	4.218	-1.715	33.670	23.894	-1.877	0.569	0.712
C8x11.5	C6x8.2	2.000	4.633	-1.715	36.520	23.894	-5.458	0.473	0.721
C8x11.5	C6x8.2	1.000	5.048	-1.715	42.153	23.894	-9.039	0.374	0.733
C8x11.5	C6x8.2	0.49	5.760	-1.715	46.098	23.894	-10.866	0.321	0.739
C6x8.2	C4x5.4	4.165	2.371	-1.220	15.804	7.163	2.429	0.741	0.616
C6x8.2	C4x5.4	4.000	2.437	-1.220	15.336	7.163	2.176	0.716	0.615
C6x8.2	C4x5.4	3.000	2.834	-1.220	13.600	7.163	0.643	0.570	0.616
C6x8.2	C4x5.4	2.000	3.230	-1.220	13.752	7.163	-0.890	0.422	0.631
C6x8.2	C4x5.4	1.000	3.627	-1.220	15.792	7.163	-2.423	0.263	0.657
C6x8.2	C4x5.4	0.435	3.851	-1.220	17.779	7.163	-3.290	0.168	0.672

EBASCO SERVICES INCORPORATED

BY C. Wu DATE 5/16/85 SHEET 2 OF 2

CHKD. BY T.S. Huang 6/7/85 OFS NO. 3317-002 DEPT. NO. 549

CLIENT ~~TEXAS UTILITIES GENERATING CO.~~

PROJECT ~~COMANCHE PEAK UNIT 2~~ CABLE TRAY HANGERS

SUBJECT Summary of Shear Center Location of Composite Channels

Sections		DY	Total Area	Composite C.G - Principal Axis		
A	B	in	in^2	I_{PYY} in^4	I_{PZZ} in^4	Phi ∠ °
C6x8.2	C6x8.2	3.837	4.760	24.140	13.895	-26.581
		3.000		22.358	13.895	-10.281
		2.000		22.415	13.895	11.294
		1.000		24.852	13.895	30.148
		0.443		27.242	13.895	38.417
		2.524		22.088	13.895	0.000
		2.324		22.136	13.895	4.359
		2.424		22.100	13.895	2.182
C6x8.2	C6x8.2	2.624	4.760	22.100	13.895	-2.182
C8x11.5	C6x8.2	5.790	5.731	43.749	20.577	22.230
		4.000		33.893	23.603	9.674
		5.000		38.263	21.949	20.196
		3.000		34.018	23.546	-10.502
		2.000		38.552	21.861	-20.423
		1.000		45.871	20.176	-22.357
C8x11.5	C6x8.2	0.490	5.731	50.530	19.461	-22.192
C6x8.2	C4x5.4	4.165	3.945	16.440	6.527	14.675
		4.000		15.879	6.620	14.020
		3.000		13.663	7.100	5.651
		2.000		13.870	7.045	-7.560
		1.000		16.426	6.529	-14.661
C6x8.2	C4x5.4	0.435	3.945	18.716	6.227	-15.894

Notes: I_{YY}, I_{ZZ}, I_{YZ} — Y, Z coord.
I_{PYY}, I_{PZZ} — Principal axis
$\angle\phi$ — (+),
$\bar{Y}, \bar{Z}$ — Y_B, Z_B Coord.
e_Y, e_Z — refer to ℄ of Web of Channels

581/8-81

EBASCO SERVICES INCORPORATED

BY A J Chen DATE 2-18-86 Rev. 1 SHEET 11a OF 18
CHKD. BY F. Hettinger DATE 2-19-86 OFS NO. 3306,221 DEPT. NO. 550

CLIENT TEXAS UTILITIES GENERATING CO.
PROJECT COMANCHE PEAK UNIT 2
SUBJECT CABLE TRAY HANGERS

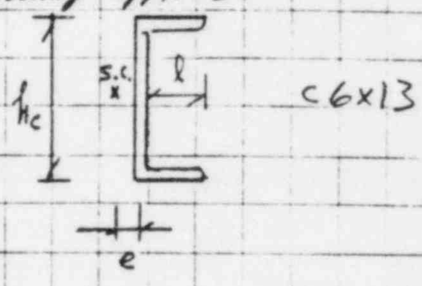
The critical condition shown on page 10 is critical for the most common C4×7.25 tier member. For the tier member with highest torsional rigidity, C6×13, the following applies:

$I_{weak\,axis} = 1.05 \text{ in}^4$

$J = 0.241 \text{ in}^4$

$h_c = 6.0 \text{ in}$

$e = 0.6 \text{ in}$



$\ell = 2.157 - 0.437 = 1.72 \text{ in}$

$$\delta_2 = \theta \ell = \frac{T\ell}{GJ}\left(L - a \tanh \frac{L}{a}\right)$$

where $a = \frac{h_c}{2}\sqrt{\frac{EI}{GJ}} = \frac{6.0}{2}\sqrt{\frac{(29\times10^6)(1.05)}{(1.115\times10^7)(0.241)}} = 10.10$

$$T = 2F_v \cdot e = 2 \cdot F_v \times 0.6 = 1.2 F_v$$

For $L = 6''$

$$\delta_2 = \frac{1.2 F_v (1.72)}{0.241(1.115\times10^7)}\left[6 - 10.10 \tanh \frac{6}{10.10}\right] = 4.75\times10^{-7} F_v$$

For $L = 3''$

$$\delta_2 = \frac{1.2 F_v (1.72)}{0.241(1.115\times10^7)}\left[3 - 10.10 \tanh \frac{3}{10.10}\right] = 6.55\times10^{-8} F_v$$

The tray deflection

$$\delta_1 = \frac{F_v \ell}{G \cdot h \cdot t_t} = \frac{F_v (1.72)}{(1.115\times10^7)(1.104/2)} = 2.80\times10^{-7} F_v$$

$$\therefore \quad \delta_2 < \delta_1$$

EBASCO SERVICES INCORPORATED

BY S J Chan DATE 2-18-86 Rev. 1 SHEET 11b OF 18

CHKD. BY F. Hettinger DATE 2-19-86 OFS NO. 3306.221 DEPT. NO. 550

CLIENT TEXAS UTILITIES GENERATING CO.

PROJECT COMANCHE PEAK UNIT 2

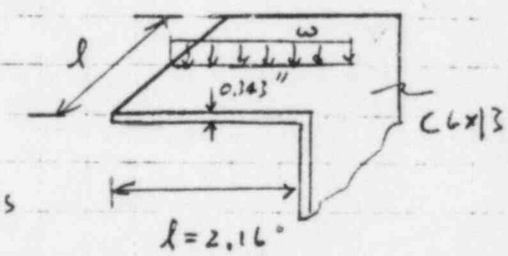
SUBJECT CABLE TRAY HANGERS

From page 9, for $\delta_2 < \delta_1$, the percentage of total load acting on channel's flange can be estimated as follows:

$$\delta = \delta_1 - \delta_2 = 2.80\times10^{-7} F_v - 6.55\times10^{-8} F_v$$
$$= 2.15\times10^{-7} F_v$$

$$\omega = \frac{8EI\delta}{l^4} = \frac{8(29\times10^6)(\frac{1}{12}\times2.16\times0.343^3)(2.15\times10^{-7}F_v)}{(2.16)^4}$$

$$= 1.67\times10^{-2} F_v$$



The percentage of total vertical load acting on channel's flange is

$$\frac{\omega l}{2F_v} = \frac{1.67\times10^{-2} F_v \times 2.16}{2F_v}$$

$$= 1.8\% \quad \text{— negligible}$$

Therefore, the resultant vertical force F can be assumed acting at the center of the web of the tier C6x13, which has the highest torsional rigidity in the tier members used.

EBASCO SERVICES INCORPORATED

BY A J Chen DATE 2-18-86 Rev. 1 SHEET 12 OF 18

CHKD. BY JHettinger DATE 2-19-86 OFS NO. 3306.221 DEPT. NO. 550

CLIENT ~~TEXAS UTILITIES GENERATING CO.~~

PROJECT COMANCHE PEAK UNIT 2

SUBJECT CABLE TRAY HANGERS

Conclusion :

For all possible L values and tier member sizes, the resultant force F will always be acting at the center of the tier channel's web.

ATTACHMENT 7
SHEET 1 OF 82

```
                XX        XX   0000000000   RRRRRRRRRRRR  AAAAAAAAAAAA  KK      KK  HH        HH
                XX       XX   00      0000  RR        RR  AA        AA  KK     KK   HH        HH
                XX      XX   00      00 00  RR        RR  AA        AA  KK    KK    HH        HH
                XX    XX    00      00  00  RR        RR  AA        AA  KK   KK     HH        HH
                XXXX       00     00    00  RRRRRRRRRRRR  AAAAAAAAAAAA  KKKKKK      HHHHHHHHHHHH
               XXXX       00    00      00  RRRRRRRRRRR   AAAAAAAAAAAA  KKKKKK      HHHHHHHHHHHH
             XX   XX     00 00        00  RR      RR     AA        AA  KK    KK    HH        HH
            XX     XX   0000         00  RR       RR     AA        AA  KK     KK   HH        HH
           XX       XX  000         00  RR        RR    AA        AA  KK      KK  HH        HH
          XX        XX  0000000000     RR         RR   AA        AA  KK       KK  HH        HH
         XX         XX  00000000      RR          RR  AA        AA  KK        KK HH        HH

          JJJJJJJJJJ      11         00000000      777777777777  555555555555          AAAAAAAAAA
          JJJJJJJJJJ     111        0000000000     777777777777  555555555555         AAAAAAAAAAAA
              JJ        1111       00      0000    77        77  55                   AA        AA
              JJ          11       00     00 00            77    55                   AA        AA
              JJ          11       00    00  00           77     55                   AA        AA
              JJ          11       00   00   00          77      555555555            AAAAAAAAAAAA
              JJ          11       00  00    00          77      5555555555           AAAAAAAAAAAA
              JJ          11       00 00     00          77               55          AA        AA
          JJ  JJ          11       0000      00          77                55         AA        AA
          JJ  JJ          11       000       00          77                55         AA        AA
          JJJJJJJ     1111111111   0000000000            77      555555555555         AA        AA
           JJJJJ      1111111111    00000000             77      55555555555          AA        AA
```

```
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
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*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
*A START JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.00.04 AM 13 SEP 85 R305.PR1 8301 START A*
```

CLIENT TUGC PROJECT Comanche Peak
SUBJECT CABLE TRAY SUPPORT
CTH-2-337
COMPUTER PROGRAM USED STRUDL (STATIC)
PREPARED BY: E Rakhmilevich DATE 9/14/85
CHECKED BY: K. C. WANG DATE 9-18-85
REF. CALC. BOOK NO. PRINTOUT BOOK NO.

```
IEF142I XORAKH LOAD - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /LOAD     / START 85256.1053
IEF374I STEP /LOAD     / STOP  85256.1053 TCB    0MIN 00.05SEC SRB    0MIN 00.00SEC VIRT    44K SYS   252K
**********************************************************************************************************************
*
*                                          KOMAND DATA ACQUISITION SYSTEM
*
* STEP NAME      LOAD          START TIME 10.53.23.17    VIRT SYS  USED     252K   PAGE INS              0  STEP TCB       00.00.00.05 *
* PGM NAME       IEBGENER      STOP  TIME 10.53.24.65    VIRT CORE USED      44K   PAGE OUTS             0  JOB  TCB       00.00.00.05 *
* DISPATCH PRTY 105            ELAP. TIME 00.00.01.48    SWAPS/PAGES     0/     0  SRB TIME    00.00.00.00  CONDITION CODE        0000 *
* PERF. GROUP          1       SRU               .39     TRANS ACT TIME 00.00.00.80                         OCCUPANCY      00.00.00.00 *
*
**********************************************************************************************************************
*                                                    EXCP STATISTICS
*
* UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT *
*
*  C60            3
*
* EXCP TOTAL            3       VIO PAGE INS          0       VIO PAGE OUTS            0      PAGES SWAPPED IN          0
*
**********************************************************************************************************************
IEF142I XORAKH PRINT - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /PRINT    / START 85256.1053
IEF374I STEP /PRINT    / STOP  85256.1053 TCB    0MIN 00.05SEC SRB    0MIN 00.00SEC VIRT    44K SYS   256K
**********************************************************************************************************************
*
*                                          KOMAND DATA ACQUISITION SYSTEM
*
* STEP NAME      PRINT         START TIME 10.53.24.77    VIRT SYS  USED     256K   PAGE INS              0  STEP TCB       00.00.00.05 *
* PGM NAME       IEBGENER      STOP  TIME 10.53.25.44    VIRT CORE USED      44K   PAGE OUTS             0  JOB  TCB       00.00.00.10 *
* DISPATCH PRTY 105            ELAP. TIME 00.00.00.67    SWAPS/PAGES     0/     0  SRB TIME    00.00.00.00  CONDITION CODE        0000 *
* PERF. GROUP          1       SRU               .39     TRANS ACT TIME 00.00.00.40                         OCCUPANCY      00.00.00.00 *
*
**********************************************************************************************************************
*                                                    EXCP STATISTICS
*
* UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT *
*
*  460            4
*
* EXCP TOTAL            4       VIO PAGE INS          0       VIO PAGE OUTS            0      PAGES SWAPPED IN          0
*
**********************************************************************************************************************
IEF142I XORAKH STRUDL - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /STRUDL   / START 85256.1053
IEF374I STEP /STRUDL   / STOP  85256.1054 TCB    0MIN 02.47SEC SRB    0MIN 00.19SEC VIRT  1564K SYS   276K
**********************************************************************************************************************
*
*                                          KOMAND DATA ACQUISITION SYSTEM
*
* STEP NAME      STRUDL        START TIME 10.53.25.66    VIRT SYS  USED     276K   PAGE INS              0  STEP TCB       00.00.02.47 *
* PGM NAME       ICEX2         STOP  TIME 10.54.00.51    VIRT CORE USED  1,564K   PAGE OUTS             0  JOB  TCB       00.00.02.57 *
* DISPATCH PRTY 105            ELAP. TIME 00.00.34.85    SWAPS/PAGES     0/     0  SRB TIME    00.00.00.19  CONDITION CODE        0000 *
* PERF. GROUP          1       SRU             61.39     TRANS ACT TIME 00.00.32.32                         OCCUPANCY      00.00.00.00 *
*
**********************************************************************************************************************
*                                                    EXCP STATISTICS
*
* UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT      UNIT   EXCP COUNT *
```

```
*  [illegible]      13     [illegible]       83     890          0     [illegible]     [illegible]    4A1        0     862      39
*  443              44     [illegible]      344     892        104     46A              48            460        3     585       0
*  734               0

*  EXCP TOTAL        678     VIO PAGE INS      0     VIO PAGE OUTS      0     PAGES SWAPPED IN      0

IEF375I  JOB /XORAKH  / START 85256.1053
IEF376I  JOB /XORAKH  / STOP  85256.1054 TCB    0MIN 02.57SEC SRB    0MIN 00.19SEC

                                 KOMAND DATA ACQUISITION SYSTEM

*  JOB LOG NUMBER - XORAKH   85256 10.53.18.14      TCB TIME    00.00.02.57          SRB TIME              00.00.00.19

*  PROGRAMMER   E RAKHMILEVICH                      INIT DATE   09/13/85   85.256    INITIATION TIME       10.53.23.17

*  ACCTG DATA   HE66YEPF000CP3306297                TERM DATE   09/13/85   85.256    TERMINATION TIME      10.54.00.99

*  OS-VS2 REL   03.8                                PGN/SERVICE    1/        78      ELAPSED TIME          00.00.37.82

*  SYSTEM ID    8301                                CLASS                C           COMPLETION STATUS           C0000

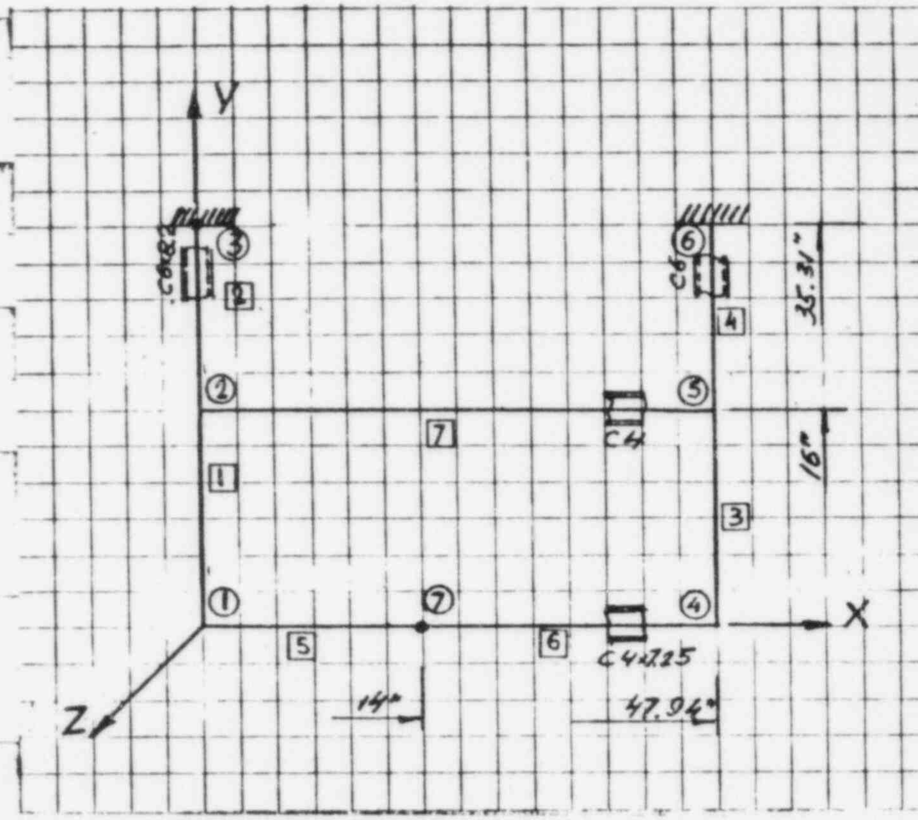
                                 TOTAL MAINFRAME UNITS

                          SYSTEM RESOURCE UNITS (SRU)                    .78

                          APPLICATION RESOURCE UNITS (ARU)             61.39
```

```
TYPE SPACE FRAME
ALPHANUMERIC IDENTIFIER TREATMENT BY CHARACTER COMPARISON
UNITS INCHES, KIPS,DEGREES, FAHRENEIT, LBM, SECONDS
JOINT COORDINATES
1           0.0         0.0  0.0
2           0.0        16.0  0.0
3           0.0        35.31 0.0
4          47.94        0.0  0.0
5          47.94       16.0  0.0
6          47.94       35.31 0.0
7          14.0         0.0  0.0
SUPPORT JOINTS -
  3 6
JOINT RELEASES
  3        M Y
MEMBER INCIDENCES
1      1 2
2      2 3
3      4 5
4      5 6
5      1 7
6      7 4
7      2 5
CONSTANTS
E 29.E3 ALL ; POISSON .3 ALL ; DENS 0.284 ALL
G 11.2E3 ALL ; CTE 0.0000065 ALL ; FYLD 36.0 ALL
CONSTANTS
BETA  180   1 TO 4
MEMBER PROPERTIES
  1 TO 4    TABLE 'STEELC1' 'C6X8'  TYPE 'CHANNEL'
  5 TO 7    TABLE 'STEELC1' 'C4X7' TYPE 'CHANNEL'
LOADING  1  'DEAD LOAD'
DEAD LOAD COMP GLO Y -1 BY JOINTS
JOINT LOADS
  7       F Y  -.111 M X       .061
LOADING  2  'OBE NEG VERT SEIS'
DEAD LOAD COMP GLO Y -0.375 BY JOINTS
JOINT LOADS
  7         F Y -.042 M X  .023
LOADING  3  'OBE POS HOR TRANS SEIS'
DEAD LOAD COMP GLO X  .25  BY JOINTS
JOINT LOADS
  7         M Y  .023   M Z  .056
  1          F X .014
  4          F X .014
LOADING  4  'OBE POS HOR LONG SEIS'
DEAD LOAD COMP GLO Z  .21 BY JOINTS
LOADING COMBINATION  6       'SSE NEG VERT SEIS' COMPONENTS -
2  1.68
LOADING COMBINATION  7       'SSE POS HOR TRANS SEIS' COMPONENTS -
3  1.11
LOADING COMBINATION  8       'SSE POS HOR LONG SEIS' COMPONENTS -
4  1.78
PRINT STRUCTURAL DATA
PRINT LOADING DATA
STIFFNESS ANALYSIS REDUCE BAND
LOADING COMBINATION  234   'OBE SRSS 2 3 4' RMS -
2 3 4
LOADING COMBINATION  678   'SSE SRSS 6 7 8' RMS -
6 7 8
```

```
LOADING COMBINATION  1001  'DL+SRSS 234'  COMPONENTS -
1 1  234 1
LOADING COMBINATION  1002  'DL-SRSS 234' COMPONENTS -
1 1  234 -1
LOADING COMBINATION  2001  'DL+SRSS 678' COMPONENTS -
1 1  678 1
LOADING COMBINATION  2002  'DL-SRSS 678' COMPONENTS -
1 1  678 -1
LOAD LIST -
6 7 8
COMBINE ALL
LOADS LIST -
  234  -
  678
GENERATE RESULTS
LOAD LIST -
1001 1002 2001 2002
COMBINE ALL
LOAD LIST -
ALL
OUTPUT BY JOINTS ; OUTPUT BY MEMBERS
LIST DISPLACEMENTS, REACTIONS, FORCES
SECTION FR NS 3 0. 0.5 1.0
GROUP '&LM' DEFINITION
MEMBERS ONLY ALL ACTIVE $ LOADED
END OF GROUP DEFINITION
LIST SECTION STRESS MEMBERS '&LM'
$ LIST OVERALL STRESS
PARAMETERS
'CODE' 'AISC' ALL ; 'VERSION' '69U1' ALL
'TORSION' 'YES' ALL ; 'CB' 1.0 ALL
'ASF' 1.6 LOADINGS  2001 2002
'FBMAX' 1.0 ALL
'FACMAX' 1.0 ALL
'FATMAX' 1.0 ALL
'FSHMAX' 0.55 ALL
PARAMETERS
'LY' 35.31 MEM     1 to 4
'LZ' 47.94 MEM     5 6
'CMY' 1     MEM     1 to 4
'CMY' 0.85 MEM     5 6 7
'CMZ' 0.85 MEM     1 to 7
'KY'  2     MEM     1 to 4
'KZ'  1.55 MEM     1 to 4
'UNLCF' 47.94 MEM  5 6
LOAD LIST -
1001 1002 2001 2002
CHECK CODE -
ALL   -
GENERATING TRACE  6  RESULTS FOR FAILING MEMBERS
FINISH NOMESSAGES
```



CLIENT TUGC PROJECT Comanche Peak

SUBJECT CABLE TRAY SUPPORT CTH-2-337

COMPUTER PROGRAM USED STRUDL (STATIC)

PREPARED BY: E. Rakhmilevich DATE 9/14/85

CHECKED BY: K. C. WANG DATE 9-18-85

REF. CALC. BOOK NO. .... PRINTOUT BOOK NO. ....

P S U I C E S

VERSION 5 MODIFICATION 5

A PROPRIETARY PRODUCT OF

PROJECT SOFTWARE AND DEVELOPMENT, INC.
14 STORY STREET
CAMBRIDGE, MASSACHUSETTS 02138
TEL 617-661-1444

RUN DATE = 09/13/85
DYNAMIC CORE (VIRTUAL) 1429504 BYTES
370/083 VS2 REL 03.8I

THIS IS OVERALL RUN NO. 932

MONTH TO DATE STATISTICS FOR PASSWORD 'ERSTLY ' (EXCLUSIVE OF THIS RUN).

ENTRIES	390
COMPLETIONS	384
RECORDED CPU TIME	15MIN 1 SEC
RECORDED EXCPS	187459

STRUDL '2-003375' 'COMANCHE PEAK CABLE TRAY DESIGN'

```
         PPPPDPPPPPP            SSSSSSSSSSS   TTTTTTTTTTT   RRRRRRRRRRR   UU        UU   DDDDDDDDDDD   LL
        PPPPD DPPPPP           SSSSSSSSSSS   TTTTTTTTTTT   RRRRRRRRRRRR  UU        UU   DDDDDDDDDDDD  LL
       PPPPD  DPPPP           SS                 TT        RR         RR  UU        UU   DD         DD  LL
      PPPPD   DPPP           SS                 TT        RR         RR  UU        UU   DD         DD  LL
     PPPPD    DPP   HHHHH   SSSSSSSSSSS        TT        RRRRRRRRRRRR  UU        UU   DD         DD  LL
    PPPPD     DP   HHHHH   SSSSSSSSSSS        TT        RRRRRRRRRRRR  UU        UU   DD         DD  LL
   PPPPDDDDDDDD                     SS       TT        RRRR           UU        UU   DD         DD  LL
  PPPPPPPPPPPP                     SS       TT        RR  RR         UU        UU   DD         DD  LL
 PP                      SSSSSSSSSSS       TT        RR     RR       UUUUUUUUUUU   DDDDDDDDDDDD  LLLLLLLLLLL
PP                      SSSSSSSSSSS       TT        RR       RR     UUUUUUUUUUU   DDDDDDDDDDD  LLLLLLLLLLL
```

```
**********************************************
*                                            *
*              P-DELTA STRUDL                *
*                                            *
*              VERSION 0385                  *
*                                            *
*          A PROPRIETARY PRODUCT OF          *
*                                            *
*              P-DELTA, INC.                 *
*             42 ST  ANN ROAD                *
*        QUINCY, MASSACHUSETTS 02170         *
*           TEL. (617) 472-8533              *
*                                            *
*    COPYRIGHT (C) 1982, 1983, 1984, 1985    *
*           ALL RIGHTS RESERVED              *
*                                            *
*        10.53.33        9/13/85             *
*                                            *
**********************************************
```

TYPE SPACE FRAME

ALPHANUMERIC IDENTIFIER TREATMENT BY CHARACTER COMPARISON

UNITS INCHES, KIPS, DEGREES, FAHRENEIT, LBM, SECONDS

JOINT COORDINATES

1	0.0	0.0	0.0
2	0.0	16.0	0.0
3	0.0	35.31	0.0
4	47.94	0.0	0.0
5	47.94	16.0	0.0
6	47.94	35.31	0.0
7	14.0	0.0	0.0

```
SUPPORT JOINTS -
  3 6
JOINT RELEASES
  3        M Y
MEMBER INCIDENCES
1       1 2
2       2 3
3       4 5
4       5 6
5       1 7
6       7 4
7       2 5
CONSTANTS
E 29.E3 ALL , POISSON .3 ALL , DENS 0.284 ALL
G 11.2E3 ALL , CTE 0.0000065 ALL , FYLD 36.0 ALL
CONSTANTS
BETA  180   1 TO 4
MEMBER PROPERTIES
  1 TO 4    TABLE 'STEELC1' 'C6X8'  TYPE 'CHANNEL'
  5 TO 7    TABLE 'STEELC1' 'C4X7' TYPE 'CHANNEL'
LOADING  1  'DEAD LOAD'
DEAD LOAD COMP GLO Y -1 BY JOINTS
JOINT LOADS
  7       F Y -.111 M X      .061
LOADING  2  'OBE NEG VERT SEIS'
DEAD LOAD COMP GLO Y -0.375 BY JOINTS
JOINT LOADS
  7         F Y -.042 M X  .023
LOADING  3  'OBE POS HOR TRANS SEIS'
DEAD LOAD COMP GLO X  .25  BY JOINTS
```

```
JOINT LOADS
  7        M Y  .023   M Z  .056
  1         F X .014
  4         F X .014
LOADING  4  'OBE POS HOR LONG SEIS'
DEAD LOAD COMP QLD Z  .21 BY JOINTS
LOADING COMBINATION  6       'SSE NEG VERT SEIS' COMPONENTS -
2  1.68
LOADING COMBINATION  7       'SSE POS HOR TRANS SEIS' COMPONENTS -
3  1.11
LOADING COMBINATION  8       'SSE POS HOR LONG SEIS' COMPONENTS -
4  1.78
PRINT STRUCTURAL DATA
```

```
*******************************************
*  PROBLEM DATA FROM INTERNAL STORAGE  *
*******************************************
```

JOB ID - 2-00337S JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	DEG	FAH	SEC	LBM

********** STRUCTURAL DATA **********

JOINT COORDINATES-----/-CONDITION-/--STATUS--/

JOINT	X	Y	Z	CONDITION	STATUS
1	0.0	0.0	0.0		ACTIVE
2	0.0	16.000	0.0		ACTIVE
3	0.0	35.310	0.0	SUPPORT	ACTIVE
4	47.940	0.0	0.0		ACTIVE
5	47.940	16.000	0.0		ACTIVE
6	47.940	35.310	0.0	SUPPORT	ACTIVE
7	14.000	0.0	0.0		ACTIVE

JOINT RELEASES-----/ELASTIC SUPPORT RELEASES-----/

JOINT	FORCE	MOMENT	THETA 1	THETA 2	THETA 3	KFX	KFY	KFZ	KMX	KMY	KMZ
1		Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MEMBER INCIDENCES-----/ LENGTH PROJECTIONS ON GLOBAL AXES----/ RELEASES-----/ STATUS--/

MEMBER	START	END	LENGTH	X	Y	Z	START FORCE	START MOMENT	END FORCE	END MOMENT	STATUS		
1	1	2	16.000	0.0	16.000	0.0					ACTIVE	SPACE	FRAME
2	2	3	19.310	0.0	19.310	0.0					ACTIVE	SPACE	FRAME
3	4	5	16.000	0.0	16.000	0.0					ACTIVE	SPACE	FRAME
4	5	6	19.310	0.0	19.310	0.0					ACTIVE	SPACE	FRAME
5	1	7	14.000	14.000	0.0	0.0					ACTIVE	SPACE	FRAME
6	7	4	33.940	33.940	0.0	0.0					ACTIVE	SPACE	FRAME
7	2	5	47.940	47.940	0.0	0.0					ACTIVE	SPACE	FRAME

ELEMENT INCIDENCES-----/

ELEMENT NODES

MEMBER PROPERTIES-----/

MEM/SEG. LEN	TYPE TABLE	AX	AY YD FLTK	AZ ZD WBTK	IX OD	IY ID	IZ SFX	SY RAD	SZ ALP	YC TYP	ZC SPA	EY GEN	EZ IYZ
1	TABLE	2.400	1.200	0.878	0.075	0.692	13.100	0.492	4.380	3.000	1.408	0.0	0.0
	STEELC1 C6X8		6.000	1.920	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.343	0.200									
2	TABLE	2.400	1.200	0.878	0.075	0.692	13.100	0.492	4.380	3.000	1.408	0.0	0.0
	STEELC1 C6X8		6.000	1.920	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.343	0.200									
3	TABLE	2.400	1.200	0.878	0.075	0.692	13.100	0.492	4.380	3.000	1.408	0.0	0.0
	STEELC1 C6X8		6.000	1.920	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.343	0.200									
4	TABLE	2.400	1.200	0.878	0.075	0.692	13.100	0.492	4.380	3.000	1.408	0.0	0.0
	STEELC1 C6X8		6.000	1.920	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.343	0.200									
5	TABLE	2.130	1.284	0.679	0.082	0.432	4.590	0.343	2.290	2.000	1.262	0.0	0.0
	STEELC1 C4X7		4.000	1.721	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.296	0.321									
6	TABLE	2.130	1.284	0.679	0.082	0.432	4.590	0.343	2.290	2.000	1.262	0.0	0.0
	STEELC1 C4X7		4.000	1.721	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.296	0.321									
7	TABLE	2.130	1.284	0.679	0.082	0.432	4.590	0.343	2.290	2.000	1.262	0.0	0.0
	STEELC1 C4X7		4.000	1.721	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
			0.296	0.321									

MEMBER CONSTANTS

CONSTANT	STANDARD VALUE	DOMAIN,	VALUE	MEMBER LIST
E	0.290000E 05	ALL		
G	0.112000E 05	ALL		
CTE	0.650000E-05	ALL		
DENSITY	0.284000E 00	ALL		
POISSON	0.300000E 00	ALL		
FYLD	0.380000E 02	ALL		
BETA	0.0	ALL BUT	0.180000E 03	1 2 3 4
CBETA	0.0	ALL		
FULT	0.600000E 02	ALL		

****
* END OF DATA FROM INTERNAL STORAGE *
****

PRINT LOADING DATA

```
***********************************************
*  PROBLEM DATA FROM INTERNAL STORAGE  *
***********************************************
JOB ID -   2-003379       JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -  LENGTH        WEIGHT        ANGLE        TEMPERATURE        TIME              MASS
                 INCH          KIPF          DEG             FAH             SEC               LBM


          *********** LOADING DATA ***********


LOADING - 1              DEAD LOAD                                                              STATUS - ACTIVE

/-----------NON-SELECTIVE DEAD LOAD COMPONENTS GIVEN----------/

 COMPONENTS : X   0.0     Y  -1.0000 Z   0.0      BY  JOINTS   GLOBAL


MEMBER AND ELEMENT LOADS------------------------------------------------------------------------------/
MEMBER/ELEMENT

JOINT LOADS------------------------------/ -----------------------------------/
JOINT      STEP    FORCE X              Y            Z       MOMENT X            Y            Z
7                        0.0          -0.111        0.0              0.061         0.0          0.0

JOINT DISPLACEMENTS-----------------------/ ----------------------------------/
JOINT      STEP    DISP. X              Y            Z       ROT.   X            Y            Z

JOINT FORCE ASSUMPTIONS -------------------------------------------------------------------------/

JOINT      THETA  1          2          3      FORCE X            Y            Z       MOMENT X            Y            Z
NO ASSUMPTIONS GIVEN FOR THIS LOADING


MEMBER FORCE ASSUMPTIONS ----------------------/    ----------------------------------/

MEMBER        COMPONENT    DISTANCE       VALUE           COMPONENT    DISTANCE      VALUE
NO ASSUMPTIONS GIVEN FOR THIS LOADING


LOADING - 2              OBE NEG VERT SEIS                                                      STATUS - ACTIVE

/-----------NON-SELECTIVE DEAD LOAD COMPONENTS GIVEN----------/

 COMPONENTS   X   0.0     Y  -0.3750 Z   0.0      BY  JOINTS   GLOBAL

MEMBER AND ELEMENT LOADS------------------------------------------------------------------------------/
```

MEMBER/ELEMENT

JOINT LOADS

JOINT	STEP	FORCE X	Y	Z	MOMENT X	Y	Z
7		0.0	-0.042	0.0	0.023	0.0	0.0

JOINT DISPLACEMENTS

JOINT	STEP	DISP X	Y	Z	ROT. X	Y	Z

JOINT FORCE ASSUMPTIONS

JOINT THETA 1 2 3 FORCE X Y Z MOMENT X Y Z
NO ASSUMPTIONS GIVEN FOR THIS LOADING

MEMBER FORCE ASSUMPTIONS

MEMBER COMPONENT DISTANCE VALUE COMPONENT DISTANCE VALUE
NO ASSUMPTIONS GIVEN FOR THIS LOADING

LOADING - 3 OBE POS HOR TRANS SEIS STATUS - ACTIVE

/----------NON-SELECTIVE DEAD LOAD COMPONENTS GIVEN----------/

COMPONENTS : X 0.2500 Y 0.0 Z 0.0 BY JOINTS GLOBAL

MEMBER AND ELEMENT LOADS
MEMBER/ELEMENT

JOINT LOADS

JOINT	STEP	FORCE X	Y	Z	MOMENT X	Y	Z
1		0.014	0.0	0.0	0.0	0.0	0.0
4		0.014	0.0	0.0	0.0	0.0	0.0
7		0.0	0.0	0.0	0.0	0.023	0.056

JOINT DISPLACEMENTS

JOINT	STEP	DISP X	Y	Z	ROT. X	Y	Z

JOINT FORCE ASSUMPTIONS

JOINT THETA 1 2 3 FORCE X Y Z MOMENT X Y Z
NO ASSUMPTIONS GIVEN FOR THIS LOADING

MEMBER FORCE ASSUMPTIONS

MEMBER COMPONENT DISTANCE VALUE COMPONENT DISTANCE VALUE
NO ASSUMPTIONS GIVEN FOR THIS LOADING

LOADING - 4 OBE POS HOR LONG SEIS STATUS - ACTIVE

/----------NON-SELECTIVE DEAD LOAD COMPONENTS GIVEN----------/

COMPONENTS : X 0.0 Y 0.0 Z 0.2100 BY JOINTS GLOBAL

MEMBER AND ELEMENT LOADS--/
MEMBER/ELEMENT

JOINT LOADS-----------------------/ -----------------------/
JOINT STEP FORCE X Y Z MOMENT X Y Z

JOINT DISPLACEMENTS-----------------------/ -----------------------/
JOINT STEP DISP. X Y Z ROT. X Y Z

JOINT FORCE ASSUMPTIONS --/

JOINT THETA 1 2 3 FORCE X Y Z MOMENT X Y Z
NO ASSUMPTIONS GIVEN FOR THIS LOADING

MEMBER FORCE ASSUMPTIONS ----------------/ ----------------/

MEMBER COMPONENT DISTANCE VALUE COMPONENT DISTANCE VALUE
NO ASSUMPTIONS GIVEN FOR THIS LOADING

LOADING - 6 SSE NEG VERT SEIS STATUS - ACTIVE

COMBINATION GIVEN - 2 1.680

LOADING - 7 SSE POS HOR TRANS SEIS STATUS - ACTIVE

COMBINATION GIVEN - 3 1.110

LOADING - 8 SSE POS HOR LONG SEIS STATUS - ACTIVE

COMBINATION GIVEN - 4 1.780

```
****************************************
*  END OF DATA FROM  INTERNAL STORAGE  *
****************************************
```

STIFFNESS ANALYSIS REDUCE BAND

BANDWIDTH USING INITIAL JOINT NUMBERING :

```
THE MAXIMUM BANDWIDTH IS     5 AND OCCURS AT JOINT 7
THE AVERAGE BANDWIDTH IS                       1.667
THE STANDARD DEVIATION OF THE BANDWIDTH IS     1.966
```

BANDWIDTH AFTER INTERNALLY RENUMBERING STRUCTURE :

```
THE MAXIMUM BANDWIDTH IS     2 AND OCCURS AT JOINT 1
THE AVERAGE BANDWIDTH IS                       1.333
THE STANDARD DEVIATION OF THE BANDWIDTH IS     0.816
```

```
***********************************************************
* TOTAL DEAD WEIGHT OF STRUCTURE =  0.106134182D 00 KIPF *
***********************************************************
```

LOADING COMBINATION 234 'OBE SRSS 2 3 4' RMS -
2 3 4

LOADING COMBINATION 678 'SSE SRSS 6 7 8' RMS -
6 7 8

STRESS RESULTS ARE TO BE COMBINED AT STRESS LEVEL

LOADING COMBINATION 1001 'DL+SRSS 234' COMPONENTS -
1 1. 234 1.

LOADING COMBINATION 1002 'DL-SRSS 234' COMPONENTS -
1 1. 234 -1.

LOADING COMBINATION 2001 'DL+SRSS 678' COMPONENTS -
1 1. 678 1.

LOADING COMBINATION 2002 'DL-SRSS 678' COMPONENTS -
1 1. 678 -1.

LOAD LIST -
[illegible]

COMBINE ALL

```
LOADS LIST -
  234 -
  578

GENERATE RESULTS

LOAD LIST -
1001 1002 2001 2002

COMBINE ALL

LOAD LIST -
ALL

OUTPUT BY JOINTS , OUTPUT BY MEMBERS

LIST DISPLACEMENTS, REACTIONS, FORCES
```

```
*****************************
*RESULTS OF LATEST ANALYSIS*
*****************************
```

JOB ID - 2-00337S JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

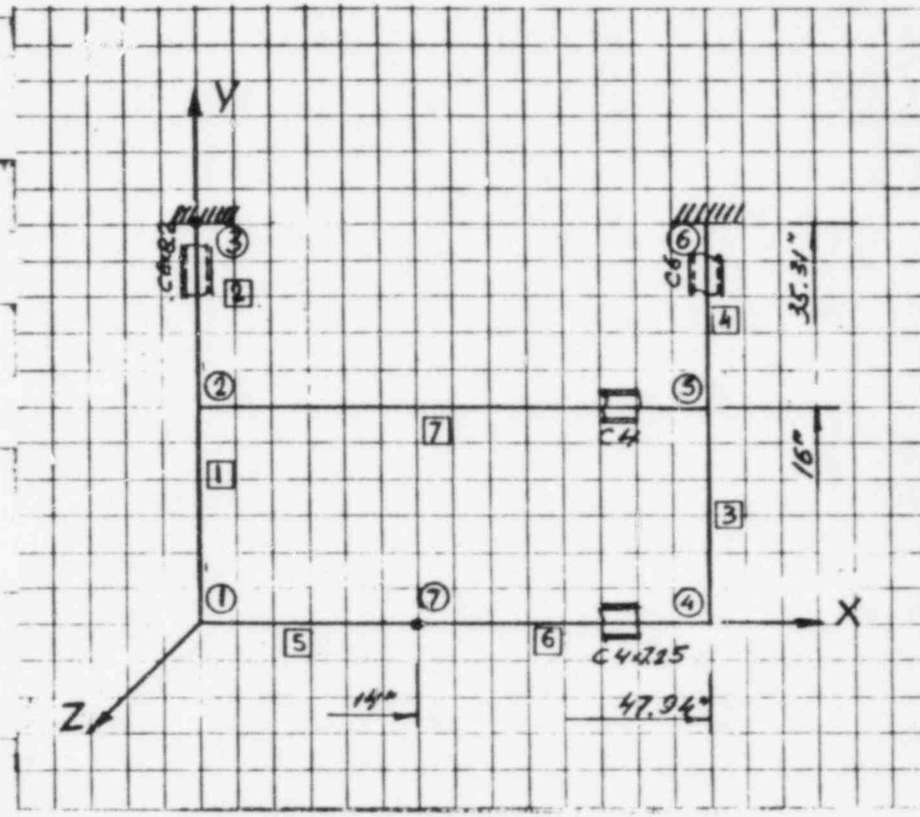
ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	DEG	FAH	SEC	LBM

MEMBER FORCES

MEMBER	LOADING	JOINT	FORCES AXIAL	FORCES SHEAR Y	FORCES SHEAR Z	MOMENTS TORSION(CG)	MOMENTS MOMENT Y	MOMENTS MOMENT Z
1								
	1	1	-0.1032671	0.0332017	-0.0000212	-0.0004995	0.0424169	0.6688373
		2	0.1032671	-0.0332017	0.0000212	0.0004995	-0.0420781	-0.1376094
	2	1	-0.0390047	0.0125499	-0.0000080	-0.0001883	0.0159932	0.2528116
		2	0.0390047	-0.0125499	0.0000080	0.0001883	-0.0158655	-0.0520137
	3	1	-0.0080744	0.0183665	-0.0004660	0.0007233	0.0005087	0.1551424
		2	0.0080744	-0.0183665	0.0004660	-0.0007233	0.0069467	0.1387209
	4	1	0.0	0.0	-0.0041980	-0.0014574	0.0000054	0.0
		2	0.0	0.0	0.0041980	0.0014574	0.0671632	0.0
	6	1	-0.0655279	0.0210838	-0.0000134	-0.0003164	0.0268686	0.4247231
		2	0.0655279	-0.0210838	0.0000134	0.0003164	-0.0266540	-0.0873829
	7	1	-0.0089626	0.0203867	-0.0005172	0.0008028	0.0005647	0.1722080
		2	0.0089626	-0.0203867	0.0005172	-0.0008028	0.0077109	0.1539802
	8	1	0.0	0.0	-0.0074725	-0.0025941	0.0000097	0.0
		2	0.0	0.0	0.0074725	0.0025941	0.1195505	0.0
	234	1	0.0398317	0.0222447	0.0042238	0.0016379	0.0160013	0.2966188
		2	0.0398317	0.0222447	0.0042238	0.0016379	0.0693604	0.1481516
	678	1	0.0661380	0.0293282	0.0074904	0.0027339	0.0268745	0.4583068
		2	0.0661380	0.0293282	0.0074904	0.0027339	0.1227282	0.1770471
	1001	1	-0.0634354	0.0554464	0.0042027	0.0011384	0.0584182	0.9654562
		2	0.1430988	-0.0109571	0.0042450	0.0021373	0.0272823	0.0105422
	1002	1	-0.1430988	0.0109571	-0.0042450	-0.0021373	0.0264155	0.3722184
		2	0.0634354	-0.0554464	-0.0042027	-0.0011384	-0.1114388	-0.2857609
	2001	1	-0.0371291	0.0625299	0.0074692	0.0022344	0.0692914	1.1271439
		2	0.1694051	-0.0038735	0.0075116	0.0032334	0.0806500	0.0394376
	2002	1	-0.1694051	0.0038735	-0.0075116	-0.0032334	0.0155423	0.2105305
		2	0.0371291	-0.0625299	-0.0074692	-0.0022344	-0.1648063	-0.3146564
2								
	1	2	-0.1275785	0.0031211	-0.0000040	-0.0000000	0.0416678	0.0856443
		3	0.1275785	-0.0031211	0.0000040	0.0000000	-0.0415706	-0.0253762
	2	2	-0.0481149	0.0011797	-0.0000015	0.0	0.0157108	0.0323710
		3	0.0481149	-0.0011797	0.0000015	0.0	-0.0156817	-0.0095904
	3	2	-0.0151987	0.0255631	-0.0004760	0.0000000	-0.0065363	0.0320240
		3	0.0151987	-0.0255631	0.0004760	-0.0000000	0.0757274	0.4615993
	4	2	0.0	0.0	-0.0097601	0.0000000	-0.0671597	0.0

		3	0.0	0.0	0.0097601	-0.0000000	0.2556271	0.0
	6	2	-0.0808329	0.0019820	-0.0000025	0.0	0.0263941	0.0543833
		3	0.0808329	-0.0019820	0.0000025	0.0	-0.0263453	-0.0161118
	7	2	-0.0168706	0.0283750	-0.0005283	0.0000000	-0.0072553	0.0355466
		3	0.0168706	-0.0283750	0.0005283	-0.0000000	0.0174574	0.5123749
	8	2	0.0	0.0	-0.0173730	0.0000000	-0.1195442	0.0
		3	0.0	0.0	0.0173730	-0.0000000	0.4550161	0.0
	234	2	0.0504583	0.0255903	0.0097717	0.0000000	0.0692818	0.0455348
		3	0.0504583	0.0255903	0.0097717	0.0000000	0.2565901	0.4616987
	678	2	0.0825747	0.0284441	0.0173810	0.0000000	0.1226381	0.0649700
		3	0.0825747	0.0284441	0.0173810	0.0000000	0.4561123	0.5126281
	1001	2	-0.0771202	0.0287114	0.0097677	0.0000000	0.1109496	0.1311790
		3	0.1780368	0.0224692	0.0097757	0.0000000	0.2149994	0.4363225
	1002	2	-0.1780368	-0.0224692	-0.0097757	-0.0000000	-0.0276140	0.0401095
		3	0.0771202	-0.0287114	-0.0097677	-0.0000000	-0.2981806	-0.4870747
	2001	2	-0.0450039	0.0315652	0.0173770	0.0000000	0.1643059	0.1506143
		3	0.2101532	0.0253231	0.0173850	0.0000000	0.4145215	0.4872519
	2002	2	-0.2101532	-0.0253231	-0.0173850	-0.0000000	-0.0809703	0.0206743
		3	0.0450039	-0.0315652	-0.0173770	-0.0000000	-0.4977028	-0.5380041
3								
	1	4	-0.0476382	-0.0332017	0.0000212	-0.0005155	0.0185831	-0.4430810
		5	0.0476382	0.0332017	-0.0000212	0.0005155	-0.0189218	-0.0891469
	2	4	-0.0179597	-0.0125499	0.0000080	-0.0001944	0.0070067	-0.1671025
		5	0.0179597	0.0125499	-0.0000080	0.0001944	-0.0071345	-0.0336954
	3	4	0.0080744	0.0196099	0.0004660	-0.0000617	-0.0005087	0.1759446
		5	-0.0080744	-0.0196099	-0.0004660	0.0000617	-0.0069467	0.1378134
	4	4	0.0	0.0	0.0041821	0.0010751	-0.0000054	0.0
		5	0.0	0.0	0.0041821	-0.0010751	0.0669189	0.0
	6	4	-0.0301724	-0.0210838	0.0000134	-0.0003265	0.0117713	-0.2807319
		5	0.0301724	0.0210838	-0.0000134	0.0003265	-0.0119859	-0.0566082
	7	4	0.0089626	0.0217669	0.0005172	-0.0000685	-0.0005647	0.1952985
		5	-0.0089626	-0.0217669	-0.0005172	0.0000685	-0.0077109	0.1529728
	8	4	0.0	0.0	-0.0074441	0.0019137	-0.0000097	0.0
		5	0.0	0.0	0.0074441	-0.0019137	0.1191156	0.0
	234	4	0.0196913	0.0232819	0.0042080	0.0010943	0.0070252	0.2426515
		5	0.0196913	0.0232819	0.0042080	0.0010943	0.0676557	0.1418729
	678	4	0.0314754	0.0303039	0.0074621	0.0019426	0.0117849	0.3419821
		5	0.0314754	0.0303039	0.0074621	0.0019426	0.1199652	0.1631109
	1001	4	-0.0279469	-0.0099199	0.0042291	0.0005788	0.0256083	-0.1994295
		5	0.0673295	0.0564836	0.0041868	0.0016098	0.0487339	0.0527260
	1002	4	-0.0673295	-0.0564836	-0.0041868	-0.0016098	0.0115579	-0.6847323
		5	0.0279469	0.0099199	-0.0042291	-0.0005788	-0.0865775	-0.2310197
	2001	4	-0.0161628	-0.0028979	0.0074832	0.0016271	0.0303679	-0.1000988
			0.0791135	0.0635056	0.0074409	0.0024581	0.1010433	0.0739641
	2002		-0.0791135	-0.0635056	-0.0074409	-0.0024581	0.0067982	-0.7840632
		5	0.0161628	0.0028979	-0.0074832	-0.0014271	-0.1388870	-0.2522578
4								
	1	5	-0.0763938	-0.0031211	0.0000040	-0.0001916	0.0193322	0.0345831
		6	0.0763938	0.0031211	-0.0000040	0.0001916	-0.0194093	-0.0948511
			-0.0287498	-0.0011797	0.0000015	-0.0000723	0.0072892	0.0130705
		6	0.0287498	0.0011797	-0.0000015	0.0000723	-0.0073183	-0.0358511
	3	5	-0.0151987	0.0256800	0.0004760	0.0001817	0.0065363	0.0329800
		6	-0.0151987	-0.0256800	-0.0004760	-0.0001817	-0.0157274	0.4629001
	4	5	0.0	0.0	-0.0097641	0.0000962	-0.0669227	0.0
		6	0.0	0.0	0.0097641	-0.0000962	0.2554677	0.0
			-0.0482996	-0.0019820	0.0000025	-0.0001214	0.0122458	0.0219584
		6	0.0482996	0.0019820	-0.0000025	0.0001214	-0.0122947	-0.0602298
	7	5	0.0168706	0.0285048	0.0005283	0.0002017	0.0072553	0.0366078

```
LOADING COMBINATION  1001  'DL+SRSS 234' COMPONENTS -
1 1  234 1
LOADING COMBINATION  1002  'DL-SRSS 234' COMPONENTS -
1 1  234 -1
LOADING COMBINATION  2001  'DL+SRSS 678' COMPONENTS -
1 1  678 1
LOADING COMBINATION  2002  'DL-SRSS 678' COMPONENTS -
1 1  678 -1
LOAD LIST -
6 7 8
COMBINE ALL
LOADS LIST -
  234  -
  678
GENERATE RESULTS
LOAD LIST -
1001 1002 2001 2002
COMBINE ALL
LOAD LIST -
ALL
OUTPUT BY JOINTS ; OUTPUT BY MEMBERS
LIST DISPLACEMENTS, REACTIONS, FORCES
SECTION FR NS 3 0. 0.5 1.0
GROUP '&LM' DEFINITION
MEMBERS ONLY ALL ACTIVE $ LOADED
END OF GROUP DEFINITION
LIST SECTION STRESS MEMBERS '&LM'
$ LIST OVERALL STRESS
PARAMETERS
'CODE' 'AISC' ALL ; 'VERSION' '69U1' ALL
'TORSION' 'YES' ALL ; 'CB' 1.0 ALL
'ASF' 1.6 LOADINGS  2001 2002
'FRMAX' 1.0 ALL
'FACMAX' 1.0 ALL
'FAIMAX' 1.0 ALL
'FSHMAX' 0.55 ALL
PARAMETERS
'LY' 35.31 MEM     1 to 4
'LZ' 47.94 MEM     5 6
'CMY' 1     MEM     1 to 4
?CMY' 0.85 MEM     5 6 7
'CMZ' 0.85 MEM     1 to 7
'KY'  2     MEM     1 to 4
'KZ'  1.55 MEM     1 to 4
'UNLCF' 47.94 MEM  5 6
LOAD LIST -
1001 1002 2001 2002
CHECK CODE -
ALL  -
GENERATING TRACE  6  RESULTS FOR FAILING MEMBERS
FINISH NOMESSAGES
```



CLIENT TUGC PROJECT Comanche Peak
SUBJECT CABLE TRAY SUPPORT
CTH-2-337
COMPUTER PROGRAM USED STRUDL (STATIC)
PREPARED BY: E. Rakhmilevich DATE 9/14/85
CHECKED BY: K. C. WANG DATE 9-18-85
REF. CALC. BOOK NO. .... PRINTOUT BOOK NO. ....

```
*****************************************************************
*                                                               *
*                       P S U I C E S                           *
*                                                               *
*               VERSION 5  MODIFICATION 5                       *
*                                                               *
*               A PROPRIETARY PRODUCT OF                        *
*                                                               *
*         PROJECT SOFTWARE AND DEVELOPMENT, INC.                *
*                   14 STORY STREET                             *
*           CAMBRIDGE, MASSACHUSETTS 02138                      *
*                 TEL  617-661-1444                             *
*                                                               *
*                 COPYRIGHT (C) 1985                            *
*                 ALL RIGHTS RESERVED                           *
*                                                               *
*                 RUN DATE = 09/13/85                           *
*        DYNAMIC CORE (VIRTUAL)  1429504 BYTES                  *
*              370/083    VS2  REL 03.81                        *
*                                                               *
*****************************************************************
```

THIS IS OVERALL RUN NO. 932

MONTH TO DATE STATISTICS FOR PASSWORD 'ERSTLY ' (EXCLUSIVE OF THIS RUN).

ENTRIES	390
COMPLETIONS	384
RECORDED CPU TIME	15MIN 1 SEC
RECORDED EXCPS	187459

```
         PPPPDPPPPPP          SSSSSSSSSSS  TTTTTTTTTTT  RRRRRRRRRRR  UU        UU  DDDDDDDDDDD  LL
        PPPPD DPPPPP         SSSSSSSSSSS  TTTTTTTTTTT  RRRRRRRRRRRR UU        UU  DDDDDDDDDDDD LL
       PPPPD  DPPPP         SS                TT      RR        RR UU        UU  DD        DD LL
      PPPPD   DPPP         SS                TT      RR        RR UU        UU  DD        DD LL
     PPPPD    DPP  HHHHH  SSSSSSSSSSS       TT      RRRRRRRRRRRR UU        UU  DD        DD LL
    PPPPD     DP  HHHHH  SSSSSSSSSSS       TT      RRRRRRRRRRRR UU        UU  DD        DD LL
   PPPPDDDDDDDD                   SS      TT      RRRR         UU        UU  DD        DD LL
  PPPPPPPPPPPP                   SS      TT      RR  RR       UU        UU  DD        DD LL
 PP                     SSSSSSSSSSS     TT      RR    RR     UUUUUUUUUU  DDDDDDDDDDDD LLLLLLLLLLL
PP                     SSSSSSSSSSS     TT      RR      RR   UUUUUUUUUU  DDDDDDDDDDD  LLLLLLLLLLL
```

```
**************************************************
*                                                *
*                P-DELTA STRUDL                  *
*                                                *
*                 VERSION 0385                   *
*                                                *
*          A PROPRIETARY PRODUCT OF              *
*                                                *
*                P-DELTA, INC.                   *
*              42 ST. ANN ROAD                   *
*        QUINCY, MASSACHUSETTS 02170             *
*            TEL. (617) 472-8533                 *
*                                                *
*      COPYRIGHT (C) 1982,1983,1984,1985         *
*             ALL RIGHTS RESERVED                *
*                                                *
*          10:53:33        9/13/85               *
*                                                *
**************************************************
```

TYPE SPACE FRAME

ALPHANUMERIC IDENTIFIER TREATMENT BY CHARACTER COMPARISON

UNITS INCHES, KIPS,DEGREES, FAHRENEIT, LBM, SECONDS

JOINT COORDINATES

1	0.0	0.0	0.0
2	0.0	16.0	0.0
3	0.0	35.31	0.0
4	47.94	0.0	0.0
5	47.94	16.0	0.0
6	47.94	35.31	0.0
7	14.0	0.0	0.0

```
SUPPORT JOINTS -
  3 6
JOINT RELEASES
  3       M Y
MEMBER INCIDENCES
1      1 2
2      2 3
3      4 5
4      5 6
5      1 7
6      7 4
7      2 5
CONSTANTS
E 29.E3 ALL , POISSON .3 ALL , DENS 0.284 ALL
G 11.2E3 ALL , CTE 0.0000065 ALL , FYLD 36.0 ALL
CONSTANTS
BETA 180   1 TO 4
MEMBER PROPERTIES
  1 TO 4    TABLE 'STEELC1' 'C6X8'  TYPE 'CHANNEL'
  5 TO 7    TABLE 'STEELC1' 'C4X7' TYPE 'CHANNEL'
LOADING  1  'DEAD LOAD'
DEAD LOAD COMP GLO Y -1 BY JOINTS
JOINT LOADS
  7       F Y  -.111 M X       .061
LOADING  2  'OBE NEG VERT SEIS'
DEAD LOAD COMP GLO Y -0.375 BY JOINTS
JOINT LOADS
  7        F Y -.042 M X  .023
LOADING  3  'OBE POS HOR TRANS SEIS'
DEAD LOAD COMP GLO X  .25  BY JOINTS
```

```
JOINT LOADS
  7        M Y   023   M Z   056
  1        F X .014
  4        F X .014
LOADING  4  'OBE POS HOR LONG SEIS'
DEAD LOAD COMP QLO Z  .21 BY JOINTS
LOADING COMBINATION  6       'SSE NEG VERT SEIS' COMPONENTS -
2  1.68
LOADING COMBINATION  7       'SSE POS HOR TRANS SEIS' COMPONENTS -
3  1.11
LOADING COMBINATION  8       'SSE POS HOR LONG SEIS' COMPONENTS -
4  1.78
PRINT STRUCTURAL DATA
```

```
*****************************************
*  PROBLEM DATA FROM INTERNAL STORAGE   *
*****************************************
```

JOB ID - 2-00337S   JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	DEG	FAH	SEC	LBM

********** STRUCTURAL DATA **********

JOINT COORDINATES---/-CONDITION-/--STATUS--/

JOINT	X	Y	Z	CONDITION	STATUS
1	0.0	0.0	0.0		ACTIVE
2	0.0	16.000	0.0		ACTIVE
3	0.0	35.310	0.0	SUPPORT	ACTIVE
4	47.940	0.0	0.0		ACTIVE
5	47.940	16.000	0.0		ACTIVE
6	47.940	35.310	0.0	SUPPORT	ACTIVE
7	14.000	0.0	0.0		ACTIVE

JOINT RELEASES---/ELASTIC SUPPORT RELEASES---/

JOINT	FORCE	MOMENT	THETA 1	THETA 2	THETA 3	KFX	KFY	KFZ	KMX	KMY	KMZ
3		Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MEMBER INCIDENCES---/ LENGTH PROJECTIONS ON GLOBAL AXES----/ RELEASES---/ STATUS--/

MEMBER	START	END	LENGTH	X	Y	Z	START FORCE	START MOMENT	END FORCE	END MOMENT	STATUS		
1	1	2	16.000	0.0	16.000	0.0					ACTIVE	SPACE	FRAME
2	2	3	19.310	0.0	19.310	0.0					ACTIVE	SPACE	FRAME
3	4	5	16.000	0.0	16.000	0.0					ACTIVE	SPACE	FRAME
4	5	6	19.310	0.0	19.310	0.0					ACTIVE	SPACE	FRAME
5	1	7	14.000	14.000	0.0	0.0					ACTIVE	SPACE	FRAME
6	7	4	33.940	33.940	0.0	0.0					ACTIVE	SPACE	FRAME
7	2	5	47.940	47.940	0.0	0.0					ACTIVE	SPACE	FRAME

ELEMENT INCIDENCES---/

ELEMENT   NODES

MEMBER PROPERTIES---/

MEM/SEG.LEN	TYPE TABLE	AY	AY YD FLTK	AZ ZD WBTK	IX OD	IY ID	IZ SFX	SY RAD	SZ ALP	YC TYP	ZC SPA	EY GEN	EZ IYZ
1	TABLE STEELC1 C6X8	2.400	1.200 6.000 0.343	0.878 1.920 0.200	0.075 0.0	0.692 0.0	13.100 0.0	0.492 0.0	4.380 0.0	3.000 CHANNEL	1.408 0.0	0.0 YES	0.0 0.0
2	TABLE STEELC1 C6X8	2.400	1.200 6.000 0.343	0.878 1.920 0.200	0.075 0.0	0.692 0.0	13.100 0.0	0.492 0.0	4.380 0.0	3.000 CHANNEL	1.408 0.0	0.0 YES	0.0 0.0
3	TABLE STEELC1 C6X8	2.400	1.200 6.000 0.343	0.878 1.920 0.200	0.075 0.0	0.692 0.0	13.100 0.0	0.492 0.0	4.380 0.0	3.000 CHANNEL	1.408 0.0	0.0 YES	0.0 0.0
4	TABLE STEELC1 C6X8	2.400	1.200 6.000 0.343	0.878 1.920 0.200	0.075 0.0	0.692 0.0	13.100 0.0	0.492 0.0	4.380 0.0	3.000 CHANNEL	1.408 0.0	0.0 YES	0.0 0.0
5	TABLE STEELC1 C4X7	2.130	1.284 4.000 0.296	0.679 1.721 0.321	0.082 0.0	0.432 0.0	4.590 0.0	0.343 0.0	2.290 0.0	2.000 CHANNEL	1.262 0.0	0.0 YES	0.0 0.0
6	TABLE STEELC1 C4X7	2.130	1.284 4.000 0.296	0.679 1.721 0.321	0.082 0.0	0.432 0.0	4.590 0.0	0.343 0.0	2.290 0.0	2.000 CHANNEL	1.262 0.0	0.0 YES	0.0 0.0
7	TABLE STEELC1 C4X7	2.130	1.284 4.000 0.296	0.679 1.721 0.321	0.082 0.0	0.432 0.0	4.590 0.0	0.343 0.0	2.290 0.0	2.000 CHANNEL	1.262 0.0	0.0 YES	0.0 0.0

MEMBER CONSTANTS

CONSTANT	STANDARD VALUE	DOMAIN.	VALUE	MEMBER LIST
E	0.290000E 05	ALL		
G	0.112000E 05	ALL		
CTE	0.650000E-05	ALL		
DENSITY	0.284000E 00	ALL		
POISSON	0.300000E 00	ALL		
FYLD	0.360000E 02	ALL		
BETA	0.0	ALL BUT	0.180000E 03	1 2 3 4
CBETA	0.0	ALL		
FULT	0.600000E 02	ALL		

```
****************************************
*  END OF DATA FROM  INTERNAL STORAGE  *
****************************************
```

PRINT LOADING DATA

```
*****************************************
*  PROBLEM DATA FROM INTERNAL STORAGE   *
*****************************************
JOB ID -   2-003379       JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -  LENGTH        WEIGHT        ANGLE       TEMPERATURE      TIME           MASS
                  INCH          KIPF          DEG           FAH           SEC            LBM


          ********** LOADING DATA **********

LOADING - 1           DEAD LOAD                                                            STATUS - ACTIVE

/----------NON-SELECTIVE DEAD LOAD COMPONENTS GIVEN----------/

 COMPONENTS : X   0.0    Y  -1.0000 Z   0.0     BY  JOINTS   GLOBAL

MEMBER AND ELEMENT LOADS------------------------------------------------------------------------------/
MEMBER/ELEMENT

JOINT LOADS---------------------------------------------/ ------------------------------------/
JOINT      STEP   FORCE X            Y           Z       MOMENT X           Y          Z
7                       0.0       -0.111       0.0             0.061       0.0        0.0

JOINT DISPLACEMENTS-------------------------------------/ ------------------------------------/
JOINT      STEP   DISP. X            Y           Z       ROT.   X           Y          Z

JOINT FORCE ASSUMPTIONS ---------------------------------------------------------------------------/

JOINT      THETA  1         2        3      FORCE X           Y           Z      MOMENT X          Y          Z
NO ASSUMPTIONS GIVEN FOR THIS LOADING


MEMBER FORCE ASSUMPTIONS ---------------------/     ---------------------------------/

MEMBER        COMPONENT   DISTANCE      VALUE          COMPONENT   DISTANCE     VALUE
NO ASSUMPTIONS GIVEN FOR THIS LOADING


LOADING - 2           OBE NEG VERT SEIS                                                     STATUS - ACTIVE

/----------NON-SELECTIVE DEAD LOAD COMPONENTS GIVEN----------/

 COMPONENTS   X   0.0    Y  -0.3750 Z   0.0     BY  JOINTS   GLOBAL

MEMBER AND ELEMENT LOADS------------------------------------------------------------------------------/
```

MEMBER/ELEMENT

JOINT LOADS

JOINT	STEP	FORCE X	Y	Z	MOMENT X	Y	Z
7		0.0	-0.042	0.0	0.023	0.0	0.0

JOINT DISPLACEMENTS

JOINT	STEP	DISP. X	Y	Z	ROT. X	Y	Z

JOINT FORCE ASSUMPTIONS

JOINT	THETA 1	2	3	FORCE X	Y	Z	MOMENT X	Y	Z

NO ASSUMPTIONS GIVEN FOR THIS LOADING

MEMBER FORCE ASSUMPTIONS

MEMBER	COMPONENT	DISTANCE	VALUE	COMPONENT	DISTANCE	VALUE

NO ASSUMPTIONS GIVEN FOR THIS LOADING

LOADING - 3 DBF POS HOR TRANS SEIS STATUS - ACTIVE

/----------NON-SELECTIVE DEAD LOAD COMPONENTS GIVEN----------/

COMPONENTS : X 0.2500 Y 0.0 Z 0.0 BY JOINTS GLOBAL

MEMBER AND ELEMENT LOADS

MEMBER/ELEMENT

JOINT LOADS

JOINT	STEP	FORCE X	Y	Z	MOMENT X	Y	Z
1		0.014	0.0	0.0	0.0	0.0	0.0
4		0.014	0.0	0.0	0.0	0.0	0.0
7		0.0	0.0	0.0	0.0	0.023	0.056

JOINT DISPLACEMENTS

JOINT	STEP	DISP. X	Y	Z	ROT. X	Y	Z

JOINT FORCE ASSUMPTIONS

JOINT	THETA 1	2	3	FORCE X	Y	Z	MOMENT X	Y	Z

NO ASSUMPTIONS GIVEN FOR THIS LOADING

MEMBER FORCE ASSUMPTIONS

MEMBER	COMPONENT	DISTANCE	VALUE	COMPONENT	DISTANCE	VALUE

NO ASSUMPTIONS GIVEN FOR THIS LOADING

```
LOADING - 4            OBE POS HOR LONG SEIS                                              STATUS - ACTIVE

/----------NON-SELECTIVE DEAD LOAD COMPONENTS GIVEN----------/

 COMPONENTS : X   0.0    Y   0.0    Z   0.2100  BY  JOINTS   GLOBAL

MEMBER AND ELEMENT LOADS--------------------------------------------------------------------------------/
MEMBER/ELEMENT

JOINT LOADS------------------------------------------/ -------------------------------------/
JOINT      STEP   FORCE X            Y            Z      MOMENT X           Y            Z

JOINT DISPLACEMENTS----------------------------------/ -------------------------------------/
JOINT      STEP   DISP. X            Y            Z      ROT.   X           Y            Z

JOINT FORCE ASSUMPTIONS ---------------------------------------------------------------------------/

JOINT      THETA  1          2          3     FORCE X            Y            Z     MOMENT X           Y            Z
NO ASSUMPTIONS GIVEN FOR THIS LOADING


MEMBER FORCE ASSUMPTIONS ----------------------/     ----------------------------------/

MEMBER        COMPONENT   DISTANCE       VALUE           COMPONENT   DISTANCE      VALUE
NO ASSUMPTIONS GIVEN FOR THIS LOADING


LOADING - 6            SSE NEG VERT SEIS                                                  STATUS - ACTIVE

         COMBINATION GIVEN -   2          1.680



LOADING - 7            SSE POS HOR TRANS SEIS                                             STATUS - ACTIVE

         COMBINATION GIVEN -   3          1.110



LOADING - 8            SSE POS HOR LONG SEIS                                              STATUS - ACTIVE

         COMBINATION GIVEN -   4          1.780
```

```
****************************************
*  END OF DATA FROM  INTERNAL STORAGE  *
****************************************
```

STIFFNESS ANALYSIS REDUCE BAND

BANDWIDTH USING INITIAL JOINT NUMBERING :

THE MAXIMUM BANDWIDTH IS 5 AND OCCURS AT JOINT 7
THE AVERAGE BANDWIDTH IS 1.667
THE STANDARD DEVIATION OF THE BANDWIDTH IS 1.966

BANDWIDTH AFTER INTERNALLY RENUMBERING STRUCTURE :

THE MAXIMUM BANDWIDTH IS 2 AND OCCURS AT JOINT 1
THE AVERAGE BANDWIDTH IS 1.333
THE STANDARD DEVIATION OF THE BANDWIDTH IS 0.816

```
************************************************************
* TOTAL DEAD WEIGHT OF STRUCTURE =  0.106134182D 00 KIPF *
************************************************************
```

LOADING COMBINATION 234 'OBE SRSS 2 3 4' RMS -
2 3 4

LOADING COMBINATION 678 'SSE SRSS 6 7 8' RMS -
6 7 8

STRESS RESULTS ARE TO BE COMBINED AT STRESS LEVEL

LOADING COMBINATION 1001 'DL+SRSS 234' COMPONENTS -
1 1. 234 1.

LOADING COMBINATION 1002 'DL-SRSS 234' COMPONENTS -
1 1. 234 -1.

LOADING COMBINATION 2001 'DL+SRSS 678' COMPONENTS -
1 1. 678 1.

LOADING COMBINATION 2002 'DL-SRSS 678' COMPONENTS -
1 1. 678 -1.

LOAD LIST -
[illegible]

COMBINE ALL

```
LOADS LIST -
  234 -
  678

GENERATE RESULTS

LOAD LIST -
1001 1002 2001 2002

COMBINE ALL

LOAD LIST -
ALL

OUTPUT BY JOINTS ; OUTPUT BY MEMBERS

LIST DISPLACEMENTS, REACTIONS, FORCES
```

```
*****************************
*RESULTS OF LATEST ANALYSIS*
*****************************
```

JOB ID - 2-00337S JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	DEG	FAH	SEC	LBM

MEMBER FORCES

MEMBER	LOADING	JOINT	FORCES AXIAL	FORCES SHEAR Y	FORCES SHEAR Z	MOMENTS TORSION(CQ)	MOMENTS MOMENT Y	MOMENTS MOMENT Z
1								
	1	1	-0.1032671	0.0332017	-0.0000212	-0.0004995	0.0424169	0.6688373
		2	0.1032671	-0.0332017	0.0000212	0.0004995	-0.0420781	-0.1376094
	2	1	-0.0390047	0.0125499	-0.0000080	-0.0001883	0.0159932	0.2528116
		2	0.0390047	-0.0125499	0.0000080	0.0001883	-0.0158655	-0.0520137
	3	1	-0.0080744	0.0183665	-0.0004660	0.0007233	0.0005087	0.1551424
		2	0.0080744	-0.0183665	0.0004660	-0.0007233	0.0069467	0.1387209
	4	1	0.0	0.0	-0.0041980	-0.0014574	0.0000054	0.0
		2	0.0	0.0	0.0041980	0.0014574	0.0671632	0.0
	6	1	-0.0655279	0.0210838	-0.0000134	-0.0003164	0.0268686	0.4247231
		2	0.0655279	-0.0210838	0.0000134	0.0003164	-0.0266540	-0.0873829
	7	1	-0.0089626	0.0203867	-0.0005172	0.0008028	0.0005647	0.1722080
		2	0.0089626	-0.0203867	0.0005172	-0.0008028	0.0077109	0.1539802
	8	1	0.0	0.0	-0.0074725	-0.0025941	0.0000097	0.0
		2	0.0	0.0	0.0074725	0.0025941	0.1195505	0.0
	234	1	0.0398317	0.0222447	0.0042238	0.0016379	0.0160013	0.2966188
		2	0.0398317	0.0222447	0.0042238	0.0016379	0.0693604	0.1481516
	678	1	0.0661380	0.0293282	0.0074904	0.0027339	0.0268745	0.4583068
		2	0.0661380	0.0293282	0.0074904	0.0027339	0.1227282	0.1770471
	1001	1	-0.0634354	0.0554464	0.0042027	0.0011384	0.0584182	0.9654562
		2	0.1430988	-0.0109571	0.0042450	0.0021373	0.0272823	0.0105422
	1002	1	-0.1430988	0.0109571	-0.0042450	-0.0021373	0.0264155	0.3722184
		2	0.0634354	-0.0554464	-0.0042027	-0.0011384	-0.1114385	-0.2857609
	2001	1	-0.0371291	0.0625299	0.0074692	0.0022344	0.0692914	1.1271439
		2	0.1694051	-0.0038735	0.0075116	0.0032334	0.0806500	0.0394376
	2002	1	-0.1694051	0.0038735	-0.0075116	-0.0032334	0.0155423	0.2105305
		2	0.0371291	-0.0625299	-0.0074692	-0.0022344	-0.1648063	-0.3146564
2								
	1	2	-0.1275785	0.0031211	-0.0000040	-0.0000000	0.0416678	0.0856443
		3	0.1275785	-0.0031211	0.0000040	0.0000000	-0.0415906	-0.0253762
	2	2	-0.0481149	0.0011797	-0.0000015	0.0	0.0157108	0.0323710
		3	0.0481149	-0.0011797	0.0000015	0.0	-0.0156817	-0.0095904
	3	2	-0.0151987	0.0255631	-0.0004760	0.0000000	-0.0065363	0.0320240
		3	0.0151987	-0.0255631	0.0004760	-0.0000000	0.0157274	0.4615993
	4	2	0.0	0.0	-0.0097601	0.0000000	-0.0671597	0.0

		3	0.0	0.0	0.0097601	-0.0000000	0.2556271	0.0
	6	2	-0.0808329	0.0019820	-0.0000025	0.0	0.0263941	0.0543833
		3	0.0808329	0.0019820	0.0000025	0.0	-0.0263453	-0.0161118
	7	2	-0.0168706	0.0283750	-0.0005283	0.0000000	-0.0072553	0.0355466
		3	0.0168706	-0.0283750	0.0005283	-0.0000000	0.0174574	0.5123749
	8	2	0.0	0.0	-0.0173730	0.0000000	-0.1195442	0.0
		3	0.0	0.0	0.0173730	-0.0000000	0.4550161	0.0
	234	2	0.0504583	0.0255903	0.0097717	0.0000000	0.0692818	0.0455348
		3	0.0504583	0.0255903	0.0097717	0.0000000	0.2565901	0.4616987
	678	2	0.0825747	0.0284441	0.0173810	0.0000000	0.1226381	0.0649700
		3	0.0825747	0.0284441	0.0173810	0.0000000	0.4561123	0.5126281
	1001	2	-0.0771202	0.0287114	0.0097677	0.0000000	0.1109496	0.1311790
		3	0.1780368	0.0224692	0.0097757	0.0000000	0.2149994	0.4363225
	1002	2	-0.1780368	-0.0224692	-0.0097757	-0.0000000	-0.0276140	0.0401095
		3	0.0771202	-0.0287114	-0.0097677	-0.0000000	-0.2981806	-0.4870747
	2001	2	-0.0450039	0.0315652	0.0173770	0.0000000	0.1643059	0.1506143
		3	0.2101532	0.0253231	0.0173850	0.0000000	0.4145215	0.4872519
	2002	2	-0.2101532	-0.0253231	-0.0173850	-0.0000000	-0.0809703	0.0206743
		3	0.0450039	-0.0315652	-0.0173770	-0.0000000	-0.4977028	-0.5380041
3								
	1	4	-0.0476382	-0.0332017	0.0000212	-0.0005155	0.0185831	-0.4420810
		5	0.0476382	0.0332017	-0.0000212	0.0005155	-0.0189218	-0.0891469
	2	4	-0.0179597	-0.0125499	0.0000080	-0.0001944	0.0070067	-0.1671025
		5	0.0179597	0.0125499	-0.0000080	0.0001944	-0.0071345	-0.0336954
	3	4	0.0080744	0.0196099	0.0004660	-0.0000617	-0.0005087	0.1759446
		5	-0.0080744	-0.0196099	-0.0004660	0.0000617	-0.0069467	0.1378134
	4	4	0.0	0.0	-0.0041821	0.0010751	-0.0000054	0.0
		5	0.0	0.0	0.0041821	-0.0010751	0.0669189	0.0
	6	4	-0.0301724	-0.0210838	0.0000134	-0.0003265	0.0117713	-0.2807319
		5	0.0301724	0.0210838	-0.0000134	0.0003265	-0.0119859	-0.0566082
	7	4	0.0089626	0.0217669	0.0005172	-0.0000685	-0.0005647	0.1952985
		5	-0.0089626	-0.0217669	-0.0005172	0.0000685	-0.0077109	0.1529728
	8	4	0.0	0.0	-0.0074441	0.0019137	-0.0000097	0.0
		5	0.0	0.0	0.0074441	-0.0019137	0.1191156	0.0
	234	4	0.0196913	0.0232819	0.0042080	0.0010943	0.0070252	0.2426515
		5	0.0196913	0.0232819	0.0042080	0.0010943	0.0676557	0.1418729
	678	4	0.0314754	0.0303039	0.0074621	0.0019426	0.0117849	0.3419821
		5	0.0314754	0.0303039	0.0074621	0.0019426	0.1199652	0.1631109
	1001	4	-0.0279469	-0.0099199	0.0042291	0.0005788	0.0256083	-0.1994295
		5	0.0673295	0.0564836	0.0041868	0.0016098	0.0487339	0.0527260
	1002	4	-0.0673295	-0.0564836	-0.0041868	-0.0016098	0.0115579	-0.6847323
		5	0.0279469	0.0099199	-0.0042291	-0.0005788	-0.0865775	-0.2310197
	2001	4	-0.0161628	-0.0028979	0.0074832	0.0014271	0.0303679	-0.1000988
		[illegible]	0.0791135	0.0635056	0.0074409	0.0024581	0.1010433	0.0739641
	[illegible]		-0.0791135	-0.0635056	-0.0074409	-0.0024581	0.0067982	-0.7840632
		5	0.0161628	0.0028979	-0.0074832	-0.0014271	-0.1388870	-0.2522578
4								
	1	5	-0.0763938	-0.0031211	0.0000040	-0.0001916	0.0193322	0.0345831
		[illegible]	0.0763938	0.0031211	-0.0000040	0.0001916	-0.0194093	-0.0948511
			-0.0287498	-0.0011797	0.0000015	-0.0000723	0.0072892	0.0130705
		6	0.0287498	0.0011797	-0.0000015	0.0000723	-0.0073183	-0.0358511
	3	5	0.0151987	0.0256800	0.0004760	0.0001817	0.0065363	0.0329800
		6	-0.0151987	-0.0256800	-0.0004760	-0.0001817	-0.0157274	0.4629001
	4	5	0.0	0.0	-0.0097641	0.0000962	-0.0669227	0.0
		[illegible]	0.0	0.0	0.0097641	-0.0000962	0.2554677	0.0
			-0.0482996	-0.0019820	0.0000025	-0.0001214	0.0122458	0.0219584
		6	0.0482996	0.0019820	-0.0000025	0.0001214	-0.0122947	-0.0602298
	[illegible]	5	0.0168706	0.0285048	0.0005283	0.0002017	0.0072553	0.0366078

		6	-0.0168705	-0.0285048	-0.0005283	-0.0002017	-0.0174574	0.5138188
	8	5	0.0	0.0	-0.0173801	0.0001713	-0.1191224	0.0
		6	0.0	0.0	0.0173801	-0.0001713	0.4547324	0.0
	234	5	0.0325200	0.0257071	0.0097757	0.0002179	0.0676351	0.0354756
		6	0.0325200	0.0257071	0.0097757	0.0002179	0.2560558	0.4642861
	678	5	0.0511612	0.0285736	0.0173881	0.0002911	0.1199697	0.0426884
		6	0.0511612	0.0285736	0.0173881	0.0002911	0.4552331	0.5173366
	1001	5	-0.0438739	0.0225860	0.0097797	0.0000263	0.0869672	0.0700586
		6	0.1089138	0.0288281	0.0097717	0.0004096	0.2366465	0.3694348
	1002	5	-0.1089138	-0.0288281	-0.0097717	-0.0004096	-0.0483029	-0.0008926
		6	0.0438739	-0.0225860	-0.0097797	-0.0000263	-0.2754650	-0.5591372
	2001	5	-0.0252327	0.0254525	0.0173921	0.0000995	0.1393019	0.0772715
		6	0.1275550	0.0316947	0.0173841	0.0004828	0.4358237	0.4224853
	2002	5	-0.1275550	-0.0316947	-0.0173841	-0.0004828	-0.1006376	-0.0081054
		6	0.0252327	-0.0254525	-0.0173921	-0.0000995	-0.4746423	-0.6121877
5								
	1	1	-0.0332017	0.0935799	-0.0000212	-0.0424169	0.0004995	0.6688373
		7	0.0332017	-0.0935799	0.0000212	0.0424169	-0.0002031	0.6412809
	2	1	-0.0125499	0.0353720	-0.0000080	-0.0159932	0.0001883	0.2528116
		7	0.0125499	-0.0353720	0.0000080	0.0159932	-0.0000766	0.2423970
	3	1	-0.0019447	0.0080744	-0.0004660	-0.0005087	-0.0007233	0.1551424
		7	0.0019447	-0.0080744	0.0004660	0.0005087	0.0072468	-0.0421007
	4	1	0.0	0.0	-0.0021637	-0.0000054	0.0014574	0.0
		7	0.0	0.0	0.0021637	0.0000054	0.0288347	0.0
	6	1	-0.0210838	0.0594250	-0.0000134	-0.0268686	0.0003164	0.4247231
		7	0.0210838	-0.0594250	0.0000134	0.0268686	-0.0001286	0.4072267
	7	1	-0.0021586	0.0089626	-0.0005172	-0.0005647	-0.0008028	0.1722080
		7	0.0021586	-0.0089626	0.0005172	0.0005647	0.0080440	-0.0467317
	8	1	0.0	0.0	-0.0038514	-0.0000097	0.0025941	0.0
		7	0.0	0.0	0.0038514	0.0000097	0.0513258	0.0
	234	1	0.0126996	0.0362819	0.0022133	0.0160013	0.0016379	0.2966188
		7	0.0126996	0.0362819	0.0022133	0.0160013	0.0297315	0.2460260
	678	1	0.0211940	0.0600971	0.0038860	0.0268745	0.0027339	0.4583068
		7	0.0211940	0.0600971	0.0038860	0.0268745	0.0519525	0.4098991
	1001	1	-0.0205021	0.1298618	0.0021922	-0.0264155	0.0021373	0.9654562
		7	0.0459014	-0.0572980	0.0022345	0.0584182	0.0295284	0.8873068
	1002	1	-0.0459014	0.0572980	-0.0022345	-0.0584182	-0.0011384	0.3722184
		7	0.0205021	-0.1298618	-0.0021922	0.0264155	-0.0299346	0.3952549
	2001	1	-0.0120078	0.1536769	0.0038649	-0.0155423	0.0032334	1.1271439
		7	0.0543957	-0.0334828	0.0039072	0.0692914	0.0517494	1.0511799
	2002	1	-0.0543957	0.0334828	-0.0039072	-0.0692914	-0.0022344	0.2105305
		7	0.0120078	-0.1536769	-0.0038649	0.0155423	-0.0521555	0.2313818
6								
	1	7	-0.0332017	-0.0319199	-0.0000212	0.0185831	0.0002031	-0.6412805
		4	0.0332017	0.0319199	0.0000212	-0.0185831	0.0005155	-0.4420810
	2	7	-0.0125499	-0.0120654	-0.0000080	0.0070067	0.0000766	-0.2423968
		4	0.0125499	0.0120654	0.0000080	-0.0070067	0.0001944	-0.1671025
	3	7	0.0016803	0.0080744	-0.0004660	-0.0005087	0.0157532	0.0981005
		4	-0.0016803	-0.0080744	0.0004660	0.0005087	0.0000617	0.1759446
	4	7	0.0	0.0	0.0008813	-0.0000054	-0.0288347	0.0
		4	0.0	0.0	-0.0008813	0.0000054	-0.0010751	0.0
	6	7	-0.0210838	-0.0202699	-0.0000134	0.0117713	0.0001286	-0.4072265
		4	0.0210838	0.0202699	0.0000134	-0.0117713	0.0003265	-0.2807319
	7	7	0.0018652	0.0089626	-0.0005172	-0.0005647	0.0174860	0.1088915
		4	-0.0018652	-0.0089626	0.0005172	0.0005647	0.0000685	0.1952985
	8	7	0.0	0.0	0.0015686	-0.0000097	-0.0513258	0.0
		4	0.0	0.0	-0.0015686	0.0000097	-0.0019137	0.0
	234	7	0.0126619	0.0145179	0.0009969	0.0070252	0.0328574	0.2614953

		4	0.0128819	0.0145179	0.0009969	0.0070252	0.0010943	0.2426515
	678	7	0.0211661	0.0221629	0.0016518	0.0117849	0.0542228	0.4215336
		4	0.0211661	0.0221629	0.0016518	0.0117849	0.0019426	0.3419821
	1001	7	-0.0205399	-0.0174020	0.0009757	0.0256083	0.0330608	-0.3797851
		4	0.0458636	0.0464378	0.0010181	-0.0115579	0.0016098	-0.1994295
	1002	7	-0.0458636	-0.0464378	-0.0010181	0.0115579	-0.0326543	-0.9027758
		4	0.0205399	0.0174020	-0.0009757	-0.0256083	-0.0005788	-0.6847323
	2001	7	-0.0120357	-0.0097570	0.0016306	0.0303679	0.0544259	-0.2197468
		4	0.0543678	0.0540828	0.0016729	-0.0067982	0.0024581	-0.1000988
	2002	7	-0.0543678	-0.0540828	-0.0016729	0.0067982	-0.0540197	-1.0628138
		4	0.0120357	0.0097570	-0.0016306	-0.0303679	-0.0014271	-0.7840632
7								
	1	2	0.0300807	-0.0022221	0.0000172	0.0004103	-0.0004995	-0.0519651
		5	-0.0300807	0.0022221	-0.0000172	-0.0004103	-0.0003239	-0.0545638
	2	2	0.0113701	-0.0008400	0.0000065	0.0001547	-0.0001883	-0.0196426
		5	-0.0113701	0.0008400	-0.0000065	-0.0001547	-0.0001221	-0.0206249
	3	2	-0.0005633	0.0071243	-0.0000100	-0.0004104	0.0007233	0.1707452
		5	0.0005633	-0.0071243	0.0000100	0.0004104	-0.0002434	0.1707938
	4	2	0.0	0.0	0.0000100	-0.0000037	-0.0014574	0.0
		5	0.0	0.0	-0.0000100	0.0000037	0.0009789	0.0
	6	2	0.0191018	-0.0014111	0.0000109	0.0002599	-0.0003164	-0.0329995
		5	-0.0191018	0.0014111	-0.0000109	-0.0002599	-0.0002052	-0.0346498
	7	2	-0.0006252	0.0079080	-0.0000111	-0.0004555	0.0008028	0.1895271
		5	0.0006252	-0.0079080	0.0000111	0.0004555	-0.0002702	0.1895811
	8	2	0.0	0.0	0.0000178	-0.0000065	-0.0025941	0.0
		5	0.0	0.0	-0.0000178	0.0000065	0.0017424	0.0
	234	2	0.0113841	0.0071736	0.0000155	0.0004386	0.0016379	0.1718713
		5	0.0113841	0.0071736	0.0000155	0.0004386	0.0010160	0.1720347
	678	2	0.0191120	0.0080329	0.0000236	0.0005245	0.0027339	0.1923785
		5	0.0191120	0.0080329	0.0000236	0.0005245	0.0017751	0.1927216
	1001	2	0.0414647	0.0049515	0.0000327	0.0008489	0.0011384	0.1199062
		5	-0.0186966	0.0093958	-0.0000016	0.0000283	0.0006922	0.1174709
	1002	2	0.0186966	-0.0093958	0.0000016	-0.0000283	-0.0021373	-0.2238364
		5	-0.0414647	-0.0049515	-0.0000327	-0.0008489	-0.0013399	-0.2265985
	2001	2	0.0491927	0.0058108	0.0000408	0.0009348	0.0022344	0.1404135
		5	-0.0109686	0.0102550	0.0000064	0.0001142	0.0014512	0.1381577
	2002	2	0.0109686	-0.0102550	-0.0000064	-0.0001142	-0.0032334	-0.2443436
		5	-0.0491927	-0.0058108	-0.0000408	-0.0009348	-0.0020990	-0.2472854

REACTIONS AT SUPPORT JOINTS

JOINT		LOADING	FORCES			MOMENTS		
			X FORCE	Y FORCE	Z FORCE	X MOMENT	Y MOMENT	Z MOMENT
3	GLOBAL							
		1	0.0031211	0.1341593	-0.0000040	-0.0415906	0.0	0.0253762
		2	0.0011797	0.0505827	-0.0000015	-0.0156817	0.0	0.0095904
		3	-0.0272083	0.0151987	-0.0004760	0.0157274	0.0	-0.4615993
		4	0.0	0.0	-0.0111421	0.2556271	0.0	0.0
		6	-0.0019820	0.0849788	-0.0000025	-0.0263453	0.0	0.0161118
		7	-0.0302012	0.0168706	-0.0005283	0.0174574	0.0	-0.5123749
		8	0.0	0.0	-0.0198329	0.4550161	0.0	0.0
		234	0.0272339	0.0520167	0.0111522	0.2565901	0.0	0.4616987
		678	0.0302662	0.0866372	0.0198399	0.4561123	0.0	0.5126281

		1001	0.0241128	0.1869761	0.0111482	0.2149994	0.0	0.4870747
		1002	-0.0303549	0.0813426	-0.0111562	-0.2981806	0.0	-0.4363225
		2001	0.0271451	0.2207966	0.0198359	0.4145215	0.0	0.5380041
		2002	-0.0333872	0.0475221	-0.0198439	-0.4977028	0.0	-0.4872519
6	GLOBAL							
		1	0.0031211	0.0829747	0.0000040	-0.0194093	0.0001916	0.0948511
		2	0.0011797	0.0312176	0.0000015	-0.0073183	0.0000723	0.0358511
		3	0.0273252	-0.0151987	0.0004760	-0.0157274	-0.0001817	-0.4629001
		4	0.0	0.0	-0.0111461	0.2554677	-0.0000962	0.0
		6	0.0019820	0.0524455	0.0000025	-0.0122947	0.0001214	0.0602298
		7	-0.0303309	-0.0168706	0.0005283	-0.0174574	-0.0002017	-0.5138188
		8	0.0	0.0	-0.0198400	0.4547324	-0.0001713	0.0
		234	0.0273506	0.0347209	0.0111562	0.2560558	0.0002179	0.4642861
		678	0.0303956	0.0550922	0.0198471	0.4552331	0.0002911	0.5173366
		1001	0.0304717	0.1176955	0.0111602	0.2366465	0.0004096	0.5591372
		1002	-0.0242295	0.0482538	-0.0111523	-0.2764650	-0.0000263	-0.3694348
		2001	0.0335167	0.1380668	0.0198510	0.4358237	0.0004828	0.6121877
		2002	-0.0272745	0.0278825	-0.0198431	-0.4746423	-0.0000995	-0.4224853

JOINT DISPLACEMENTS - SUPPORTS

JOINT		LOADING	/------DISPLACEMENTS------			//------ROTATIONS------		/
			X DISP	Y DISP	Z DISP	X ROT	Y ROT	Z ROT
3	GLOBAL							
		1	0.0	0.0	0.0	0.0	-0.0002716	0.0
		2	0.0	0.0	0.0	0.0	-0.0001024	0.0
		3	0.0	0.0	0.0	0.0	0.0003453	0.0
		4	0.0	0.0	0.0	0.0	-0.0001403	0.0
		6	0.0	0.0	0.0	0.0	-0.0001721	0.0
		7	0.0	0.0	0.0	0.0	0.0003833	0.0
		8	0.0	0.0	0.0	0.0	-0.0002497	0.0
		234	0.0	0.0	0.0	0.0	0.0003865	0.0
		678	0.0	0.0	0.0	0.0	0.0004887	0.0
		1001	0.0	0.0	0.0	0.0	0.0001149	0.0
		1002	0.0	0.0	0.0	0.0	-0.0006582	0.0
		2001	0.0	0.0	0.0	0.0	0.0002171	0.0
		2002	0.0	0.0	0.0	0.0	-0.0007604	0.0
6	GLOBAL							
		1	0.0	0.0	0.0	0.0	0.0	0.0
		2	0.0	0.0	0.0	0.0	0.0	0.0
		3	0.0	0.0	0.0	0.0	0.0	0.0
		4	0.0	0.0	0.0	0.0	0.0	0.0
		6	0.0	0.0	0.0	0.0	0.0	0.0
		7	0.0	0.0	0.0	0.0	0.0	0.0
		8	0.0	0.0	0.0	0.0	0.0	0.0
		234	0.0	0.0	0.0	0.0	0.0	0.0
		678	0.0	0.0	0.0	0.0	0.0	0.0
		1001	0.0	0.0	0.0	0.0	0.0	0.0
		1002	0.0	0.0	0.0	0.0	0.0	0.0
		2001	0.0	0.0	0.0	0.0	0.0	0.0
		2002	0.0	0.0	0.0	0.0	0.0	0.0

JOINT DISPLACEMENTS - FREE JOINTS

JOINT	LOADING	DISPLACEMENTS X DISP	Y DISP	Z DISP	ROTATIONS X ROT	Y ROT	Z ROT
1	GLOBAL						
	1	-0.0001295	-0.0000591	-0.0012966	0.0042250	-0.0008167	-0.0011347
	2	0.0000489	-0.0000223	-0.0004889	0.0015930	-0.0003079	-0.0004289
	3	0.0003928	-0.0000061	0.0003192	-0.0007608	0.0011346	0.0006057
	4	0.0	0.0	0.0045875	-0.0104318	-0.0017308	0.0
	6	-0.0000822	-0.0000375	-0.0008213	0.0026763	-0.0005174	-0.0007205
	7	0.0004360	-0.0000067	0.0003543	-0.0008444	0.0012594	0.0006723
	8	0.0	0.0	0.0081658	-0.0185686	-0.0030809	0.0
	234	0.0003958	0.0000231	0.0046245	0.0105801	0.0020924	0.0007422
	678	0.0004437	0.0000381	0.0082147	0.0187795	0.0033683	0.0009855
	1001	0.0002664	-0.0000360	0.0033279	0.0148051	0.0012756	-0.0003925
	1002	-0.0005253	-0.0000823	-0.0059211	-0.0063551	-0.0029091	-0.0018769
	2001	0.0003142	-0.0000210	0.0069181	0.0230045	0.0023516	-0.0001492
	2002	-0.0005732	-0.0000972	-0.0095113	-0.0145544	-0.0041851	-0.0021202
2	GLOBAL						
	1	-0.0000178	-0.0000354	-0.0003866	0.0022951	-0.0002716	-0.0001617
	2	-0.0000067	-0.0000133	-0.0001458	0.0008654	-0.0001024	-0.0000611
	3	0.0001825	-0.0000042	0.0001186	-0.0006137	0.0003453	0.0006255
	4	0.0	0.0	0.0018104	-0.0088979	-0.0001403	0.0
	6	-0.0000113	-0.0000224	-0.0002449	0.0014538	-0.0001721	-0.0001027
	7	0.0002026	-0.0000047	0.0001316	-0.0006812	0.0003833	0.0006943
	8	0.0	0.0	0.0032225	-0.0158382	-0.0002497	0.0
	234	0.0001826	0.0000140	0.0018201	0.0089609	0.0003865	0.0006285
	678	0.0002029	0.0000229	0.0032344	0.0159194	0.0004887	0.0007019
	1001	0.0001678	-0.0000214	0.0014335	0.0112560	0.0001149	0.0004668
	1002	-0.0002005	-0.0000494	-0.0022067	-0.0066658	-0.0006582	-0.0007902
	2001	0.0001851	-0.0000125	0.0028478	0.0182144	0.0002171	0.0005402
	2002	-0.0002207	-0.0000583	-0.0036211	-0.0136243	-0.0007604	-0.0008635
4	GLOBAL						
	1	-0.0001037	-0.0000321	-0.0005983	0.0019246	-0.0008150	0.0002374
	2	-0.0000392	-0.0000121	-0.0002256	0.0007257	-0.0003073	0.0000897
	3	0.0003923	0.0000061	-0.0003192	0.0007608	0.0001720	0.0005800
	4	0.0	0.0	0.0045817	-0.0104155	0.0013001	0.0
	6	-0.0000659	-0.0000203	-0.0003790	0.0012191	-0.0005162	0.0001507
	7	0.0004355	0.0000067	-0.0003543	0.0008444	0.0001909	0.0006438
	8	0.0	0.0	0.0081555	-0.0185397	0.0023141	0.0
	234	0.0003943	0.0000135	0.0045984	0.0104685	0.0013469	0.0005869
	678	0.0004404	0.0000214	0.0081720	0.0185989	0.0023787	0.0006612
	1001	0.0002906	-0.0000186	0.0040001	0.0123930	0.0005319	0.0008243
	1002	-0.0004980	-0.0000457	-0.0051967	-0.0085439	-0.0021619	-0.0003496
	2001	0.0003367	-0.0000107	0.0075737	0.0205234	0.0015637	0.0008986
	2002	-0.0005441	-0.0000536	-0.0087703	-0.0166743	-0.0031937	-0.0004239
5	GLOBAL						
	1	-0.0000412	-0.0000212	-0.0001801	0.0010679	-0.0002524	-0.0001885
	2	-0.0000156	-0.0000080	-0.0000679	0.0004027	-0.0000952	-0.0000712
	3	0.0001829	0.0000042	-0.0001186	0.0006137	0.0002393	0.0006260
	4	0.0	0.0	0.0018087	-0.0088869	0.0001268	0.0
	6	-0.0000261	-0.0000134	-0.0001141	0.0006765	-0.0001599	-0.0001197
	7	0.0002031	0.0000047	-0.0001316	0.0006812	0.0002656	0.0006949
	8	0.0	0.0	0.0032194	-0.0158188	0.0002256	0.0
	234	0.0001836	0.0000090	0.0018138	0.0089172	0.0002870	0.0006301
	678	0.0002047	0.0000142	0.0032241	0.0158479	0.0003835	0.0007051
	1001	0.0001424	-0.0000122	0.0016337	0.0099851	0.0000347	0.0004416
	1002	-0.0002248	-0.0000302	-0.0019939	-0.0078493	-0.0005394	-0.0008185

		2001	0.0001636	-0.0000070	0.0030440	0.0169158	0.0001311	0.0005166
		2002	0.0002459	-0.0000354	-0.0034042	-0.0147799	-0.0006358	-0.0008936
7	GLOBAL							
		1	-0.0001219	-0.0005984	-0.0010939	0.0412724	-0.0008392	-0.0012177
		2	-0.0000461	-0.0002261	-0.0004124	0.0155617	-0.0003164	-0.0004603
		3	0.0003932	0.0000476	0.0000201	-0.0003164	0.0013898	0.0000114
		4	0.0	0.0	0.0049469	-0.0104271	-0.0008544	0.0
		6	-0.0000774	-0.0003799	-0.0006929	0.0261437	-0.0005316	-0.0007732
		7	0.0004365	0.0000528	0.0000223	-0.0003512	0.0015427	0.0000127
		8	0.0	0.0	0.0088084	-0.0185601	-0.0015208	0.0
		234	0.0003959	0.0002311	0.0049641	0.0187347	0.0016618	0.0004604
		678	0.0004433	0.0003836	0.0088327	0.0320639	0.0022305	0.0007734
		1001	0.0002740	-0.0003673	0.0038702	0.0600071	0.0008226	-0.0007573
		1002	-0.0005179	-0.0008295	-0.0060579	0.0225377	-0.0025010	-0.0016781
		2001	0.0003214	-0.0002148	0.0077388	0.0733362	0.0013913	-0.0004444
		2002	-0.0005653	-0.0009820	-0.0099265	0.0092085	-0.0030697	-0.0019911

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SECTION FR NS 3 0  0 5 1 0
GROUP '&LM' DEFINITION
MEMBERS ONLY ALL ACTIVE * LOADED
END OF GROUP DEFINITION
LIST SECTION STRESS MEMBERS '&LM'
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RESULTS OF LATEST ANALYSIS
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JOB ID - 2-00337S JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS - LENGTH INCH, WEIGHT KIPF, ANGLE DEG, TEMPERATURE FAH, TIME SEC, MASS LBM

INTERNAL MEMBER RESULTS - SECTIONAL STRESSES

MEMBER 1 SECTION STRESSES.

DISTANCE FROM START	AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.0430280	-0.0276681	0.0000241	-0.0863047	0.1527026	-0.2390074	0.2271141
0.500FR	0.0430280	-0.0276681	0.0000241	-0.0859601	0.0920601	-0.1780202	0.1663464
1.000FR	0.0430280	-0.0276681	0.0000241	-0.0856155	0.0314177	-0.1170331	0.1055786
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.0162520	-0.0104582	0.0000091	-0.0325411	0.0577196	-0.0902606	0.0858046
0.500FR	0.0162520	-0.0104582	0.0000091	-0.0324112	0.0347974	-0.0672085	0.0628353
1.000FR	0.0162520	-0.0104582	0.0000091	-0.0322812	0.0118753	-0.0441565	0.0398659
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	0.0033643	-0.0153054	0.0005307	-0.0010351	0.0354206	-0.0364557	0.0391614
0.500FR	0.0033643	-0.0153054	0.0005307	0.0065496	0.0018746	0.0084242	0.0117885
1.000FR	0.0033643	-0.0153054	0.0005307	0.0141343	0.0316715	0.0458058	0.0491701
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	0.0	0.0047809	-0.0000111	0.0	-0.0000111	-0.0000111
0.500FR	0.0	0.0	0.0047809	0.0683222	0.0	0.0683222	0.0683222
1.000FR	0.0	0.0	0.0047809	0.1366556	0.0	0.1366556	0.1366556
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.0273033	-0.0175698	0.0000153	-0.0546690	0.0969688	-0.1516378	0.1441517
0.500FR	0.0273033	-0.0175698	0.0000153	-0.0544507	0.0584596	-0.1129103	0.1055632
1.000FR	0.0273033	-0.0175698	0.0000153	-0.0542324	0.0199504	-0.0741829	0.0669746

	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	0.0037344	-0.0169889	0.0005890	-0.0011490	0.0393169	-0.0404659	0.0434691
0.500FR	0.0037344	-0.0169889	0.0005890	0.0072701	0.0020808	0.0093509	0.0130853
1.000FR	0.0037344	-0.0169889	0.0005890	0.0156891	0.0351553	0.0508444	0.0545786
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	0.0	0.0085101	-0.0000197	0.0	-0.0000197	-0.0000197
0.500FR	0.0	0.0	0.0085101	0.1216136	0.0	0.1216136	0.1216136
1.000FR	0.0	0.0	0.0085101	0.2432469	0.0	0.2432469	0.2432469
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.0165965	0.0185372	0.0048103	0.0325576	0.0677212	0.0973447	0.0943189
0.500FR	0.0165965	0.0185372	0.0048103	0.0759033	0.0348479	0.0959519	0.0856104
1.000FR	0.0165965	0.0185372	0.0048103	0.1411262	0.0338246	0.1507405	0.1478888
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.0275575	0.0244402	0.0085304	0.0546811	0.1046363	0.1569443	0.1505632
0.500FR	0.0275575	0.0244402	0.0085304	0.1334451	0.0584966	0.1660287	0.1489903
1.000FR	0.0275575	0.0244402	0.0085304	0.2497125	0.0404217	0.2593400	0.2536643
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.0596245	-0.0091309	0.0048344	-0.0537472	0.2204238	0.2623103	0.3214331
0.500FR	0.0596245	-0.0071309	0.0048344	0.0588595	0.1269080	0.1761153	0.2339754
1.000FR	0.0596245	-0.0091309	0.0048344	0.0824516	0.0652422	0.1287479	0.1775326
	LOADING 1002	DL-SRSS 234					
0.0 FR	0.0264314	-0.0462053	-0.0047862	-0.1188623	-0.2204238	-0.3363520	-0.2770490
0.500FR	0.0264314	-0.0462053	-0.0047862	-0.1618634	-0.1269080	-0.2739721	-0.2206027
1.000FR	0.0264314	-0.0462053	-0.0047862	-0.2267417	-0.0652422	-0.2677736	-0.2218940
	LOADING 2001	DL+SRSS 678					
0.0 FR	0.0705854	-0.0032280	0.0085545	0.0512676	0.2573388	0.3075058	0.3776772
0.500FR	0.0705854	-0.0032280	0.0085545	0.0797839	0.1505567	0.2132107	0.2808423
1.000FR	0.0705854	-0.0032280	0.0085545	0.1640971	0.0718394	0.1922231	0.2326851
	LOADING 2002	DL-SRSS 678					
0.0 FR	0.0154705	-0.0521083	-0.0085063	-0.1409858	-0.2573388	-0.3959516	-0.3256259
0.500FR	0.0154705	-0.0521083	-0.0085063	-0.2194052	-0.1505567	-0.3440488	-0.2839824
1.000FR	0.0154705	-0.0521083	-0.0085063	-0.3353278	-0.0718394	-0.3763730	-0.3276594

MEMBER 2 SECTION STRESSES

DISTANCE FROM START	STRESS AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.0531577	-0.0026009	0.0000046	-0.0847806	0.0195535	-0.1043341	0.1035405
0.500FR	0.0531577	-0.0026009	0.0000046	-0.0847021	0.0126736	-0.0973756	0.0966321

1.000FR	0.0531577	-0.0026009	0.0000046	-0.0846236	0.0057936	-0.0904172	0.0897236
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.0200478	-0.0009831	0.0000017	-0.0319665	0.0073906	-0.0393571	0.0390627
0.500FR	0.0200478	-0.0009831	0.0000017	-0.0319368	0.0047901	-0.0367270	0.0364514
1.000FR	0.0200478	-0.0009831	0.0000017	-0.0319072	0.0021896	-0.0340968	0.0338401
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	0.0063328	-0.0213026	0.0005421	0.0132993	0.0073114	0.0206107	0.0269435
0.500FR	0.0063328	-0.0213026	0.0005421	0.0226498	0.0490383	0.0716881	0.0780209
1.000FR	0.0063328	-0.0213026	0.0005421	0.0320002	0.1053880	0.1373882	0.1437210
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	0.0	0.0111153	0.1366484	0.0	0.1366484	0.1366484
0.500FR	0.0	0.0	0.0111153	0.3283837	0.0	0.3283837	0.3283837
1.000FR	0.0	0.0	0.0111153	0.5201191	0.0	0.5201191	0.5201191
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.0336804	-0.0016516	0.0000029	-0.0537036	0.0124163	-0.0661198	0.0656253
0.500FR	0.0336804	-0.0016516	0.0000029	-0.0536539	0.0080474	-0.0617013	0.0612383
1.000FR	0.0336804	-0.0016516	0.0000029	-0.0536041	0.0036785	-0.0572826	0.0568513
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	0.0070294	-0.0236458	0.0006017	0.0147622	0.0081157	0.0228779	0.0299073
0.500FR	0.0070294	-0.0236458	0.0006017	0.0251412	0.0544325	0.0795737	0.0866031
1.000FR	0.0070294	-0.0236458	0.0006017	0.0355202	0.1169806	0.1525009	0.1595303
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	0.0	0.0197852	0.2432342	0.0	0.2432342	0.2432342
0.500FR	0.0	0.0	0.0197852	0.5845229	0.0	0.5845229	0.5845229
1.000FR	0.0	0.0	0.0197852	0.9258116	0.0	0.9258116	0.9258116
	LOADING 234	OBE SRSS 2 3 4					
0.0 FR	0.0210243	0.0213252	0.0111285	0.1409664	0.0103961	0.1423293	0.1393530
0.500FR	0.0210243	0.0213252	0.0111285	0.3307094	0.0492717	0.3381178	0.3379367
1.000FR	0.0210243	0.0213252	0.0111285	0.5220783	0.1054107	0.5390378	0.5397931
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.0344061	0.0237034	0.0197943	0.2495293	0.0148333	0.2521486	0.2457687
0.500FR	0.0344061	0.0237034	0.0197943	0.5875182	0.0550242	0.5931323	0.5915676
1.000FR	0.0344061	0.0237034	0.0197943	0.9280421	0.1170384	0.9400346	0.9397521
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.0741820	0.0187243	0.0111330	0.0820900	0.0299496	0.1036447	0.1673576
0.500FR	0.0741820	0.0187243	0.0111330	0.2460073	0.0619453	0.2585300	0.3102011
1.000FR	0.0741820	0.0187243	0.0111330	0.4374545	0.1112043	0.4486203	0.5025336
	LOADING 1002	DL-SRSS 234					

DISTANCE FROM START	AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND COMBINED	BEND. AND AXIAL COMBINED
0.0 FR	0.0321334	-0.0239261	-0.0111239	-0.2257470	-0.0299496	-0.2466634	-0.1897312
0.500FR	0.0321334	-0.0239261	-0.0111239	-0.4154113	-0.0619453	-0.4354934	-0.3821545
1.000FR	0.0321334	-0.0239261	-0.0111239	-0.6067019	-0.1112043	-0.6294550	-0.5770527
	LOADING 2001	DL+SRSS 678					
0.0 FR	0.0875638	0.0211025	0.0197989	0.1647487	0.0343868	0.1825448	0.2331145
0.500FR	0.0875638	0.0211025	0.0197989	0.5028161	0.0676977	0.5150019	0.5661972
1.000FR	0.0875638	0.0211025	0.0197989	0.8434184	0.1228321	0.8518984	0.9032685
	LOADING 2002	DL-SRSS 678					
0.0 FR	0.0187516	-0.0263043	-0.0197898	-0.3343098	-0.0343868	-0.3564826	-0.2969450
0.500FR	0.0187516	-0.0263043	-0.0197898	-0.6722201	-0.0676977	-0.6905077	-0.6357853
1.000FR	0.0187516	-0.0263043	-0.0197898	-1.0126648	-0.1228321	-1.0304518	-0.9770116

MEMBER 3 SECTION STRESSES.

DISTANCE FROM START	STRESS AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.0198492	0.0276681	-0.0000241	-0.0378106	0.1009318	-0.1387424	0.1345303
0.500FR	0.0198492	0.0276681	-0.0000241	-0.0381552	0.0402893	-0.0784445	0.0740132
1.000FR	0.0198492	0.0276681	-0.0000241	-0.0384999	0.0203532	-0.0588530	0.0542024
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.0074832	0.0104582	-0.0000091	-0.0142565	0.0381513	-0.0524077	0.0508187
0.500FR	0.0074832	0.0104582	-0.0000091	-0.0143864	0.0152291	-0.0296155	0.0279438
1.000FR	0.0074832	0.0104582	-0.0000091	-0.0145163	0.0076930	-0.0222093	0.0204549
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	-0.0033643	-0.0163416	-0.0005307	0.0010351	0.0401700	0.0412051	-0.0439108
0.500FR	-0.0033643	-0.0163416	-0.0005307	-0.0065496	0.0043529	-0.0109025	-0.0142668
1.000FR	-0.0033643	-0.0163416	-0.0005307	-0.0141343	0.0314643	-0.0455986	-0.0489629
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	0.0	0.0047628	0.0000111	0.0	0.0000111	0.0000111
0.500FR	0.0	0.0	0.0047628	0.0680848	0.0	0.0680848	0.0680848
1.000FR	0.0	0.0	0.0047628	0.1361585	0.0	0.1361585	0.1361585
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.0125718	0.0175698	-0.0000153	-0.0239508	0.0640941	-0.0880449	0.0853753
0.500FR	0.0125718	0.0175698	-0.0000153	-0.0241692	0.0255849	-0.0497541	0.0469455
1.000FR	0.0125718	0.0175698	-0.0000153	-0.0243874	0.0129243	-0.0373117	0.0343642
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	-0.0037344	-0.0181391	-0.0005890	0.0011490	0.0445887	0.0457377	-0.0487409
0.500FR	-0.0037344	-0.0181391	-0.0005890	-0.0072701	0.0048317	-0.0121018	-0.0158362
1.000FR	-0.0037344	-0.0181391	-0.0005890	-0.0156891	0.0349253	-0.0506144	-0.0543488

LOADING 8 SSE POS HOR LONG SEIS

0.0 FR	0.0	0.0	0.0084777	0.0000197	0.0	0.0000197	0.0000197
0.500FR	0.0	0.0	0.0084777	0.1211908	0.0	0.1211908	0.1211908
1.000FR	0.0	0.0	0.0084777	0.2423621	0.0	0.2423621	0.2423621

LOADING 234 OBE SRSS 2 3 4

0.0 FR	0.0082047	0.0194016	0.0047923	0.0142940	0.0553999	0.0666663	0.0671616
0.500FR	0.0082047	0.0194016	0.0047923	0.0698986	0.0158390	0.0742794	0.0718073
1.000FR	0.0082047	0.0194016	0.0047923	0.1376577	0.0323911	0.1437530	0.1446960

LOADING 678 SSE SRSS 6 7 8

0.0 FR	0.0131147	0.0252532	0.0084982	0.0239784	0.0780782	0.0992161	0.0983087
0.500FR	0.0131147	0.0252532	0.0084982	0.1237910	0.0260372	0.1210201	0.1269167
1.000FR	0.0131147	0.0252532	0.0084982	0.2440907	0.0372399	0.2478560	0.2483836

LOADING 1001 DL+SRSS 234

0.0 FR	0.0280540	0.0470697	0.0047681	-0.0235166	0.1563317	0.1740273	0.2016920
0.500FR	0.0280540	0.0470697	0.0047681	0.0392913	0.0561283	0.0863429	0.1117264
1.000FR	0.0280540	0.0470697	0.0047681	0.0991578	0.0527442	0.1256063	0.1463985

LOADING 1002 DL-SRSS 234

0.0 FR	0.0116445	0.0082666	-0.0048164	-0.0521046	-0.1563317	-0.2054089	-0.1776310
0.500FR	0.0116445	0.0082666	-0.0048164	-0.1080508	-0.0561283	-0.1527240	-0.1304026
1.000FR	0.0116445	0.0082666	-0.0048164	-0.1761575	-0.0527442	-0.1978932	-0.1766665

LOADING 2001 DL+SRSS 678

0.0 FR	0.0329640	0.0529213	0.0084741	0.0224688	0.1790099	0.2002727	0.2328391
0.500FR	0.0329640	0.0529213	0.0084741	0.0856358	0.0663264	0.1239359	0.1450022
1.000FR	0.0329640	0.0529213	0.0084741	0.2055908	0.0575931	0.2297093	0.2500861

LOADING 2002 DL-SRSS 678

0.0 FR	0.0067345	0.0024149	-0.0085223	-0.0617890	-0.1790099	-0.2379586	-0.2052671
0.500FR	0.0067345	0.0024149	-0.0085223	-0.1619462	-0.0663264	-0.2094727	-0.1855119
1.000FR	0.0067345	0.0024149	-0.0085223	-0.2825905	-0.0575931	-0.3048237	-0.2831179

MEMBER 4 SECTION STRESSES

DISTANCE FROM START	STRESS AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
LOADING 1 DEAD LOAD							
0.0 FR	0.0318308	0.0026009	-0.0000046	-0.0393347	0.0078957	-0.0472304	0.0540300
0.500FR	0.0318308	0.0026009	-0.0000046	-0.0394132	0.0147756	-0.0541888	0.0609385
1.000FR	0.0318308	0.0026009	-0.0000046	-0.0394918	0.0216555	-0.0611473	0.0678470
LOADING 2 OBE NEG VERT SEIS							
0.0 FR	0.0119791	0.0009831	-0.0000017	-0.0148311	0.0029841	-0.0178152	0.0203563
0.500FR	0.0119791	0.0009831	-0.0000017	-0.0148607	0.0055847	-0.0204454	0.0229676

1.000FR	0.0119791	0.0009831	-0.0000017	-0.0148903	0.0081852	-0.0230755	0.0255789
LOADING 3	OBE POS HOR TRANS SEIS						
0.0 FR	-0.0063328	-0.0214000	-0.0005421	-0.0132993	0.0075297	-0.0208290	-0.0271618
0.500FR	-0.0063328	-0.0214000	-0.0005421	-0.0226498	0.0490776	-0.0717274	-0.0780602
1.000FR	-0.0063328	-0.0214000	-0.0005421	-0.0320002	0.1056849	-0.1376852	-0.1440180
LOADING 4	OBE POS HOR LONG SEIS						
0.0 FR	0.0	0.0	0.0111199	0.1361663	0.0	0.1361663	0.1361663
0.500FR	0.0	0.0	0.0111199	0.3279804	0.0	0.3279804	0.3279804
1.000FR	0.0	0.0	0.0111199	0.5197946	0.0	0.5197946	0.5197946
LOADING 6	SSE NEG VERT SEIS						
0.0 FR	0.0201248	0.0016516	-0.0000029	-0.0249163	0.0050133	-0.0299296	0.0341986
0.500FR	0.0201248	0.0016516	-0.0000029	-0.0249660	0.0093822	-0.0343482	0.0385856
1.000FR	0.0201248	0.0016516	-0.0000029	-0.0250158	0.0137511	-0.0387669	0.0429726
LOADING 7	SSE POS HOR TRANS SEIS						
0.0 FR	-0.0070294	-0.0237540	-0.0006017	-0.0147622	0.0083580	-0.0231202	-0.0301496
0.500FR	-0.0070294	-0.0237540	-0.0006017	-0.0251412	0.0544762	-0.0796174	-0.0866468
1.000FR	-0.0070294	-0.0237540	-0.0006017	-0.0355202	0.1173103	-0.1528305	-0.1598600
LOADING 8	SSE POS HOR LONG SEIS						
0.0 FR	0.0	0.0	0.0197933	0.2423759	0.0	0.2423759	0.2423759
0.500FR	0.0	0.0	0.0197933	0.5838048	0.0	0.5838048	0.5838048
1.000FR	0.0	0.0	0.0197933	0.9252343	0.0	0.9252343	0.9252343
LOADING 234	OBE SRSS 2 3 4						
0.0 FR	0.0135500	0.0214225	0.0111331	0.1376157	0.0080995	0.1388974	0.1389714
0.500FR	0.0135500	0.0214225	0.0111331	0.3290971	0.0493944	0.3358598	0.3371525
1.000FR	0.0135500	0.0214225	0.0111331	0.5209914	0.1060014	0.5377624	0.5394028
LOADING 678	SSE SRSS 6 7 8						
0.0 FR	0.0213172	0.0238113	0.0198025	0.2441000	0.0097462	0.2453088	0.2444406
0.500FR	0.0213172	0.0238113	0.0198025	0.5848789	0.0552782	0.5894147	0.5902170
1.000FR	0.0213172	0.0238113	0.0198025	0.9262536	0.1181135	0.9378393	0.9389845
LOADING 1001	DL+SRSS 234						
0.0 FR	0.0453808	0.0240234	0.0111285	0.0982810	0.0159951	0.1053633	0.1370948
0.500FR	0.0453808	0.0240234	0.0111285	0.2896838	0.0641699	0.3112221	0.3443456
1.000FR	0.0453808	0.0240234	0.0111285	0.4814994	0.1276569	0.5199260	0.5533972
LOADING 1002	DL-SRSS 234						
0.0 FR	0.0182808	-0.0188216	-0.0111376	-0.1769504	-0.0159951	-0.1861278	-0.1543711
0.500FR	0.0182808	-0.0188216	-0.0111376	-0.3685102	-0.0641699	-0.3838667	-0.3510622
1.000FR	0.0182808	-0.0188216	-0.0111376	-0.5604831	-0.1276569	-0.5866452	-0.5535737
LOADING 2001	DL+SRSS 678						

0.0 FR	0.0531479	0.0264122	0.0197979	0.2047653	0.0176419	0.2118369	0.2431397
0.500FR	0.0531479	0.0264122	0.0197979	0.5434655	0.0700538	0.5647770	0.5974101
1.000FR	0.0531479	0.0264122	0.0197979	0.8867616	0.1397690	0.9200028	0.9529789
	LOADING 2002	DL-SRSS 678					
0.0 FR	0.0105136	-0.0212104	-0.0198070	-0.2834345	-0.0176419	-0.2925390	-0.2598400
0.500FR	0.0105136	-0.0212104	-0.0198070	-0.6242919	-0.0700538	-0.6397382	-0.6067616
1.000FR	0.0105136	-0.0212104	-0.0198070	-0.9657453	-0.1397690	-0.9907980	-0.9577531

MEMBER 5 SECTION STRESSES.

DISTANCE FROM START	STRESS AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.0155877	-0.0728816	0.0000312	-0.0014591	0.2920685	-0.2935275	0.3081867
0.500FR	0.0155877	-0.0728816	0.0000312	-0.0010262	0.0060166	-0.0070428	0.0219775
1.000FR	0.0155877	-0.0728816	0.0000312	-0.0005932	0.2800351	-0.2806281	0.2958384
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.0058920	-0.0275483	0.0000118	-0.0005502	0.1103980	-0.1109481	0.1164901
0.500FR	0.0058920	-0.0275483	0.0000118	-0.0003869	0.0022739	-0.0026608	0.0083066
1.000FR	0.0058920	-0.0275483	0.0000118	-0.0002237	0.1058502	-0.1060739	0.1118235
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	0.0009130	-0.0062885	0.0006860	0.0021129	0.0677477	0.0698606	0.0707736
0.500FR	0.0009130	-0.0062885	0.0006860	0.0116415	0.0430662	0.0547076	0.0556206
1.000FR	0.0009130	-0.0062885	0.0006860	0.0211700	0.0183846	0.0395546	0.0404676
	LOADING 4	OBE POS HOR LONG SEIS					
0.0 FR	0.0	0.0	0.0031856	-0.0042574	0.0	-0.0042574	-0.0042574
0.500FR	0.0	0.0	0.0031856	0.0399886	0.0	0.0399886	0.0399886
1.000FR	0.0	0.0	0.0031856	0.0842347	0.0	0.0842347	0.0842347
	LOADING 6	SSE NEG VERT SEIS					
0.0 FR	0.0098985	-0.0462812	0.0000197	-0.0009243	0.1854686	-0.1863928	0.1957032
0.500FR	0.0098985	-0.0462812	0.0000197	-0.0006500	0.0038201	-0.0044701	0.0139550
1.000FR	0.0098985	-0.0462812	0.0000197	-0.0003758	0.1778283	-0.1782040	0.1878634
	LOADING 7	SSE POS HOR TRANS SEIS					
0.0 FR	0.0010134	-0.0069802	0.0007615	0.0023453	0.0752000	0.0775453	0.0785587
0.500FR	0.0010134	-0.0069802	0.0007615	0.0129220	0.0478034	0.0607254	0.0617389
1.000FR	0.0010134	-0.0069802	0.0007615	0.0234987	0.0204069	0.0439056	0.0449190
	LOADING 8	SSE POS HOR LONG SEIS					
0.0 FR	0.0	0.0	0.0056704	-0.0075783	0.0	-0.0075783	-0.0075783
0.500FR	0.0	0.0	0.0056704	0.0711796	0.0	0.0711796	0.0711796
1.000FR	0.0	0.0	0.0056704	0.1499376	0.0	0.1499376	0.1499376

	LOADING [illegible]	OBE SRSS 2 3 4					
0.0 FR	0.0059623	0.0282570	0.0032586	0.0047847	0.1295279	0.1302505	0.1357303
0.500FR	0.0059623	0.0282570	0.0032586	0.0416505	0.0431261	0.0677906	0.0689438
1.000FR	0.0059623	0.0282570	0.0032586	0.0868544	0.1074349	0.1411087	0.1378053
	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.0099502	0.0468046	0.0057213	0.0079865	0.2001340	0.2003180	0.2098497
0.500FR	0.0099502	0.0468046	0.0057213	0.0723460	0.0479558	0.0936171	0.0951263
1.000FR	0.0099502	0.0468046	0.0057213	0.1517683	0.1789953	0.2369930	0.2399970
	LOADING 1001	DL+SRSS 234					
0.0 FR	0.0215500	-0.0446247	0.0032898	0.0033256	0.4215963	0.4219069	0.4430261
0.500FR	0.0215500	-0.0446247	0.0032898	0.0406243	0.0491428	0.0727811	0.0895219
1.000FR	0.0215500	-0.0446247	0.0032898	0.0862612	0.3874699	0.4145719	0.4348347
	LOADING 1002	DL-SRSS 234					
0.0 FR	0.0096254	-0.1011385	-0.0032275	-0.0062438	-0.4215963	-0.4225063	-0.4014055
0.500FR	0.0096254	-0.1011385	-0.0032275	-0.0426766	-0.0491428	-0.0628002	-0.0483657
1.000FR	0.0096254	-0.1011385	-0.0032275	-0.0874476	-0.3874699	-0.4217370	-0.4020419
	LOADING 2001	DL+SRSS 678					
0.0 FR	0.0255379	-0.0260770	0.0057525	0.0065274	0.4922026	0.4927450	0.5179162
0.500FR	0.0255379	-0.0260770	0.0057525	0.0713198	0.0539724	0.0986076	0.1157044
1.000FR	0.0255379	-0.0260770	0.0057525	0.1511751	0.4590304	0.5117782	0.5350263
	LOADING 2002	DL-SRSS 678					
0.0 FR	0.0056375	-0.1196862	-0.0056901	-0.0094456	-0.4922026	-0.4937961	-0.4686457
0.500FR	0.0056375	-0.1196862	-0.0056901	-0.0733721	-0.0539724	-0.0886267	-0.0745481
1.000FR	0.0056375	-0.1196862	-0.0056901	-0.1523616	-0.4590304	-0.5176210	-0.4948788

MEMBER 6 SECTION STRESSES

DISTANCE FROM START	STRESS AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
	LOADING 1	DEAD LOAD					
0.0 FR	0.0155877	0.0248598	0.0000312	-0.0005932	0.2800351	-0.2806281	0.2958384
0.500FR	0.0155877	0.0248598	0.0000312	0.0004864	0.0434933	0.0439496	0.0595373
1.000FR	0.0155877	0.0248598	0.0000312	0.0015059	0.1930485	0.1945544	0.2101420
	LOADING 2	OBE NEG VERT SEIS					
0.0 FR	0.0058920	0.0093967	0.0000118	-0.0002237	0.1058501	-0.1060738	0.1118234
0.500FR	0.0058920	0.0093967	0.0000118	0.0001721	0.0164398	0.0166119	0.0225038
1.000FR	0.0058920	0.0093967	0.0000118	0.0005678	0.0729705	0.0735383	0.0794302
	LOADING 3	OBE POS HOR TRANS SEIS					
0.0 FR	-0.0007889	-0.0062885	0.0006860	-0.0460196	0.0428386	-0.0888582	-0.0896471
0.500FR	-0.0007889	-0.0062885	0.0006860	-0.0229197	0.0169965	-0.0399162	-0.0407051

1.000FR	-0.0007887	-0.0062885	0.0006860	0.0001803	0.0768317	0.0770119	-0.0776861
LOADING 4	OBE POS HOR LONG SEIS						
0.0 FR	0.0	0.0	-0.0012975	0.0842346	0.0	0.0842346	0.0842346
0.500FR	0.0	0.0	-0.0012975	0.0405470	0.0	0.0405470	0.0405470
1.000FR	0.0	0.0	-0.0012975	-0.0031407	0.0	-0.0031407	-0.0031407
LOADING 6	SSE NEG VERT SEIS						
0.0 FR	0.0098985	0.0157865	0.0000197	-0.0003758	0.1778281	-0.1782039	0.1878633
0.500FR	0.0098985	0.0157865	0.0000197	0.0002891	0.0276188	0.0279079	0.0378064
1.000FR	0.0098985	0.0157865	0.0000197	0.0009539	0.1225904	0.1235443	0.1334428
LOADING 7	SSE POS HOR TRANS SEIS						
0.0 FR	-0.0008757	-0.0069802	0.0007615	-0.0510817	0.0475509	-0.0986326	-0.0995082
0.500FR	-0.0008757	-0.0069802	0.0007615	-0.0254408	0.0188661	-0.0443070	-0.0451826
1.000FR	-0.0008757	-0.0069802	0.0007615	0.0002001	0.0852832	0.0854833	-0.0862316
LOADING 8	SSE POS HOR LONG SEIS						
0.0 FR	0.0	0.0	-0.0023095	0.1499376	0.0	0.1499376	0.1499376
0.500FR	0.0	0.0	-0.0023095	0.0721735	0.0	0.0721735	0.0721735
1.000FR	0.0	0.0	-0.0023095	-0.0055904	0.0	-0.0055904	-0.0055904
LOADING 234	OBE SRSS 2 3 4						
0.0 FR	0.0059445	0.0113068	0.0014677	0.0959860	0.1141902	0.1617041	0.1660374
0.500FR	0.0059445	0.0113068	0.0014677	0.0465768	0.0236463	0.0591777	0.0583833
1.000FR	0.0059445	0.0113068	0.0014677	0.0031967	0.1059613	0.1062694	0.1109776
LOADING 678	SSE SRSS 6 7 8						
0.0 FR	0.0099371	0.0172609	0.0024318	0.1584006	0.1840759	0.2523866	0.2597756
0.500FR	0.0099371	0.0172609	0.0024318	0.0765267	0.0334474	0.0889890	0.0869157
1.000FR	0.0099371	0.0172609	0.0024318	0.0056748	0.1493373	0.1501119	0.1588305
LOADING 1001	DL+SRSS 234						
0.0 FR	0.0215322	0.0361666	0.0014989	0.0953928	0.3942253	0.4411457	0.4610668
0.500FR	0.0215322	0.0361666	0.0014989	0.0470331	0.0671396	0.0881660	0.1063937
1.000FR	0.0215322	0.0361666	0.0014989	0.0047026	0.2990097	0.3008237	0.3211196
LOADING 1002	DL-SRSS 234						
0.0 FR	0.0096431	0.0135530	-0.0014365	-0.0965793	-0.3942253	-0.4161169	-0.3959889
0.500FR	0.0096431	0.0135530	-0.0014365	-0.0461204	-0.0671396	-0.1022146	-0.0858325
1.000FR	0.0096431	0.0135530	-0.0014365	-0.0017104	-0.2990097	-0.2996584	-0.2795029
LOADING 2001	DL+SRSS 678						
0.0 FR	0.0255248	0.0421206	0.0024630	0.1578074	0.4641110	0.5318283	0.5548051
0.500FR	0.0255248	0.0421206	0.0024630	0.0769830	0.0769407	0.1216097	0.1413532
1.000FR	0.0255248	0.0421206	0.0024630	0.0071807	0.3423857	0.3446662	0.3689724
LOADING 2002	DL-SRSS 678						

DISTANCE FROM START	AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
[illegible]	[illegible]	0.0075989	-0.0024007	-0.1589938	-0.4641110	-0.5135451	-0.4904894
0.500FR	0.0056505	0.0075989	-0.0024007	-0.0760703	-0.0769407	-0.1320259	-0.1143649
1.000FR	0.0056505	0.0075989	-0.0024007	-0.0041688	-0.3423857	-0.3431906	-0.3190554

MEMBER 7 SECTION STRESSES

DISTANCE FROM START	STRESS: AXIAL	Y SHEAR	Z SHEAR	Y BENDING	Z BENDING	Y AND Z BEND. COMBINED	BEND. AND AXIAL COMBINED
LOADING 1	DEAD LOAD						
0.0 FR	-0.0141224	0.0017306	-0.0000253	0.0014591	0.0226922	0.0241512	-0.0373452
0.500FR	-0.0141224	0.0017306	-0.0000253	0.0002565	0.0005674	0.0008239	-0.0147831
1.000FR	-0.0141224	0.0017306	-0.0000253	-0.0009461	0.0238270	-0.0247731	-0.0388955
LOADING 2	OBE NEG VERT SEIS						
0.0 FR	-0.0053381	0.0006542	-0.0000095	0.0005502	0.0085775	0.0091277	-0.0141157
0.500FR	-0.0053381	0.0006542	-0.0000095	0.0000967	0.0002[illegible]45	0.0003112	-0.0055877
1.000FR	-0.0053381	0.0006542	-0.0000095	-0.0003567	0.0090065	-0.0093633	-0.0147013
LOADING 3	OBE POS HOR TRANS SEIS						
0.0 FR	0.0002644	-0.0055485	0.0000147	-0.0021129	0.0745612	-0.0766741	-0.0764096
0.500FR	0.0002644	-0.0055485	0.0000147	-0.0014120	0.0000106	-0.0014226	-0.0011582
1.000FR	0.0002644	-0.0055485	0.0000147	-0.0007110	0.0745825	-0.0752935	0.0751055
LOADING 4	OBE POS HOR LONG SEIS						
0.0 FR	0.0	0.0	-0.0000147	0.0042574	0.0	0.0042574	0.0042574
0.500FR	0.0	0.0	-0.0000147	0.0035585	0.0	0.0035585	0.0035585
1.000FR	0.0	0.0	-0.0000147	0.0028595	0.0	0.0028595	0.0028595
LOADING 6	SSE [illegible]EQ VERT SEIS						
0.0 FR	-0.0089680	0.0010990	-0.0000160	0.0009243	0.0144103	0.0153345	-0.0237144
0.500FR	-0.0089680	0.0010990	-0.0000160	0.0001625	0.0003603	0.0005228	-0.0093874
1.000FR	-0.0089680	0.0010990	-0.0000160	-0.0005993	0.0151309	-0.0157303	-0.0246982
LOADING 7	SSE POS HOR TRANS SEIS						
0.0 FR	0.0002935	-0.0061589	0.0000164	-0.0023453	0.0827629	-0.0851082	-0.0848147
0.500FR	0.0002935	-0.0061589	0.0000164	-0.0015673	0.0000118	-0.0015791	-0.0012856
1.000FR	0.0002935	-0.0061589	0.0000164	-0.0007893	0.0827865	-0.0835757	0.0833670
LOADING 8	SSE POS HOR LONG SEIS						
0.0 FR	0.0	0.0	-0.0000262	0.0075783	0.0	0.0075783	0.0075783
0.500FR	0.0	0.0	-0.0000262	0.0063341	0.0	0.0063341	0.0063341
1.000FR	0.0	0.0	-0.0000262	0.0050900	0.0	0.0050900	0.0050900
LOADING 234	OBE SRSS 2 3 4						
0.0 FR	0.0053446	0.0055870	0.0000229	0.0047847	0.0750529	0.0773327	0.0769163
0.500FR	0.0053446	0.0055870	0.0000229	0.0038296	0.0002147	0.0038449	0.0066122
1.000FR	0.0053446	0.0055870	0.0000229	0.0029681	0.0751243	0.0758426	0.0764459

	LOADING 678	SSE SRSS 6 7 8					
0.0 FR	0.0089728	0.0062562	0.0000348	0.0079865	0.0840080	0.0868101	0.0872397
0.500FR	0.0089728	0.0062562	0.0000348	0.0068272	0.0003608	0.0068489	0.0112128
1.000FR	0.0089728	0.0062562	0.0000348	0.0051855	0.0841578	0.0849822	0.0867398
	LOADING 1001	DL+SRSS 234					
0.0 FR	-0.0087777	0.0073176	-0.0000024	0.0062438	0.0977451	0.1014840	0.0866508
0.500FR	-0.0087777	0.0073176	-0.0000024	0.0040861	0.0007822	0.0046688	-0.0089938
1.000FR	-0.0087777	0.0073176	-0.0000024	0.0020220	0.0989513	0.0990615	0.0842127
	LOADING 1002	DL-SRSS 234					
0.0 FR	-0.0194670	-0.0038563	-0.0000482	-0.0033256	-0.0977451	-0.0990779	-0.1142615
0.500FR	-0.0194670	-0.0038563	-0.0000482	-0.0038731	-0.0007822	-0.0041372	-0.0210456
1.000FR	-0.0194670	-0.0038563	-0.0000482	-0.0039143	-0.0989513	-0.0992904	-0.1145290
	LOADING 2001	DL+SRSS 678					
0.0 FR	-0.0051496	0.0079868	0.0000095	0.0094456	0.1067002	0.1109613	0.0954190
0.500FR	-0.0051496	0.0079868	0.0000095	0.0067836	0.0009279	0.0073728	-0.0050776
1.000FR	-0.0051496	0.0079868	0.0000095	0.0042394	0.1079848	0.1081066	0.0925226
	LOADING 2002	DL-SRSS 678					
0.0 FR	-0.0230952	-0.0045255	-0.0000600	-0.0065274	-0.1067002	-0.1081738	-0.1245849
0.500FR	-0.0230952	-0.0045255	-0.0000600	-0.0062707	-0.0009279	-0.0068363	-0.0256461
1.000FR	-0.0230952	-0.0045255	-0.0000600	-0.0061317	-0.1079848	-0.1084206	-0.1249633

OVERALL MAXIMUM STRESSES OCCUR AS FOLLOWS

STRESS			APPEARING IN MEMBER	AT SECTION	FOR LOAD	OPTION
MAXIMUM AXIAL STRESS	=	0.08786	2	19.3100	2001	2
MAXIMUM SHEAR Y STRESS	=	-0.11969	5	14.0000	2002	2
MAXIMUM SHEAR Z STRESS	=	-0.01981	4	19.3100	2002	2
MAXIMUM Y BENDING TENSION	=	0.92804	2	19.3100	678	2
MAXIMUM Z BENDING TENSION	=	0.49220	5	0.0	2001	2
MAXIMUM Y BENDING COMPRESSION	=	-1.01266	2	19.3100	2002	2
MAXIMUM Z BENDING COMPRESSION	=	-0.49220	5	0.0	2002	2
MAXIMUM COMBINED BENDING TENSION	=	0.94003	2	19.3100	678	2
MAXIMUM COMB. BEND. COMPESSION	=	1.03045	2	19.3100	2002	2
MAXIMUM ABS. COMBINED BENDING	=	1.03045	2	19.3100	2002	2
MAXIMUM COMB. AXIAL AND BENDING	=	-0.97701	2	19.3100	2002	2

WHERE,

OPTION 1 - SECTION IS UNSYMMETRIC AND ITS 'TYPE' IS NOT KNOWN. BENDING Y AND Z MAY NOT BE COMBINED AND FURTHERMORE BENDING STRESSES MAY NOT BE COMBINED WITH AXIAL STRESSES

2 - BENDING Y IS COMBINED WITH BENDING Z BY TAKING SIGN OF STRESSES (COMPRESSION OR TENSION) INTO ACCOUNT.

ALSO COMBINED BENDING STRESS IS FURTHER COMBINED WITH AXIAL STRESS WITH PROPER SIGNS.

```
* LIST OVERALL STRESS
PARAMETERS

'CODE' 'AISC' ALL ; 'VERSION' 'A9U1' ALL

'TORSION' 'YES' ALL ; 'CB' 1.0 ALL

'ASF' 1.6 LOADINGS  2001 2002

'FBMAX' 1.0 ALL

'FACMAX' 1.0 ALL

'FATMAX' 1.0 ALL

'FBHMAX' 0.55 ALL

PARAMETERS

'LY' 35.31 MEM     1 to 4
**** SYSWRN 7.08 - COMMAND NOT COMPLETELY PROCESSED.  SYMBOLS NOT YET PROCESSED FOLLOW:
**** to 4

'LZ' 47.94 MEM     5 6

'CMY' 1     MEM     1 to 4
**** SYSWRN 7.08 - COMMAND NOT COMPLETELY PROCESSED.  SYMBOLS NOT YET PROCESSED FOLLOW:
**** to 4

?CMY' 0.85 MEM     5 6 7
**** SYSWRN 7.21 - UNBALANCED QUOTES.
**** SYSWRN 7.06 - '?CMY'    ' NOT A VALID COMMAND.

'CMZ' 0.85 MEM     1 to 7
**** SYSWRN 7.06 - ''CMZ'    ' NOT A VALID COMMAND.

'KY'  2     MEM     1 to 4
**** SYSWRN 7.06 - ''KY'     ' NOT A VALID COMMAND.

'KZ'  1.55 MEM     1 to 4
**** SYSWRN 7.06 - ''KZ'     ' NOT A VALID COMMAND.

'UNLCF' 47.94 MEM  5 6
**** SYSWRN 7.06 - ''UNLCF'  ' NOT A VALID COMMAND.

LOAD LIST -
1001 1002 2001 2002

CHECK CODE -
ALL   -
GENERATING TRACE  6  RESULTS FOR FAILING MEMBERS
```

```
********************************
* STRUDL CODE CHECK RESULTS *
********************************

JOB ID -    2-00337S       JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -  LENGTH        WEIGHT       ANGLE      TEMPERATURE      TIME          MASS
                 INCH          KIPF         DEG          FAH            SEC           LBM
```

MEMBER LOAD	PROFILE TABLE	RESULT SECTION	CONTROLLING CHECKS PRIMARY SECONDARY	RATIO(P) RATIO(S)	CONTROLLING SECTION STRESSES AXIAL TORSION	SHEAR Y BEND Y	SHEAR Z BEND Z	CODE TYPE
1	C6X8	PASS	TSLNDRNS	0.274	0.03	-0.05	-0.01	AISC
1002	STEELC1	0.0	MOM. YZ	0.016	0.01	-0.12	-0.22	CHANNEL
2	C6X8	PASS	TSLNDRNS	0.150	0.03	-0.03	-0.01	AISC
1002	STEELC1	19.31	MOM. YZ	0.033	0.00	-0.61	-0.11	CHANNEL
3	C6X8	PASS	TSLNDRNS	0.124	0.01	0.01	-0.01	AISC
1002	STEELC1	16.00	MOM. YZ	0.011	0.00	-0.18	-0.05	CHANNEL
4	C6X8	PASS	TSLNDRNS	0.150	0.01	-0.02	-0.02	AISC
2002	STEELC1	19.31	MOM. YZ	0.032	0.00	-0.97	-0.14	CHANNEL
5	C4X7	PASS	TSLNDRNS	0.136	0.02	-0.05	0.00	AISC
1001	STEELC1	14.00	PART 6.2	0.023	0.23	0.09	0.39	CHANNEL
6	C4X7	PASS	TSLNDRNS	0.314	0.02	0.04	0.00	AISC
1001	STEELC1	0.0	PART 6.2	0.024	0.05	0.10	0.39	CHANNEL
7	C4X7	PASS	CSLNDRNS	0.533	-0.02	-0.00	-0.00	AISC
1002	STEELC1	47.94	FM 1.6-2	0.006	0.00	-0.00	-0.10	CHANNEL

0.007"

21.6

T $\frac{0.02}{F_a} + \frac{0.1+0.39+0.46}{21.6}$

```
**** STRUDL MESSAGE - NO MEMBERS IN THE LIST TO GENERATE CODE CHECK RESULTS WITH SECONDARY TRACE     6
```

$\int = 0.23 - 0.05 + ? = < 14.4$

```
********** FOLLOWING IS A SUMMARY OF THE CODE CHECKS PERFORMED ABOVE **********

           ALL    7 MEMBERS, THAT ARE CHECKED, PASSED CODE CHECKS.


FINISH NOMESSAGES

GOOD-BYE
```

SUMMARY OF ERRORS FOR THIS JOB

ERROR NUMBER	NUMBER OF ERRORS
208	6

THIS RUN HAS BEEN 'COMPLETED', AND FULLY ACCOUNTED FOR 'EBSTLY '

CPU SECONDS

	RUN	LAST INTERVAL
EXECUTING	2.37	2.37

EXCP'S

DATASET	TOTAL RUN	LAST INTERVAL
STEPLIB	13	0
	83	0
	0	0
SYS00112	0	0
SYS00110	0	0
DD0	35	0
DD1	44	0
DD2	344	0
DD3	104	0
DD5	35	0
FT05F001	0	0
FT06F001	0	0
FT07F001	0	0
FT08F001	0	0
FT10F001	0	0
ICESDUMP	0	0
SYSUDUMP	0	0
TOTAL	657	0
I/O EXCPS	3	0

DATE	OVERALL ENTRY NO.	MONTH ENTRY NO.	MACHINE TYPE	OS VERSION.	SUBSYSTEM VERSION	COMPLETION CODE	I	MONTH TO DATE CPU TIME	(INCLUDING THIS RUN) EXCPS
13SEP88	932	391	3083	03.81	8	0000	I	904.35	188114

DISK STATISTICS WITH 3 BUFFERS OF 18432 BYTES (DISKOPT=X0004)

	DIRECT ACCESS EXCP'S	PERCENT			
DISK WRITES	20	3.64			
DISK READS	529	96.36			
IN LAST BUFFER	12	2.27			
JUST MISSED	117	22.12			
EXTRA FINDS	264	49.91			
DDNAME			BLOCKSIZE	BLOCKS IN FILE	M-BYTES TRANSFERRED
DD1	44	8.01	800	57	0.035200
DD2	344	62.66	800	1918	0.275200
DD3	104	18.94	1320	567	0.137280
DD5	48	8.74	800	4522	0.038400
DDO	9	1.64	18432	30	0.165888
				TOTAL	0.651968

XORAKH

J1075 A

```
*A  END  JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.04.47 AM 13 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.04.47 AM 13 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.04.47 AM 13 SEP 85 R305.PR1 8301  END  A*
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*A  END  JOB 1075 XORAKH   1   001 001 R0305  E RAKHMILEVICH  ROOM  11.04.47 AM 13 SEP 85 R305.PR1 8301  END  A*
```

ATTACHMENT 7
SHEET 47 OF 80

```
XX        XX   0000000000   RRRRRRRRRRR   AAAAAAAAAAA   KK      KK   HH        HH
 XX      XX   00      0000  RR        RR  AA        AA  KK     KK    HH        HH
  XX    XX    00     00 00  RR        RR  AA        AA  KK    KK     HH        HH
   XX  XX     00    00  00  RR        RR  AA        AA  KK   KK      HH        HH
    XXXX      00   00   00  RRRRRRRRRRR   AAAAAAAAAAAA  KKKKKK       HHHHHHHHHHHH
    XXXX      00  00    00  RRRRRRRRRR    AAAAAAAAAAAA  KKKKKK       HHHHHHHHHHHH
   XX  XX     00 00     00  RR    RR      AA        AA  KK   KK      HH        HH
  XX    XX    0000      00  RR     RR     AA        AA  KK    KK     HH        HH
 XX      XX   000       00  RR      RR    AA        AA  KK     KK    HH        HH
XX        XX  0000000000    RR       RR   AA        AA  KK      KK   HH        HH
XX        XX   00000000     RR        RR  AA        AA  KK       KK  HH        HH

  JJJJJJJJJJ  555555555555   3333333333       11      8888888888       AAAAAAAAAA
  JJJJJJJJJJ  555555555555  333333333333     111     888888888888     AAAAAAAAAAAA
      JJ      55           33          33   1111     88        88     AA        AA
      JJ      55                       33     11     88        88     AA        AA
      JJ      55                       33     11      88      88      AA        AA
      JJ      5555555555           3333       11       88888888       AAAAAAAAAAAA
      JJ      55555555555          3333       11       88888888       AAAAAAAAAAAA
      JJ                55             33     11      88      88      AA        AA
JJ    JJ                 55            33     11     88        88     AA        AA
JJ    JJ                 55  33        33     11     88        88     AA        AA
 JJJJJJJ      555555555555  333333333333  1111111111 888888888888     AA        AA
  JJJJJJ      55555555555    3333333333   1111111111  8888888888      AA        AA
```

```
*A START JOB 5318 XORAKH   1      001 001 R0305   E RAKHMILEVICH    ROOM     9.05.44 AM 11 SEP 85 R305.PR1 8301 START A*
*A START JOB 5318 XORAKH   1      001 001 R0305   E RAKHMILEVICH    ROOM     9.05.44 AM 11 SEP 85 R305.PR1 8301 START A*
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*A START JOB 5318 XORAKH   1      001 001 R0305   E RAKHMILEVICH    ROOM     9.05.44 AM 11 SEP 85 R305.PR1 8301 START A*
```

```
// MSGCLASS=A,TIME=60,MSGLEVEL=(0,0),REGION=1500K
```

CLIENT TUGC

SUBJECT CABLE TRAY SUPPORT

CTH-2-337

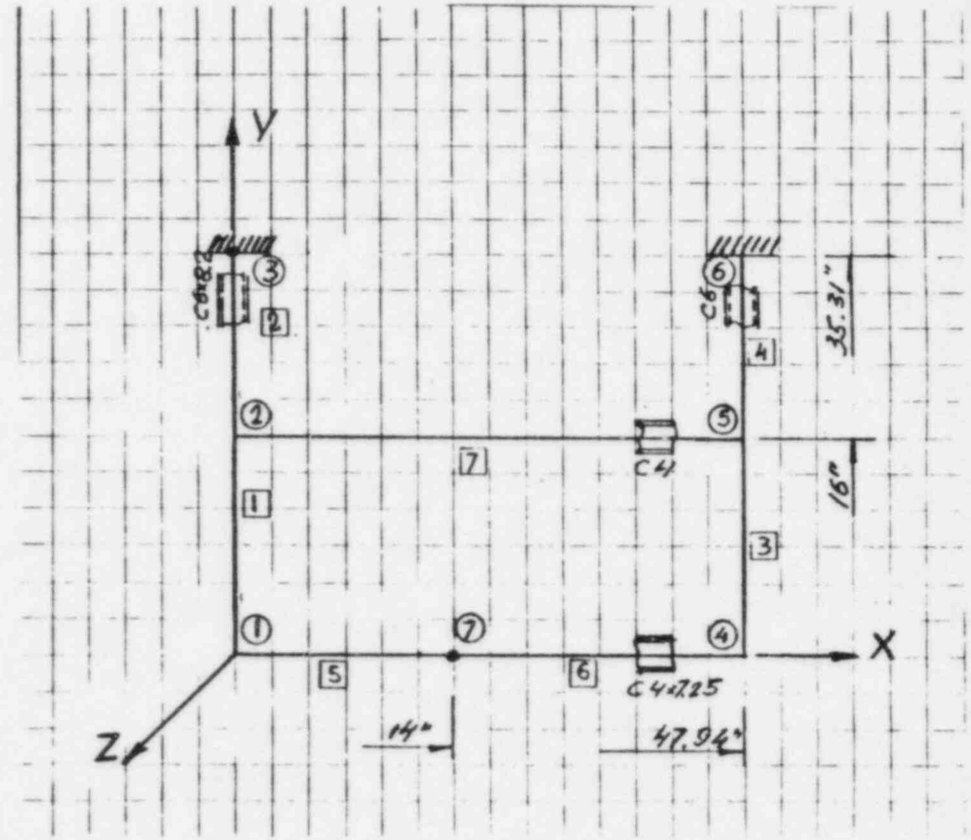
STRUDL (FREQ)

K. C. WANG 9-12-85

```
IEF142I XORAKH LOAD - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /LOAD     / START 85254.0858
IEF374I STEP /LOAD     / STOP  85254.0858 TCB    0MIN 00.05SEC SRB    0MIN 00.00SEC VIRT    44K SYS   472K
********************************************************************************************************************************
*                                                                                                                              *
*                                         KOMAND DATA ACQUISITION SYSTEM                                                       *
*                                                                                                                              *
* STEP NAME      LOAD          START TIME 08.58.33.72    VIRT SYS  USED      472K    PAGE INS              0  STEP TCB      00.00.00.05 *
* PGM NAME       IEBGENER      STOP  TIME 08.58.34.99    VIRT CORE USED       44K    PAGE OUTS             0  JOB  TCB      00.00.00.05 *
* DISPATCH PRTY 105            ELAP. TIME 00.00.01.27    SWAPS/PAGES      0/      0  SRB TIME    00.00.00.00  CONDITION CODE       0000 *
* PERF. GROUP          1       SRU                .38    TRANS ACT TIME 00.00.00.54                           OCCUPANCY     00.00.00.00 *
*                                                                                                                              *
********************************************************************************************************************************
*                                                 EXCP STATISTICS                                                              *
*                                                                                                                              *
* UNIT    EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT *
*                                                                                                                              *
*  E62           2                                                                                                             *
*                                                                                                                              *
* EXCP TOTAL           2       VIO PAGE INS          0       VIO PAGE OUTS          0       PAGES SWAPPED IN          0         *
*                                                                                                                              *
********************************************************************************************************************************
IEF142I XORAKH PRINT - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /PRINT    / START 85254.0858
IEF374I STEP /PRINT    / STOP  85254.0858 TCB    0MIN 00.05SEC SRB    0MIN 00.00SEC VIRT    44K SYS   476K
********************************************************************************************************************************
*                                                                                                                              *
*                                         KOMAND DATA ACQUISITION SYSTEM                                                       *
*                                                                                                                              *
* STEP NAME      PRINT         START TIME 08.58.35.09    VIRT SYS  USED      476K    PAGE INS              0  STEP TCB      00.00.00.05 *
* PGM NAME       IEBGENER      STOP  TIME 08.58.35.82    VIRT CORE USED       44K    PAGE OUTS             0  JOB  TCB      00.00.00.10 *
* DISPATCH PRTY 105            ELAP. TIME 00.00.00.73    SWAPS/PAGES      0/      0  SRB TIME    00.00.00.00  CONDITION CODE       0000 *
* PERF. GROUP          1       SRU                .39    TRANS ACT TIME 00.00.00.43                           OCCUPANCY     00.00.00.00 *
*                                                                                                                              *
********************************************************************************************************************************
*                                                 EXCP STATISTICS                                                              *
*                                                                                                                              *
* UNIT    EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT *
*                                                                                                                              *
*  B62           3                                                                                                             *
*                                                                                                                              *
* EXCP TOTAL           3       VIO PAGE INS          0       VIO PAGE OUTS          0       PAGES SWAPPED IN          0         *
*                                                                                                                              *
********************************************************************************************************************************
IEF142I XORAKH STRUDL - STEP WAS EXECUTED - COND CODE 0000
IEF373I STEP /STRUDL   / START 85254.0858
IEF374I STEP /STRUDL   / STOP  85254.0859 TCB    0MIN 01.93SEC SRB    0MIN 00.14SEC VIRT  1564K SYS   488K
********************************************************************************************************************************
*                                                                                                                              *
*                                         KOMAND DATA ACQUISITION SYSTEM                                                       *
*                                                                                                                              *
* STEP NAME      STRUDL        START TIME 08.58.35.97    VIRT SYS  USED      488K    PAGE INS              1  STEP TCB      00.00.01.93 *
* PGM NAME       ICEX2         STOP  TIME 08.59.01.99    VIRT CORE USED  1,564K    PAGE OUTS             0  JOB  TCB      00.00.02.03 *
* DISPATCH PRTY 105            ELAP. TIME 00.00.26.02    SWAPS/PAGES      0/      0  SRB TIME    00.00.00.14  CONDITION CODE       0000 *
* PERF. GROUP          1       ARU              45.15    TRANS ACT TIME 00.00.23.29                           OCCUPANCY     00.00.00.00 *
*                                                                                                                              *
********************************************************************************************************************************
*                                                 EXCP STATISTICS                                                              *
*                                                                                                                              *
* UNIT    EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT     UNIT   EXCP COUNT *
```

```
* A54            0      E90         143   E90          0     B92          0    CA1          0    734        39 *
* C43            7      A54          37   B92         95     46A         43    E62          2    5B5         0 *
* C60            0
*
* EXCP TOTAL        366      VIO PAGE INS         0      VIO PAGE OUTS         0      PAGES SWAPPED IN         0
*                                                                                                              *
****************************************************************************************************************
IEF375I  JOB /XORAKH  / START 85254.0858
IEF376I  JOB /XORAKH  / STOP  85254.0859 TCB    0MIN 02.03SEC SRB    0MIN 00.14SEC
****************************************************************************************************************
*                                                                                                              *
*                                  KOMAND DATA ACQUISITION SYSTEM                                              *
*                                                                                                              *
*  JOB LOG NUMBER - XORAKH   85254 08.58.30.03       TCB TIME   00.00.02.03        SRB TIME          00.00.00.14   *
*                                                                                                              *
*  PROGRAMMER  E RAKHMILEVICH                        INIT DATE  09/11/85  85.254   INITIATION TIME   08.58.33.72   *
*                                                                                                              *
*  ACCTG DATA  HE66YEPP000CP3306297                  TERM DATE  09/11/85  85.254   TERMINATION TIME  08.59.02.53   *
*                                                                                                              *
*  OS-VS2 REL  03.8                                  PGN/SERVICE    1/       .77   ELAPSED TIME      00.00.28.81   *
*                                                                                                              *
*  SYSTEM ID   8301                                  CLASS             C           COMPLETION STATUS       C0000   *
*                                                                                                              *
****************************************************************************************************************
*                                         TOTAL MAINFRAME UNITS                                                *
*                                                                                                              *
*                                  SYSTEM RESOURCE UNITS (SRU)                .77                              *
*                                                                                                              *
*                                  APPLICATION RESOURCE UNITS (ARU)         45.15                              *
****************************************************************************************************************
```

```
TYPE SPACE FRAME
ALPHANUMERIC IDENTIFIER TREATMENT BY CHARACTER COMPARISON
UNITS INCHES, KIPS, DEGREES, FAHRENEIT, LBM, SECONDS
JOINT COORDINATES
1           0.0          0.0  0.0
2           0.0         16.0  0.0
3           0.0         35.31 0.0
4          47.94         0.0  0.0
5          47.94        16.0  0.0
6          47.94        35.31 0.0
7          14.0          0.0  0.0
SUPPORT JOINTS -
  3 6
JOINT RELEASES
  3        M Y
MEMBER INCIDENCES
1       1 2
2       2 3
3       4 5
4       5 6
5       1 7
6       7 4
7       2 5
CONSTANTS
E 29.E3 ALL ; POISSON .3 ALL ; DENS 0.284 ALL
G 11.2E3 ALL ; CTE 0.0000065 ALL ; FYLD 36.0 ALL
CONSTANTS
BETA  180    1 TO 4
MEMBER PROPERTIES
  1 TO 4    TABLE 'STEELC1' 'C6X8'  TYPE 'CHANNEL'
  5 TO 7    TABLE 'STEELC1' 'C4X7'  TYPE 'CHANNEL'
PRINT STRUCTURAL DATA
PLOT DEVICE PRINTER WID 10 LEN 10
PLOT FORMAT TOLERANCE 5
PLOT PLANE Z EQUAL 0
INERTIA OF JOINTS LUMPED
INERTIA OF JOINTS FACTOR  1  ADD
  7              LINEAR X  111  Y  111
GROUP '&RET' DEFINITION ; JOINTS ALL ACTIVE
END OF GROUP DEFINITION
CHANGES
INERTIA OF JOINTS LUMPED
ADDITIONS
DYNAMIC DEGREES STATIC ; JOINTS
'&RET' XT ; END
UNIT CYCL ; ADDITION ; ASSEMBLE FOR DYNAMICS
MODAL ANALYSIS 5
LIST DYNAMIC EIGENVECTORS
LIST DYNAMIC NORM PART FACTORS
CHANGES
INERTIA OF JOINTS LUMPED
DYNAMIC DEGREES STATIC ; JOINTS
'&RET' YT ; END
UNIT CYCL ; ADDITION ; ASSEMBLE FOR DYNAMICS
MODAL ANALYSIS 5
LIST DYNAMIC EIGENVECTORS
LIST DYNAMIC NORM PART FACTORS
CHANGES
INERTIA OF JOINTS LUMPED
DYNAMIC DEGREES STATIC ; JOINTS
```



CLIENT TUGC PROJECT Comanche Peak
SUBJECT CABLE TRAY SUPPORT
CTH-2-337
STRUDL (FREQ)
E. [illegible] 9/1?/85
K C WANG 9-18-85

```
UNIT CYCL ; ADDITION ; ASSEMBLE FOR DYNAMICS
MODAL ANALYSIS 5
LIST DYNAMIC EIGENVECTORS
LIST DYNAMIC NORM PART FACTORS
UNITS DEGREES
FINISH NOMESSAGES
```

```
********************************************************************************
*                                                                              *
*                              P S U I C E S                                   *
*                                                                              *
*                      VERSION 5  MODIFICATION 5                               *
*                                                                              *
*                      A PROPRIETARY PRODUCT OF                                *
*                                                                              *
*              PROJECT SOFTWARE AND DEVELOPMENT, INC.                          *
*                         14 STORY STREET                                      *
*                 CAMBRIDGE, MASSACHUSETTS 02138                               *
*                        TEL. 617-661-1444                                     *
*                                                                              *
*                       COPYRIGHT (C) 1985                                     *
*                       ALL RIGHTS RESERVED                                    *
*                                                                              *
*                       RUN DATE = 09/11/85                                    *
*              DYNAMIC CORE (VIRTUAL)  1429504 BYTES                           *
*                    370/083   VS2  REL 03.8I                                  *
*                                                                              *
********************************************************************************
```

THIS IS OVERALL RUN NO. 852

MONTH TO DATE STATISTICS FOR PASSWORD 'ENSILY ' (EXCLUSIVE OF THIS RUN).

ENTRIES	310
COMPLETIONS	304
RECORDED CPU TIME	11MIN 23 SEC
RECORDED EXCPS	144741

STRUDL '2-00337F' 'COMANCHE PEAK CABLE TRAY DESIGN'

```
        PPPPDPPPPPP           SSSSSSSSSSS   TTTTTTTTTTT   RRRRRRRRRRR   UU       UU   DDDDDDDDDDD   LL
       PPPPD DPPPPP          SSSSSSSSSSS   TTTTTTTTTTT   RRRRRRRRRRRR  UU       UU   DDDDDDDDDDDD  LL
      PPPPD  DPPPP          SS                TT        RR         RR  UU       UU   DD         DD  LL
     PPPPD   DPPP          SS                TT        RR         RR  UU       UU   DD         DD  LL
    PPPPD     DPP   HHHHH   SSSSSSSSSSS       TT        RRRRRRRRRRRR  UU       UU   DD         DD  LL
   PPPPD      DP    HHHHH  SSSSSSSSSSS       TT        RRRRRRRRRRRR  UU       UU   DD         DD  LL
  PPPPDDDDDDDDD                      SS      TT        RRRR          UU       UU   DD         DD  LL
 PPPPPPPPPPPPP                      SS      TT        RR  RR        UU       UU   DD         DD  LL
 PP                       SSSSSSSSSSS      TT        RR    RR      UUUUUUUUUUU   DDDDDDDDDDDD  LLLLLLLLLLL
PP                       SSSSSSSSSSS      TT        RR      RR    UUUUUUUUUUU   DDDDDDDDDDD   LLLLLLLLLLL
```

```
**************************************************
*                                                *
*                 P-DELTA STRUDL                 *
*                                                *
*                  VERSION 0385                  *
*                                                *
*          A PROPRIETARY PRODUCT OF              *
*                                                *
*                 P-DELTA, INC.                  *
*               42 ST. ANN ROAD                  *
*          QUINCY, MASSACHUSETTS 02170           *
*             TEL. (617) 472-8533                *
*                                                *
*     COPYRIGHT (C) 1982,1983,1984,1985          *
*             ALL RIGHTS RESERVED                *
*                                                *
*            8:58:43        9/11/85              *
*                                                *
**************************************************
```

TYPE SPACE FRAME

ALPHANUMERIC IDENTIFIER TREATMENT BY CHARACTER COMPARISON

UNITS INCHES, KIPS,DEGREES, FAHRENEIT, LBM, SECONDS

JOINT COORDINATES

1	0.0	0.0	0.0
2	0.0	16.0	0.0
3	0.0	35.31	0.0
4	47.94	0.0	0.0
5	47.94	16.0	0.0
6	47.94	35.31	0.0
7	14.0	0.0	0.0

```
SUPPORT JOINTS -
  3 6
JOINT RELEASES
  3        M Y
MEMBER INCIDENCES
1      1 2
2      2 3
3      4 5
4      5 6
5      1 7
6      7 4
7      2 3
CONSTANTS
E 29 E3 ALL ; POISSON .3 ALL ; DENS 0.284 ALL
G 11.2E3 ALL ; CTE 0.0000065 ALL ; FYLD 36.0 ALL
CONSTANTS
BETA  180   1 TO 4
MEMBER PROPERTIES
  1 TO 4    TABLE 'STEELC1' 'C6X8'  TYPE 'CHANNEL'
  5 TO 7    TABLE 'STEELC1' 'C4X7' TYPE 'CHANNEL'
PRINT STRUCTURAL DATA
```

```
*******************************************
*  PROBLEM DATA FROM INTERNAL STORAGE   *
*******************************************
```

JOB ID - 2-00337F JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	DEG	FAH	SEC	LBM

********** STRUCTURAL DATA **********

JOINT COORDINATES-----------------------------------/-CONDITION-/--STATUS--/

JOINT	X	Y	Z	CONDITION	STATUS
1	0.0	0.0	0.0		ACTIVE
2	0.0	16.000	0.0		ACTIVE
3	0.0	35.310	0.0	SUPPORT	ACTIVE
4	47.940	0.0	0.0		ACTIVE
5	47.940	16.000	0.0		ACTIVE
6	47.940	35.310	0.0	SUPPORT	ACTIVE
7	14.000	0.0	0.0		ACTIVE

JOINT RELEASES------------------------------------/ELASTIC SUPPORT RELEASES---/

JOINT	FORCE	MOMENT	THETA 1	THETA 2	THETA 3	KFX	KFY	KFZ	KMX	KMY	KMZ
3		Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MEMBER INCIDENCES-----------/ LENGTH PROJECTIONS ON GLOBAL AXES----/ RELEASES---------------------/ STATUS--/

MEMBER	START	END	LENGTH	X	Y	Z	START FORCE	START MOMENT	END FORCE	END MOMENT	STATUS		
1	1	2	16.000	0.0	16.000	0.0					ACTIVE	SPACE	FRAME
2	2	3	19.310	0.0	19.310	0.0					ACTIVE	SPACE	FRAME
3	4	5	16.000	0.0	16.000	0.0					ACTIVE	SPACE	FRAME
4	5	6	19.310	0.0	19.310	0.0					ACTIVE	SPACE	FRAME
5	1	7	14.000	14.000	0.0	0.0					ACTIVE	SPACE	FRAME
6	7	4	33.940	33.940	0.0	0.0					ACTIVE	SPACE	FRAME
7	2	5	47.940	47.940	0.0	0.0					ACTIVE	SPACE	FRAME

ELEMENT INCIDENCES---/

ELEMENT	NODES

MEMBER PROPERTIES--/

MEM/SEQ.LEN	TYPE / TABLE		AX	AY / YD / FLTK	AZ / ZD / WBTK	IX / OD	IY / ID	IZ / SFX	SY / RAD	SZ / ALP	YC / TYP	ZC / SPA	EY / GEN	EZ / IYZ
1	TABLE		2.400	1.200	0.878	0.075	0.692	13.100	0.492	4.380	3.000	1.408	0.0	0.0
	STEELC1	C6X8		6.000	1.920	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
				0.343	0.200									
2	TABLE		2.400	1.200	0.878	0.075	0.692	13.100	0.492	4.380	3.000	1.408	0.0	0.0
	STEELC1	C6X8		6.000	1.920	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
				0.343	0.200									
3	TABLE		2.400	1.200	0.878	0.075	0.692	13.100	0.492	4.380	3.000	1.408	0.0	0.0
	STEELC1	C6X8		6.000	1.920	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
				0.343	0.200									
4	TABLE		2.400	1.200	0.878	0.075	0.692	13.100	0.492	4.380	3.000	1.408	0.0	0.0
	STEELC1	C6X8		6.000	1.920	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
				0.343	0.200									
5	TABLE		2.130	1.284	0.679	0.08[illegible]	0.432	4.590	0.343	2.290	2.000	1.262	0.0	0.0
	STEELC1	C4X7		4.000	1.721	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
				0.296	0.321									
6	TABLE		2.130	1.284	0.679	0.082	0.432	4.590	0.343	2.290	2.000	1.262	0.0	0.0
	STEELC1	C4X7		4.000	1.721	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
				0.296	0.321									
7	TABLE		2.130	1.284	0.679	0.082	0.432	4.590	0.343	2.290	2.000	1.262	0.0	0.0
	STEELC1	C4X7		4.000	1.721	0.0	0.0	0.0	0.0	0.0	CHANNEL	0.0	YES	0.0
				0.296	0.321									

MEMBER CONSTANTS--/

CONSTANT	STANDARD VALUE	DOMAIN.	VALUE	MEMBER LIST			
E	0.290000E 05	ALL					
G	0.112000E 05	ALL					
CTE	0.650000E-05	ALL					
DENSITY	0.284000E 00	ALL					
POISSON	0.300000E 00	ALL					
FYLD	0.360000E 02	ALL					
BETA	0.0	ALL BUT					
			0.180000E 03	1	2	3	4
CBETA	0.0	ALL					
FULT	0.600000E 02	ALL					

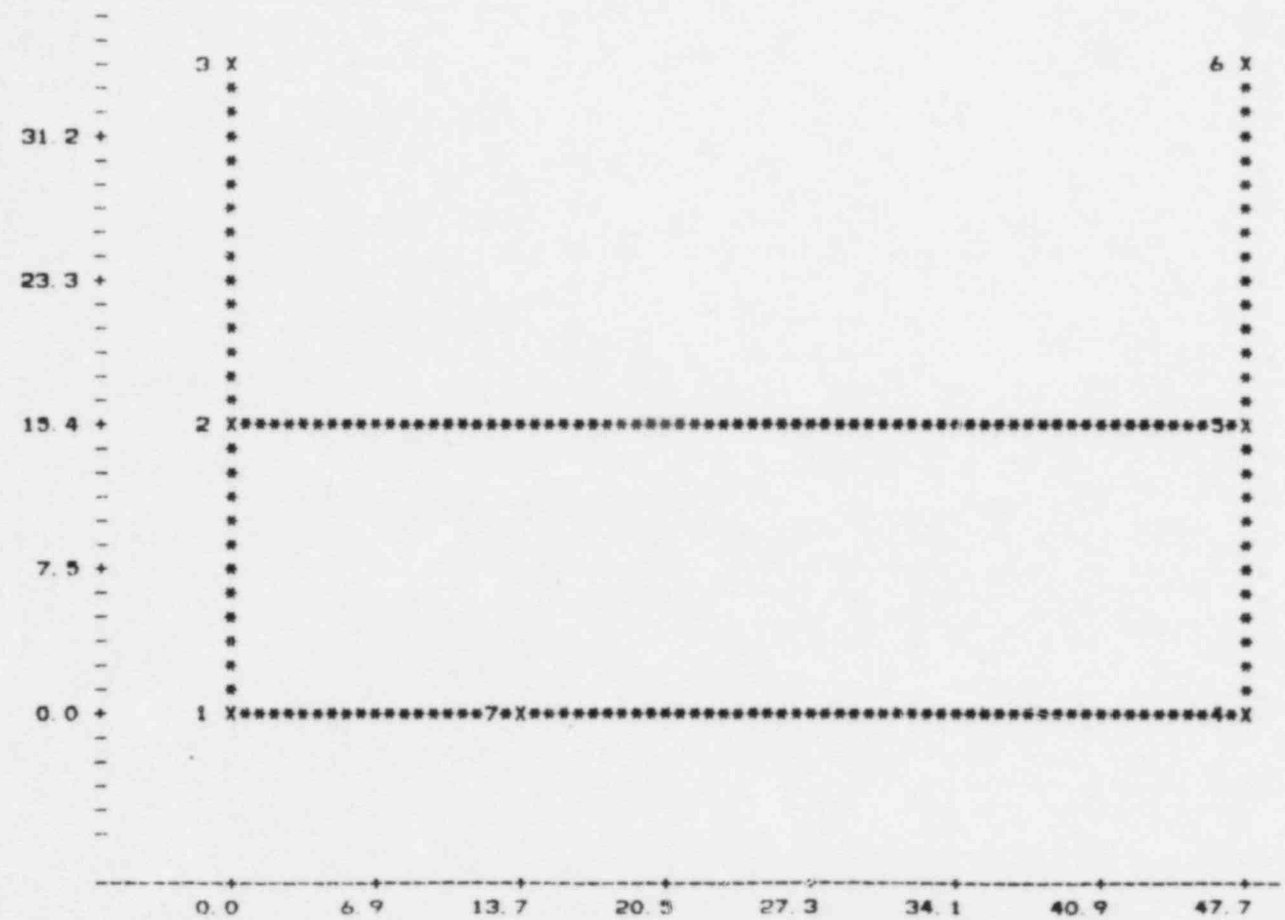
```
****************************************
*  END OF DATA FROM  INTERNAL STORAGE  *
****************************************
```

```
PLOT DEVICE PRINTER WID 10 LEN 10
PLOT FORMAT TOLERANCE 5
PLOT PLANE Z EQUAL 0
```

ORIENTATION

HORIZONTAL SCALE 6.800 UNITS PER INCH

VERTICAL SCALE 7.900 UNITS PER INCH



INERTIA OF JOINTS LUMPED

INERTIA OF JOINTS FACTOR 1 ADD

7 LINEAR X 111 Y 111

GROUP '&RET' DEFINITION ; JOINTS ALL ACTIVE

END OF GROUP DEFINITION

CHANGES

INERTIA OF JOINTS LUMPED

ADDITIONS

DYNAMIC DEGREES STATIC ; JOINTS

'&RET' XT ; END

UNIT CYCL ; ADDITION ; ASSEMBLE FOR DYNAMICS

CORRESPONDENCE BETWEEN INTERNAL AND PHYSICAL DEGREES OF FREEDOM

DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT
1	DX	1	2	DX	2	3	DX	4	4	DX	5	5	DX	7			

LOCATION OF DYNAMIC DEGREES OF FREEDOM IN ORIGINAL MATRIX

1 7 14 20 26

LOCATION OF CONDENSED DEGREES OF FREEDOM IN ORIGINAL MATRIX

2 3 4 5 6 8 9 10 11 12 13 15 16 17 18 19 21 22 23 24
25 27 28 29 30 31

MODAL ANALYSIS 5

EIGENVALUES

MODE	EIGENVALUE	FREQUENCY	PERIOD
1	6.636963D 03	8.146756D 01	1.227481D-02
2	2.284708D 05	4.779862D 02	2.092108D-03
3	1.123830D 06	1.060109D 03	9.432986D-04
4	1.379287D 06	1.174431D 03	8.514754D-04

```
     5     2.157629D 06     1.468887D 03     6.807868D-04

LIST DYNAMIC EIGENVECTORS
```

```
*****************************
*RESULTS OF LATEST ANALYSIS*
*****************************


JOB ID -    2-00337F       JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -  LENGTH         WEIGHT         ANGLE       TEMPERATURE      TIME          MASS
                  INCH           KIPF           CYCL          FAH           SEC           LBM


   EIGENVECTORS

   MODE   1

JOINT               /-----------------DISPLACEMENT-----------------//------------------ROTATION------------------/
                          X DISP.          Y DISP.          Z DISP.          X ROT.          Y ROT.          Z ROT.

1         GLOBAL      0.9097535      -0.0138328       0.0              0.0             0.0              0.0272732
2         GLOBAL      0.4429445      -0.0098138       0.0              0.0             0.0              0.0275737
3         GLOBAL      0.0             0.0             0.0              0.0             0.0              0.0
4         GLOBAL      0.9780414       0.0138328       0.0              0.0             0.0              0.0266209
5         GLOBAL      0.4420891       0.0098138       0.0              0.0             0.0              0.0272134
6         GLOBAL      0.0             0.0             0.0              0.0             0.0              0.0
7         GLOBAL      1.0000000       0.1011791       0.0              0.0             0.0             -0.0041211

   MODE   2

JOINT               /-----------------DISPLACEMENT-----------------//------------------ROTATION------------------/
                          X DISP.          Y DISP.          Z DISP.          X ROT.          Y ROT.          Z ROT.

1         GLOBAL     -0.1164913       0.0199674       0.0              0.0             0.0             -0.0604096
2         GLOBAL      0.9923812       0.0112377       0.0              0.0             0.0             -0.0055795
3         GLOBAL      0.0             0.0             0.0              0.0             0.0              0.0
4         GLOBAL     -0.0322808      -0.0199674       0.0              0.0             0.0             -0.0558132
5         GLOBAL      1.0000000      -0.0112377       0.0              0.0             0.0             -0.0029914
6         GLOBAL      0.0             0.0             0.0              0.0             0.0              0.0
7         GLOBAL     -0.1735488      -0.2397218       0.0              0.0             0.0              0.0087106

   MODE   3

JOINT               /-----------------DISPLACEMENT-----------------//------------------ROTATION------------------/
                          X DISP.          Y DISP.          Z DISP.          X ROT.          Y ROT.          Z ROT.

1         GLOBAL      0.1498551       0.0059948       0.0              0.0             0.0             -0.0523249
2         GLOBAL      1.0000000       0.0038623       0.0              0.0             0.0              0.0034164
3         GLOBAL      0.0             0.0             0.0              0.0             0.0              0.0
4         GLOBAL     -0.6434622      -0.0059948       0.0              0.0             0.0              0.0238407
```

5	GLOBAL	-0.9472082	-0.0038623	0.0	0.0	0.0	-0.0177503
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	0.0622571	-0.4299895	0.0	0.0	0.0	-0.0135253

MODE 4

JOINT		/-----DISPLACEMENT	-----	-----//	-----ROTATION	-----	-----/
		X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
1	GLOBAL	-0.1390511	-0.0102695	0.0	0.0	0.0	-0.0238742
2	GLOBAL	0.1806633	-0.0066331	0.0	0.0	0.0	-0.0054845
3	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
4	GLOBAL	1.0000000	0.0102695	0.0	0.0	0.0	0.0724500
5	GLOBAL	-0.2524297	0.0066331	0.0	0.0	0.0	0.0304420
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	-0.1051966	-0.3878047	0.0	0.0	0.0	-0.0239775

MODE 5

JOINT		/-----DISPLACEMENT	-----	-----//	-----ROTATION	-----	-----/
		X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
1	GLOBAL	-0.2446554	-0.0040004	0.0	0.0	0.0	-0.0366618
2	GLOBAL	0.3285673	-0.0030407	0.0	0.0	0.0	-0.0090111
3	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
4	GLOBAL	1.0000000	0.0040004	0.0	0.0	0.0	0.0495883
5	GLOBAL	0.1536636	0.0030407	0.0	0.0	0.0	0.0297348
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	0.0017136	-0.4043395	0.0	0.0	0.0	-0.0189245

LIST DYNAMIC NORM PART FACTORS

```
*******************************************************
* PARTICIPATION FACTORS COMPUTED FROM LATEST MODAL ANALYSIS *
*******************************************************
```

JOB ID - 2-00337F JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	CYCL	FAH	SEC	LBM

PARTICIPATION FACTORS AS COMPUTED FROM NORMALIZED MODES (OUTPUT IN INTERNAL UNITS)

/--MODE--/	DISPLACEMENT X DISP.	DISPLACEMENT Y DISP.	DISPLACEMENT Z DISP.	ROTATION X ROT.	ROTATION Y ROT.	ROTATION Z ROT.
1	0.45055033D 00	0.33106415D-01	0.0	0.0	0.0	0.0
2	-0.76278145D-01	0.78238359D-01	0.0	0.0	0.0	0.0
3	0.14287218D-02	-0.13987046D 00	0.0	0.0	0.0	0.0
4	0.19041503D-02	0.12590337D 00	0.0	0.0	0.0	0.0
5	-0.68274107D-01	0.13137626D 00	0.0	0.0	0.0	0.0

CHANGES

INERTIA OF JOINTS LUMPED

DYNAMIC DEGREES STATIC ; JOINTS

'&RET' YT ; END

UNIT CYCL ; ADDITION ; ASSEMBLE FOR DYNAMICS

CORRESPONDENCE BETWEEN INTERNAL AND PHYSICAL DEGREES OF FREEDOM

DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT
1	DY	1	2	DY	2	3	DY	4	4	DY	5	5	DY	7			

LOCATION OF DYNAMIC DEGREES OF FREEDOM IN ORIGINAL MATRIX
2 8 15 21 27
LOCATION OF CONDENSED DEGREES OF FREEDOM IN ORIGINAL MATRIX
1 3 4 5 6 7 9 10 11 12 13 14 16 17 18 19 20 22 23 24
25 26 28 29 30 31

MODAL ANALYSIS 5

EIGENVALUES

MODE	EIGENVALUE	FREQUENCY	PERIOD
1	1.669001D 04	1.291898D 02	7.740540D-03
2	7.398473D 05	8.601438D 02	1.162595D-03
3	9.590309D 05	9.793012D 02	1.021135D-03
4	4.913998D 06	2.216754D 03	4.511096D-04
5	6.399754D 06	2.529773D 03	3.952919D-04

LIST DYNAMIC EIGENVECTORS

****
RESULTS OF LATEST ANALYSIS
****

JOB ID - 2-00337F JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	CYCL	FAH	SEC	LBM

EIGENVECTORS

MODE 1

JOINT		DISPLACEMENT X DISP.	Y DISP.	Z DISP.	ROTATION X ROT.	Y ROT.	Z ROT.
1	GLOBAL	0.2194563	0.0811914	0.0	0.0	0.0	0.0337201
2	GLOBAL	0.0299431	0.0441743	0.0	0.0	0.0	0.0047653
3	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
4	GLOBAL	0.1754786	0.0293153	0.0	0.0	0.0	-0.0071488
5	GLOBAL	0.0697867	0.0166046	0.0	0.0	0.0	0.0055640
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	0.2066134	1.0000000	0.0	0.0	0.0	0.0361428

MODE 2

JOINT		DISPLACEMENT X DISP.	Y DISP.	Z DISP.	ROTATION X ROT.	Y ROT.	Z ROT.
1	GLOBAL	0.2506695	-0.0683504	0.0	0.0	0.0	0.0070296
2	GLOBAL	0.0927070	-0.0491983	0.0	0.0	0.0	0.0092074
3	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
4	GLOBAL	0.2610970	1.0000000	0.0	0.0	0.0	0.0167199
5	GLOBAL	0.0832598	0.7306679	0.0	0.0	0.0	0.0090180
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	0.2537147	-0.0053488	0.0	0.0	0.0	0.0147427

MODE 3

JOINT		DISPLACEMENT X DISP.	Y DISP.	Z DISP.	ROTATION X ROT.	Y ROT.	Z ROT.
1	GLOBAL	-0.4735016	1.0000000	0.0	0.0	0.0	-0.0418881
2	GLOBAL	-0.1225995	0.8125365	0.0	0.0	0.0	-0.0140568
3	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
4	GLOBAL	-0.4375907	0.0543077	0.0	0.0	0.0	-0.0085158

5	GLOBAL	-0.1551347	0.0443413	0.0	0.0	0.0	-0.0147090
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	-0.4630143	-0.0142108	0.0	0.0	0.0	-0.0512704

MODE 4

JOINT		DISPLACEMENT			ROTATION		
		X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
1	GLOBAL	-0.0264141	-0.0078711	0.0	0.0	0.0	-0.0011554
2	GLOBAL	-0.0238127	0.0081029	0.0	0.0	0.0	-0.0028841
3	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
4	GLOBAL	-0.0153746	1.0000000	0.0	0.0	0.0	0.0091038
5	GLOBAL	-0.0338145	-0.8105073	0.0	0.0	0.0	-0.0030846
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	-0.0231902	-0.0008526	0.0	0.0	0.0	0.0141433

MODE 5

JOINT		DISPLACEMENT			ROTATION		
		X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
1	GLOBAL	-0.2799799	1.0000000	0.0	0.0	0.0	-0.0369428
2	GLOBAL	-0.0382866	-0.4499208	0.0	0.0	0.0	-0.0053209
3	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
4	GLOBAL	-0.2441587	0.0122357	0.0	0.0	0.0	-0.0036539
5	GLOBAL	-0.0707405	-0.0061909	0.0	0.0	0.0	-0.0059714
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	-0.2695189	-0.0019719	0.0	0.0	0.0	-0.0531264

LIST DYNAMIC NORM PART FACTORS

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*********************************************************
* PARTICIPATION FACTORS COMPUTED FROM LATEST MODAL ANALYSIS *
*********************************************************
```

JOB ID - 2-00337F JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	CYCL	FAH	SEC	LBM

PARTICIPATION FACTORS AS COMPUTED FROM NORMALIZED MODES (OUTPUT IN INTERNAL UNITS)

/--MODE--/	X DISP	Y DISP.	Z DISP	X ROT.	Y ROT.	Z ROT.
1	0.86668926D-01	0.33247808D 00	0.0	0.0	0.0	0.0
2	-0.11148879D 00	-0.84095277D-01	0.0	0.0	0.0	0.0
3	-0.19929705D 00	0.81574340D-01	0.0	0.0	0.0	0.0
4	0.12787755D-01	0.14908211D-01	0.0	0.0	0.0	0.0
5	-0.11207153D 00	-0.63982614D-02	0.0	0.0	0.0	0.0

CHANGES

INERTIA OF JOINTS LUMPED

DYNAMIC DEGREES STATIC ; JOINTS

'&RET' ZT ; END

UNIT CYCL ; ADDITION ; ASSEMBLE FOR DYNAMICS

CORRESPONDENCE BETWEEN INTERNAL AND PHYSICAL DEGREES OF FREEDOM

DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT	DOF	DIR	JOINT
1	DZ	1	2	DZ	2	3	DZ	4	4	DZ	5	5	DZ	7			

LOCATION OF DYNAMIC DEGREES OF FREEDOM IN ORIGINAL MATRIX
3 9 16 22 28
LOCATION OF CONDENSED DEGREES OF FREEDOM IN ORIGINAL MATRIX
1 2 4 5 6 7 8 10 11 12 13 14 15 17 18 19 20 21 23 24
25 26 27 29 30 31

MODAL ANALYSIS 5

EIGENVALUES

MODE	EIGENVALUE	FREQUENCY	PERIOD
1	5.444734D 02	2.333395D 01	4.285595D-02
2	8.203623D 02	2.864197D 01	3.491376D-02
3	8.659185D 03	9.305474D 01	1.074635D-02
4	2.082348D 04	1.443034D 02	6.929835D-03
5	2.539243D 04	1.593500D 02	6.275486D-03

LIST DYNAMIC EIGENVECTORS

****
RESULTS OF LATEST ANALYSIS
****

JOB ID - 2-00337F JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	CYCL	FAH	SEC	LBM

EIGENVECTORS

MODE 1

JOINT		X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
1	GLOBAL	0.0	0.0	0.9234282	-0.0379140	-0.0066920	0.0
2	GLOBAL	0.0	0.0	0.3511364	-0.0311300	-0.0000947	0.0
3	GLOBAL	0.0	0.0	0.0	0.0	-0.0000947	0.0
4	GLOBAL	0.0	0.0	0.8575734	-0.0352422	0.0073293	0.0
5	GLOBAL	0.0	0.0	0.3259578	-0.0289133	0.0011018	0.0
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	0.0	0.0	1.0000000	-0.0371337	-0.0026050	0.0

MODE 2

JOINT		X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
1	GLOBAL	0.0	0.0	-0.8851839	0.0351623	-0.0338385	0.0
2	GLOBAL	0.0	0.0	-0.3461543	0.0298627	-0.0161107	0.0
3	GLOBAL	0.0	0.0	0.0	0.0	-0.0161107	0.0
4	GLOBAL	0.0	0.0	1.0000000	-0.0398051	-0.0420592	0.0
5	GLOBAL	0.0	0.0	0.3905679	-0.0337409	-0.0156755	0.0
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	0.0	0.0	-0.3940756	0.0132694	-0.0371553	0.0

MODE 3

JOINT		X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
1	GLOBAL	0.0	0.0	-0.6573628	0.0023080	-0.1374880	0.0
2	GLOBAL	0.0	0.0	-0.5072179	0.0245901	-0.0182408	0.0
3	GLOBAL	0.0	0.0	0.0	0.0	-0.0182408	0.0
4	GLOBAL	0.0	0.0	-0.1942496	0.0008965	0.0856127	0.0

5	GLOBAL	0.0	0.0	-0.1474642	0.0072972	0.0019745	0.0
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	0.0	0.0	1.0000000	0.0018958	-0.0730750	0.0

MODE 4

JOINT		DISPLACEMENT X DISP.	Y DISP.	Z DISP.	ROTATION X ROT.	Y ROT.	Z ROT.
1	GLOBAL	0.0	0.0	0.0421766	-0.0115773	-0.0049135	0.0
2	GLOBAL	0.0	0.0	-0.0940084	-0.0005226	-0.0236525	0.0
3	GLOBAL	0.0	0.0	0.0	0.0	-0.0236525	0.0
4	GLOBAL	0.0	0.0	-0.6693570	0.1472321	0.0275023	0.0
5	GLOBAL	0.0	0.0	1.0000000	0.0106807	-0.0192385	0.0
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	0.0	0.0	0.0601666	0.0348001	0.0059128	0.0

MODE 5

JOINT		DISPLACEMENT X DISP.	Y DISP.	Z DISP.	ROTATION X ROT.	Y ROT.	Z ROT.
1	GLOBAL	0.0	0.0	1.0000000	-0.1450295	0.0978130	0.0
2	GLOBAL	0.0	0.0	-0.7086017	-0.0233639	-0.0066078	0.0
3	GLOBAL	0.0	0.0	0.0	0.0	-0.0066078	0.0
4	GLOBAL	0.0	0.0	0.0821529	-0.0110445	-0.0412090	0.0
5	GLOBAL	0.0	0.0	-0.0424448	-0.0019598	-0.0179408	0.0
6	GLOBAL	0.0	0.0	0.0	0.0	0.0	0.0
7	GLOBAL	0.0	0.0	-0.2126760	-0.1059016	0.0588995	0.0

LIST DYNAMIC NORM PART FACTORS

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***********************************************************
* PARTICIPATION FACTORS COMPUTED FROM LATEST MODAL ANALYSIS *
***********************************************************
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JOB ID - 2-00337F JOB TITLE - COMANCHE PEAK CABLE TRAY DESIGN

ACTIVE UNITS -	LENGTH	WEIGHT	ANGLE	TEMPERATURE	TIME	MASS
	INCH	KIPF	CYCL	FAH	SEC	LBM

PARTICIPATION FACTORS AS COMPUTED FROM NORMALIZED MODES (OUTPUT IN INTERNAL UNITS)

/--MODE--/	----DISPLACEMENT----			//----ROTATION----/		
	X DISP.	Y DISP.	Z DISP.	X ROT.	Y ROT.	Z ROT.
1	0.0	0.0	0.14217797D 00	0.0	0.0	0.0
2	0.0	0.0	-0.67544150D-02	0.0	0.0	0.0
3	0.0	0.0	0.31839883D-01	0.0	0.0	0.0
4	0.0	0.0	0.38332467D-01	0.0	0.0	0.0
5	0.0	0.0	-0.31168373D-01	0.0	0.0	0.0

UNITS DEGREES

FINISH NOMESSAGES

GOOD-BYE

THIS RUN HAS BEEN 'COMPLETED' AND FULLY ACCOUNTED FOR 'EBSTLY '

CPU SECONDS

	RUN	LAST INTERVAL
EXECUTING	1.83	1.83

EXCP'S

DATASET	TOTAL RUN	LAST INTERVAL
STEPLIB	0	0
	142	0
	0	0
SYS03424	0	0
SYS03422	0	0
DD0	35	0
DD1	7	0
DD2	37	0
DD3	95	0
DD5	30	0
FT05F001	0	0
FT06F001	0	0
FT07F001	0	0
FT08F001	0	0
FT10F001	0	0
ICESDUMP	0	0
SYSUDUMP	0	0
TOTAL	346	0
I/O EXCPS	2	0

DATE	OVERALL ENTRY NO.	MONTH ENTRY NO.	MACHINE TYPE	OS VERSION	SUBSYSTEM VERSION	COMPLETION CODE	I	MONTH TO DATE (INCLUDING THIS RUN) CPU TIME	EXCPS
11SEP85	852	311	3083	03.8I	9-	0000	I	685.36	145087

DISK STATISTICS WITH 3 BUFFERS OF 18432 BYTES (DISKOPT=X0004)

DIRECT ACCESS	EXCP'S	PERCENT	BLOCKSIZE	BLOCKS IN FILE	M-BYTES TRANSFERRED
DISK WRITES	19	9.95			
DISK READS	172	90.05			
IN LAST BUFFER	8	4.65			
JUST MISSED	3	1.74			
EXTRA FINDS	190	110.47			
DDNAME			BLOCKSIZE	BLOCKS IN FILE	M-BYTES TRANSFERRED
DD1	7	3.66	800	57	0.005600
DD2	37	19.37	800	1918	0.029600
DD3	95	49.74	1320	567	0.125400
DD5	43	22.51	800	4522	0.034400
DD0	9	4.71	18432	30	0.165888
				TOTAL	0.360888

```
            XX        XX  0000000000  RRRRRRRRRRRR  AAAAAAAAAAAA  KK       KK  HH        HH
            XX       XX  00       0000 RR        RR  AA        AA  KK     KK   HH        HH
            XX      XX  00      00 00  RR        RR  AA        AA  KK    KK    HH        HH
            XX     XX  00     00  00  RR        RR  AA        AA  KK   KK     HH        HH
            XXXX      00    00   00  RRRRRRRRRRRR  AAAAAAAAAAAA  KKKKKK      HHHHHHHHHHHH
           XXXX       00   00    00  RRRRRRRRRRR   AAAAAAAAAAAA  KKKKKK      HHHHHHHHHHHH
          XX  XX      00 00     00  RR        RR  AA        AA  KK    KK    HH        HH
         XX   XX      0000      00  RR        RR  AA        AA  KK    KK    HH        HH
        XX    XX      000      00  RR        RR  AA        AA  KK    KK    HH        HH
       XX     XX      0000000000  RR        RR  AA        AA  KK    KK    HH        HH
      XX      XX      00000000    RR        RR  AA        AA  KK    KK    HH        HH

        JJJJJJJJJ  555555555555   3333333333       11      8888888888        AAAAAAAAAA
        JJJJJJJJJ  555555555555  333333333333     111     888888888888      AAAAAAAAAAAA
               JJ  55            33         33   1111     88        88      AA        AA
               JJ  55                       33     11     88        88      AA        AA
               JJ  55                       33     11      88      88       AA        AA
               JJ  555555555             3333      11       88888888        AAAAAAAAAAAA
               JJ  5555555555            3333      11       88888888        AAAAAAAAAAAA
               JJ           55              33     11      88      88       AA        AA
        JJ     JJ            55             33     11     88        88      AA        AA
        JJ     JJ            55  33         33     11     88        88      AA        AA
        JJJJJJJ    555555555555  333333333333  1111111111  888888888888      AA        AA
         JJJJJ     55555555555    3333333333   1111111111   8888888888       AA        AA
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*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
*A  END  JOB 5318 XORAKH  1   001 001 R0305  E RAKHMILEVICH  ROOM  9.08.04 AM 11 SEP 85 R305.PR1 8301  END  A*
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APPENDIX K

INSTRUCTION FOR CALCULATION PACKAGE PREPARATION

1.0 GENERAL

The preparation and documentation by Civil SAG New York of calculations for cable tray hangers (CTH) shall conform to Company Procedure E-30 and these Instructions.

The Instructions are needed to achieve with a simple, and well documented approach, good traceability while accounting for the specific conditions required for the design verification of the CTH for CPSES Units 1 & 2.

Attachment 1 of these instructions are guidelines to be used in the Unit No. 2 Calculation Backfit Program. The portion of this program related to calculation package format describes formatting to be used for Unit No. 1 as well as Unit No. 2.

All documents which are utilized as a source of input or as a reference, and all calculations produced in the cable tray hanger design verification program shall be bound in books at a central location for easy retrieval and usage. Two separate volumes consisting of a series of books, one set assigned to Volume I and the other set assigned to Volume II, shall be established.

2.0 ORGANIZATION OF CALCULATIONS IN BOOKS

2.1 Volume I

In general, the books included in Volume I shall contain documents consisting of the project design criteria, general instructions, design aids, studies, computer data and usage information, computer program verification reports, and cable tray hanger group design classification procedure and data. Each book included in Volume I shall have a general Table of Contents listing all documents contained in Volume I.

2.2 Volume II

All calculation books containing cable tray hanger (CTH) design verification calculations and associated computer analysis output runs shall be incorporated into Volume II. All final and superseded cable tray hanger calculations shall be filed together. Likewise all final and superseded computer analysis output runs shall be filed together.

3.0 FORMAT OF CALCULATIONS FOR GROUPING OF HANGERS

The design verification requires that each CTH has a calculation package. However, due to many similarities between hangers with the same geometry (same spatial configuration) some hangers are grouped so that the design verification of only one "representative envelope" (RE) of the group serves as either the complete or partial basis for the qualification of the

APPENDIX K

3.0 FORMAT OF CALCULATIONS FOR GROUPING OF HANGERS (Cont'd)

whole group. When used as a partial basis, the forces and/or stresses from the analysis of the RE are used for design verification of specific features (welds, anchorages) of each hanger in the group.

Grouping is the process whereby, per grouping procedure in Volume I, cognizant engineers compare all known elements influencing hanger structural response and select the "representative envelope" hanger which, once design verified, documents the rest of the group. If none of the actual group hangers are judged to be a representative one then the one closest to the representative envelope may be enhanced with attributes (loads, spans, etc.) from the other hangers to create an "idealized" representative envelope. In all calculations and documentation, the "representative envelope" hanger is called representative, for simplicity only.

4.0 CABLE TRAY HANGER CALCULATION TRACEABILITY

Each hanger which does not have an individual calculation and refers instead to a calculation made for the group representative, shall be documented by a calculation package consisting of a cover sheet, table of contents, reference sheet (Exhibit 1) referencing the group representative, and Attachments E, F, H, I, J and K as described in Section 5.0 below as applicable. As the calculations are completed, a computerized cross-reference list is kept available for ready retrieval of any calculation.

The revision of a calculation may be required by the revision of the hanger as-built data, revision of design criteria, design guidelines or both. Wherever a revision of the calculation is made without requiring changes to the hanger drawing, a note on the cover sheet shall so indicate.

5.0 SPECIFICS OF CALCULATIONS

Each hanger calculation shall be prepared as per Ebasco Company Procedure E-30 and these instructions. The cover sheet of the calculation shall be as shown in Exhibit 2. The signature in ink of the preparer, checker and reviewer on the cover sheet is limited to a confirmation that the Calculation Package has been properly prepared in accordance with the Project Procedures and this guideline. Compliance with technical and design criteria requirements will continue to be the responsibility of the preparer and the checker of the individual calculation pages.

For Calculation Packages issued prior to the publication of these guidelines, the current revision of the Calculation Packages will be documented as outlined above. Previous calculation revisions will not be backfitted on the

APPENDIX K

5.0 SPECIFICS OF CALCULATIONS (Cont'd)

cover sheet for preparer, checker and reviewer signatures. For these cases, the following note will be made on the cover sheet of the Calculation Package for original completion dates and initials:

Note: For original calculation completion dates and initials, see package.

Each entire Calculation Package shall consist of the following applicable sections and attachments, as listed in the Calculation Package Table of Contents (see Exhibit 3):

Calculation Package Sections

1. Cover Sheet (Exhibit 2)

2. Table of Contents (Exhibit 3)

3. Design Data Sheet (Exhibit 4)

   When grouping is used, the calculation package for the "representative envelope" shall contain a separate Design Data Sheet for each hanger in the group as well as for the "representative envelope". R

   If site calculations are attached (Att. K), a note stating the impact of site calculations on Conclusion shall be added at bottom of Design Data Sheet.

   For grouped hangers, site calculations will be located in the grouped hangers calculation package as described in Paragraph 4.0 of this Appendix K. R

4. Grouping Sheet, if applicable (Exhibit 5)

   If a major revision to a hanger drawing is made, it is the responsibility of the calculation originator to notify the Grouping Team of this fact.

5. A sheet, if applicable, referencing Unit 1 or Unit 2 static or dynamic calculations which are used as a basis for Unit 1 or Unit 2 calculations.

6. A section containing frequency calculations for cable tray, cable tray hanger and tray/hanger system.

7. A section containing static and/or dynamic analyses of the cable tray hanger.

8. A section containing the evaluation of hanger member stresses.

9. A section containing the evaluation of hanger welded connections.

10. A section containing the evaluation of hanger anchorages.

APPENDIX K

Calculation Package Attachments

A. Calculation Design Verification Checklist, Form 0599 (Exhibit 6). The 0599 form attached here attests to the design verification of only the current calculation revision, except when filled out in the Unit 2 calculation backfit effort, in which case the 0599 form shall attest to the design verification of all previous calculation revisions as well as the current one.

When grouping is performed, the 0599 form attached to the "representative envelope" calculation package shall identify all hangers in the group and shall attest to the design verification of all hangers in the group, including the "representative envelope". Calculation sheets for all hangers in the group must not be dated later than the 0599 form attached to the "representative envelope". R

B. Format Backfit Worksheet (Exhibit 7); only for Unit 2 calculations. For "representative envelope" hangers, this worksheet will be completed after work on all hangers in the group is completed. R

C. Technical Backfit Worksheet (Exhibit 8); only for Unit 2 calculations. For "representative envelope" hangers, this worksheet will be completed after work on all hangers in the group is completed. R

D. Referenced Unit 2 calculations if applicable as a Unit 1 calculation basis.

E. The red line drawings of the hanger.

F. A copy of the signed out drawings of the hanger.

G. Copies of select pages of referenced computer runs showing the computer run number, date, computer program name and version, and properly filled in computer output stamp.

H. A summary of hanger footprint loads on WEB input form.

I. Miscellaneous backup information directly related to design input values for calculations and drawings.

J. Superseded calculations

K. Supplementary site calculations, if any, and a statement attesting to the fact that these calculations have been reviewed by the person responsible for merging site calculations with the New York calculation package and that any impact of site calculations on final calculation package is reflected in the main body of the calculation package.

A separator sheet may be inserted immediately in front of Attachment K to facilitate package handling. R

APPENDIX K

EXHIBIT 1

FOR CALCULATION ON THIS HANGER CTH-2-7648
SEE CTH-2-10297

APPENDIX K

EXHIBIT 2

EBASCO SERVICES INCORPORATED
CALCULATION COVER SHEET

CLIENT: TEXAS UTILITIES GENERATING CO. OFS No. 3306.
PROJECT: COMANCHE PEAK UNIT No. DEPT No. 550 | R

SUBJECT: CABLE TRAY HANGER
CALCULATION No. CTH- - ________ NUMBER OF SHEETS ________
PROBLEM: AS-BUILT REVIEW ______ DESIGNED AND INSTALLED ______

THIS CALCULATION IS APPLICABLE TO DWG CTH- - ________ (Rev)
AND ALSO CTH- - ________ (Rev) CTH- - ________ (Rev)
CTH- - ________ (Rev) CTH- - ________ (Rev)
CTH- - ________ (Rev) CTH- - ________ (Rev)

COMPUTER RUN No. ________ DATE ________
________ ________
________ ________

CONTAINS ASSUMPTIONS WHICH REQUIRE CONFIRMATION YES ____ NO ____
ASSUMPTIONS CONFIRMED ON ________ BY ________

REV. No.	SHEET Nos.	NAME	DATE	NAME	DATE	NAME	DATE
		COVER SHEET BY		COVER SHEET CHECKED BY		CALC. PACKAGE REVIEWED BY	

PRELIMINARY ☐ FINAL ☐ SUPERSEDES CALC No. ________

APPENDIX K

EXHIBIT 3

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK SES UNIT No.
DESIGN VERIFICATION OF CTH- -

TABLE OF CONTENTS

R

APPENDIX K

EXHIBIT 4

EBASCO SERVICES INCORPORATED

BY ____________ DATE ____________ SHEET ____ OF ____

CHKD. BY ____________ DATE ____________ OFS NO. 3306 ____ DEPT. NO. 550

R

CLIENT Texas Utilities Generating Company

PROJECT Comanche Peak Steam Electric Station Unit No.

SUBJECT Standard Format for Seismic Design Calculation

I. DESIGN DATA

1. CTH No. ____________

2. Location: Building ____________ FLOOR ELEV. ____________

3. Type of Support: Transverse ____________

Longitudinal ____________

Multidirectional ____________

4. Anchorage

Strip Plate ____________

Larger Embedded Plate ____________

Surface Plate ________, Hilti-Kwik Bolt ____________

Richmond Insert ____________

Hilti Super-Kwik Bolt ________

5. Type of Mounting: Ceiling Mounted ____________

Wall Mounted ____________

Steel Mounted ____________

Floor Mounted ____________

II. CONCLUSION

1. CTH is Adequate ☐

2. CTH is Adequate with conditions as noted on drawing ☐

3. CTH is Adequate as Modified ☐

APPENDIX K

EXHIBIT 5

EBASCO SERVICES INCORPORATED

BY ______ DATE ______ SHEET ____ OF ____
CHKD BY ______ DATE ______ OFS NO. ______ DEPT. NO. 550
CLIENT TUGCO
PROJECT COMANCHE PEAK SES UNIT NO.
SUBJECT CTS GROUPING

Reasons for calculating one representative hanger of the group ____________

The group consisting of __________ supports has been reviewed for:

1. hanger height and width
2. support member sectional properties
3. total load
4. tray span(s)
5. support location

and by inspection, the _________ hanger was found to envelope all the other supports.

For details of grouping, see Volume 1, Book 4.

The group consists of the following supports:

R

APPENDIX K

EXHIBIT 6

[illegible]

[illegible]

CHECKLIST FOR DESIGN VERIFICATION OF CABLE TRAY HANGERS AND CONDUIT SUPPORT DRAWINGS AND CALCULATIONS BY DESIGN REVIEW METHOD

TEXAS UTILITIES GENERATING CO
COMANCHE PEAK PROJECTS

DOCUMENT NUMBER	REVISION	DOCUMENT NUMBER	REVISION

QUESTIONS (SHALL BE ANSWERED BY THE INDEPENDENT VERIFIER)	CALCS	DRAWINGS
1. [illegible]		
2. [illegible]		N/A
3. [illegible]		
4. [illegible]		
5. [illegible]	N/A	
5a. [illegible]	N/A	N/A
6. [illegible]	N/A	N/A
7. [illegible]		
8. [illegible]		N/A
9. [illegible]		
10. [illegible]		
11. [illegible]	N/A	N/A
12. [illegible]	N/A	N/A
13. [illegible]	N/A	N/A
14. [illegible]	N/A	N/A
15. [illegible]		
16. [illegible]	N/A	N/A
17. [illegible]	N/A	N/A
18. [illegible]		
19. [illegible]		
20. [illegible]		

LEGEND: YES = ACCEPTABLE
N/A = NOT APPLICABLE

INDEPENDENT VERIFIER SIGNATURE ____________________ DATE __________

APPENDIX K

EXHIBIT 7

TEXAS UTILITIES GENERATING COMPANY-COMANCHE PEAK SES UNIT NO. 2
CALCULATION FORMAT BACKFIT WORKSHEET
FOR NEW YORK OFFICE CABLE TRAY HANGERS
CALCULATION NO. CTH-2- _______ REV ___

THIS REVIEW APPLIES TO SUPPORT CTH-2- _______ (REV ___), AND TO THE FOLLOWING OTHER SUPPORTS (AND REVISIONS): SUPPORT ______ (REV ___),

UNLESS OTHERWISE NOTED BELOW, INDICATE WITH A
✓ ITEMS CORRECTLY CONSIDERED IN DESIGN VERIFICATION
X ITEMS INCORRECTLY CONSIDERED OR OMITTED IN DESIGN VERIFICATION
N/A ITEMS NOT APPLICABLE
(FILL IN ALL SPACES)

GENERAL: CALCS NEAT ___ ORDERLY ___ ALL SHEETS NUMBERED ___
ALL CALC SHEETS INITIALED AND DATED BY: ORIGINATOR ___ CHECKER ___
ALL REVISED SHEETS INITIALED ___ DATED ___
ATTACHMENTS LABELLED ___ CALCS ON FORM 381 ___
CROSS OUTS/WHITEOUTS/TAPEOUTS INITIALED ___ DATED ___
COVER SHEET: SIGNED AND DATED BY: ORIGINATOR ___ CHECKER ___
CALC REV NO. ___ DWG REV NO. ___
ADDED/REVISED/SUPERSEDED/VOIDED SHEETS NOTED ___
NO OUTSTANDING ASSUMPTIONS NOTED ___ TOTAL SHEETS NOTED ___
ORIG CALC COMPLETION NOTE ___ COMPUTER RUN NO. ___ DATE ___
STANDARD TABLE OF CONTENTS ___
SUMMARY SHEETS: DESIGN DATA SHEET ___ GROUPING SHEET ___
CALCULATIONS: PROBLEM SCOPE ___ ASSUMPTIONS NOTED ___
DESIGN INPUT PROPERLY STATED AND/OR REFERENCED ___
CONCLUSIONS ___ COMPUTER RUNS REFERENCED ___
COMPUTER RUNS: LABELLED ___ ORIGINATOR ___ CHECKER ___ DATED ___
ATTACHMENTS: CALC DESIGN VERIFICATION CHECKLIST (FORM 999) ___
FORMAT BACKFIT WORKSHEET ___ TECHNICAL BACKFIT WORKSHEET ___
RED LINE DWGS ___ SIGNED OUT DWGS ___
COPY OF SELECT PAGES OF EACH COMPUTER RUN ___
WEB INPUT (LATEST FORM) ___ MISC. BACKUP INFO ___
SITE CALCULATIONS ___

BY __________ DATE ______
CHKD __________ DATE ______
(FORM 999 HAS BEEN COMPLETED)

CC: R. ALEXANDRU
T. LATIFAOGLU

APPENDIX K

EXHIBIT 8

TEXAS UTILITIES GENERATING COMPANY-COMANCHE PEAK SES UNIT NO. 2
CALCULATION TECHNICAL BACKFIT WORKSHEET
FOR NEW YORK OFFICE CABLE TRAY HANGERS
CALCULATION NO. CTH-2-________ REV ___

THIS REVIEW APPLIES TO SUPPORT CTH-2- ________(REV ___), AND TO THE FOLLOWING OTHER SUPPORTS (AND REVISIONS): SUPPORT _______(REV ___),

---

* UNLESS OTHERWISE NOTED BELOW, INDICATE WITH A
* ✓ ITEMS CORRECTLY CONSIDERED IN THE DESIGN VERIFICATION, OR CONSERVATIVELY CONSIDERED IF THE CONSERVATISM DOES NOT CAUSE HANGER MODIFICATION.
* X ITEMS INCORRECTLY CONSIDERED OR OMITTED IN THE DESIGN VERIFICATION, OR CONSERVATIVELY CONSIDERED IF THE CONSERVATISM CAUSES HANGER MODIFICATION.
* N/A ITEMS NOT APPLICABLE.
* (FILL IN ALL SPACES)

COMPUTER PROGRAM: STRUDL VERSION 0385 OR 0985 ___
GEOMETRY: BOUNDARY CONDITIONS ___ ECCENTRICITIES ___
LOADS: THERMOLAG ___ SYSTEMS EFFECT (MAINLY VERT RISERS) ___
LONGIT TRAY SPANS ___ THERMAL LOAD ___
LOAD APPL POINTS ___ LONGIT DIR SELF-WEIGHT (ALL SUPPORTS) ___
SEISMIC G BASIS: PEAK ___ FREQ ___ MRM ___ MRM (SPECIFY VALUE) ___
FREQ CALC ___ FREQ REQUIREMENT FOR ATTACHED CONDUITS ___
DESIGN VERIFICATION:
MEMBERS: SLENDERNESS RATIO ___ WARPING STRESS (NORMAL ___ SHEAR ___)
SRSS FOR SEISMIC (W/O DL) ___ ALL LOAD COMBINATIONS ___
BOLT HOLE EFFECT ___ DIMENSIONAL TOLERANCE ___
STRESS INTERACTION (GIVE CRITICAL VALUE) ___
CONNECTIONS: SRSS 3D WELD STRESS ___ MIN WELD SIZE ___
ALL LOAD COMBINATIONS ___
ANCHORAGE: BOLT PRYING ACTION ___
WELD WARPING STRESS (NORMAL ___ SHEAR ___)
ALL LOAD COMBINATIONS ___ BOLT INTERACTION (GIVE CRITICAL VALUE) ___
BASEPLATE FOOTPRINT LOADS (LATEST WEB INPUT FORM) ___
STRUDL COMPUTER BUGS: TUBE SECTION STRESS CHECK ___
ALLOWABLE AXIAL STRESSES ___

BY ________________ DATE ______
CHKD ________________ DATE ______
(FORM 599 HAS BEEN COMPLETED)

CC: R. ALEXANDRU
T. LATIFAOGLU

APPENDIX K - ATTACHMENT 1

Texas Utilities Generating Company

Comanche Peak SES

Calculation Backfit Program

Guidelines For Use of "Calculation Backfit Worksheets"

Table of Contents

I. References

(1) Seismic Design Criteria for Cable Tray Hangers for Comanche Peak SES Unit No. 2, SAG. CP 3- 11/85, R4 12/4/85.

(2) General Instructions for Cable Tray Hanger Analysis for Comanche Peak SES Units No. 1 and No. 2, R2 12/20/85.

(3) Ebasco Company Procedure E-30 and Appendix K to E-30.

(4) Ebasco Company Procedure E-76-CP.

(5) Ebasco Company Procedure E-7-CP.

II. Introduction

To ensure that all final Comanche Peak SES Unit No. 2 cable tray hanger design verification calculations conform to the latest Ebasco Design Criteria and Instructions (References 1 and 2) and Ebasco Engineering Procedures (References 3 and 4), a Calculation Backfit Program has been instituted. The portion of this program related to calculation package format describes formatting to be used on Unit No. 1 as well as Unit No. 2.

This program consists of a systematic review of the technical and format aspects of each cable tray hanger design verification calculation package and, if required, preparation of revisions to these calculations and/or associated drawings. The review of each package shall be accomplished by using the Calculation Format and Technical Backfit Worksheets (Appendix K Exhibits 7 and 8). The guidelines in this attachment describe the use of these worksheets.

III. General Guidelines

1. Prior to initiating a backfit, the backfit originator must confirm, through the Supervising Design Engineer, that the calculation package and drawing in hand are the most recent revisions. If revisions subsequent to those in hand have been made by the site, the latest revisions must be obtained through the Supervising Design Engineer prior to backfit initiation. Any site calculations shall be merged with NY calculations as part of the backfit effort. In addition, the backfit originator must establish through the Supervising Design Engineer the current construction status of any modifications indicated on the most recent revision.

2. At the top of each worksheet, the calculation number and revision number identifying the calculation package under review shall be entered. Next, the support for which this calculation applies shall be identified by support drawing number and revision number. Also, all other supports for which this calculation applies as a result of grouping shall be similarly listed in the space provided.

In general, any support requiring member modification should not be part of a group unless all hangers in the group have very similar modifications. If, as a result of the backfit, regrouping is required, then regrouping should be performed and the Grouping Lead Engineer should be notified immediately in writing.

3. The symbol legend shown on each worksheet defines the symbols to be used in filling out the worksheets. All spaces must be filled in. The backfit originator (person performing review and backfit if required) shall use his experience and judgement to ascertain whether each item listed has been correctly, conservatively or incorrectly considered, or omitted, in the calculations in accordance with References 1 to 4 and sound engineering practice, and then enter the appropriate symbol after each item. Where specific values are requested (eg. stress interaction - give critical value), the originator shall enter the maximum values shown in the calculation.

   In determining whether a particular item which has been conservatively considered should be marked with a (✓) or (x), the reviewer must determine whether or not the conservatism has significantly affected the need for and extent of a hanger modification. If an as-built hanger passes with a conservative value, then this is acceptable. If, however, the use of a conservative value resulted in a hanger modification, then this item must be considered incorrect and the conservatism must be reduced to minimize the required modification, unless, of course, the modification has already been constructed at the site, in which case the modified support must be backfit. If, as a result of the backfit, a modification is required for a previously passed as-built hanger, notify the Supervising Engineer immediately in writing. He will review the results and at his discretion initiate response spectrum dynamic analysis, and if necessary, time history dynamic analysis, to attempt to demonstrate hanger adequacy.

   Any incorrectly considered or omitted items must be corrected by the backfit originator as a calculation revision, and drawing revision if required. If a drawing revision is required, it shall be accomplished in accordance with Ref 5. If the backfit originator determines that an omitted item has no significance on calculation results, he should modify the calculation by simply adding a statement explaining why the omission is of no concern. Likewise if a conservative approach has been used, a statement to this effect should be made in the calculation (ie. if OBE allowables were compared with SSE loads because this is conservative and does not result in a support modification, a statement to this effect should be included in the calculation). Statements such as "by inspection" or "by engineering judgement" should not be used. Instead, the basis of the judgement should be written down in the calculation. If site calculations contain such a statement, the backfit originator should determine if the statement is correct and, if so, leave it as it is. Ultimately, after the backfit is completed, all items on the worksheet must be marked with either a (✓) or (N/A).

4. The backfit originator shall sign and date the bottom of each worksheet. The backfit checker shall, after checking any calculation made by the originator and resolving any differences he may have with the originator, complete, sign and date the Design Verification Checklist Form 599 and then sign and date the backfit worksheets. The backfit worksheets and Form 599 shall be filed as calculation package attachments, and copies distributed as noted at the bottom of the worksheets.

The general guidelines above apply to both worksheets. Detailed guidelines for each item of the Technical Backfit worksheet and for selected items of the Format Backfit worksheet follow below. Guidelines stated in III.3 above regarding conservative values must be strictly adhered to.

IV. Detailed Guidelines - Technical Backfit Worksheet

For each item on the Technical Backfit Worksheet, a short description highlighting what should be checked is presented below. These descriptions are not meant to completely describe every aspect of each item, but only the aspects which are most suspect. The backfit originator must review each item for conformance to References 1 to 4 and sound engineering practice.

1. Computer Program: STRUDL version 0385 or 0985 ——

Only computer runs made using acceptable QA versions (0385, 0985 or subsequent acceptable versions) of STRUDL can be included in calculation packages. STRUDL versions other than 0385 or 0985 may have been used very early in the job. and for such cases the analysis must be rerun. For baseplate analysis only, STRUDL version 0185 is also acceptable.

2. Geometry: Boundary Conditions —— Eccentricities ——

Boundary conditions used in either computer or hand analysis must accurately reflect actual anchorage configurations as specified in Section III of Ref. 2.

Eccentricities used in computer or hand analysis must be considered per Section IV of Ref. 2 to realistically account for the application of loads and interconnections between structural members. Some of the attachments referenced in Section IV of Ref. 2 (RO) have been revised and incorporated into subsequent revisions. Tray loads should be applied to the support members at two points.

3. Loads:

a. Thermolag ——

For each tray run and its associated hangers, it must be determined if thermolag is applied. In doing so, Att. D of Ref. 2 and the supplementary Auxiliary Building Added Scope Thermolag list provided R by the Supervising Design Engineer must be used. If thermolag is applied, its weight must be considered in all calculations. Note that a formula for calculation of thermolag weight for tube sections in Att. A1 of Ref. 2 (R0) has been revised and incorporated into subsequent revisions.

b. Systems Effect (mainly vert risers)——

For vertical risers supported by hangers with significant differences in stiffness properties, and for some straight horizontal cable tray runs, the tray load will distribute to the hangers proportional to hanger stiffness rather than by contributing tray span length. For such cable tray runs, use a system approach to determine support loads.

c. Longit tray spans ——

In calculating seismic and thermal loads for longitudinal hangers, span lengths between adjacent longitudinal hangers must be used. If longitudinal or transverse overspans or discrepancies in span length data are found, notify the Supervising Design Engineer before proceeding with the backfit.

d. Thermal load ——

Section II.F of Ref. 2 shall be used to establish whether or not a hanger is subjected to thermal load. If thermal load is to be considered, Att. B2, P and Q of Ref. 2 should be followed. Sections of Ref. 2 (R0) related to thermal load have been revised and incorporated into subsequent revisions. Only thermal loads induced by tray temperature changes are to be considered.

e. Load appl. points ——

For both computer and hand analysis, the location specified in R0 of Ref. 2 for points of application of cable tray longitudinal load onto the hanger has been revised for one-bolt cable tray clamps. Refer to Att. B1 and B2 of subsequent revisions of Ref. 2.

f. Longit. Dir. Self-Weight (All Supports) ——

All hangers including transverse ones are subjected to seismic loads equal to their own dead weight times the longitudinal acceleration. "Longitudinal" refers to the direction along the cable tray run.

g. Seismic g basis: peak —— freq —— MRM ——
MRM(specify value) —— freq calc ——

Seismic accelerations may be based on either the peak value of the response spectra curve or on the calculated system frequency. If based on the peak, enter the appropriate symbol after "peak" and enter N/A after "freq". If based on a frequency calculation, enter the appropriate symbol after "freq" and enter N/A after "peak".

In calculating design seismic accelerations, a multimode response multiplier (MRM) of 1.25 should be used. Early in the project, a conservative value of 1.5 may have been used. Enter the appropriate symbol next to "MRM", and then enter the actual MRM value used in the calculations. The actual value is entered because, if the calculation is conservative, it may be useful to know in evaluating overall acceptability of the hanger. If the as-built hanger fails with 1.5, the 1.25 value shall be used. If frequency calculations were performed by hand, verify that correct and referenced formulas were used. Enter the appropriate symbol after "Freq calc".

h. Frequency requirement for attached conduits—

Cable tray hangers which support conduits must have, at the point of conduit attachment, a minimum frequency of at least 14.5 Hz.

4. Design Verification: Members

a. Slenderness ratio —

Effective length "K" values used to calculate slenderness ratios for transverse trapeze supports have been relaxed in Att. E of Ref. 2. Att. E also clarifies "K" values to be used for typical vertical trapeze and "L" shaped supports. For longitudinally braced trapezes, a K of 2.1 must be used for the unbraced segment.

b. Warping Stress (Normal — Shear —)

Warping stresses in two directions (normal to the member crossection and in-the-plane of the crossection) must be considered for members subjected to warping effects. These stresses must be added to other normal and shear stress in the member. If the support was evaluated by computer analysis, the computer value for the torsion in the member at the point of warping constraint should be used to calculate warping stress (ie. for a vertical trapeze attached to the ceiling, calculate warping stress by determining the computer value of the torque in the top post member and applying this torque at the end of a post member of length equal to the distance from anchorage to the uppermost tier).

c. SRSS for Seismic (w/o DL) ---

The stress effects of seismic loads in three directions must be added by SRSS, and then added to other loads according to the specified load combinations. Dead load must not be included in the SRSS.

d. All load combinations ---

All load combinations as specified in Att. F of Ref. 2 must be considered. Justification must be provided for any load combination not actually calculated in member stress evaluation.

e. Bolt hole effect ---

If any section with a bolt hole has an interaction equation coefficient larger than 0.75, the section shall be manually verified by reducing the area and moment of inertia to account for the bolt hole (see Sheet 36 of Ref. 2).

Allowable bolt edge distances must conform to the requirements of Att. T of Ref. 2.

f. Dimensional tolerance ---

The effects of the dimensional tolerances listed in Att. R of Ref. 2, except item (b), should be considered in design verification calculations. These tolerances are not to be routinely incorporated in the design verification but rather the approach described in Att. R of Ref. 2 should be followed.

g. Stress interaction (give critical value) ---

The critical member stress interaction value (the maximum value for any load combination) should be entered here. It may be useful in making judgements concerning adequacy of a hanger when evaluating the effect of other items which may deviate from requirements.

5. Design Verification: Connections

a. SRSS 3D Weld Stress ---

Final weld stress shall be determined by combining the weld stresses, including warping stresses, due to loads in the three orthogonal directions by SRSS. This SRSS is for load directionality and not for seismic effects which is a separate SRSS combination. Refer to Ebasco memo SAG.TUG2.1558 for weld evaluation procedures. Refer to item IV.4.b above regarding use of computer torsion values for warping calculation.

For the design of welding between channels of double channel sections, the computer program "COMBS" available from SAG NY may be used.

b. Min. weld size ——

Welds not meeting the AWS code minimum weld size requirement, but found through detailed analysis to have stresses within the allowable stress, are acceptable from a design verification standpoint.

For inaccessible welds, the backfit originator should verify that the minimum weld size actually needed for the particular weld geometry and loading has been determined and noted in the calulations.

c. All load combinations ——

All load combinations as specified in Att. F of Ref. 2 must be considered. Justification must be provided for any load combination not actually calculated in evaluation of any connection details.

6. Design Verification: Anchorage

a. Bolt prying action ——

Bolts shall be checked per Att. G1 to G5 of Ref. 2 which specify appropriate prying action factors for various anchor bolt configurations. Some of these factors have been revised in revisions of Ref. 2 subsequent to R0.

If formulas do not apply, or if anchors fail using formulas, then the baseplate computer program should be used.

For Richmond bolt check, note that the separation ratio is not included in Ref. 2 Att. 5.

b. Weld warping stress (normal —— shear ——)

In cases where members are subjected to warping effects (members welded "all around" at embedded plates or anchored plates), the anchorage weld verification shall include warping stresses in addition to other stresses. For such cases, warping will cause two additional stresses in the weld. One of these will be in the same direction as, and must be added to, the shear stresses caused by direct shear and pure torsion loads. The other warping stress is in the same direction as, and must be added to, shear stresses caused by member axial and bending loads. These two total weld shear stresses must then be combined by SRSS. Refer to Ebasco memo SAG.TUG2.1558 for weld evaluation procedures. Refer to item IV.4.b above regarding use of computer torsion values for warping calculation.

c. All load combinations —

All load combinations as specified in Att. F of Ref. 2 must be considered. Justification must be provided for any load combination not actually calculated in anchorage evaluations.

d. Bolt interaction (give critical value) —

The critical bolt interaction value should be entered here. This value may be useful in making judgements concerning adequacy of the hanger when considering other items which may deviate from requirements.

e. Baseplate footprint loads (latest WEB input form) —

The latest WEB input form must be used to summarize baseplate and embedded plate footprint loads. Care must be taken in filling out the WEB form since the axes shown may not necessarily be the same as the axes used in analysis. A copy of WEB form should be given to the Supervising Design Engineer for collection and transmittal to site.

7. Design Verification : STRUDL computer bugs

a. Tube section stress check —

An error was found in STRUDL version 0385 in which bending stresses in rectangular and square tube sections (actual or built-up) were incorrectly combined. This error affects code checking done from the beginning of Unit 2 work through Sept. 12, 1985. Results may be either conservative or unconservative due to this error. Therefore, all version 0385 runs with tube sections made before September 13, 1985 must be rerun. If any as-built support which previously passed now fails due to this computer bug, notify the Supervising Engineer immediately in writing. He will review the results and at his discretion initiate response spectrum dynamic analysis, and if necessary, time history dynamic analysis, to attempt to demonstrate hanger adequacy.

b. Allowable axial stresses —

An error was found in STRUDL version 0385 in which the allowable stress factor for axial allowable stresses may be incorrectly calculated. This error affects code checking done from July 31, 1985 through Sept. 12, 1985. This error is random in the sense that it may result in either conservative or unconservative results. Generally the results are unconservative, therefore all version 0385 runs made from July 31, 1985 through September 12, 1985 must be rerun. If any as-built support which previously passed now fails due to this computer bug, notify the Supervising Engineer immediately in writing. He will review the results and at his discretion initiate response spectrum dynamic analysis, and if necessary, time history dynamic analysis, to attempt to demonstrate hanger adequacy.

V. Detailed Guidelines - Format Backfit Worksheet

Guidelines are provided below for selected items on the Format Backfit Worksheet. Ebasco Procedure E-30 and its Appendix K (Ref. 3) are the basis for the calculation package format requirements. Items for which guidelines are not provided below are self-explanatory.

1. General

a. All sheets numbered---

All sheets in the main body of the calculation package (excluding attachments) shall be numbered consecutively starting with the Design Data Sheet as sheet number 1. Sheets inserted as part of a revision may be numbered with number/letter combinations (ie. 5a, 5b. For such cases, the following note should be added at the bottom of sheet 5 "Following sheet is 5a". Likewise, a similar note should be added at the bottom of each added sheet). The CTH number shall also be identified on all sheets. Attachments shall be labelled and numbered separately (see V.1.c below).

b. All revised sheets initialed and dated---

All crossouts made on revised sheets must be initialed and dated by the backfit originator. In addition, the backfit originator and checker must initial and date the top or bottom of the revised sheet next to the revision number. R

When a calculation revision does not require a drawing revision, the statement "No drawing revision required" shall be added at the bottom of the cover sheet with a reference to the latest revision number.

All revised, superseded and voided calculation sheets, 599 Forms, computer output and drawings must be retained. All superseded calculation sheets and 599 Forms should be retained in Attachment J. Revised sheets should be retained in the appropriate section of the main body. Voided sheets should be retained in either the main body or in Att. J. All noncurrent computer output should be retained in the computer output package with the current revision on top.

c. Attachments labelled---

Each Attachment sheet shall have the attachment ID letter in the upper right corner and shall show the CTH calculation number at the top R of the sheet. Each attachment except Att. K shall have its sheets separately numbered consecutively independent of other attachments.

Att. K (site calculations) will not be renumbered, but rather attached as it comes from the site. A separate sheet shall be attached at the beginning of Att. K stating the total number of sheets in Att. K, and containing a statement attesting to the fact that these calculations have been reviewed and that any impact on final calculation package is reflected in main body.

d. Calcs on Form 581---
In general, all calculations must be presented on Ebasco calculation form 581. Site calculations presented on TUGCO calculation forms are also acceptable.

e. Crossouts/whiteouts/tapeouts initialed and dated---
Whiteout and tapeout are not allowed. Any calculations found to be crossed, whited or taped out must be initialed and dated by the backfit originator as an indication that the values are correct for the purpose of the calculation. For a sheet with extensive crossouts, whiteouts or tapeouts, supersede this sheet with a zerox copy initialed and dated by the backfit originator and checker R

2. Cover Sheet

All Unit 2 calculation packages require a new cover sheet as shown in Exhibit 2 of Appendix K. All previous cover sheets must retained in Att. J of the calculation package.

a. Signed and dated by:
The backfit originator, who is the "BY" on backfit worksheets and any revised calculation sheets, shall sign in ink the "cover sheet by" box on the cover sheet for the current calculation revision.

The backfit checker, who is the "CHKD" on backfit worksheets, revised calculation sheets and the Design Verification Checklist Form 599, shall sign in ink the "cover sheet checked by" box on the cover sheet for the current calculation revision. See V.2.b below for signatures of previous revisions.

Backfit worksheets and the 0599 form issued for "representative envelope" calculations will be completed after all hangers in the group are completed. R

b. Calc Rev No---
The current calculation revision number, as well as all previous revision numbers, must be indicated on the cover sheet with one exception (see below). Previous revisions will not be backfitted on the cover sheet for preparer, checker and reviewer signatures. For such cases, the following note must be referenced in place of previous revision signatures, and this note must be added at the bottom of the cover sheet:

"Note: For original calculation completion dates and initials, see package."

Exception: For previous revisions which are completely superseded, no reference shall be made on the cover sheet to this revision, and the revision shall be filed in Att. J with the cover sheet stamped "superseded".

c. Added/Revised/Superseded/Voided Sheets Noted---

All such sheets must be identified by sheet number in the box next to the revision number at the bottom of the cover sheet.

d. No outstanding assumptions noted---

A final calculation package shall not contain any assumptions requiring confirmation. The backfit originator must address any open site assumptions, and notify through the Supervising Design Engineer the site of closure for purpose of updating the site's open item log.

e. Total sheets noted---

The total physical number of sheets in the calculation package including the cover sheet, table of contents and all attachments shall be noted in the space provided near the top of the cover sheet.

f. Original calc completion note---

See item V.2.b above.

g. Computer run no. and date---

All computer runs and dates applicable to final calculations shall be listed on the cover sheet.

3. Standard Table of Contents

The standard Table of Contents shown in Exhibit 3 of Appendix K shall be used for all calculation packages. If a particular item or attachment does not exist, enter "NA" or "NONE" in the sheet number column. For each item listed, enter the first sheet number on which the item appears. If the item appears in several different locations within a calculation package, enter the first sheet number of each location.

4. Calculations

a. Problem Scope---

The problem scope is adequately defined by a properly filled out cover sheet, design data sheet and grouping sheet, if applicable.

b. Assumptions noted---

Any assumptions made and their confirmation or justification, other than those documented in Volume I, must be stated in the appropriate section of the calculation package. The backfit originator must address any open site assumptions, and notify through Supervising Design Engineer the site of closure for purpose of updating the site's open item log.

c. Design input properly stated and/or referenced---

Any design input used must be properly stated and referenced in the calculations (ie. span length drawings used for information should be referenced along with where the drawings can be found).

d. Conclusions---

In addition to the conclusion indicated on the Design Data and Conclusion sheet, a statement shall be added at the end of each applicable calculation section indicating the conclusion of that particular section (i.e., for member, weld and anchorage evaluations, indicate the maximum stress, stress interaction, or load value along with the allowable value and a statement such as "OK" indicating acceptability).

A statement describing the conclusion concerning the impact of site calculations shall be added on the Design Data Sheet and on the first sheet of Att. K.

e. Computer runs referenced---

For any computer output used in the final calculations, the computer run number must be indicated in the calculation section of the calculation package.

5. Computer Runs

All computer runs must be properly stamped (input and output), labelled, signed and dated.

6. Attachments

a. Calc Design Verification Checklist and Backfit Worksheets----

Refer to V.2.a above for instructions regarding who shall fill out and sign these sheets. The Calculation Design Verification Checklist shall be completed in ink, with no erasures, cross-outs, whiteouts or tapeouts. R

b. Red line dwgs--- Signed out dwgs---

All revisions of the red line and signed out drawings, including site revisions, shall be filed in Att. E and F respectively with current revisions on top.

c. Copy of select pages of each computer run---

Copies of select pages of each referenced computer run showing the computer run number, date, computer program name and version, and properly filled in computer output stamp shall be filed as Att. G.

d. WEB input (latest form)---

The latest WEB input form must be used to summarize baseplate and embedded plate footprint loads. A copy of the WEB form should be given to the Supervising Design Engineer for collection and transmittal to site.

e. Misc. backup info---

Only miscellaneous backup information that bears directly on design input values for calculations and drawings shall be included in Att. I. Examples include memos of telecon relating information from the site, "DBA" memos etc.

f. Site calculations---

Supplementary site calculations, if any, and a statement attesting to the fact that these calculations have been reviewed by the person responsible for merging site calculations with the New York calculation package and that any impact of site calculations on final calculation package is reflected in the main body of the calculation package are to be included in Att. K.

COMANCHE PEAK STEAM ELECTRIC STATION
DESIGN CHANGE AUTHORIZATION

TUGCO(2)

(WILL) (~~WILL NOT~~) BE INCORPORATED IN DESIGN DOCUMENT DCA NO. 22,023 REV 0

1. SAFETY RELATED DOCUMENT: XX YES ____ NO

2. ORIGINATOR: TNE ____ CPPE XX ORIGINAL DESIGNER ____

ATTACHMENT 9
SHEET 1 OF 2

3. DESCRIPTION:

A. APPLICABLE ~~SPEC~~/DWG/~~DOCUMENT~~ TNE-S2-0901 REV CP-2

B. DETAILS Change note 20 on the referenced drawing to read:

20. Bolt hole sizes for anchors (Hilti Bolts and Richmond Inserts) shall be as follows:

a. 3/16" larger than nominal bolt diameter (Max.) for bolts up to and including 1-1/4"Ø.

b. 1/4" larger than nominal bolt diameter (Max.) for 1-1/2"Ø bolts.

Hardened washers are required on all Hilti Bolts.

Hardened washers are not required on Richmond Insert Bolts meeting this criteria.

FOR INFORMATION ONLY

35-1195
RECEIVED
OCT 12 1984
DOCUMENT CONTROL

GIBBS & HILL, INC.
RECEIVED
OCT 09 1984

4. SUPPORTING DOCUMENTATION:

JDC/se 10-08-84

5. APPROVAL SIGNATURES:

A. ORIGINATOR: [signature] DATE 10-8-84

B. DESIGN REPRESENTATIVE: Thomas Keiss DATE 10-8-84

C. DESIGN REVIEW PRIOR TO ISSUE: Thomas T. Liao DATE 10-12-84

6. STANDARD DISTRIBUTION:

ARMS (ORIGINAL) (1)
QUALITY ENGINEERING (1)
DCTG FOR ORIG. DESIGN (1)
Civil Engineering (1)
Desing Review (1)
Site DG (1)
Westinghouse (1)

FORM: TNE-DC-2
August 1

CHANGE VERIFI .TION CHECKLIST FOR CMC'S AND DCA'S - G&H JB NO. 2323

0. (35-40) RECEIVED DATE Oct. 9 84

1. DISTR. OF REVIEWED CMC/DCA: 875 (CMC), 865 (DCA), TUSI DCTG ______

2. (4-11) [redacted]/DCA NUMBER 22023 REVISION 0

3. FOR DCA: IS DCA CONSISTENT WITH DECD?: NA YES NO

DECD NUMBER ______ REVISION ______

4. FOR CMC: IS CMC CONSISTENT WITH DCA/DECD?: NA YES NO

DCA NUMBER ______ REV. ______ DECD NO. ______ REV. ______

5. IS A NEW OR REVISED CALCULATION REQUIRED?: YES NO

NUMBER ______ SET ______ REV. ______ DATE ______

HAS CALCULATION BEEN COMPLETED AND APPROVED?: NA YES NO

6. (16-31) G&H DOCUMENTS AFFECTED:

INCORP. REQ'D.: TNE - S2 - 0901 REV. CP-2

NO INCORP. (NI): ______

NOT APPLICABLE (NA): ______

FOR INFORMATION ONLY

7. HWMS-QA APPLICABLE?: YES NO

8. DESIGN REVIEW REQ'D?: YES NO

9. UNIT AFFECTED?: 1 & COMMON

2

BOTH

10. INTERDISCIPLINE REVIEW:

	APP	REJ	INFO	INITIALS	DATE
STRUCT					
MECH					
ELEC					
I&C					
ARCH					
CHEM SVCS					
PBS					
SPEC ANAL					
APP MECH					
QA/QC					
NUCLEAR					

(42-47) (51-56) (49)

11. ENGINEERING REVIEW COMPLETE: APP COMM** PhD PEA REJ** NR

(49) ☐ VOID ☐ SUPERSEDED BY ______

ENGINEER Y C Sha DATE 10-11-84

12. DESIGN REVIEW COMPLETE: APP REJ**

DESIGN REVIEWER(S) Thomas T. Liao DATE 10-12-84

______ DATE ______

**ATTACH COPIES OF SITE NOTIFICATION AND REFERENCE DOCUMENT HERE: ______ DATE ______

13 JOB ENGINEER(S) CBhujang DATE(S) 10·12·84

14. (13-56) REMARKS: G&H SITE REVIEW

CTH-2-10146 P7

EBASCO SERVICES INCORPORATED

CALCULATION COVER SHEET

ATTACHMENT "A"

CLIENT TEXAS UTILITIES-GENERATING CO. OFS NO. 3317

PROJECT COMANCHE PEAK UNIT NO. 2 DEPT NO. 549

SUBJECT CABLE TRAY HANGER

CALCULATION NO. CTH-2-10146 NUMBER OF SHEETS 15

PROBLEM AS-BUILT REVIEW R/B N/A, SFGD ✓, DG/B N/A, AUX/B N/A
DESIGNED AND INSTALLED N/A

APPLICATION OF THERMOLAG TO CABLE TRAYS IS ASSUMED.

CONTAINS ASSUMPTIONS WHICH REQUIRE CONFIRMATION* YES N/A NO ✓
ASSUMPTIONS CONFIRMED ON N/A BY N/A

REV. NO.	SHEET NOS.	CALCULATION BY NAME	DATE	CHECKED BY NAME	DATE	OPTIONAL	REVIEWED OR APPROVED BY NAME	DATE
00	1-15	P. PATADIA	5/15/85	P.L. Patel	5-17-85			

PRELIMINARY ☐ N/A FINAL ☑ SUPERSEDES CALC NO. N/A

* CONFIRMATION OF DESIGN DATA TO BE VERIFIED BY FIELD.

APEX REMOTE BATCH

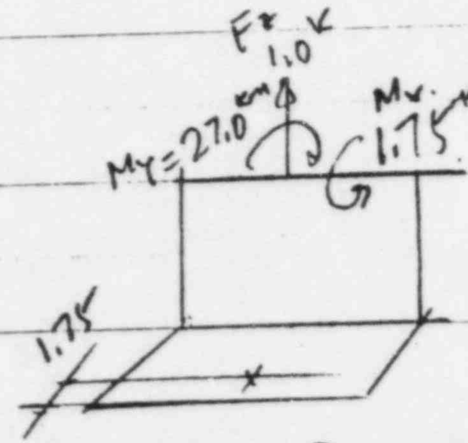
CMCVCAJ

UNITED INFORMATION SERVICES, INC. 66. APEX/SL D.4.7.5

10.43.18. 03/22/85.

CMCVCAJ

COPY 1



CLIENT TUGC PROJECT CPSES-2

SUBJECT BASE ANGLE ANALYSIS — $\angle 6\times6\times\frac{3}{4}$ W/BOLT

COMPUTER PROGRAM USED ANSYS

PREPARED BY: TTLM DATE 3/22/85

CHECKED BY: S. P. L DATE 4/11/85

REF. CALC. DOC. NO. .... PRINTOUT DOC NO. ....

$\angle 6\times6\times\frac{3}{4}$, $K_T = 363.9^{K}/_{''}$, $K_V = 202.6^{K}/_{''}$

$T = 7.916^K$. $T_R = 1.10\frac{1.75}{1.75} + 1.11\frac{27.0}{4.5} + 1.04\frac{1\times6}{1.75} = 11.33^K$

ATTACHMENT 10

SHEET ..... OF .....

APEX/CRAY

```
EEEEEEE DDDDDD   LL        IIIII  UU    UU
EEEEEEE DDDDDDD  LL        IIIII  UU    UU
EE      DD   DD  LL         II    UU    UU
EE      DD   DD  LL         II    UU    UU
EEEEE   DD   DD  LL         II    UU    UU
EEEEE   DD   DD  LL         II    UU    UU
EE      DD   DD  LL         II    UU    UU
EE      DD   DD  LL         II    UU    UU
EEEEEEE DDDDDDD  LLLLLLL   IIIII  UUUUUUU
EEEEEEE DDDDDD   LLLLLLL   IIIII   UUUUU
```

```
TUGC,CPSES,TYP ANCH L6X6X3/4,1-1.25 SUPER HILTI S CENTER


    ****BASE PLATE MESH INFORMATION****

NO. OF GRID IN X  NO. OF GRID IN Y   X-DIMENSION  Y-DIMENSION

          9                9            9.000          6.000


X-COORD.=   0.000   1.500   3.000   4.500   6.000   7.500   8.000   8.500   9.000

Y-COORD.=   0.000   0.437   0.875   1.312   1.750   2.812   3.875   4.937   6.000


    **** MATERIAL PROPERTIES ****

  PLATE THK    E OF PLATE  E OF BOLT   E OF CONCRET  MU STEEL     MU OF CONCRETE

0.75000E+00 0.29000E+05 0.29000E+05 0.36050E+04 0.30000E+00 0.17000E+00


    ****RC SPRING CONSTANT AT EACH NODE****
.9117E+020.1823E+030.1823E+030.1823E+030.1823E+030.1216E+030.6078E+020.6078E+020.3039E+02
.1823E+030.3647E+030.3647E+030.3647E+030.3647E+030.2431E+030.1216E+030.1216E+030.6078E+02
.1823E+030.3647E+030.3647E+030.3647E+030.3647E+030.2431E+030.1216E+030.1216E+030.6078E+02
.1823E+030.3647E+030.3647E+030.3647E+030.3647E+030.2431E+030.1216E+030.1216E+030.6078E+02
.3126E+030.6252E+030.6252E+030.6252E+030.6252E+030.4168E+030.2084E+030.2084E+030.1042E+03
.4428E+030.8856E+030.8856E+030.8856E+030.8856E+030.5904E+030.2952E+030.2952E+030.1476E+03
.4428E+030.8856E+030.8856E+030.8856E+030.8856E+030.5904E+030.2952E+030.2952E+030.1476E+03
.4428E+030.8856E+030.8856E+030.8856E+030.8856E+030.5904E+030.2952E+030.2952E+030.1476E+03
.2214E+030.4428E+030.4428E+030.4428E+030.4428E+030.2952E+030.1476E+030.1476E+030.7380E+02


    **** SPRING CONSTANTS****

  SUM OF RC SPRING     BOLT SPRING

 .3001E+05       0.3639E+03

                 0.2926E+03


     ****BOLT LOCATION****

  X-COORD.=       4.500
```

****PROPERTY OF ATTACHMENT AND STIFFENER****

THICKNESS	HEIGHT OF STIFFENER
0.750	6.000

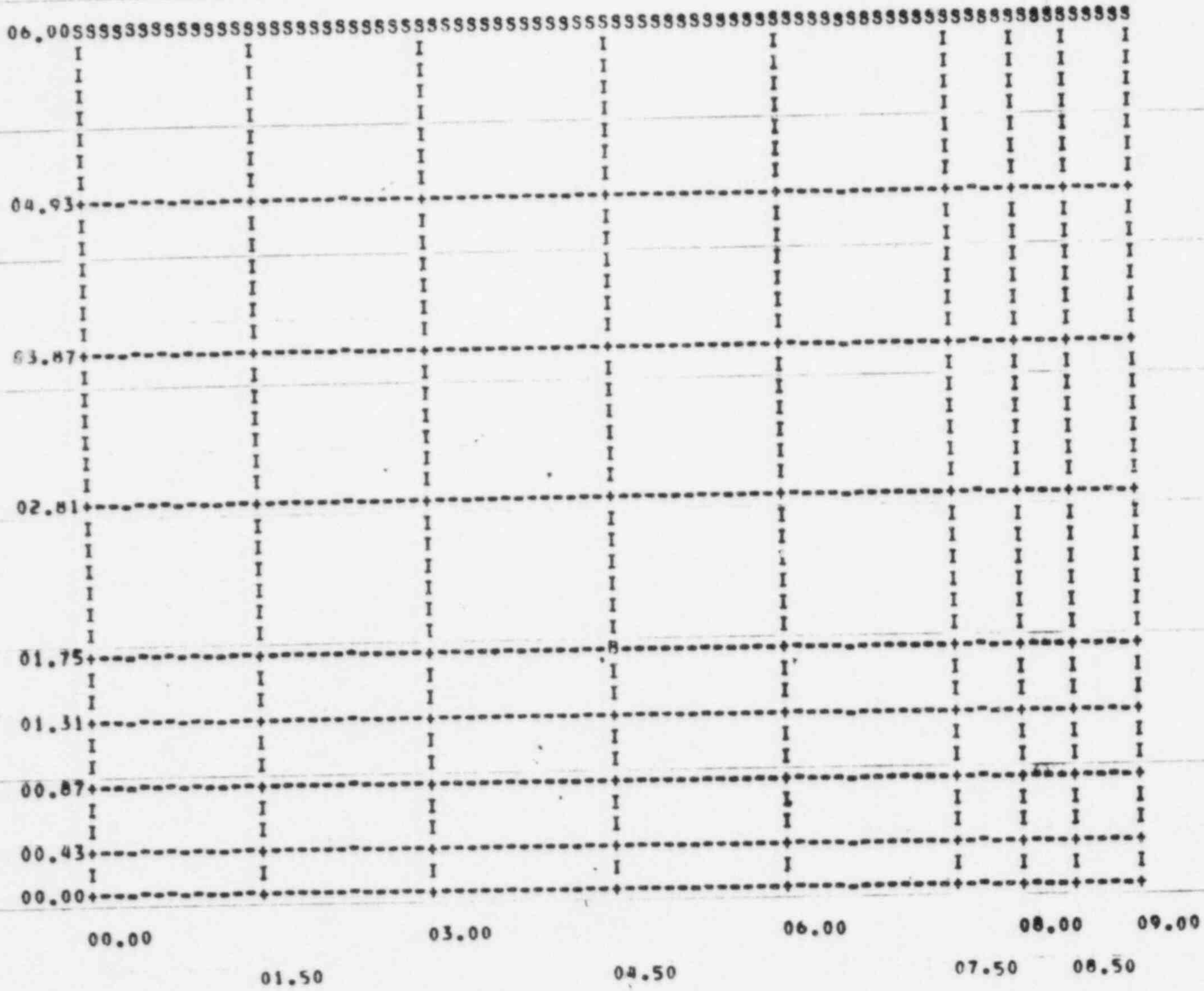
****AREA CENTER OF ATTACHMENT****

XC= 0.00YC= 0.00ZC= 0.00

****APPLIED FORCE AND MOMENT****

FORCE COMP.	NODE NO.	FORCE MAGNITUDE
FZ	238	1.00000
MX	238	1.75000
MY	238	27.00000

TUGC,CPSES,TYP ANCH L6X6X3/4,1-1.25 SUPER HILTI S CENTER



THE FOLLOWING ELEMENT NOS. WERE DELETED

60	61	62	63	77	78	79	80	94	95
96	97	111	112	113	114	128	129	130	131
137	138	139	140						

*********** ANSYS INPUT DATA LISTING (TAPE18) ***********

```
     6     12    18    24    30    36    42    48    54    60    66    72    78
     V     V     V     V     V     V     V     V     V     V     V     V     V
TUGC,CPBES,TYP ANCH L6X6X3/4,1-1.25 SUPER HILTI $ CENTER
 ED LIU
           1                99          1                 0           1

  1 63 00  0
  2 10 11  0
  3 10 10  0
  4 63 00  0
  5  4 00  0
  6 14
 -1
0.7500E+00
0.1641E+00
0.3281E+00
0.3281E+00
0.3281E+00
0.3281E+00
0.2187E+00
0.1094E+00
0.1094E+00
0.5469E-01
0.3281E+00
0.6562E+00
0.6562E+00
0.6562E+00
0.6562E+00
0.4375E+00
0.2187E+00
0.2187E+00
0.1094E+00
0.3281E+00
0.6562E+00
0.6562E+00
0.6562E+00
0.6562E+00
0.4375E+00
0.2187E+00
0.2187E+00
0.1094E+00
0.3281E+00
0.6562E+00
0.6562E+00
0.6562E+00
0.6562E+00
0.4375E+00
0.2187E+00
0.2187E+00
0.1094E+00
0.5625E+00
0.1125E+01
     A     A     A     A     A     A     A     A     A     A     A     A     A
```

********** ANSYS INPUT DATA LISTING (TAPE18) **********

```
     6     12    18    24    30    36    42    48    54    60    66    72    78
     v     v     v     v     v     v     v     v     v     v     v     v     v
0.1125E+01
0.1125E+01
0.1125E+01
0.7500E+00
0.3750E+00
0.3750E+00
0.1875E+00
0.7969E+00
0.1594E+01
0.1594E+01
0.1594E+01
0.1594E+01
0.1062E+01
0.5312E+00
0.5312E+00
0.2656E+00
0.7969E+00
0.1594E+01
0.1594E+01
0.1594E+01
0.1594E+01
0.1062E+01
0.5312E+00
0.5312E+00
0.2656E+00
0.7969E+00
0.1594E+01
0.1594E+01
0.1594E+01
0.1594E+01
0.1062E+01
0.5312E+00
0.5312E+00
0.2656E+00
0.3984E+00
0.7969E+00
0.7969E+00
0.7969E+00
0.7969E+00
0.5312E+00
0.2656E+00
0.2656E+00
0.1328E+00
0.2026E+03
0.1255E-01
0.7500E+00
0.1000E+030.1000E+060.1000E+060.1000E+010.1000E+01
          -1
     1     2    11    10                             1     1     1
     2     3    12    11                             1     1     1
     A     A     A     A     A     A     A     A     A     A     A     A     A
```

********** ANSYS INPUT DATA LISTING (TAPE18) **********

	6	12	18	24	30	36	42	48	54	60	66	72	78
	v	v	v	v	v	v	v	v	v	v	v	v	v
101	3	4	13	12					1	1	1		
102	4	5	14	13					1	1	1		
103	5	6	15	14					1	1	1		
104	6	7	16	15					1	1	1		
105	7	8	17	16					1	1	1		
106	8	9	18	17					1	1	1		
107	1	82							2	2	2		
108	2	83							2	2	3		
109	3	84							2	2	4		
110	4	85							2	2	5		
111	5	86							2	2	6		
112	6	87							2	2	7		
113	7	88							2	2	8		
114	8	89							2	2	9		
115	9	90							2	2	10		
116	10	11	20	19					1	1	1		
117	11	12	21	20					1	1	1		
118	12	13	22	21					1	1	1		
119	13	14	23	22					1	1	1		
120	14	15	24	23					1	1	1		
121	15	16	25	24					1	1	1		
122	16	17	26	25					1	1	1		
123	17	18	27	26					1	1	1		
124	10	91							2	2	11		
125	11	92							2	2	12		
126	12	93							2	2	13		
127	13	94							2	2	14		
128	14	95							2	2	15		
129	15	96							2	2	16		
130	16	97							2	2	17		
131	17	98							2	2	18		
132	18	99							2	2	19		
133	19	20	29	28					1	1	1		
134	20	21	30	29					1	1	1		
135	21	22	31	30					1	1	1		
136	22	23	32	31					1	1	1		
137	23	24	33	32					1	1	1		
138	24	25	34	33					1	1	1		
139	25	26	35	34					1	1	1		
140	26	27	36	35					1	1	1		
141	19	100							2	2	20		
142	20	101							2	2	21		
143	21	102							2	2	22		
144	22	103							2	2	23		
145	23	104							2	2	24		
146	24	105							2	2	25		
147	25	106							2	2	26		
148	26	107							2	2	27		
149	27	108							2	2	28		
150	28	29	38	37					1	1	1		
	A	A	A	A	A	A	A	A	A	A	A	A	A

********** ANSYS INPUT DATA LISTING (TAPE18) **********

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
151	29	30	39	38					1	1	1		
152	30	31	40	39					1	1	1		
153	31	32	41	40					1	1	1		
154	32	33	42	41					1	1	1		
155	33	34	43	42					1	1	1		
156	34	35	44	43					1	1	1		
157	35	36	45	44					1	1	1		
158	28	109							2	2	29		
159	29	110							2	2	30		
160	30	111							2	2	31		
161	31	112							2	2	32		
162	32	113							2	2	33		
163	33	114							2	2	34		
164	34	115							2	2	35		
165	35	116							2	2	36		
166	36	117							2	2	37		
167	37	38	47	46					1	1	1		
168	38	39	48	47					1	1	1		
169	39	40	49	48					1	1	1		
170	40	41	50	49					1	1	1		
171	41	42	51	50					1	1	1		
172	42	43	52	51					1	1	1		
173	43	44	53	52					1	1	1		
174	44	45	54	53					1	1	1		
175	37	118							2	2	38		
176	38	119							2	2	39		
177	39	120							2	2	40		
178	40	121							2	2	41		
179	41	122							2	2	42		
180	42	123							2	2	43		
181	43	124							2	2	44		
182	44	125							2	2	45		
183	45	126							2	2	46		
184	46	47	56	55					1	1	1		
185	47	48	57	56					1	1	1		
186	48	49	58	57					1	1	1		
187	49	50	59	58					1	1	1		
188	50	51	60	59					1	1	1		
189	51	52	61	60					1	1	1		
190	52	53	62	61					1	1	1		
191	53	54	63	62					1	1	1		
192	46	127							2	2	47		
193	47	128							2	2	48		
194	48	129							2	2	49		
195	49	130							2	2	50		
196	50	131							2	2	51		
197	51	132							2	2	52		
198	52	133							2	2	53		
199	53	134							2	2	54		
200	54	135							2	2	55		
	A	A	A	A	A	A	A	A	A	A	A	A	A

********** ANSYS INPUT DATA LISTING (TAPE18) **********

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
201	55	56	65	64					1	1	1		
202	56	57	66	65					1	1	1		
203	57	58	67	66					1	1	1		
204	58	59	68	67					1	1	1		
205	59	60	69	68					1	1	1		
206	60	61	70	69					1	1	1		
207	61	62	71	70					1	1	1		
208	62	63	72	71					1	1	1		
209	55	136							2	2	56		
210	56	137							2	2	57		
211	57	138							2	2	58		
212	58	139							2	2	59		
213	59	140							2	2	60		
214	60	141							2	2	61		
215	61	142							2	2	62		
216	62	143							2	2	63		
217	63	144							2	2	64		
218	64	65	74	73					1	1	1		
219	65	66	75	74					1	1	1		
220	66	67	76	75					1	1	1		
221	67	68	77	76					1	1	1		
222	68	69	78	77					1	1	1		
223	69	70	79	78					1	1	1		
224	70	71	80	79					1	1	1		
225	71	72	81	80					1	1	1		
226	64	145							2	2	65		
227	65	146							2	2	66		
228	66	147							2	2	67		
229	67	148							2	2	68		
230	68	149							2	2	69		
231	69	150							2	2	70		
232	70	151							2	2	71		
233	71	152							2	2	72		
234	72	153							2	2	73		
235	73	154							2	2	74		
236	74	155							2	2	75		
237	75	156							2	2	76		
238	76	157							2	2	77		
239	77	158							2	2	78		
240	78	159							2	2	79		
241	79	160							2	2	80		
242	80	161							2	2	81		
243	81	162							2	2	82		
244	40	364							0	6	83		
245	40	445							0	6	83		
246	40	121							3	3	84		
247	73	74	236	235					4	4	85		
248	74	75	237	236					4	4	85		
249	75	76	238	237					4	4	85		
250	76	77	239	238					4	4	85		
	A	A	A	A	A	A	A	A	A	A	A	A	A

********** ANSYS INPUT DATA LISTING (TAPE18) **********

```
           6    12    18    24    30    36    42    48    54    60    66    72    78
           V     V     V     V     V     V     V     V     V     V     V     V     V
 251      77    78   240   239                                 4     4    85
 252      78    79   241   240                                 4     4    85
 253      79    80   242   241                                 4     4    85
 254      80    81   243   242                                 4     4    85
 255      -1
 256       1         0.0000E+00  0.0000E+00  0.0000E+00
 257       2         0.1500E+01  0.0000E+00  0.0000E+00
 258       3         0.3000E+01  0.0000E+00  0.0000E+00
 259       4         0.4500E+01  0.0000E+00  0.0000E+00
 260       5         0.6000E+01  0.0000E+00  0.0000E+00
 261       6         0.7500E+01  0.0000E+00  0.0000E+00
 262       7         0.8000E+01  0.0000E+00  0.0000E+00
 263       8         0.8500E+01  0.0000E+00  0.0000E+00
 264       9         0.9000E+01  0.0000E+00  0.0000E+00
 265      10         0.0000E+00  0.4375E+00  0.0000E+00
 266      11         0.1500E+01  0.4375E+00  0.0000E+00
 267      12         0.3000E+01  0.4375E+00  0.0000E+00
 268      13         0.4500E+01  0.4375E+00  0.0000E+00
 269      14         0.6000E+01  0.4375E+00  0.0000E+00
 270      15         0.7500E+01  0.4375E+00  0.0000E+00
 271      16         0.8000E+01  0.4375E+00  0.0000E+00
 272      17         0.8500E+01  0.4375E+00  0.0000E+00
 273      18         0.9000E+01  0.4375E+00  0.0000E+00
 274      19         0.0000E+00  0.8750E+00  0.0000E+00
 275      20         0.1500E+01  0.8750E+00  0.0000E+00
 276      21         0.3000E+01  0.8750E+00  0.0000E+00
 277      22         0.4500E+01  0.8750E+00  0.0000E+00
 278      23         0.6000E+01  0.8750E+00  0.0000E+00
 279      24         0.7500E+01  0.8750E+00  0.0000E+00
 280      25         0.8000E+01  0.8750E+00  0.0000E+00
 281      26         0.8500E+01  0.8750E+00  0.0000E+00
 282      27         0.9000E+01  0.8750E+00  0.0000E+00
 283      28         0.0000E+00  0.1312E+01  0.0000E+00
 284      29         0.1500E+01  0.1312E+01  0.0000E+00
 285      30         0.3000E+01  0.1312E+01  0.0000E+00
 286      31         0.4500E+01  0.1312E+01  0.0000E+00
 287      32         0.6000E+01  0.1312E+01  0.0000E+00
 288      33         0.7500E+01  0.1312E+01  0.0000E+00
 289      34         0.8000E+01  0.1312E+01  0.0000E+00
 290      35         0.8500E+01  0.1312E+01  0.0000E+00
 291      36         0.9000E+01  0.1312E+01  0.0000E+00
 292      37         0.0000E+00  0.1750E+01  0.0000E+00
 293      38         0.1500E+01  0.1750E+01  0.0000E+00
 294      39         0.3000E+01  0.1750E+01  0.0000E+00
 295      40         0.4500E+01  0.1750E+01  0.0000E+00
 296      41         0.6000E+01  0.1750E+01  0.0000E+00
 297      42         0.7500E+01  0.1750E+01  0.0000E+00
 298      43         0.8000E+01  0.1750E+01  0.0000E+00
 299      44         0.8500E+01  0.1750E+01  0.0000E+00
 300      45         0.9000E+01  0.1750E+01  0.0000E+00
           A     A     A     A     A     A     A     A     A     A     A     A     A
```

********** ANSYS INPUT DATA LISTING (TAPE18) **********

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
301	46			0.0000E+00		0.2812E+01		0.0000E+00					
302	47			0.1500E+01		0.2812E+01		0.0000E+00					
303	48			0.3000E+01		0.2812E+01		0.0000E+00					
304	49			0.4500E+01		0.2812E+01		0.0000F+00					
305	50			0.6000E+01		0.2812E+01		0.0000E+00					
306	51			0.7500E+01		0.2812E+01		0.0000E+00					
307	52			0.8000E+01		0.2812E+01		0.0000E+00					
308	53			0.8500E+01		0.2812E+01		0.0000E+00					
309	54			0.9000E+01		0.2812E+01		0.0000E+00					
310	55			0.0000E+00		0.3875E+01		0.0000E+00					
311	56			0.1500E+01		0.3875E+01		0.0000E+00					
312	57			0.3000E+01		0.3875E+01		0.0000E+00					
313	58			0.4500E+01		0.3875E+01		0.0000E+00					
314	59			0.6000E+01		0.3875E+01		0.0000E+00					
315	60			0.7500E+01		0.3875E+01		0.0000F+00					
316	61			0.8000F+01		0.3875E+01		0.0000E+00					
317	62			0.8500E+01		0.3875E+01		0.0000E+00					
318	63			0.9000E+01		0.3875E+01		0.0000E+00					
319	64			0.0000E+00		0.4937E+01		0.0000E+00					
320	65			0.1500E+01		0.4937E+01		0.0000E+00					
321	66			0.3000E+01		0.4937E+01		0.0000E+00					
322	67			0.4500E+01		0.4937E+01		0.0000E+00					
323	68			0.6000E+01		0.4937E+01		0.0000E+00					
324	69			0.7500E+01		0.4937E+01		0.0000E+00					
325	70			0.8000E+01		0.4937E+01		0.0000E+00					
326	71			0.8500F+01		0.4937E+01		0.0000E+00					
327	72			0.9000E+01		0.4937E+01		0.0000E+00					
328	73			0.0000E+00		0.6000E+01		0.0000E+00					
329	74			0.1500E+01		0.6000E+01		0.0000E+00					
330	75			0.3000E+01		0.6000E+01		0.0000E+00					
331	76			0.4500E+01		0.6000E+01		0.0000E+00					
332	77			0.6000E+01		0.6000E+01		0.0000E+00					
333	78			0.7500E+01		0.6000E+01		0.0000E+00					
334	79			0.8000E+01		0.6000F+01		0.0000E+00					
335	80			0.8500E+01		0.6000E+01		0.0000E+00					
336	81			0.9000E+01		0.6000E+01		0.0000E+00					
337	82			0.0000E+00		0.0000E+00		-0.1000E+01					
338	83			0.1500E+01		0.0000E+00		-0.1000E+01					
339	84			0.3000E+01		0.0000E+00		-0.1000E+01					
340	85			0.4500E+01		0.0000E+00		-0.1000E+01					
341	86			0.6000E+01		0.0000E+00		-0.1000E+01					
342	87			0.7500E+01		0.0000E+00		-0.1000E+01					
343	88			0.8000E+01		0.0000E+00		-0.1000E+01					
344	89			0.8500E+01		0.0000E+00		-0.1000E+01					
345	90			0.9000E+01		0.0000E+00		-0.1000E+01					
346	91			0.0000E+00		0.4375E+00		-0.1000E+01					
347	92			0.1500E+01		0.4375E+00		-0.1000E+01					
348	93			0.3000E+01		0.4375E+00		-0.1000E+01					
349	94			0.4500E+01		0.4375E+00		-0.1000E+01					
350	95			0.6000E+01		0.4375E+00		-0.1000E+01					
	A	A	A	A	A	A	A	A	A	A	A	A	A

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**********  ANSYS INPUT DATA LISTING (TAPE18)  **********

            6     12    18    24    30    36    42    48    54    60    66    72    78
            V     V     V     V     V     V     V     V     V     V     V     V     V
 351       96          0.7500E+01  0.4375E+00 -0.1000E+01
 352       97          0.8000E+01  0.4375E+00 -0.1000E+01
 353       98          0.8500E+01  0.4375E+00 -0.1000E+01
 354       99          0.9000E+01  0.4375E+00 -0.1000E+01
 355      100          0.0000E+00  0.8750E+00 -0.1000E+01
 356      101          0.1500E+01  0.8750E+00 -0.1000E+01
 357      102          0.3000E+01  0.8750E+00 -0.1000E+01
 358      103          0.4500E+01  0.8750E+00 -0.1000E+01
 359      104          0.6000E+01  0.8750E+00 -0.1000E+01
 360      105          0.7500E+01  0.8750E+00 -0.1000E+01
 361      106          0.8000E+01  0.8750E+00 -0.1000E+01
 362      107          0.8500E+01  0.8750E+00 -0.1000E+01
 363      108          0.9000E+01  0.8750E+00 -0.1000E+01
 364      109          0.0000E+00  0.1312E+01 -0.1000E+01
 365      110          0.1500E+01  0.1312E+01 -0.1000E+01
 366      111          0.3000E+01  0.1312E+01 -0.1000E+01
 367      112          0.4500E+01  0.1312E+01 -0.1000E+01
 368      113          0.6000E+01  0.1312E+01 -0.1000E+01
 369      114          0.7500E+01  0.1312E+01 -0.1000E+01
 370      115          0.8000E+01  0.1312E+01 -0.1000E+01
 371      116          0.8500E+01  0.1312E+01 -0.1000E+01
 372      117          0.9000E+01  0.1312E+01 -0.1000E+01
 373      118          0.0000E+00  0.1750E+01 -0.1000E+01
 374      119          0.1500E+01  0.1750E+01 -0.1000E+01
 375      120          0.3000E+01  0.1750E+01 -0.1000E+01
 376      121          0.4500E+01  0.1750E+01 -0.1000E+01
 377      122          0.6000E+01  0.1750E+01 -0.1000E+01
 378      123          0.7500E+01  0.1750E+01 -0.1000E+01
 379      124          0.8000E+01  0.1750E+01 -0.1000E+01
 380      125          0.8500E+01  0.1750E+01 -0.1000E+01
 381      126          0.9000E+01  0.1750E+01 -0.1000E+01
 382      127          0.0000E+00  0.2812E+01 -0.1000E+01
 383      128          0.1500E+01  0.2812E+01 -0.1000E+01
 384      129          0.3000E+01  0.2812E+01 -0.1000E+01
 385      130          0.4500E+01  0.2812E+01 -0.1000E+01
 386      131          0.6000E+01  0.2812E+01 -0.1000E+01
 387      132          0.7500E+01  0.2812E+01 -0.1000E+01
 388      133          0.8000E+01  0.2812E+01 -0.1000E+01
 389      134          0.8500E+01  0.2812E+01 -0.1000E+01
 390      135          0.9000E+01  0.2812E+01 -0.1000E+01
 391      136          0.0000E+00  0.3875E+01 -0.1000E+01
 392      137          0.1500E+01  0.3875E+01 -0.1000E+01
 393      138          0.3000E+01  0.3875E+01 -0.1000E+01
 394      139          0.4500E+01  0.3875E+01 -0.1000E+01
 395      140          0.6000E+01  0.3875E+01 -0.1000E+01
 396      141          0.7500E+01  0.3875E+01 -0.1000E+01
 397      142          0.8000E+01  0.3875E+01 -0.1000E+01
 398      143          0.8500E+01  0.3875E+01 -0.1000E+01
 399      144          0.9000E+01  0.3875E+01 -0.1000E+01
 400      145          0.0000E+00  0.4937E+01 -0.1000E+01
            A     A     A     A     A     A     A     A     A     A     A     A     A
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********** ANSYS INPUT DATA LISTING (TAPE18) **********

```
                 6     12    18    24    30    36    42    48    54    60    66    72    78
                 V     V     V     V     V     V     V     V     V     V     V     V     V
 401           146          0.1500E+01  0.4937E+01 -0.1000E+01
 402           147          0.3000E+01  0.4937E+01 -0.1000E+01
 403           148          0.4500E+01  0.4937E+01 -0.1000E+01
 404           149          0.6000E+01  0.4937E+01 -0.1000E+01
 405           150          0.7500E+01  0.4937E+01 -0.1000E+01
 406           151          0.8000E+01  0.4937E+01 -0.1000E+01
 407           152          0.8500E+01  0.4937E+01 -0.1000E+01
 408           153          0.9000E+01  0.4937E+01 -0.1000E+01
 409           154          0.0000E+00  0.6000E+01 -0.1000E+01
 410           155          0.1500E+01  0.6000E+01 -0.1000E+01
 411           156          0.3000E+01  0.6000E+01 -0.1000E+01
 412           157          0.4500E+01  0.6000E+01 -0.1000E+01
 413           158          0.6000E+01  0.6000E+01 -0.1000E+01
 414           159          0.7500E+01  0.6000E+01 -0.1000E+01
 415           160          0.8000E+01  0.6000E+01 -0.1000E+01
 416           161          0.8500E+01  0.6000E+01 -0.1000E+01
 417           162          0.9000E+01  0.6000E+01 -0.1000E+01
 418           364          0.5500E+01  0.1750E+01  0.0000E+00
 419           445          0.4500E+01  0.2750E+01  0.0000E+00
 420           235          0.0000E+00  0.6000E+01  0.6000E+01
 421           236          0.1500E+01  0.6000E+01  0.6000E+01
 422           237          0.3000E+01  0.6000E+01  0.6000E+01
 423           238          0.4500E+01  0.6000E+01  0.6000E+01
 424           239          0.6000E+01  0.6000E+01  0.6000E+01
 425           240          0.7500E+01  0.6000E+01  0.6000E+01
 426           241          0.8000E+01  0.6000E+01  0.6000E+01
 427           242          0.8500E+01  0.6000E+01  0.6000E+01
 428           243          0.9000E+01  0.6000E+01  0.6000E+01
 429            -1
 430      ELDE                  60    61    62    63    77    78    79    80    94    95
 431      ELDE                  96    97   111   112   113   114   128   129   130   131
 432      ELDE                 137   138   139   140
 433      END
 434      EX          1     0.2900E+05
 435      EY          1     0.2900E+05
 436      NUXY        1     0.3000E+00
 437      ALPX        1     0.0000E+00
 438      ALPY        1     0.0000E+00
 439      DENS        1     0.0000E+00
 440      EX          2     0.5557E+03
 441      ALPX        2     0.0000E+00
 442      DENS        2     0.0000E+00
 443      EX          3     0.2900E+05
 444      ALPX        3     0.0000E+00
 445      DENS        3     0.0000E+00
 446      EX          4     0.2900E+05
 447      EY          4     0.2900E+05
 448      NUXY        4     0.3000E+00
 449      ALPX        4     0.0000E+00
 450      ALPY        4     0.0000E+00
                 A     A     A     A     A     A     A     A     A     A     A     A     A
```

********** ANSYS INPUT DATA LISTING (TAPE18) **********

```
     6     12    18    24    30    36    42    48    54    60    66    72    78
     V     V     V     V     V     V     V     V     V     V     V     V     V
DENS   4      0.0000E+00
EX     5      0.2900E+05
ALPX   5      0.0000E+00
NUXY   5      0.3000E+00
DENS   5      0.0000E+00
END
  1   -10 10                                                                   1
                                               1

   240 ROTZ
    82 UX     0.0000E+00               162        UY    UZ
   364 UX                              445    81  UY    UZ
       END
   238 FZ     0.1000E+01
   238 MX     0.1750E+01
   238 MY     0.2700E+02
         -1
    -1
FINISH
```

***** ANALYST = ED LIU

***** ANALYSIS OPTIONS (CARDS C1 AND C2) *****

	VALUE	VARIABLE NAME	COLUMNS
ANALYSIS TYPE	0	KAN	5-7
ELEMENT CONSTANT TABLE . . .	1	KTB	11-12
POST-RUN PROCESS KEY	99	KYPOST	27-28
KAY(8)	1	KAY(8)	43-44
REFERENCE TEMPERATURE	0.00	TREF	1-12
UNIFORM TEMPERATURE	0.00	TUNIF	13-24
GEOMETRY MODIFY KEY	1	KMOD	75-76
CORE SIZE REQUESTED (OLTAL) .	00326306		

BLOCKED BINARY FILE NAMES . .	TAPE3	TAPE2	TAPE11	TAPE4	TAPE10	TAPE12
BLOCK SIZES	580	580	1160	580	580	580

***** ELEMENT TYPES (CARD D) *****

TYPE	STIF	DESCRIPTION	KEYSUB OPTIONS 1B	1A	1	2B	2A	2	NJ	INOTPR
1	63	QUAD. FLAT SHELL	0	0	0	0	0	0	0	0
2	10	CABLE	0	1	1	0	0	0	0	0
3	10	CABLE	0	1	0	0	0	0	0	0
4	63	QUAD. FLAT SHELL	0	0	0	0	0	0	0	0
5	4	ELASTIC BEAM, 3-D	0	0	0	0	0	0	0	0
6	14	SPRING-DAMPER	0	0	0	0	0	0	0	0

***** TABLE OF ELEMENT REAL CONSTANTS (CARD D2) *****

NO.	
1	0.75000
2	0.1[illegible]

4	0.32810
5	0.32810
6	0.32810
7	0.21870
8	0.10940
9	0.10940
10	0.54690E-01
11	0.32810
12	0.65620
13	0.65620
14	0.65620
15	0.65620
16	0.43750
17	0.21870
18	0.21870
19	0.10940
20	0.32810
21	0.65620
22	0.65620
23	0.65620
24	0.65620
25	0.43750
26	0.21870
27	0.21870
28	0.10940
29	0.32810
30	0.65620
31	0.65620
32	0.65620
33	0.65620
34	0.43750
35	0.21870
36	0.21870
37	0.10940
38	0.56250
39	1.1250
40	1.1250
41	1.1250
42	1.1250
43	0.75000
44	0.37500
45	0.37500
46	0.18750
47	0.79690
48	1.5940
49	1.5940
50	1.5940
51	1.5940
52	1.0620
53	0.53120
54	0.53120
55	0.26560
56	0.79690
57	1.5940
58	1.5940
59	1.5940
60	1.5940
61	1.0620
62	0.53120
63	0.53120
64	0.26560
65	0.79690
66	1.5940
67	1.5940
[illegible]	[illegible]

70	1.0620				
71	0.53120				
72	0.53120				
73	0.26560				
74	0.39840				
75	0.79690				
76	0.79690				
77	0.79690				
78	0.79690				
79	0.53120				
80	0.26560				
81	0.26560				
82	0.13280				
83	202.60				
84	0.12550E-01				
85	0.75000				
86	100.00	0.10000E+06	0.10000E+06	1.0000	1.0000

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 3 UPDATE 67L UCS-CRAY JUNE 1,1979
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412) 746-3304

TUGC,CPSES,TYP ANCH L6X6X3/4,1-1.25 SUPER HILTI $ CENTER 10.6694 3/22/85 CP= 0.658

***** ELEMENT DEFINITIONS (CARD E) *****

ELEMENT	NODES				MAT	TYPE	CLASS	ELEMENT REAL CONSTANTS				
								THK1	THK2	THK3	THK4	STIF
1	1	2	11	10	1	1	0	0.750	0.750	0.750	0.750	0.000
2	2	3	12	11	1	1	0	0.750	0.750	0.750	0.750	0.000
3	3	4	13	12	1	1	0	0.750	0.750	0.750	0.750	0.000
4	4	5	14	13	1	1	0	0.750	0.750	0.750	0.750	0.000
5	5	6	15	14	1	1	0	0.750	0.750	0.750	0.750	0.000
6	6	7	16	15	1	1	0	0.750	0.750	0.750	0.750	0.000
7	7	8	17	16	1	1	0	0.750	0.750	0.750	0.750	0.000
8	8	9	18	17	1	1	0	0.750	0.750	0.750	0.750	0.000
								AREA	ISTR			
9	1	82			2	2	0	0.164	0.000			
10	2	83			2	2	0	0.328	0.000			
11	3	84			2	2	0	0.328	0.000			
12	4	85			2	2	0	0.328	0.000			
13	5	86			2	2	0	0.219	0.000			
14	6	87			2	2	0	0.109	0.000			
15	7	88			2	2	0	0.109	0.000			
16	8	89			2	2	0	0.547E-01	0.000			
17	9	90						THK1	THK2	THK3	THK4	STIF
18	10	11	20	19	1	1	0	0.750	0.750	0.750	0.750	0.000
19	11	12	21	20	1	1	0	0.750	0.750	0.750	0.750	0.000
20	12	13	22	21	1	1	0	0.750	0.750	0.750	0.750	0.000
21	13	14	23	22	1	1	0	0.750	0.750	0.750	0.750	0.000
22	14	15	24	23	1	1	0	0.750	0.750	0.750	0.750	0.000
23	15	16	25	24	1	1	0	0.750	0.750	0.750	0.750	0.000
24	16	17	26	25	1	1	0	0.750	0.750	0.750	0.750	0.000
25	17	18	27	26	1	1	0	0.750	0.750	0.750	0.750	0.000
								AREA	ISTR			
26	10	91			2	2	0	0.328	0.000			
27	11	92			2	2	0	0.656	0.000			
28	12	93			2	2	0	0.656	0.000			
29	13	94			2	2	0	0.656	0.000			
30	14	95			2	2	0	0.656	0.000			
31	15	96			2	2	0	0.437	0.000			
32	16	97			2	2	0	0.219	0.000			
33	17	98			2	2	0	0.219	0.000			
34	18	99			2	2	0	0.109	0.000			
								THK1	THK2	THK3	THK4	STIF
35	19	20	29	28	1	1	0	0.750	0.750	0.750	0.750	0.000
36	20	21	30	29	1	1	0	0.750	0.750	0.750	0.750	0.000
37	21	22	31	30	1	1	0	0.750	0.750	0.750	0.750	0.000
38	22	23	32	31	1	1	0	0.750	0.750	0.750	0.750	0.000
39	23	24	33	32	1	1	0	0.750	0.750	0.750	0.750	0.000
40	24	25	34	33	1	1	0	0.750	0.750	0.750	0.750	0.000
41	25	26	35	34	1	1	0	0.750	0.750	0.750	0.750	0.000
42	26	27	36	35	1	1	0	0.750	0.750	0.750	0.750	0.000
								AREA	ISTR			
43	19	100			2	2	0	0.328	0.000			
44	20	101			2	2	0	0.656	0.000			
45	21	102			2	2	0	0.656	0.000			
46	22	103			2	2	0	0.656	0.000			
47	23	104			2	2	0	0.656	0.000			
48	24	105			2	2	0	0.437	0.000			

50	26	107			2	2	0	0.219	0.000			
51	27	108			2	2	0	0.109	0.000			
								THK1	THK2	THK3	THK4	STIF
52	28	29	38	37	1	1	0	0.750	0.750	0.750	0.750	0.000
53	29	30	39	38	1	1	0	0.750	0.750	0.750	0.750	0.000
54	30	31	40	39	1	1	0	0.750	0.750	0.750	0.750	0.000
55	31	32	41	40	1	1	0	0.750	0.750	0.750	0.750	0.000
56	32	33	42	41	1	1	0	0.750	0.750	0.750	0.750	0.000
57	33	34	43	42	1	1	0	0.750	0.750	0.750	0.750	0.000
58	34	35	44	43	1	1	0	0.750	0.750	0.750	0.750	0.000
59	35	36	45	44	1	1	0	0.750	0.750	0.750	0.750	0.000
								AREA	ISTR			
60	28	109			2	2	0	0.328	0.000			
61	29	110			2	2	0	0.656	0.000			
62	30	111			2	2	0	0.656	0.000			
63	31	112			2	2	0	0.656	0.000			
64	32	113			2	2	0	0.656	0.000			
65	33	114			2	2	0	0.437	0.000			
66	34	115			2	2	0	0.219	0.000			
67	35	116			2	2	0	0.219	0.000			
68	36	117			2	2	0	0.109	0.000			
								THK1	THK2	THK3	THK4	STIF
69	37	38	47	46	1	1	0	0.750	0.750	0.750	0.750	0.000
70	38	39	48	47	1	1	0	0.750	0.750	0.750	0.750	0.000
71	39	40	49	48	1	1	0	0.750	0.750	0.750	0.750	0.000
72	40	41	50	49	1	1	0	0.750	0.750	0.750	0.750	0.000
73	41	42	51	50	1	1	0	0.750	0.750	0.750	0.750	0.000
74	42	43	52	51	1	1	0	0.750	0.750	0.750	0.750	0.000
75	43	44	53	52	1	1	0	0.750	0.750	0.750	0.750	0.000
76	44	45	54	53	1	1	0	0.750	0.750	0.750	0.750	0.000
								AREA	ISTR			
77	37	118			2	2	0	0.562	0.000			
78	38	119			2	2	0	1.12	0.000			
79	39	120			2	2	0	1.12	0.000			
80	40	121			2	2	0	1.12	0.000			
81	41	122			2	2	0	0.750	0.000			
82	42	123			2	2	0	0.375	0.000			
83	43	124			2	2	0	0.375	0.000			
84	44	125			2	2	0	0.187	0.000			
85	45	126										
								THK1	THK2	THK3	THK4	STIF
86	46	47	56	55	1	1	0	0.750	0.750	0.750	0.750	0.000
87	47	48	57	56	1	1	0	0.750	0.750	0.750	0.750	0.000
88	48	49	58	57	1	1	0	0.750	0.750	0.750	0.750	0.000
89	49	50	59	58	1	1	0	0.750	0.750	0.750	0.750	0.000
90	50	51	60	59	1	1	0	0.750	0.750	0.750	0.750	0.000
91	51	52	61	60	1	1	0	0.750	0.750	0.750	0.750	0.000
92	52	53	62	61	1	1	0	0.750	0.750	0.750	0.750	0.000
93	53	54	63	62	1	1	0	0.750	0.750	0.750	0.750	0.000
								AREA	ISTR			
94	46	127			2	2	0	0.797	0.000			
95	47	128			2	2	0	1.59	0.000			
96	48	129			2	2	0	1.59	0.000			
97	49	130			2	2	0	1.59	0.000			
98	50	131			2	2	0	1.59	0.000			
99	51	132			2	2	0	1.06	0.000			
100	52	133			2	2	0	0.531	0.000			
101	53	134			2	2	0	0.531	0.000			
102	54	135			2	2	0	0.266	0.000			
								THK1	THK2	THK3	THK4	STIF
103	55	56	65	64	1	1	0	0.750	0.750	0.750	0.750	0.000
104	56	57	66	65	1	1	0	0.750	0.750	0.750	0.750	0.000
105	57	58	67	66	1	1	0	0.750	0.750	0.750	0.750	0.000
106	58	59	68	67	1	1	0	0.750	0.750	0.750	0.750	0.000
107	[illegible]	[illegible]	[illegible]	[illegible]	1	1	[illegible]	0.750	0.750	0.750	0.750	0.000

109	61	62	71	70	1	1	0	0.750	0.750	0.750	0.750	0.000
110	62	63	72	71	1	1	0	0.750	0.750	0.750	0.750	0.000
								AREA	ISTR			
111	55	136			2	2	0	0.797	0.000			
112	56	137			2	2	0	1.59	0.000			
113	57	138			2	2	0	1.59	0.000			
114	58	139			2	2	0	1.59	0.000			
115	59	140			2	2	0	1.59	0.000			
116	60	141			2	2	0	1.06	0.000			
117	61	142			2	2	0	0.531	0.000			
118	62	143			2	2	0	0.531	0.000			
119	63	144			2	2	0	0.266	0.000			
								THK1	THK2	THK3	THK4	STIF
120	64	65	74	73	1	1	0	0.750	0.750	0.750	0.750	0.000
121	65	66	75	74	1	1	0	0.750	0.750	0.750	0.750	0.000
122	66	67	76	75	1	1	0	0.750	0.750	0.750	0.750	0.000
123	67	68	77	76	1	1	0	0.750	0.750	0.750	0.750	0.000
124	68	69	78	77	1	1	0	0.750	0.750	0.750	0.750	0.000
125	69	70	79	78	1	1	0	0.750	0.750	0.750	0.750	0.000
126	70	71	80	79	1	1	0	0.750	0.750	0.750	0.750	0.000
127	71	72	81	80	1	1	0	0.750	0.750	0.750	0.750	0.000
								AREA	ISTR			
128	64	145			2	2	0	0.797	0.000			
129	65	146			2	2	0	1.59	0.000			
130	66	147			2	2	0	1.59	0.000			
131	67	148			2	2	0	1.59	0.000			
132	68	149			2	2	0	1.59	0.000			
133	69	150			2	2	0	1.06	0.000			
134	70	151			2	2	0	0.531	0.000			
135	71	152			2	2	0	0.531	0.000			
136	72	153			2	2	0	0.266	0.000			
137	73	154			2	2	0	0.398	0.000			
138	74	155			2	2	0	0.797	0.000			
139	75	156			2	2	0	0.797	0.000			
140	76	157			2	2	0	0.797	0.000			
141	77	158			2	2	0	0.797	0.000			
142	78	159			2	2	0	0.531	0.000			
143	79	160			2	2	0	0.266	0.000			
144	80	161			2	2	0	0.266	0.000			
145	81	162			2	2	0	0.133	0.000			
								STIF	CV	CV2		
146	40	364			1	6	0	203.	0.000	0.000		
147	40	445			1	6	0	203.	0.000	0.000		
								AREA	ISTR			
148	40	121			3	3	0	0.125E-01	0.000			
								THK1	THK2	THK3	THK4	STIF
149	73	74	236	235	4	4	0	0.750	0.750	0.750	0.750	0.000
150	74	75	237	236	4	4	0	0.750	0.750	0.750	0.750	0.000
151	75	76	238	237	4	4	0	0.750	0.750	0.750	0.750	0.000
152	76	77	239	238	4	4	0	0.750	0.750	0.750	0.750	0.000
153	77	78	240	239	4	4	0	0.750	0.750	0.750	0.750	0.000
154	78	79	241	240	4	4	0	0.750	0.750	0.750	0.750	0.000
155	79	80	242	241	4	4	0	0.750	0.750	0.750	0.750	0.000
156	80	81	243	242	4	4	0	0.750	0.750	0.750	0.750	0.000

OCTAL STORAGE REQUIREMENTS FOR ELEMENT INPUT CP= 1.187
CORE= 00111464 MEMORY= 00001572 TOTAL= 00113256 MEMORY AVAILABLE= 00214121
MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 35880

NUMBER OF ELEMENTS = 156 MAXIMUM NODE NUMBER USED = 445

*** ELEMENT STIFFNESS FORMULATION TIME ESTIMATE (CRAY-1) ***

1	63	64	0.0576	3.686
2	10	81	0.0036	0.292
3	10	1	0.0036	0.004
4	63	8	0.0576	0.461
6	14	2	0.0036	0.007

TOTAL TIME = 4.450 SECONDS.

***** NODE DEFINITIONS (CARD F) *****

NODE	LOCATION X (OR R)	LOCATION Y (OR THETA)	LOCATION Z (OR PHI)	ROTATION (DEGREES) THXY (OR RT)	ROTATION (DEGREES) THYZ (TZ OR TP)	ROTATION (DEGREES) THXZ (RZ OR RP)
1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
2	1.5000	0.00000	0.00000	0.00000	0.00000	0.00000
3	3.0000	0.00000	0.00000	0.00000	0.00000	0.00000
4	4.5000	0.00000	0.00000	0.00000	0.00000	0.00000
5	6.0000	0.00000	0.00000	0.00000	0.00000	0.00000
6	7.5000	0.00000	0.00000	0.00000	0.00000	0.00000
7	8.0000	0.00000	0.00000	0.00000	0.00000	0.00000
8	8.5000	0.00000	0.00000	0.00000	0.00000	0.00000
9	9.0000	0.00000	0.00000	0.00000	0.00000	0.00000
10	0.00000	0.43750	0.00000	0.00000	0.00000	0.00000
11	1.5000	0.43750	0.00000	0.00000	0.00000	0.00000
12	3.0000	0.43750	0.00000	0.00000	0.00000	0.00000
13	4.5000	0.43750	0.00000	0.00000	0.00000	0.00000
14	6.0000	0.43750	0.00000	0.00000	0.00000	0.00000
15	7.5000	0.43750	0.00000	0.00000	0.00000	0.00000
16	8.0000	0.43750	0.00000	0.00000	0.00000	0.00000
17	8.5000	0.43750	0.00000	0.00000	0.00000	0.00000
18	9.0000	0.43750	0.00000	0.00000	0.00000	0.00000
19	0.00000	0.87500	0.00000	0.00000	0.00000	0.00000
20	1.5000	0.87500	0.00000	0.00000	0.00000	0.00000
21	3.0000	0.87500	0.00000	0.00000	0.00000	0.00000
22	4.5000	0.87500	0.00000	0.00000	0.00000	0.00000
23	6.0000	0.87500	0.00000	0.00000	0.00000	0.00000
24	7.5000	0.87500	0.00000	0.00000	0.00000	0.00000
25	8.0000	0.87500	0.00000	0.00000	0.00000	0.00000
26	8.5000	0.87500	0.00000	0.00000	0.00000	0.00000
27	9.0000	0.87500	0.00000	0.00000	0.00000	0.00000
28	0.00000	1.3120	0.00000	0.00000	0.00000	0.00000
29	1.5000	1.3120	0.00000	0.00000	0.00000	0.00000
30	3.0000	1.3120	0.00000	0.00000	0.00000	0.00000
31	4.5000	1.3120	0.00000	0.00000	0.00000	0.00000
32	6.0000	1.3120	0.00000	0.00000	0.00000	0.00000
33	7.5000	1.3120	0.00000	0.00000	0.00000	0.00000
34	8.0000	1.3120	0.00000	0.00000	0.00000	0.00000
35	8.5000	1.3120	0.00000	0.00000	0.00000	0.00000
36	9.0000	1.3120	0.00000	0.00000	0.00000	0.00000
37	0.00000	1.7500	0.00000	0.00000	0.00000	0.00000
38	1.5000	1.7500	0.00000	0.00000	0.00000	0.00000
39	3.0000	1.7500	0.00000	0.00000	0.00000	0.00000
40	4.5000	1.7500	0.00000	0.00000	0.00000	0.00000
41	6.0000	1.7500	0.00000	0.00000	0.00000	0.00000
42	7.5000	1.7500	0.00000	0.00000	0.00000	0.00000
43	8.0000	1.7500	0.00000	0.00000	0.00000	0.00000
44	8.5000	1.7500	0.00000	0.00000	0.00000	0.00000
45	9.0000	1.7500	0.00000	0.00000	0.00000	0.00000
46	0.00000	2.8120	0.00000	0.00000	0.00000	0.00000
47	1.5000	2.8120	0.00000	0.00000	0.00000	0.00000
48	3.0000	2.8120	0.00000	0.00000	0.00000	0.00000
49	4.5000	2.8120	0.00000	0.00000	0.00000	0.00000
50	6.0000	2.8120	0.00000	0.00000	0.00000	0.00000
51	7.5000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

53	8.5000	2.8120	0.00000	0.00000	0.00000	0.00000
54	9.0000	2.8120	0.00000	0.00000	0.00000	0.00000
55	0.00000	3.8750	0.00000	0.00000	0.00000	0.00000
56	1.5000	3.8750	0.00000	0.00000	0.00000	0.00000
57	3.0000	3.8750	0.00000	0.00000	0.00000	0.00000
58	4.5000	3.8750	0.00000	0.00000	0.00000	0.00000
59	6.0000	3.8750	0.00000	0.00000	0.00000	0.00000
60	7.5000	3.8750	0.00000	0.00000	0.00000	0.00000
61	8.0000	3.8750	0.00000	0.00000	0.00000	0.00000
62	8.5000	3.8750	0.00000	0.00000	0.00000	0.00000
63	9.0000	3.8750	0.00000	0.00000	0.00000	0.00000
64	0.00000	4.9370	0.00000	0.00000	0.00000	0.00000
65	1.5000	4.9370	0.00000	0.00000	0.00000	0.00000
66	3.0000	4.9370	0.00000	0.00000	0.00000	0.00000
67	4.5000	4.9370	0.00000	0.00000	0.00000	0.00000
68	6.0000	4.9370	0.00000	0.00000	0.00000	0.00000
69	7.5000	4.9370	0.00000	0.00000	0.00000	0.00000
70	8.0000	4.9370	0.00000	0.00000	0.00000	0.00000
71	8.5000	4.9370	0.00000	0.00000	0.00000	0.00000
72	9.0000	4.9370	0.00000	0.00000	0.00000	0.00000
73	0.00000	6.0000	0.00000	0.00000	0.00000	0.00000
74	1.5000	6.0000	0.00000	0.00000	0.00000	0.00000
75	3.0000	6.0000	0.00000	0.00000	0.00000	0.00000
76	4.5000	6.0000	0.00000	0.00000	0.00000	0.00000
77	6.0000	6.0000	0.00000	0.00000	0.00000	0.00000
78	7.5000	6.0000	0.00000	0.00000	0.00000	0.00000
79	8.0000	6.0000	0.00000	0.00000	0.00000	0.00000
80	8.5000	6.0000	0.00000	0.00000	0.00000	0.00000
81	9.0000	6.0000	0.00000	0.00000	0.00000	0.00000
82	0.00000	0.00000	-1.0000	0.00000	0.00000	0.00000
83	1.5000	0.00000	-1.0000	0.00000	0.00000	0.00000
84	3.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
85	4.5000	0.00000	-1.0000	0.00000	0.00000	0.00000
86	6.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
87	7.5000	0.00000	-1.0000	0.00000	0.00000	0.00000
88	8.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
89	8.5000	0.00000	-1.0000	0.00000	0.00000	0.00000
90	9.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
91	0.00000	0.43750	-1.0000	0.00000	0.00000	0.00000
92	1.5000	0.43750	-1.0000	0.00000	0.00000	0.00000
93	3.0000	0.43750	-1.0000	0.00000	0.00000	0.00000
94	4.5000	0.43750	-1.0000	0.00000	0.00000	0.00000
95	6.0000	0.43750	-1.0000	0.00000	0.00000	0.00000
96	7.5000	0.43750	-1.0000	0.00000	0.00000	0.00000
97	8.0000	0.43750	-1.0000	0.00000	0.00000	0.00000
98	8.5000	0.43750	-1.0000	0.00000	0.00000	0.00000
99	9.0000	0.43750	-1.0000	0.00000	0.00000	0.00000
100	0.00000	0.87500	-1.0000	0.00000	0.00000	0.00000
101	1.5000	0.87500	-1.0000	0.00000	0.00000	0.00000
102	3.0000	0.87500	-1.0000	0.00000	0.00000	0.00000
103	4.5000	0.87500	-1.0000	0.00000	0.00000	0.00000
104	6.0000	0.87500	-1.0000	0.00000	0.00000	0.00000
105	7.5000	0.87500	-1.0000	0.00000	0.00000	0.00000
106	8.0000	0.87500	-1.0000	0.00000	0.00000	0.00000
107	8.5000	0.87500	-1.0000	0.00000	0.00000	0.00000
108	9.0000	0.87500	-1.0000	0.00000	0.00000	0.00000
109	0.00000	1.3120	-1.0000	0.00000	0.00000	0.00000
110	1.5000	1.3120	-1.0000	0.00000	0.00000	0.00000
111	3.0000	1.3120	-1.0000	0.00000	0.00000	0.00000
112	4.5000	1.3120	-1.0000	0.00000	0.00000	0.00000
113	6.0000	1.3120	-1.0000	0.00000	0.00000	0.00000
114	7.5000	1.3120	-1.0000	0.00000	0.00000	0.00000
115	8.0000	1.3120	-1.0000	0.00000	0.00000	0.00000
116	8.5000	1.3120	-1.[illegible]	[illegible]	0.00000	0.00000
117	[illegible]	1.312[illegible]	-1.[illegible]	[illegible]	[illegible]	[illegible]

119	1.5000	1.7500	-1.0000	0.00000	0.00000	0.00000
120	3.0000	1.7500	-1.0000	0.00000	0.00000	0.00000
121	4.5000	1.7500	-1.0000	0.00000	0.00000	0.00000
122	6.0000	1.7500	-1.0000	0.00000	0.00000	0.00000
123	7.5000	1.7500	-1.0000	0.00000	0.00000	0.00000
124	8.0000	1.7500	-1.0000	0.00000	0.00000	0.00000
125	8.5000	1.7500	-1.0000	0.00000	0.00000	0.00000
126	9.0000	1.7500	-1.0000	0.00000	0.00000	0.00000
127	0.00000	2.8120	-1.0000	0.00000	0.00000	0.00000
128	1.5000	2.8120	-1.0000	0.00000	0.00000	0.00000
129	3.0000	2.8120	-1.0000	0.00000	0.00000	0.00000
130	4.5000	2.8120	-1.0000	0.00000	0.00000	0.00000
131	6.0000	2.8120	-1.0000	0.00000	0.00000	0.00000
132	7.5000	2.8120	-1.0000	0.00000	0.00000	0.00000
133	8.0000	2.8120	-1.0000	0.00000	0.00000	0.00000
134	8.5000	2.8120	-1.0000	0.00000	0.00000	0.00000
135	9.0000	2.8120	-1.0000	0.00000	0.00000	0.00000
136	0.00000	3.8750	-1.0000	0.00000	0.00000	0.00000
137	1.5000	3.8750	-1.0000	0.00000	0.00000	0.00000
138	3.0000	3.8750	-1.0000	0.00000	0.00000	0.00000
139	4.5000	3.8750	-1.0000	0.00000	0.00000	0.00000
140	6.0000	3.8750	-1.0000	0.00000	0.00000	0.00000
141	7.5000	3.8750	-1.0000	0.00000	0.00000	0.00000
142	8.0000	3.8750	-1.0000	0.00000	0.00000	0.00000
143	8.5000	3.8750	-1.0000	0.00000	0.00000	0.00000
144	9.0000	3.8750	-1.0000	0.00000	0.00000	0.00000
145	0.00000	4.9370	-1.0000	0.00000	0.00000	0.00000
146	1.5000	4.9370	-1.0000	0.00000	0.00000	0.00000
147	3.0000	4.9370	-1.0000	0.00000	0.00000	0.00000
148	4.5000	4.9370	-1.0000	0.00000	0.00000	0.00000
149	6.0000	4.9370	-1.0000	0.00000	0.00000	0.00000
150	7.5000	4.9370	-1.0000	0.00000	0.00000	0.00000
151	8.0000	4.9370	-1.0000	0.00000	0.00000	0.00000
152	8.5000	4.9370	-1.0000	0.00000	0.00000	0.00000
153	9.0000	4.9370	-1.0000	0.00000	0.00000	0.00000
154	0.00000	6.0000	-1.0000	0.00000	0.00000	0.00000
155	1.5000	6.0000	-1.0000	0.00000	0.00000	0.00000
156	3.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
157	4.5000	6.0000	-1.0000	0.00000	0.00000	0.00000
158	6.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
159	7.5000	6.0000	-1.0000	0.00000	0.00000	0.00000
160	8.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
161	8.5000	6.0000	-1.0000	0.00000	0.00000	0.00000
162	9.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
364	5.5000	1.7500	0.00000	0.00000	0.00000	0.00000
445	4.5000	2.7500	6.0000	0.00000	0.00000	0.00000
235	0.00000	6.0000	6.0000	0.00000	0.00000	0.00000
236	1.5000	6.0000	6.0000	0.00000	0.00000	0.00000
237	3.0000	6.0000	6.0000	0.00000	0.00000	0.00000
238	4.5000	6.0000	6.0000	0.00000	0.00000	0.00000
239	6.0000	6.0000	6.0000	0.00000	0.00000	0.00000
240	7.5000	6.0000	6.0000	0.00000	0.00000	0.00000
241	8.0000	6.0000	6.0000	0.00000	0.00000	0.00000
242	8.5000	6.0000	6.0000	0.00000	0.00000	0.00000
243	9.0000	6.0000	6.0000	0.00000	0.00000	0.00000

***** THE FOLLOWING TABLE CONTAINS THE NODES IN ASCENDING ORDER *****

(TO SUPPRESS ONLY THIS TABLE PUT /NOPR CARD IMMED. BEFORE F CARD TERMINATOR)

	LOCATION			ROTATION (DEGREES)	
NODE	X	Y	Z	THXY	THYZ	THXZ

1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
2	1.5000	0.00000	0.00000	0.00000	0.00000	0.00000
3	3.0000	0.00000	0.00000	0.00000	0.00000	0.00000
4	4.5000	0.00000	0.00000	0.00000	0.00000	0.00000
5	6.0000	0.00000	0.00000	0.00000	0.00000	0.00000
6	7.5000	0.00000	0.00000	0.00000	0.00000	0.00000
7	8.0000	0.00000	0.00000	0.00000	0.00000	0.00000
8	8.5000	0.00000	0.00000	0.00000	0.00000	0.00000
9	9.0000	0.00000	0.00000	0.00000	0.00000	0.00000
10	0.00000	0.43750	0.00000	0.00000	0.00000	0.00000
11	1.5000	0.43750	0.00000	0.00000	0.00000	0.00000
12	3.0000	0.43750	0.00000	0.00000	0.00000	0.00000
13	4.5000	0.43750	0.00000	0.00000	0.00000	0.00000
14	6.0000	0.43750	0.00000	0.00000	0.00000	0.00000
15	7.5000	0.43750	0.00000	0.00000	0.00000	0.00000
16	8.0000	0.43750	0.00000	0.00000	0.00000	0.00000
17	8.5000	0.43750	0.00000	0.00000	0.00000	0.00000
18	9.0000	0.43750	0.00000	0.00000	0.00000	0.00000
19	0.00000	0.87500	0.00000	0.00000	0.00000	0.00000
20	1.5000	0.87500	0.00000	0.00000	0.00000	0.00000
21	3.0000	0.87500	0.00000	0.00000	0.00000	0.00000
22	4.5000	0.87500	0.00000	0.00000	0.00000	0.00000
23	6.0000	0.87500	0.00000	0.00000	0.00000	0.00000
24	7.5000	0.87500	0.00000	0.00000	0.00000	0.00000
25	8.0000	0.87500	0.00000	0.00000	0.00000	0.00000
26	8.5000	0.87500	0.00000	0.00000	0.00000	0.00000
27	9.0000	0.87500	0.00000	0.00000	0.00000	0.00000
28	0.00000	1.3120	0.00000	0.00000	0.00000	0.00000
29	1.5000	1.3120	0.00000	0.00000	0.00000	0.00000
30	3.0000	1.3120	0.00000	0.00000	0.00000	0.00000
31	4.5000	1.3120	0.00000	0.00000	0.00000	0.00000
32	6.0000	1.3120	0.00000	0.00000	0.00000	0.00000
33	7.5000	1.3120	0.00000	0.00000	0.00000	0.00000
34	8.0000	1.3120	0.00000	0.00000	0.00000	0.00000
35	8.5000	1.3120	0.00000	0.00000	0.00000	0.00000
36	9.0000	1.7500	0.00000	0.00000	0.00000	0.00000
37	0.00000	1.7500	0.00000	0.00000	0.00000	0.00000
38	1.5000	1.7500	0.00000	0.00000	0.00000	0.00000
39	3.0000	1.7500	0.00000	0.00000	0.00000	0.00000
40	4.5000	1.7500	0.00000	0.00000	0.00000	0.00000
41	6.0000	1.7500	0.00000	0.00000	0.00000	0.00000
42	7.5000	1.7500	0.00000	0.00000	0.00000	0.00000
43	8.0000	1.7500	0.00000	0.00000	0.00000	0.00000
44	8.5000	1.7500	0.00000	0.00000	0.00000	0.00000
45	9.0000	2.8120	0.00000	0.00000	0.00000	0.00000
46	0.00000	2.8120	0.00000	0.00000	0.00000	0.00000
47	1.5000	2.8120	0.00000	0.00000	0.00000	0.00000
48	3.0000	2.8120	0.00000	0.00000	0.00000	0.00000
49	4.5000	2.8120	0.00000	0.00000	0.00000	0.00000
50	6.0000	2.8120	0.00000	0.00000	0.00000	0.00000
51	7.5000	2.8120	0.00000	0.00000	0.00000	0.00000
52	8.0000	2.8120	0.00000	0.00000	0.00000	0.00000
53	8.5000	2.8120	0.00000	0.00000	0.00000	0.00000
54	9.0000	3.8750	0.00000	0.00000	0.00000	0.00000
55	0.00000	3.8750	0.00000	0.00000	0.00000	0.00000
56	1.5000	3.8750	0.00000	0.00000	0.00000	0.00000
57	3.0000	3.8750	0.00000	0.00000	0.00000	0.00000
58	4.5000	3.8750	0.00000	0.00000	0.00000	0.00000
59	6.0000	3.8750	0.00000	0.00000	0.00000	0.00000
60	7.5000	3.8750	0.00000	0.00000	0.00000	0.00000
61	8.0000	3.8750	0.00000	0.00000	0.00000	0.00000
62	8.5000	3.8750	0.00000	0.00000	0.00000	0.00000
63	9.0000	3.8750	0.00000	0.00000	0.00000	0.00000
64	0.00000	4.9370	0.00000	0.00000	0.00000	0.00000
[illegible]	1.5000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

67	4.5000	4.9370	0.00000	0.00000	0.00000	0.00000
68	6.0000	4.9370	0.00000	0.00000	0.00000	0.00000
69	7.5000	4.9370	0.00000	0.00000	0.00000	0.00000
70	8.0000	4.9370	0.00000	0.00000	0.00000	0.00000
71	8.5000	4.9370	0.00000	0.00000	0.00000	0.00000
72	9.0000	4.9370	0.00000	0.00000	0.00000	0.00000
73	0.00000	6.0000	0.00000	0.00000	0.00000	0.00000
74	1.5000	6.0000	0.00000	0.00000	0.00000	0.00000
75	3.0000	6.0000	0.00000	0.00000	0.00000	0.00000
76	4.5000	6.0000	0.00000	0.00000	0.00000	0.00000
77	6.0000	6.0000	0.00000	0.00000	0.00000	0.00000
78	7.5000	6.0000	0.00000	0.00000	0.00000	0.00000
79	8.0000	6.0000	0.00000	0.00000	0.00000	0.00000
80	8.5000	6.0000	0.00000	0.00000	0.00000	0.00000
81	9.0000	6.0000	0.00000	0.00000	0.00000	0.00000
82	0.00000	0.00000	-1.0000	0.00000	0.00000	0.00000
83	1.5000	0.00000	-1.0000	0.00000	0.00000	0.00000
84	3.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
85	4.5000	0.00000	-1.0000	0.00000	0.00000	0.00000
86	6.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
87	7.5000	0.00000	-1.0000	0.00000	0.00000	0.00000
88	8.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
89	8.5000	0.00000	-1.0000	0.00000	0.00000	0.00000
90	9.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
91	0.00000	0.43750	-1.0000	0.00000	0.00000	0.00000
92	1.5000	0.43750	-1.0000	0.00000	0.00000	0.00000
93	3.0000	0.43750	-1.0000	0.00000	0.00000	0.00000
94	4.5000	0.43750	-1.0000	0.00000	0.00000	0.00000
95	6.0000	0.43750	-1.0000	0.00000	0.00000	0.00000
96	7.5000	0.43750	-1.0000	0.00000	0.00000	0.00000
97	8.0000	0.43750	-1.0000	0.00000	0.00000	0.00000
98	8.5000	0.43750	-1.0000	0.00000	0.00000	0.00000
99	9.0000	0.43750	-1.0000	0.00000	0.00000	0.00000
100	0.00000	0.87500	-1.0000	0.00000	0.00000	0.00000
101	1.5000	0.87500	-1.0000	0.00000	0.00000	0.00000
102	3.0000	0.87500	-1.0000	0.00000	0.00000	0.00000
103	4.5000	0.87500	-1.0000	0.00000	0.00000	0.00000
104	6.0000	0.87500	-1.0000	0.00000	0.00000	0.00000
105	7.5000	0.87500	-1.0000	0.00000	0.00000	0.00000
106	8.0000	0.87500	-1.0000	0.00000	0.00000	0.00000
107	8.5000	0.87500	-1.0000	0.00000	0.00000	0.00000
108	9.0000	0.87500	-1.0000	0.00000	0.00000	0.00000
109	0.00000	1.3120	-1.0000	0.00000	0.00000	0.00000
110	1.5000	1.3120	-1.0000	0.00000	0.00000	0.00000
111	3.0000	1.3120	-1.0000	0.00000	0.00000	0.00000
112	4.5000	1.3120	-1.0000	0.00000	0.00000	0.00000
113	6.0000	1.3120	-1.0000	0.00000	0.00000	0.00000
114	7.5000	1.3120	-1.0000	0.00000	0.00000	0.00000
115	8.0000	1.3120	-1.0000	0.00000	0.00000	0.00000
116	8.5000	1.3120	-1.0000	0.00000	0.00000	0.00000
117	9.0000	1.3120	-1.0000	0.00000	0.00000	0.00000
118	0.00000	1.7500	-1.0000	0.00000	0.00000	0.00000
119	1.5000	1.7500	-1.0000	0.00000	0.00000	0.00000
120	3.0000	1.7500	-1.0000	0.00000	0.00000	0.00000
121	4.5000	1.7500	-1.0000	0.00000	0.00000	0.00000
122	6.0000	1.7500	-1.0000	0.00000	0.00000	0.00000
123	7.5000	1.7500	-1.0000	0.00000	0.00000	0.00000
124	8.0000	1.7500	-1.0000	0.00000	0.00000	0.00000
125	8.5000	1.7500	-1.0000	0.00000	0.00000	0.00000
126	9.0000	1.7500	-1.0000	0.00000	0.00000	0.00000
127	0.00000	2.8120	-1.0000	0.00000	0.00000	0.00000
128	1.5000	2.8120	-1.0000	0.00000	0.00000	0.00000
129	3.0000	2.8120	-1.0000	0.00000	0.00000	0.00000
130	4.5000	2.8120	-1.0000	0.00000	0.00000	0.00000
131	6.0000	2.8120	-1.0000	0.00000	0.00000	0.00000

133	8.0000	2.8120	-1.0000	0.00000	0.00000	0.00000
134	8.5000	2.8120	-1.0000	0.00000	0.00000	0.00000
135	9.0000	2.8120	-1.0000	0.00000	0.00000	0.00000
136	0.00000	3.8750	-1.0000	0.00000	0.00000	0.00000
137	1.5000	3.8750	-1.0000	0.00000	0.00000	0.00000
138	3.0000	3.8750	-1.0000	0.00000	0.00000	0.00000
139	4.5000	3.8750	-1.0000	0.00000	0.00000	0.00000
140	6.0000	3.8750	-1.0000	0.00000	0.00000	0.00000
141	7.5000	3.8750	-1.0000	0.00000	0.00000	0.00000
142	8.0000	3.8750	-1.0000	0.00000	0.00000	0.00000
143	8.5000	3.8750	-1.0000	0.00000	0.00000	0.00000
144	9.0000	3.8750	-1.0000	0.00000	0.00000	0.00000
145	0.00000	4.9370	-1.0000	0.00000	0.00000	0.00000
146	1.5000	4.9370	-1.0000	0.00000	0.00000	0.00000
147	3.0000	4.9370	-1.0000	0.00000	0.00000	0.00000
148	4.5000	4.9370	-1.0000	0.00000	0.00000	0.00000
149	6.0000	4.9370	-1.0000	0.00000	0.00000	0.00000
150	7.5000	4.9370	-1.0000	0.00000	0.00000	0.00000
151	8.0000	4.9370	-1.0000	0.00000	0.00000	0.00000
152	8.5000	4.9370	-1.0000	0.00000	0.00000	0.00000
153	9.0000	4.9370	-1.0000	0.00000	0.00000	0.00000
154	0.00000	6.0000	-1.0000	0.00000	0.00000	0.00000
155	1.5000	6.0000	-1.0000	0.00000	0.00000	0.00000
156	3.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
157	4.5000	6.0000	-1.0000	0.00000	0.00000	0.00000
158	6.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
159	7.5000	6.0000	-1.0000	0.00000	0.00000	0.00000
160	8.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
161	8.5000	6.0000	-1.0000	0.00000	0.00000	0.00000
162	9.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
235	0.00000	6.0000	6.0000	0.00000	0.00000	0.00000
236	1.5000	6.0000	6.0000	0.00000	0.00000	0.00000
237	3.0000	6.0000	6.0000	0.00000	0.00000	0.00000
238	4.5000	6.0000	6.0000	0.00000	0.00000	0.00000
239	6.0000	6.0000	6.0000	0.00000	0.00000	0.00000
240	7.5000	6.0000	6.0000	0.00000	0.00000	0.00000
241	8.0000	6.0000	6.0000	0.00000	0.00000	0.00000
242	8.5000	6.0000	6.0000	0.00000	0.00000	0.00000
243	9.0000	6.0000	6.0000	0.00000	0.00000	0.00000
364	5.5000	1.7500	0.00000	0.00000	0.00000	0.00000
445	4.5000	2.7500	0.00000	0.00000	0.00000	0.00000

XMIN= 0.0000 XMAX= 9.000 YMIN= 0.0000 YMAX= 6.000 ZMIN= -1.000 ZMAX= 6.000

OCTAL STORAGE REQUIREMENTS FOR NODE INPUT CP= 1.799
CORE= 00106234 MEMORY= 00005156 TOTAL= 00113412 MEMORY AVAILABLE= 00221621
MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 12440

MODEL GEOMETRY WRITTEN ON FILE TAPE 3

PROBLEM DATA WRITTEN ON FILE TAPE7

TUGC,CPSES,TYP ANCH L6X6X3/4,1-1.25 SUPER HILTI $ CENTER   10.6697   3/22/85 CP=   1.809

***** GEOMETRY MODIFY ROUTINE (CARD FA) *****

DELETE ELEMENTS	60	61	62	63	77	78	79	80	94	95
DELETE ELEMENTS	96	97	111	112	113	114	128	129	130	131
DELETE ELEMENTS	137	138	139	140	0	0	0	0	0	0

EDITED MODEL GEOMETRY WRITTEN ON FILE TAPE 3

TUGC,CPSES,TYP ANCH L6X6X3/4,1-1.25 SUPER HILTI S CENTER 10.6697 3/22/85 CP= 1.834

```
***** MATERIAL PROPERTIES (CARD H) *****

MATERIAL    1

 EX   =      29000.0
 EY   =      29000.0
 NUXY =     0.300000
 ALPX =     0.000000
 ALPY =     0.000000
 DENS =     0.000000

MATERIAL    2

 EX   =      555.700
 ALPX =     0.000000
 DENS =     0.000000

MATERIAL    3

 EX   =      29000.0
 ALPX =     0.000000
 DENS =     0.000000

MATERIAL    4

 EX   =      29000.0
 EY   =      29000.0
 NUXY =     0.300000
 ALPX =     0.000000
 ALPY =     0.000000
 DENS =     0.000000

MATERIAL    5

 EX   =      29000.0
 ALPX =     0.000000
 NUXY =     0.300000
 DENS =     0.000000

OCTAL STORAGE REQUIREMENTS FOR H THROUGH K CARD DATA INPUT        CP=     1.904
CORE= 00104313  MEMORY= 00000000  TOTAL= 00104313  MEMORY AVAILABLE= 00221772
```

LOAD STEP NUMBER = 1

***** LOAD STEP OPTIONS (CARDS L AND M) *****

	VALUE	VARIABLE NAME	COLUMNS
LOAD STEP KEY	1	KDIS	2-3
TEMPERATURE KEY	0	KTEMP	4-6
NUMBER OF ITERATIONS.	-10	NITTER	7-9
STRESS PRINTOUT FREQUENCY . .	10	NPRINT	10-12
TIME AT END OF LOAD STEP. . .	0.00000	TIME	13-24
DISPL. PRINTOUT FREQUENCY . .	10	NDPRNT	70-72 (CARD M)
MD CARD KEY	1	IMD	80 (CARD M)

***** SPECIAL LOADING PARAMETERS (CARD MD) *****

HARMONIC LOAD PARAMETERS MODE = 0 ISYM = 1

KEY TO TERMINATE RUN IF NO CONVERGENCE = 1.

***** SPECIFIED DISPLACEMENTS (CARD N) *****

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
82	0.000000	0.000000	0.000000			
83	0.000000	0.000000	0.000000			
84	0.000000	0.000000	0.000000			
85	0.000000	0.000000	0.000000			
86	0.000000	0.000000	0.000000			
87	0.000000	0.000000	0.000000			
88	0.000000	0.000000	0.000000			
89	0.000000	0.000000	0.000000			
90	0.000000	0.000000	0.000000			
91	0.000000	0.000000	0.000000			
92	0.000000	0.000000	0.000000			
93	0.000000	0.000000	0.000000			
94	0.000000	0.000000	0.000000			
95	0.000000	0.000000	0.000000			
96	0.000000	0.000000	0.000000			
97	0.000000	0.000000	0.000000			
98	0.000000	0.000000	0.000000			
99	0.000000	0.000000	0.000000			
100	0.000000	0.000000	0.000000			
101	0.000000	0.000000	0.000000			
102	0.000000	0.000000	0.000000			
103	0.000000	0.000000	0.000000			
104	0.000000	0.000000	0.000000			
105	0.000000	0.000000	0.000000			
106	0.000000	0.000000	0.000000			
107	0.000000	0.000000	0.000000			
108	0.000000	0.000000	0.000000			
109	0.000000	0.000000	0.000000			
110	0.000000	0.000000	0.000000			

113	0.000000	0.000000	0.000000	
114	0.000000	0.000000	0.000000	
115	0.000000	0.000000	0.000000	
116	0.000000	0.000000	0.000000	
117	0.000000	0.000000	0.000000	
118	0.000000	0.000000	0.000000	
119	0.000000	0.000000	0.000000	
120	0.000000	0.000000	0.000000	
121	0.000000	0.000000	0.000000	
122	0.000000	0.000000	0.000000	
123	0.000000	0.000000	0.000000	
124	0.000000	0.000000	0.000000	
125	0.000000	0.000000	0.000000	
126	0.000000	0.000000	0.000000	
127	0.000000	0.000000	0.000000	
128	0.000000	0.000000	0.000000	
129	0.000000	0.000000	0.000000	
130	0.000000	0.000000	0.000000	
131	0.000000	0.000000	0.000000	
132	0.000000	0.000000	0.000000	
133	0.000000	0.000000	0.000000	
134	0.000000	0.000000	0.000000	
135	0.000000	0.000000	0.000000	
136	0.000000	0.000000	0.000000	
137	0.000000	0.000000	0.000000	
138	0.000000	0.000000	0.000000	
139	0.000000	0.000000	0.000000	
140	0.000000	0.000000	0.000000	
141	0.000000	0.000000	0.000000	
142	0.000000	0.000000	0.000000	
143	0.000000	0.000000	0.000000	
144	0.000000	0.000000	0.000000	
145	0.000000	0.000000	0.000000	
146	0.000000	0.000000	0.000000	
147	0.000000	0.000000	0.000000	
148	0.000000	0.000000	0.000000	
149	0.000000	0.000000	0.000000	
150	0.000000	0.000000	0.000000	
151	0.000000	0.000000	0.000000	
152	0.000000	0.000000	0.000000	
153	0.000000	0.000000	0.000000	
154	0.000000	0.000000	0.000000	
155	0.000000	0.000000	0.000000	
156	0.000000	0.000000	0.000000	
157	0.000000	0.000000	0.000000	
158	0.000000	0.000000	0.000000	
159	0.000000	0.000000	0.000000	
160	0.000000	0.000000	0.000000	
161	0.000000	0.000000	0.000000	
162	0.000000	0.000000	0.000000	
240				0.000000
364	0.000000	0.000000	0.000000	
445	0.000000	0.000000	0.000000	

***** SPECIFIED FORCES (CARD U) *****

NO.	NODE	DIRECTION	VALUE
1	238	FZ	1.00000
2	238	MX	1.75000
3	238	MY	27.0000

```
***** LOAD SUMMARY -    250 DISPLACEMENTS        3 FORCES        0 PRESSURES      *****


OCTAL STORAGE REQUIREMENTS FOR L THROUGH P CARD DATA INPUT          CP=      2.010
CORE= 00207735  MEMORY= 00000000  TOTAL= 00207735  MEMORY AVAILABLE= 00154371

 MAXIMUM STIFFNESS =  0.491276E+06  AT ELEMENT   132
 MINIMUM STIFFNESS =  0.303912E+02  AT ELEMENT    17

OCTAL STORAGE REQUIREMENTS FOR ELEMENT FORMULATION                  CP=      4.369
CORE= 00202717  MEMORY= 00000000  TOTAL= 00202717  MEMORY AVAILABLE= 00154106

  *** ELEMENT STIFFNESS FORMULATION TIMES
 TYPE  NUMBER  STIF  TOTAL CP   AVE CP

   1      64    63    2.071    0.032
   2      57    10    0.025    0.000
   3       1    10    0.001    0.001
   4       8    63    0.259    0.032
   6       2    14    0.001    0.000

 TIME AT END OF ELEMENT STIFFNESS FORMULATION   CP =      4.370


MAXIMUM IN-CORE WAVE FRONT ALLOWED FOR REQUESTED MEMORY SIZE=  291

OCTAL STORAGE REQUIREMENTS FOR WAVE FRONT MATRIX SOLUTION           CP=      5.582
CURE= 00241675  MEMORY= 00013642  TOTAL= 00255537  MEMORY AVAILABLE= 00123715


MAXIMUM IN-CORE WAVE FRONT (EQUATIONS) USED= 108

  *** MATRIX SOLUTION TIMES
 READ IN ELEMENT STIFFNESSES    CP=      0.050
 NODAL COORD. TRANSFORMATION    CP=      0.001
 MATRIX TRIANGULARIZATION       CP=      1.159

  TIME AT END OF MATRIX TRIANGULARIZATION   CP =      5.583

  TIME AT START OF BACK SUBSTITUTION   CP=      5.584     STEP=   1   ITERATION=  1

 OCTAL STORAGE REQUIREMENTS FOR BACK SUBSTITUTION                   CP=      5.609
 CORE= 00107657  MEMORY= 00005165  TOTAL= 00115044  MEMORY AVAILABLE= 00216425

   *** ELEM. STRESS CALC. TIMES
  TYPE  NUMBER  STIF  TOTAL CP   AVE CP

   1      64    63    0.161    0.003
   2      57    10    0.025    0.000
   3       1    10    0.000    0.000
   4       8    63    0.020    0.003
   6       2    14    0.001    0.000

   12 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000      PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
  STEP=   1  ITER=   1  CUM. ITER.=    1  TIME=  0.000000

  *** STEP   1    ITER   1 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMP=    0  CUM. ITER.=    1

  OCTAL STORAGE REQUIREMENTS FOR STRESS AND FORCE CALCULATIONS      CP=      5.821
  CORE= 00223351  MEMORY= 00005156  TOTAL= 00230527  MEMORY AVAILABLE= 00142145


  MAXIMUM CENTRAL MEMORY USED  = 0241675
  MAXIMUM AUXILIARY MEMORY USED= 0013642
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MAXIMUM AUXILIARY AVAILABLE  = 0142145

    64666 WORDS WRITTEN ON BLOCKS 1 AND 2
    41576 WORDS WRITTEN ON BLOCK 3
      539 ACTIVE DEGREES OF FREEDOM
     69.3 R.M.S. WAVEFRONT


 MATRIX SOLUTION TIME ESTIMATE(CRAY-1) =    2.37 SECONDS.


 RESTART DATA WRITTEN ON FILE TAPE 3

 TRIANGULARIZED MATRIX WRITTEN ON FILE TAPE11

 TIME AT START OF BACK SUBSTITUTION   CP=     8.049     STEP=   1   ITERATION=  2

   12 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000        PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
 STEP=   1  ITER=   2  CUM. ITER.=    2  TIME=  0.000000

 *** STEP    1    ITER    2 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMP=    0  CUM. ITER.=    2

 TIME AT START OF BACK SUBSTITUTION   CP=    10.571     STEP=   1   ITERATION=  3

    8 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000        PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
 STEP=   1  ITER=   3  CUM. ITER.=    3  TIME=  0.000000

 *** STEP    1    ITER    3 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMP=    0  CUM. ITER.=    3

 TIME AT START OF BACK SUBSTITUTION   CP=    13.094     STEP=   1   ITERATION=  4

    4 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000        PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
 STEP=   1  ITER=   4  CUM. ITER.=    4  TIME=  0.000000

 *** STEP    1    ITER    4 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMP=    0  CUM. ITER.=    4

 TIME AT START OF BACK SUBSTITUTION   CP=    15.621     STEP=   1   ITERATION=  5

    3 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000        PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
 STEP=   1  ITER=   5  CUM. ITER.=    5  TIME=  0.000000

 *** STEP    1    ITER    5 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMP=    0  CUM. ITER.=    5

 TIME AT START OF BACK SUBSTITUTION   CP=    18.147     STEP=   1   ITERATION=  6

    0 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000        PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
 STEP=   1  ITER=   6  CUM. ITER.=    6  TIME=  0.000000

 *** SOLUTION CONVERGED - STEP    1 ITERATIONS TERMINATED AFTER ITERATION    6  CUM. ITER.=    6
     NEXT ITERATION (IDENTIFIED AS ITERATION  10) SATISFIES PRINT REQUEST.  POST DATA ALSO WRITTEN IF REQUESTED.

 TIME AT START OF BACK SUBSTITUTION   CP=    18.432     STEP=   1   ITERATION= 10
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ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 3 UPDATE 67L UCS-CRAY JUNE 1,1979
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412) 746-3304

TUGC,CPSES,TYP ANCH L6X6X3/4,1-1.25 SUPER HILTI $ CENTER 10.6922 3/22/85 CP= 18.434

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 7

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	-0.635488E-02	0.156023E-01	0.465194E-01	0.126954E-01	0.106892E-01	-0.352066E-02
2	-0.635563E-02	0.102367E-01	0.308102E-01	0.120846E-01	0.102440E-01	-0.352066E-02
3	-0.636054E-02	0.487238E-02	0.166300E-01	0.110167E-01	0.867574E-02	-0.352063E-02
4	-0.637127E-02	-0.497873E-03	0.588008E-02	0.927147E-02	0.568181E-02	-0.352052E-02
5	-0.638263E-02	-0.588040E-02	-0.492248E-03	0.689325E-02	0.286382E-02	-0.352026E-02
6	-0.638994E-02	-0.112714E-01	-0.413128E-02	0.432534E-02	0.203916E-02	-0.351986E-02
7	-0.639116E-02	-0.130691E-01	-0.522042E-02	0.353619E-02	0.239337E-02	-0.351856E-02
8	-0.639189E-02	-0.148670E-01	-0.650279E-02	0.299150E-02	0.278512E-02	-0.351757E-02
9	-0.639217E-02	-0.166647E-01	-0.794122E-02	0.263981E-02	0.293980E-02	-0.351720E-02
10	-0.478954E-02	0.156023E-01	0.520683E-01	0.126970E-01	0.108380E-01	-0.352066E-02
11	-0.479068E-02	0.102368E-01	0.360824E-01	0.120559E-01	0.104769E-01	-0.352067E-02
12	-0.479515E-02	0.487304E-02	0.214058E-01	0.108663E-01	0.908994E-02	-0.352068E-02
13	-0.480320E-02	-0.496880E-03	0.988054E-02	0.906723E-02	0.627313E-02	-0.352060E-02
14	-0.481148E-02	-0.587971E-02	0.249020E-02	0.676149E-02	0.356521E-02	-0.352035E-02
15	-0.481718E-02	-0.112708E-01	-0.224860E-02	0.428301E-02	0.274999E-02	-0.351991E-02
16	-0.481828E-02	-0.130687E-01	-0.366980E-02	0.353580E-02	0.294528E-02	-0.351840E-02
17	-0.481895E-02	-0.148667E-01	-0.519924E-02	0.293734E-02	0.317422E-02	-0.351724E-02
18	-0.481929E-02	-0.166644E-01	-0.680717E-02	0.250294E-02	0.323685E-02	-0.351681E-02
19	-0.322403E-02	0.156022E-01	0.576362E-01	0.127724E-01	0.109884E-01	-0.352061E-02
20	-0.322501E-02	0.102369E-01	0.413556E-01	0.120903E-01	0.107189E-01	-0.352069E-02
21	-0.322876E-02	0.487359E-02	0.261433E-01	0.108503E-01	0.955318E-02	-0.352084E-02
22	-0.323509E-02	-0.495903E-03	0.138160E-01	0.897296E-02	0.689360E-02	-0.352089E-02
23	-0.324116E-02	-0.587928E-02	0.543199E-02	0.672507E-02	0.428226E-02	-0.352066E-02
24	-0.324506E-02	-0.112702E-01	-0.387919E-03	0.423748E-02	0.350021E-02	-0.352008E-02
25	-0.324593E-02	-0.130682E-01	-0.214807E-02	0.342745E-02	0.356891E-02	-0.351787E-02
26	-0.324651E-02	-0.148662E-01	-0.395797E-02	0.272903E-02	0.368453E-02	-0.351614E-02
27	-0.324686E-02	-0.166636E-01	-0.579995E-02	0.213159E-02	0.367730E-02	-0.351548E-02
28	-0.165979E-02	0.156019E-01	0.632389E-01	0.128775E-01	0.111539E-01	-0.352038E-02
29	-0.166068E-02	0.102368E-01	0.466517E-01	0.121784E-01	0.109604E-01	-0.352060E-02
30	-0.166366E-02	0.487410E-02	0.309022E-01	0.110004E-01	0.100321E-01	-0.352111E-02
31	-0.166880E-02	-0.494712E-03	0.177361E-01	0.901844E-02	0.750831E-02	-0.352151E-02
32	-0.167309E-02	-0.587908E-02	0.838247E-02	0.683513E-02	0.498046E-02	-0.352139E-02
33	-0.167537E-02	-0.112697E-01	0.145140E-02	0.419883E-02	0.427401E-02	-0.352053E-02
34	-0.167600E-02	-0.130676E-01	-0.678657E-03	0.331043E-02	0.427003E-02	-0.351685E-02
35	-0.167638E-02	-0.148656E-01	-0.281934E-02	0.248938E-02	0.431429E-02	-0.351386E-02
36	-0.167666E-02	-0.166627E-01	-0.496934E-02	0.173285E-02	0.428524E-02	-0.351272E-02
37	-0.918606E-04	0.156012E-01	0.689044E-01	0.129923E-01	0.113300E-01	-0.351963E-02
38	-0.920427E-04	0.102367E-01	0.520084E-01	0.123024E-01	0.111960E-01	-0.352017E-02
39	-0.953311E-04	0.487454E-02	0.357591E-01	0.112240E-01	0.104542E-01	-0.352148E-02
40	-0.987540E-04	-0.493161E-03	0.217501E-01	0.943608E-02	0.812854E-02	-0.352272E-02
41	-0.101699E-03	-0.587910E-02	0.114084E-01	0.702068E-02	0.575245E-02	-0.352297E-02
42	-0.102696E-03	-0.112694E-01	0.328752E-02	0.420512E-02	0.509914E-02	-0.352167E-02
43	-0.102747E-03	-0.130670E-01	0.751599E-03	0.323829E-02	0.506102E-02	-0.351511E-02
44	-0.103116E-03	-0.148652E-01	-0.177409E-02	0.229451E-02	0.505655E-02	-0.350958E-02
45	-0.103358E-03	-0.166618E-01	-0.430229E-02	0.139298E-02	0.505742E-02	-0.350741E-02
46	0.371049E-02	0.155962E-01	0.828625E-01	0.132388E-01	0.117602E-01	-0.351842E-02
47	0.371133E-02	0.102359E-01	0.652536E-01	0.126153E-01	0.116825E-01	-0.351937E-02
48	0.370756E-02	0.487808E-02	0.480388E-01	0.117786E-01	0.111548E-01	-0.352166E-02
49	0.370469E-02	-0.493083E-03	0.323453E-01	0.102471E-01	0.964808E-02	-0.352399E-02
50	0.370696E-02	-0.587938E-02	0.191882E-01	0.756571E-02	0.796919E-02	-0.352488E-02
51	0.371068E-02	-0.112691E-01	0.786381E-02	0.444831E-02	0.724253E-02	-0.352327E-02

TUGC,CPSES,TYP ANCH L6X6X3/4,1-1.25 SUPER HILTI $ CENTER 10.6922 3/22/85 CP= 18.453

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 7

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	0.371128E-02	-0.130672E-01	0.426588E-02	0.339766E-02	0.717023E-02	-0.351368E-02
53	0.371205E-02	-0.148636E-01	0.686048E-03	0.234251E-02	0.716264E-02	-0.350518E-02
54	0.371208E-02	-0.166618E-01	-0.290196E-02	0.134883E-02	0.719497E-02	-0.350175E-02
55	0.751443E-02	0.155847E-01	0.970179E-01	0.132788E-01	0.122172E-01	-0.351501E-02
56	0.751576E-02	0.102356E-01	0.787636E-01	0.127116E-01	0.121263E-01	-0.351703E-02
57	0.751181E-02	0.488450E-02	0.607328E-01	0.119723E-01	0.118979E-01	-0.352179E-02
58	0.750894E-02	-0.490127E-03	0.434153E-01	0.104716E-01	0.111316E-01	-0.352677E-02
59	0.751607E-02	-0.588342E-02	0.274964E-01	0.803542E-02	0.100403E-01	-0.352958E-02
60	0.753051E-02	-0.112728E-01	0.129220E-01	0.508588E-02	0.941647E-02	-0.352778E-02
61	0.753392E-02	-0.130651E-01	0.823830E-02	0.409071E-02	0.934622E-02	-0.351146E-02
62	0.753344E-02	-0.148643E-01	0.356406E-02	0.306013E-02	0.937522E-02	-0.349512E-02
63	0.753408E-02	-0.166599E-01	-0.114823E-02	0.207560E-02	0.949921E-02	-0.348804E-02
64	0.113042E-01	0.155623E-01	0.111007	0.129461E-01	0.126633E-01	-0.350653E-02
65	0.113099E-01	0.102377E-01	0.921462E-01	0.123687E-01	0.124621E-01	-0.351167E-02
66	0.113047E-01	0.489526E-02	0.733615E-01	0.116297E-01	0.124599E-01	-0.352206E-02
67	0.113091E-01	-0.484974E-03	0.545649E-01	0.104263E-01	0.122909E-01	-0.353148E-02
68	0.113194E-01	-0.589055E-02	0.363336E-01	0.864575E-02	0.116734E-01	-0.353907E-02
69	0.113451E-01	-0.112896E-01	0.189124E-01	0.622375E-02	0.113020E-01	-0.353923E-02
70	0.113585E-01	-0.130740E-01	0.132551E-01	0.536265E-02	0.113144E-01	-0.351105E-02
71	0.113677E-01	-0.148483E-01	0.759175E-02	0.451100E-02	0.113615E-01	-0.347457E-02
72	0.113619E-01	-0.1665[illegible]E-01	0.187557E-02	0.375817E-02	0.115817E-01	-0.345648E-02
73	0.150824E-01	0.155238E-01	0.124446	0.121971E-01	0.130948E-01	-0.348246E-02
74	0.150794E-01	0.102489E-01	0.105011	0.116957E-01	0.129125E-01	-0.350138E-02
75	0.150935E-01	0.490587E-02	0.854911E-01	0.109734E-01	0.140631E-01	-0.352690E-02
76	0.151160E-01	-0.480967E-03	0.655013E-01	0.100119E-01	0.151339E-01	-0.353594E-02
77	0.151396E-01	-0.589624E-02	0.456703E-01	0.889494E-02	0.138351E-01	-0.355182E-02
78	0.151556E-01	-0.113238E-01	0.263342E-01	0.774926E-02	0.126340E-01	-0.357416E-02
79	0.151578E-01	-0.131037E-01	0.200362E-01	0.744309E-02	0.125849E-01	-0.352146E-02
80	0.151633E-01	-0.148508E-01	0.137540E-01	0.714706E-02	0.125495E-01	-0.344211E-02
81	0.151752E-01	-0.165546E-01	0.746018E-02	0.686540E-02	0.127177E-01	-0.336454E-02
82	0.000000	0.000000	0.000000			
83	0.000000	0.000000	0.000000			
84	0.000000	0.000000	0.000000			
85	0.000000	0.000000	0.000000			
86	0.000000	0.000000	0.000000			
87	0.000000	0.000000	0.000000			
88	0.000000	0.000000	0.000000			
89	0.000000	0.000000	0.000000			
90	0.000000	0.000000	0.000000			
91	0.000000	0.000000	0.000000			
92	0.000000	0.000000	0.000000			
93	0.000000	0.000000	0.000000			
94	0.000000	0.000000	0.000000			
95	0.000000	0.000000	0.000000			
96	0.000000	0.000000	0.000000			
97	0.000000	0.000000	0.000000			
98	0.000000	0.000000	0.000000			
99	0.000000	0.000000	0.000000			
100	0.000000	0.000000	0.000000			
101	0.000000	0.000000	0.000000			
102	0.000000	0.000000	0.000000			

TUGC,CPSES,TYP ANCH L6X6X3/4,1-1.25 SUPER HILTI $ CENTER 10.6922 3/22/85 CP= 18.470

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 7

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
103	0.000000	0.000000	0.000000			
104	0.000000	0.000000	0.000000			
105	0.000000	0.000000	0.000000			
106	0.000000	0.000000	0.000000			
107	0.000000	0.000000	0.000000			
108	0.000000	0.000000	0.000000			
109	0.000000	0.000000	[illegible]			
110	0.000000	0.000000	0.000000			
111	0.000000	0.000000	0.000000			
112	0.000000	0.000000	0.000000			
113	0.000000	0.000000	0.000000			
114	0.000000	0.000000	0.000000			
115	0.000000	0.000000	0.000000			
116	0.000000	0.000000	0.000000			
117	0.000000	0.000000	0.000000			
118	0.000000	0.000000	0.000000			
119	0.000000	0.000000	0.000000			
120	0.000000	0.000000	0.000000			
121	0.000000	0.000000	0.000000			
122	0.000000	0.000000	0.000000			
123	0.000000	0.000000	0.000000			
124	0.000000	0.000000	0.000000			
125	0.000000	0.000000	0.000000			
126	0.000000	0.000000	0.000000			
127	0.000000	0.000000	0.000000			
128	0.000000	0.000000	0.000000			
129	0.000000	0.000000	0.000000			
130	0.000000	0.000000	0.000000			
131	0.000000	0.000000	0.000000			
132	0.000000	0.000000	0.000000			
133	0.000000	0.000000	0.000000			
134	0.000000	0.000000	0.000000			
135	0.000000	0.000000	0.000000			
136	0.000000	0.000000	0.000000			
137	0.000000	0.000000	0.000000			
138	0.000000	0.000000	0.000000			
139	0.000000	0.000000	0.000000			
140	0.000000	0.000000	0.000000			
141	0.000000	0.000000	0.000000			
142	0.000000	0.000000	0.000000			
143	0.000000	0.000000	0.000000			
144	0.000000	0.000000	0.000000			
145	0.000000	0.000000	0.000000			
146	0.000000	0.000000	0.000000			
147	0.000000	0.000000	0.000000			
148	0.000000	0.000000	0.000000			
149	0.000000	0.000000	0.000000			
150	0.000000	0.000000	0.000000			
151	0.000000	0.000000	0.000000			
152	0.000000	0.000000	0.000000			
153	0.000000	0.000000	0.000000			

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 3 UPDATE 6/L UCS-CRAY JUNE 1,1979
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412) 746-3304

TUGC,CPSES,TYP ANCH L6X6X3/4,1-1.25 SUPER HILTI $ CENTER 10.6922 3/22/85 CP= 18.484

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 7

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
154	0.000000	0.000000	0.000000			
155	0.000000	0.000000	0.000000			
156	0.000000	0.000000	0.000000			
157	0.000000	0.000000	0.000000			
158	0.000000	0.000000	0.000000			
159	0.000000	0.000000	0.000000			
160	0.000000	0.000000	0.000000			
161	0.000000	0.000000	0.000000			
162	0.000000	0.000000	0.000000			
235	0.935542E-01	-0.578332E-01	0.124661	0.122446E-01	0.160961	-0.177797E-02
236	0.935528E-01	-0.604263E-01	0.104895	0.118648E-01	0.456875	-0.160165E-02
237	0.935747E-01	-0.625603E-01	0.851478E-01	0.114938E-01	2.52731	-0.116664E-02
238	0.935577E-01	-0.639896E-01	0.657435E-01	0.111727E-01	14.6508	-0.658762E-03
239	0.934677E-01	-0.646761E-01	0.462250E-01	0.106490E-01	2.56092	-0.254771E-03
240	0.933821E-01	-0.649065E-01	0.265518E-01	0.101119E-01	0.659251	0.000000
241	0.933736E-01	-0.649225E-01	0.198943E-01	0.983224E-02	0.123634	-0.493613E-04
242	0.933814E-01	-0.649601E-01	0.132103E-01	0.955672E-02	0.321984E-01	-0.852432E-04
243	0.934037E-01	-0.650025E-01	0.649690E-02	0.928470E-02	0.191552E-01	-0.668488E-04
364	0.000000	0.000000	0.000000			
445	0.000000	0.000000	0.000000			

MAXIMUM VALUE

NODES	237	243	235	55	238	78
DISPL	0.935747E-01	-0.650025E-01	0.124661	0.132788E-01	14.6508	-0.357416E-02

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              ANSYS - ENGINEERING ANALYSIS SYSTEM   REVISION 3   UPDATE 67L  ULS-CRAY JUNE 1/1979
        SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412) 746-3304

  TUGC,CPSES,TYP ANCH L6X6X3/4,1-1.25 SUPER HILTI $ CENTER                        10.6922   3/22/85 CP=   18.498

   ***** ELEMENT STRESSES *****  TIME =  0.000000       LOAD STEP=   1   ITERATION= 10   CUM. ITER.=   7                  8R

 EL=    1  NODES=    1     2   11   10         MAT=  1  AREA= 0.656       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
 MX,MY,MXY= -0.29071       -0.55614E-01  0.33199        NX,NY= -0.47793E-0   -1.1181        XC,YC,ZC= 0.750      0.219      0.000
 TOP SX,SY,TXY= -3.1191     -0.59293       3.5462       SMX,SMN,TMX=  1.9084      -5.6204        3.7644       A=  35.2 SIGE=  6.7791
 MID SX,SY,TXY=-0.18183E-01 0.28495E-03 0.49373E-02 SMX,SMN,TMX= 0.15221E-02-0.19420E-01 0.10471E-01  A=  14.1 SIGE= 0.20224E-01
 BOT SX,SY,TXY=  3.0827      0.59350      -3.5363       SMX,SMN,TMX=  5.5870      -1.9108        3.7489       A= -54.7 SIGE=  6.7485

 EL=    2  NODES=    2     3   12   11         MAT=  1  AREA= 0.656       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
 MX,MY,MXY=  -1.0348       -0.10172       0.59049       NX,NY=  0.12523       -1.5016       XC,YC,ZC=  2.25      0.219      0.000
 TOP SX,SY,TXY= -11.129      -1.0851       6.3155       SMX,SMN,TMX=  1.9618     -14.176         8.0687       A=  25.8 SIGE=  15.251
 MID SX,SY,TXY=-0.90668E-01-0.14470E-03 0.16989E-01 SMX,SMN,TMX= 0.29385E-02-0.93752E-01 0.48345E-01  A=  10.3 SIGE= 0.95255E-01
 BOT SX,SY,TXY=  10.947       1.0848      -6.2815       SMX,SMN,TMX=  14.002      -1.9698        7.9859       A= -64.1 SIGE=  15.084

 EL=    3  NODES=    3     4   13   12         MAT=  1  AREA= 0.656       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
 MX,MY,MXY=  -2.0338       -0.19688       0.92237       NX,NY=  0.13751       -1.7165       XC,YC,ZC=  3.75      0.219      0.000
 TOP SX,SY,TXY= -21.875      -2.1000       9.8502       SMX,SMN,TMX=  1.9691     -25.945        13.957       A=  22.4 SIGE=  26.983
 MID SX,SY,TXY=-0.18151       0.59610E-04 0.11600E-01 SMX,SMN,TMX= 0.79768E-03-0.18225      0.91525E-01  A=   3.6 SIGE= 0.18265
 BOT SX,SY,TXY=  21.512       2.1001      -9.8270       SMX,SMN,TMX=  25.619      -2.0060        13.812       A= -67.3 SIGE=  26.678

 EL=    4  NODES=    4     5   14   13         MAT=  1  AREA= 0.656       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
 MX,MY,MXY=  -1.9346       -0.18889       1.2082        NX,NY=  0.13855       -1.2192       XC,YC,ZC=  5.25      0.219      0.000
 TOP SX,SY,TXY= -20.826      -2.0161       12.879       SMX,SMN,TMX=  4.5266     -27.369        15.948       A=  26.9 SIGE=  29.890
 MID SX,SY,TXY=-0.19024     -0.12530E-02-0.86643E-02 SMX,SMN,TMX=-0.85667E-03-0.19064      0.94892E-01  A=  -2.6 SIGE= 0.19021
 BOT SX,SY,TXY=  20.446       2.0136     -12.897       SMX,SMN,TMX=  27.081      -4.6215        15.851       A= -62.8 SIGE=  29.663

 EL=    5  NODES=    5     6   15   14         MAT=  1  AREA= 0.656       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
 MX,MY,MXY= -0.54554        0.39184E-01   1.3070        NX,NY=  0.20338       -0.39702      XC,YC,ZC=  6.75      0.219      0.000
 TOP SX,SY,TXY= -5.9434       0.42285      13.930       SMX,SMN,TMX=  11.529     -17.050         14.289       A=  38.6 SIGE=  24.903
 MID SX,SY,TXY=-0.12427       0.48961E-02-0.11099E-01 SMX,SMN,TMX= 0.58429E-02-0.12521      0.65529E-01  A=  -4.9 SIGE= 0.12824
 BOT SX,SY,TXY=  5.6949      -0.41306     -13.953       SMX,SMN,TMX=  16.924     -11.642         14.283       A= -51.2 SIGE=  24.879

 EL=    6  NODES=    6     7   16   15         MAT=  1  AREA= 0.219       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
 MX,MY,MXY=  0.63205        0.23940       1.1831        NX,NY=   1.4219        0.37675E-01  XC,YC,ZC=  7.75      0.219      0.000
 TOP SX,SY,TXY=  6.6782       2.5660      12.613       SMX,SMN,TMX=  17.402      -8.1578        12.780       A=  49.6 SIGE=  22.613
 MID SX,SY,TXY=-0.63645E-01 0.12413E-01-0.66133E-02 SMX,SMN,TMX= 0.12984E-01-0.64216E-01 0.38600E-01  A=  -4.9 SIGE= 0.71597E-01
 BOT SX,SY,TXY= -6.8055      -2.5412     -12.627       SMX,SMN,TMX=  8.1320     -17.479         12.805       A= -40.2 SIGE=  22.667

 EL=    7  NODES=    7     8   17   16         MAT=  1  AREA= 0.219       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
 MX,MY,MXY=  0.71636        0.27849       0.88051       NX,NY=  0.96531        0.68709      XC,YC,ZC=  8.25      0.219      0.000
 TOP SX,SY,TXY=  7.6041       2.9814       9.3855       SMX,SMN,TMX=  14.959      -4.3732        9.6659       A=  51.9 SIGE=  17.559
 MID SX,SY,TXY=-0.37070E-01 0.10852E-01-0.66370E-02 SMX,SMN,TMX= 0.11754E-01-0.37973E-01 0.24863E-01  A=  -7.7 SIGE= 0.45016E-01
 BOT SX,SY,TXY= -7.6782      -2.9597      -9.3987       SMX,SMN,TMX=  4.3714     -15.009         9.6903       A= -38.0 SIGE=  17.607

 EL=    8  NODES=    8     9   18   17         MAT=  1  AREA= 0.219       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
 MX,MY,MXY=  0.31684        0.31764       0.61039       NX,NY= -0.71607        1.3144       XC,YC,ZC=  8.75      0.219      0.000
 TOP SX,SY,TXY=  3.3669       3.4063       6.5082       SMX,SMN,TMX=  9.8948      -3.1217        6.5083       A=  44.9 SIGE=  11.770
 MID SX,SY,TXY=-0.12725E-01 0.18063E-01-0.25618E-02 SMX,SMN,TMX= 0.18274E-01-0.12937E-01 0.15606E-01  A=  -4.7 SIGE= 0.27161E-01
 BOT SX,SY,TXY= -3.3923      -3.3701      -6.5134       SMX,SMN,TMX=  3.1321      -9.8946        6.5134       A= -45.0 SIGE=  11.777

 EL=    9  NODES=    1    82  MAT=  2  TEMPS=      0.0       0.0  FORC= 0.00000          SIG= 0.00000          EP= 0.000000  STAT=  2  CABLE  10

 EL=   10  NODES=    2    83  MAT=  2  TEMPS=      0.0       0.0  FORC= 0.00000          SIG= 0.00000          EP= 0.000000  STAT=  2  CABLE  10

 EL=   11  NODES=    3    84  MAT=  2  TEMPS=      0.0       0.0  FORC= 0.00000          SIG= 0.00000          EP= 0.000000  STAT=  2  CABLE  10

 EL=   12  NODES=    4    85  MAT=  2  TEMPS=      0.0       0.0  FORC= 0.00000          SIG= 0.00000          EP= 0.000000  STAT=  2  CABLE  10

 EL=   13  NODES=    5    86  MAT=  2  TEMPS=      0.0       0.0  FORC=-0.89742E-01   SIG=-0.27354          EP=-0.000492  STAT=  1  CABLE  10

                                                                                                                   STAT=  1  CABLE  10
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EL=  15  NODES=   7   88  MAT=  2  TEMPS=     0.0     0.0  FORC=-0.31737       SIG= -2.9010      EP=-0.005220  STAT=  1  CABLE  10

EL=  16  NODES=   8   89  MAT=  2  TEMPS=     0.0     0.0  FORC=-0.39533       SIG= -3.6136      EP=-0.006503  STAT=  1  CABLE  10

EL=  17  NODES=   9   90  MAT=  2  TEMPS=     0.0     0.0  FORC=-0.24134       SIG= -4.4129      EP=-0.007941  STAT=  1  CABLE  10

EL=   18  NODES=  10   11   20   19       MAT=  1  AREA= 0.656       TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY= -0.27771        -0.21132        0.35104       NX,NY=  0.23404E-01 -0.95383      XC,YC,ZC= 0.750      0.656      0.000
TOP SX,SY,TXY= -2.9847       -2.2607        3.7617       SMX,SMN,TMX=  1.1564       -6.4018        3.7791       A=  42.3 SIGE=  7.0515
MID SX,SY,TXY=-0.22481E-01-0.66101E-02 0.17314E-01 SMX,SMN,TMX= 0.45007E-02-0.33592E-01 0.19046E-01  A=  32.7 SIGE= 0.36054E-01
BOT SX,SY,TXY=  2.9397        2.2475       -3.7271       SMX,SMN,TMX=  6.3368       -1.1495        3.7432       A= -47.7 SIGE=  6.9829

EL=   19  NODES=  11   12   21   20       MAT=  1  AREA= 0.656       TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY= -0.96040        -0.30966        0.63808       NX,NY= -0.40872E-01  -1.6615      XC,YC,ZC=  2.25      0.656      0.000
TOP SX,SY,TXY= -10.325       -3.3066        6.8486       SMX,SMN,TMX= 0.87955       -14.511        7.6953       A=  31.4 SIGE=  14.970
MID SX,SY,TXY=-0.80559E-01-0.35797E-02 0.42427E-01 SMX,SMN,TMX= 0.15215E-01-0.99354E-01 0.57285E-01  A=  23.9 SIGE= 0.10777
BOT SX,SY,TXY=  10.164        3.2995       -6.7638       SMX,SMN,TMX=  14.316       -0.85313        7.5847       A= -58.5 SIGE=  14.761

EL=   20  NODES=  12   13   22   21       MAT=  1  AREA= 0.656       TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY=  -2.0028        -0.47244        0.96103       NX,NY=  0.77283E-01  -1.8690      XC,YC,ZC=  3.75      0.656      0.000
TOP SX,SY,TXY= -21.500       -5.0292        10.279       SMX,SMN,TMX=-0.93673E-01 -26.435        13.171       A=  25.6 SIGE=  26.389
MID SX,SY,TXY=-0.13594        0.10121E-01 0.27680E-01 SMX,SMN,TMX= 0.15191E-01-0.14101        0.78101E-01  A=  10.4 SIGE= 0.14919
BOT SX,SY,TXY=  21.228        5.0495       -10.223       SMX,SMN,TMX=  26.175       0.10214        13.036       A= -64.2 SIGE=  26.124

EL=   21  NODES=  13   14   23   22       MAT=  1  AREA= 0.656       TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY=  -1.9363        -0.42861        1.1898        NX,NY= -0.12863       -1.5202      XC,YC,ZC=  5.25      0.656      0.000
TOP SX,SY,TXY= -20.791       -4.5664        12.670       SMX,SMN,TMX=  2.3656       -27.723        15.044       A=  28.7 SIGE=  28.978
MID SX,SY,TXY=-0.13713        0.54758E-02-0.21810E-01 SMX,SMN,TMX= 0.87370E-02-0.14039        0.74563E-01  A=  -8.5 SIGE= 0.14496
BOT SX,SY,TXY=  20.517        4.5773       -12.713       SMX,SMN,TMX=  27.552       -2.4578        15.005       A= -61.0 SIGE=  28.859

EL=   22  NODES=  14   15   24   23       MAT=  1  AREA= 0.656       TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY= -0.56503        -0.74024E-01   1.2969        NX,NY=  0.10786       -0.92712      XC,YC,ZC=  6.75      0.656      0.000
TOP SX,SY,TXY= -6.1176       -0.78260       13.804       SMX,SMN,TMX=  10.609       -17.509        14.059       A=  39.5 SIGE=  24.594
MID SX,SY,TXY=-0.90611E-01 0.69944E-02-0.29745E-01 SMX,SMN,TMX= 0.15345E-01-0.98961E-01 0.57153E-01  A= -15.7 SIGE= 0.10746
BOT SX,SY,TXY=  5.9364        0.79659       -13.863       SMX,SMN,TMX=  17.466       -10.733        14.099       A= -50.3 SIGE=  24.652

EL=   23  NODES=  15   16   25   24       MAT=  1  AREA= 0.219       TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY=  0.35487         0.28575        1.2189        NX,NY=  0.77689       -0.64727      XC,YC,ZC=  7.75      0.656      0.000
TOP SX,SY,TXY=  3.7349        3.0708        12.977       SMX,SMN,TMX=  16.384       -9.5784        12.981       A=  45.7 SIGE=  22.740
MID SX,SY,TXY=-0.50422E-01 0.22803E-01-0.24651E-01 SMX,SMN,TMX= 0.30328E-01-0.57947E-01 0.44138E-01  A= -17.0 SIGE= 0.77686E-01
BOT SX,SY,TXY= -3.8357       -3.0252       -13.026       SMX,SMN,TMX=  4.6022       -16.463        13.033       A= -44.1 SIGE=  22.832

EL=   24  NODES=  16   17   26   25       MAT=  1  AREA= 0.219       TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY=  0.50767         0.52125        1.0092        NX,NY=  0.43589       -0.16369      XC,YC,ZC=  8.25      0.656      0.000
TOP SX,SY,TXY=  5.3872        5.5870        10.744       SMX,SMN,TMX=  16.232       -5.2576        10.745       A=  44.7 SIGE=  19.402
MID SX,SY,TXY=-0.27968E-01 0.26978E-01-0.20861E-01 SMX,SMN,TMX= 0.34000E-01-0.34991E-01 0.34495E-01  A= -18.6 SIGE= 0.59750E-01
BOT SX,SY,TXY= -5.4431       -5.5330       -10.786       SMX,SMN,TMX=  5.2979       -16.274        10.786       A= -45.1 SIGE=  19.471

EL=   25  NODES=  17   18   27   26       MAT=  1  AREA= 0.219       TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY=  0.28472         0.76082        0.83628       NX,NY= -0.19048       -0.56778      XC,YC,ZC=  8.75      0.656      0.000
TOP SX,SY,TXY=  3.0289        8.1562        8.9095       SMX,SMN,TMX=  14.863       -3.6784        9.2710       A=  37.0 SIGE=  17.004
MID SX,SY,TXY=-0.81485E-02 0.40740E-01-0.10896E-01 SMX,SMN,TMX= 0.43059E-01-0.10467E-01 0.26763E-01  A= -12.0 SIGE= 0.49136E-01
BOT SX,SY,TXY= -3.0452       -8.0747       -8.9312       SMX,SMN,TMX=  3.7186       -14.838        9.2785       A= -52.9 SIGE=  17.005

EL=   26  NODES=  10   91  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000       SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=   27  NODES=  11   92  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000       SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=   28  NODES=  12   93  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000       SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=   29  NODES=  13   94  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000       SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=   30  NODES=  14   95  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000       SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

                                                                                                          STAT=  1  CABLE  10
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EL=  32 NODES=  16  97 MAT= 2 TEMPS=   0.0   0.0 FORC=-0.44600      SIG= -2.0393      EP=-0.003670  STAT= 1  CABLE 10
EL=  33 NODES=  17  98 MAT= 2 TEMPS=   0.0   0.0 FORC=-0.63187      SIG= -2.8892      EP=-0.005199  STAT= 1  CABLE 10
EL=  34 NODES=  18  99 MAT= 2 TEMPS=   0.0   0.0 FORC=-0.41383      SIG= -3.7827      EP=-0.006807  STAT= 1  CABLE 10
EL=  35 NODES=  19  20  29  28      MAT=  1 AREA= 0.655      TTOP,TBOT=   0.0     0.0  PRESS= 0.0000       QUAD SHELL 63
MX,MY,MXY= -0.24713     -0.29938       0.36559     NX,NY= -0.20962E-02 -0.64567      XC,YC,ZC= 0.750     1.09     0.000
TOP SX,SY,TXY= -2.6601      -3.2130     3.9305     SMX,SMN,TMX=  1.0036      -6.8767       3.9402      A=  47.0 SIGE=  7.4295
MID SX,SY,TXY=-0.24015E-01-0.19587E-01 0.30798E-01 SMX,SMN,TMX= 0.90760E-02-0.52678E-01 0.30877E-01  A=  42.9 SIGE= 0.57753E-01
BOT SX,SY,TXY=  2.6120       3.1738     -3.8689     SMX,SMN,TMX=  6.7720      -0.98612      3.8790      A= -42.9 SIGE=  7.3151
EL=  36 NODES=  20  21  30  29      MAT=  1 AREA= 0.655      TTOP,TBOT=   0.0     0.0  PRESS= 0.0000       QUAD SHELL 63
MX,MY,MXY= -0.87358     -0.53983       0.64160     NX,NY= -0.12950      -1.6792       XC,YC,ZC=  2.25     1.09     0.000
TOP SX,SY,TXY= -9.3852      -5.7643     6.9023     SMX,SMN,TMX=-0.43894      -14.711       7.1358      A=  37.7 SIGE=  14.496
MID SX,SY,TXY=-0.66989E-01-0.61340E-02 0.58532E-01 SMX,SMN,TMX= 0.29407E-01-0.10253      0.65969E-01  A=  31.3 SIGE= 0.11997
BOT SX,SY,TXY=  9.2512       5.7520     -6.7853     SMX,SMN,TMX=  14.509       0.49443      7.0872      A= -52.2 SIGE=  14.268
EL=  37 NODES=  21  22  31  30      MAT=  1 AREA= 0.655      TTOP,TBOT=   0.0     0.0  PRESS= 0.0000       QUAD SHELL 63
MX,MY,MXY=  -2.0110     -0.83139       1.0007      NX,NY=  0.37209E-01  -2.0972      XC,YC,ZC=  3.75     1.09     0.000
TOP SX,SY,TXY= -21.554      -8.8430     10.712     SMX,SMN,TMX= -2.7428      -27.654       12.455      A=  29.7 SIGE=  26.390
MID SX,SY,TXY=-0.10324      0.25165E-01 0.37714E-01 SMX,SMN,TMX= 0.35423E-01-0.11350      0.74461E-01  A=  15.2 SIGE= 0.13475
BOT SX,SY,TXY=  21.347       8.8933     -10.637     SMX,SMN,TMX=  27.446       2.7[illegible]9       12.325      A= -60.2 SIGE=  26.160
EL=  38 NODES=  22  23  32  31      MAT=  1 AREA= 0.655      TTOP,TBOT=   0.0     0.0  PRESS= 0.0000       QUAD SHELL 63
MX,MY,MXY=  -1.9791     -0.77517       1.1628      NX,NY=  0.41165E-01  -1.8756      XC,YC,ZC=  5.25     1.09     0.000
TOP SX,SY,TXY= -21.205      -8.2507     12.370     SMX,SMN,TMX=-0.76500      -28.691       13.[illegible]3      A=  31.2 SIGE=  28.316
MID SX,SY,TXY=-0.94893E-01 0.17756E-01-0.33801E-01 SMX,SMN,TMX= 0.27120E-01-0.10426      0.65688E-01  A= -15.5 SIGE= 0.12014
BOT SX,SY,TXY=  21.015       8.2862     -12.437     SMX,SMN,TMX=  28.622       0.67961      13.971      A= -58.6 SIGE=  28.288
EL=  39 NODES=  23  24  33  32      MAT=  1 AREA= 0.655      TTOP,TBOT=   0.0     0.0  PRESS= 0.0000       QUAD SHELL 63
MX,MY,MXY= -0.58335     -0.25830       1.3297      NX,NY=  0.27175      -1.3073       XC,YC,ZC=  6.75     1.09     0.000
TOP SX,SY,TXY= -6.2804      -2.7497     14.141     SMX,SMN,TMX=  9.7360      -18.766       14.251      A=  41.4 SIGE=  25.093
MID SX,SY,TXY=-0.57965E-01 0.55883E-02-0.41869E-01 SMX,SMN,TMX= 0.26374E-01-0.78750E-01 0.52562E-01  A= -26.4 SIGE= 0.94732E-01
BOT SX,SY,TXY=  6.1644       2.7608     -14.225     SMX,SMN,TMX=  18.789      -9.8638       14.326      A= -48.4 SIGE=  25.212
EL=  40 NODES=  24  25  34  33      MAT=  1 AREA= 0.219      TTOP,TBOT=   0.0     0.0  PRESS= 0.0000       QUAD SHELL 63
MX,MY,MXY=  0.13237      0.22130       1.3277      NX,NY=   1.0337      -0.76251      XC,YC,ZC=  7.75     1.09     0.000
TOP SX,SY,TXY=  1.3759       2.3861     14.122     SMX,SMN,TMX=  16.012      -12.250       14.131      A=  44.0 SIGE=  24.548
MID SX,SY,TXY=-0.36068E-01 0.25515E-01-0.40130E-01 SMX,SMN,TMX= 0.45306E-01-0.55859E-01 0.50583E-01  A= -26.3 SIGE= 0.87770E-01
BOT SX,SY,TXY= -1.4480      -2.3351     -14.202     SMX,SMN,TMX=  12.318      -16.101       14.209      A= -45.9 SIGE=  24.683
EL=  41 NODES=  25  26  35  34      MAT=  1 AREA= 0.219      TTOP,TBOT=   0.0     0.0  PRESS= 0.0000       QUAD SHELL 63
MX,MY,MXY=  0.31630      0.51096       1.1892      NX,NY=  0.81668      -0.53244      XC,YC,ZC=  8.25     1.09     0.000
TOP SX,SY,TXY=  3.3565       5.4840     12.648     SMX,SMN,TMX=  17.113      -8.2728       12.693      A=  42.6 SIGE=  22.425
MID SX,SY,TXY=-0.17348E-01 0.33853E-01-0.35977E-01 SMX,SMN,TMX= 0.52409E-01-0.35903E-01 0.44156E-01  A= -27.3 SIGE= 0.76924E-01
BOT SX,SY,TXY= -3.3912      -5.4163     -12.720     SMX,SMN,TMX=  8.3568      -17.164       12.761      A= -47.3 SIGE=  22.536
EL=  42 NODES=  26  27  36  35      MAT=  1 AREA= 0.218      TTOP,TBOT=   0.0     0.0  PRESS= 0.0000       QUAD SHELL 63
MX,MY,MXY=  0.20485      0.80614       1.0991      NX,NY=  0.15141      -1.4794       XC,YC,ZC=  8.75     1.09     0.000
TOP SX,SY,TXY=  2.1808       8.6463     11.708     SMX,SMN,TMX=  17.559      -6.7323       12.146      A=  37.3 SIGE=  21.723
MID SX,SY,TXY=-0.43069E-02 0.47420E-01-0.16506E-01 SMX,SMN,TMX= 0.52239E-01-0.91253E-02 0.30682E-01  A= -16.3 SIGE= 0.57349E-01
BOT SX,SY,TXY= -2.1894      -8.5514     -11.741     SMX,SMN,TMX=  6.7936      -17.534       12.164      A= -52.6 SIGE=  21.742
EL=  43 NODES=  19 100 MAT= 2 TEMPS=   0.0   0.0 FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE 10
EL=  44 NODES=  20 101 MAT= 2 TEMPS=   0.0   0.0 FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE 10
EL=  45 NODES=  21 102 MAT= 2 TEMPS=   0.0   0.0 FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE 10
EL=  46 NODES=  22 103 MAT= 2 TEMPS=   0.0   0.0 FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE 10
EL=  47 NODES=  23 104 MAT= 2 TEMPS=   0.0   0.0 FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE 10
                                                                                     [illegible]  CABLE 10
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                                                                     SIG= -1.1937        EP=-0.002148  STAT=  1  CABLE  10
EL=   49  NODES=   25  106  MAT=  2  TEMPS=     0.0     0.0  FORC=-0.26106
                                                                     SIG= -2.1994        EP=-0.003958  STAT=  1  CABLE  10
EL=   50  NODES=   26  107  MAT=  2  TEMPS=     0.0     0.0  FORC=-0.48102
                                                                     SIG= -3.2230        EP=-0.005800  STAT=  1  CABLE  10
EL=   51  NODES=   27  108  MAT=  2  TEMPS=     0.0     0.0  FORC=-0.35260
                                       AREA= 0.657        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000              QUAD SHELL  63
EL=   52  NODES=   28   29   38   37        MAT=  1
MX,MY,MXY= -0.21393        -0.34209        0.36764        NX,NY= -0.25752E-01 -0.34374       XC,YC,ZC= 0.750        1.53      0.000
TOP SX,SY,TXY= -2.3034       -3.6857        3.9662        SMX,SMN,TMX=  1.0314       -7.0205        4.0259       A=  49.9 SIGE=  7.5889
MID SX,SY,TXY=-0.21463E-01-0.36806E-01 0.44656E-01 SMX,SMN,TMX= 0.16175E-01-0.78445E-01 0.45310E-01  A=  49.9 SIGE= 0.83713E-01
BOT SX,SY,TXY=  2.2605        3.6121       -3.8768        SMX,SMN,TMX=  6.8716       -0.99903       3.9353       A= -40.1 SIGE=  7.4217
                                       AREA= 0.657        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000              QUAD SHELL  63
EL=   53  NODES=   29   30   39   38        MAT=  1
MX,MY,MXY= -0.75709        -0.63173        0.59410        NX,NY= -0.17414       -1.0986       XC,YC,ZC=  2.25        1.53      0.000
TOP SX,SY,TXY= -8.1388       -6.7470        6.4048        SMX,SMN,TMX= -1.0004       -13.885        6.4425       A=  41.9 SIGE=  13.413
MID SX,SY,TXY=-0.63176E-01-0.84974E-02 0.67766E-01 SMX,SMN,TMX= 0.37237E-01-0.10891        0.73073E-01  A=  34.0 SIGE= 0.13154
BOT SX,SY,TXY=  8.0124        6.7300       -6.2693        SMX,SMN,TMX=  13.673        1.0692        6.3020       A= -47.9 SIGE=  13.171
                                       AREA= 0.657        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000              QUAD SHELL  63
EL=   54  NODES=   30   31   40   39        MAT=  1
MX,MY,MXY=  -2.0571        -1.3635        0.99056        NX,NY= -0.69090       -2.9584       XC,YC,ZC=  3.75        1.53      0.000
TOP SX,SY,TXY= -22.012       -14.498        10.608        SMX,SMN,TMX= -7.0011       -29.509        11.254       A=  35.3 SIGE=  26.706
MID SX,SY,TXY=-0.69118E-01 0.45497E-01 0.42296E-01 SMX,SMN,TMX= 0.59415E-01-0.83036E-01 0.71226E-01  A=  18.2 SIGE= 0.12393
BOT SX,SY,TXY=  21.873        14.589       -10.524        SMX,SMN,TMX=  29.367        7.0952        11.136       A= -54.5 SIGE=  26.541
                                       AREA= 0.657        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000              QUAD SHELL  63
EL=   55  NODES=   31   32   41   40        MAT=  1
MX,MY,MXY=  -2.0628        -1.3209        1.1944        NX,NY=  0.70686       -2.8470       XC,YC,ZC=  5.25        1.53      0.000
TOP SX,SY,TXY= -22.064       -14.057        12.696        SMX,SMN,TMX= -4.7477       -31.373        13.312       A=  36.2 SIGE=  29.289
MID SX,SY,TXY=-0.60126E-01 0.32686E-01-0.44367E-01 SMX,SMN,TMX= 0.50483E-01-0.77922E-01 0.64202E-01  A= -21.9 SIGE= 0.11205
BOT SX,SY,TXY=  21.943        14.122       -12.785        SMX,SMN,TMX=  31.402        4.6631        13.370       A= -53.5 SIGE=  29.350
                                       AREA= 0.657        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000              QUAD SHELL  63
EL=   56  NODES=   32   33   42   41        MAT=  1
MX,MY,MXY= -0.58142        -0.39770        1.4227        NX,NY=  0.29398       -1.0148       XC,YC,ZC=  6.75        1.53      0.000
TOP SX,SY,TXY= -6.2328       -4.2399        15.125        SMX,SMN,TMX=  9.9213       -20.394        15.158       A=  43.1 SIGE=  26.771
MID SX,SY,TXY=-0.30973E-01 0.22246E-02-0.50468E-01 SMX,SMN,TMX= 0.38753E-01-0.67502E-01 0.53127E-01  A= -35.9 SIGE= 0.93135E-01
BOT SX,SY,TXY=  6.1708        4.2444       -15.226        SMX,SMN,TMX=  20.464       -10.049        15.256       A= -46.8 SIGE=  26.933
                                       AREA= 0.219        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000              QUAD SHELL  63
EL=   57  NODES=   33   34   43   42        MAT=  1
MX,MY,MXY= -0.21902E-01  0.70073E-01   1.4526        NX,NY=  0.82486       -0.82637       XC,YC,ZC=  7.75        1.53      0.000
TOP SX,SY,TXY=-0.24469       0.77692        15.447        SMX,SMN,TMX=  15.722       -15.190        15.456       A=  44.1 SIGE=  26.772
MID SX,SY,TXY=-0.11064E-01 0.29472E-01-0.47040E-01 SMX,SMN,TMX= 0.60424E-01-0.42016E-01 0.51220E-01  A= -33.3 SIGE= 0.89192E-01
BOT SX,SY,TXY= 0.22256       -0.71798       -15.542        SMX,SMN,TMX=  15.301       -15.796        15.549       A= -45.9 SIGE=  26.932
                                       AREA= 0.219        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000              QUAD SHELL  63
EL=   58  NODES=   34   35   44   43        MAT=  1
MX,MY,MXY=  0.14704         0.35487        1.3786        NX,NY=  0.83212       -0.67247       XC,YC,ZC=  8.25        1.53      0.000
TOP SX,SY,TXY=  1.5559        3.8154        14.657        SMX,SMN,TMX=  17.386       -12.015        14.701       A=  42.8 SIGE=  25.604
MID SX,SY,TXY=-0.12445E-01 0.30181E-01-0.48009E-01 SMX,SMN,TMX= 0.61396E-01-0.43659E-01 0.52527E-01  A= -33.0 SIGE= 0.91411E-01
BOT SX,SY,TXY= -1.5808       -3.7551       -14.753        SMX,SMN,TMX=  12.125       -17.461        14.793       A= -47.1 SIGE=  25.761
                                       AREA= 0.219        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000              QUAD SHELL  63
EL=   59  NODES=   35   36   45   44        MAT=  1
MX,MY,MXY=  0.17360         0.67444        1.3456        NX,NY=  0.25275       -1.8095       XC,YC,ZC=  8.75        1.53      0.000
TOP SX,SY,TXY=  1.8489        7.2353        14.333        SMX,SMN,TMX=  19.126       -10.042        14.584       A=  39.7 SIGE=  25.665
MID SX,SY,TXY=-0.28220E-02 0.41289E-01-0.19821E-01 SMX,SMN,TMX= 0.48887E-01-0.10420E-01 0.29653E-01  A= -21.0 SIGE= 0.54844E-01
BOT SX,SY,TXY= -1.8546       -7.1528       -14.373        SMX,SMN,TMX=  10.111       -19.118        14.615       A= -50.2 SIGE=  25.711
                                                                     SIG= 0.00000        EP= 0.000000  STAT=  2  CABLE  10
EL=   60  NODES=   32  113  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000
                                                                     SIG= 0.00000        EP= 0.000000  STAT=  2  CABLE  10
EL=   61  NODES=   33  114  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000
                                                                     SIG=-0.37713        EP=-0.000679  STAT=  1  CABLE  10
EL=   62  NODES=   34  115  MAT=  2  TEMPS=     0.0     0.0  FORC=-0.82478E-01
                                                                     SIG= -1.5667        EP=-0.002819  STAT=  1  CABLE  10
EL=   63  NODES=   35  116  MAT=  2  TEMPS=     0.0     0.0  FORC=-0.34264
                                                                     SIG= -2.7615        EP=-0.004969  STAT=  1  CABLE  10
EL=   64  NODES=   36  117  MAT=  2  TEMPS=     0.0     0.0  FORC=-0.30210
                                                                                                         QUAD SHELL  63
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MX,MY,MXY= -0.16760      -0.31883       0.34765      NX,NY= -0.[illegible]E-01  0.28253      XC,YC,ZC= 0.750
TOP SX,SY,TXY= -1.8068       -3.4854        3.7744       SMX,SMN,TMX=  1.2204       -6.5127        3.8666      A=  51.3 SIGE=  7.2009
MID SX,SY,TXY=-0.19047E-01-0.84560E-01  0.66076E-01  SMX,SMN,TMX= 0.21946E-01-0.12555        0.73750E-01  A=  58.2 SIGE= 0.13784
BOT SX,SY,TXY=  1.7687        3.3163       -3.6422       SMX,SMN,TMX=  6.2660       -1.1810        3.7235      A= -39.0 SIGE=  6.9324

EL=   66  NODES=   38   39   48   47        MAT=  1   AREA=  1.59       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.61139      -0.59982       0.47339      NX,NY= -0.33630        0.54121     XC,YC,ZC=  2.25       2.28      0.000
TOP SX,SY,TXY= -6.5840       -6.3793        5.1363       SMX,SMN,TMX= -1.3443       -11.619        5.1374      A=  44.4 SIGE=  11.009
MID SX,SY,TXY=-0.62539E-01 0.18878E-01  0.86864E-01  SMX,SMN,TMX= 0.74099E-01-0.11776        0.95930E-01  A=  32.4 SIGE= 0.16758
BOT SX,SY,TXY=  6.4589        6.4170       -4.9626       SMX,SMN,TMX=  11.401        1.4753        4.9627      A= -45.1 SIGE=  10.739

EL=   67  NODES=   39   40   49   48        MAT=  1   AREA=  1.59       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY=  -1.6473      -1.1497        0.83412      NX,NY= -0.52444        1.4852      XC,YC,ZC=  3.75       2.28      0.000
TOP SX,SY,TXY= -17.622       -12.230        8.9141       SMX,SMN,TMX= -5.6128       -24.239        9.3129      A=  36.6 SIGE=  21.977
MID SX,SY,TXY=-0.50606E-01 0.34087E-01  0.16894E-01  SMX,SMN,TMX= 0.37332E-01-0.53851E-01  0.45592E-01  A=  10.9 SIGE= 0.79398E-01
BOT SX,SY,TXY=  17.521        12.298       -8.8803       SMX,SMN,TMX=  24.166        5.6529        9.2564      A= -53.2 SIGE=  21.894

EL=   68  NODES=   40   41   50   49        MAT=  1   AREA=  1.59       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY=  -1.7289      -1.1696        1.3760       NX,NY=  0.41699        1.2654      XC,YC,ZC=  5.25       2.28      0.000
TOP SX,SY,TXY= -18.450       -12.481        14.601       SMX,SMN,TMX=-0.56298       -30.368        14.903      A=  39.2 SIGE=  30.091
MID SX,SY,TXY=-0.81028E-02-0.53039E-02-0.76881E-01  SMX,SMN,TMX= 0.70190E-01-0.83597E-01  0.76894E-01  A= -44.5 SIGE= 0.13335
BOT SX,SY,TXY=  18.434        12.471       -14.755       SMX,SMN,TMX=  30.505        0.39945        15.053      A= -50.7 SIGE=  30.307

EL=   69  NODES=   41   42   51   50        MAT=  1   AREA=  1.59       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.64009      -0.57037       1.5782       NX,NY=  0.36058        0.81002E-01  XC,YC,ZC=  6.75       2.28      0.000
TOP SX,SY,TXY= -6.7989       -6.0759        16.781       SMX,SMN,TMX=  10.347       -23.222        16.785      A=  44.4 SIGE=  29.776
MID SX,SY,TXY= 0.28715E-01 0.80410E-02-0.53627E-01  SMX,SMN,TMX= 0.72993E-01-0.36237E-01  0.54615E-01  A= -50.5 SIGE= 0.96364E-01
BOT SX,SY,TXY=  6.8563        6.0920       -16.888       SMX,SMN,TMX=  23.367       -10.418        16.892      A= -45.6 SIGE=  29.966

EL=   70  NODES=   42   43   52   51        MAT=  1   AREA= 0.531       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.18740      -0.24945       1.5711       NX,NY=  0.58590       -0.33523      XC,YC,ZC=  7.75       2.28      0.000
TOP SX,SY,TXY= -1.9812       -2.6554        16.706       SMX,SMN,TMX=  14.392       -19.028        16.710      A=  45.6 SIGE=  29.035
MID SX,SY,TXY= 0.17682E-01 0.53858E-02-0.51691E-01  SMX,SMN,TMX= 0.63589E-01-0.40522E-01  0.52055E-01  A= -48.4 SIGE= 0.90897E-01
BOT SX,SY,TXY=  2.0166        2.6662       -16.810       SMX,SMN,TMX=  19.154       -14.472        16.813      A= -44.4 SIGE=  29.215

EL=   71  NODES=   43   44   53   52        MAT=  1   AREA= 0.531       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.46328E-01 -0.11344        1.5586       NX,NY=  0.47611       -0.13010      XC,YC,ZC=  8.25       2.28      0.000
TOP SX,SY,TXY=-0.47536       -1.1853        16.595       SMX,SMN,TMX=  15.769       -17.430        16.599      A=  45.6 SIGE=  28.763
MID SX,SY,TXY= 0.18806E-01 0.24652E-01-0.29808E-01  SMX,SMN,TMX= 0.51680E-01-0.82225E-02  0.29951E-01  A= -42.2 SIGE= 0.56243E-01
BOT SX,SY,TXY= 0.51297        1.2346       -16.655       SMX,SMN,TMX=  17.533       -15.785        16.659      A= -44.4 SIGE=  28.867

EL=   72  NODES=   44   45   54   53        MAT=  1   AREA= 0.531       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY=  0.36583E-01  0.91272E-02   1.5524       NX,NY=  0.15843       -0.61864      XC,YC,ZC=  8.75       2.28      0.000
TOP SX,SY,TXY= 0.39089        0.12012        16.533       SMX,SMN,TMX=  16.789       -16.278        16.533      A=  45.2 SIGE=  28.638
MID SX,SY,TXY= 0.67731E-03 0.22761E-01-0.25933E-01  SMX,SMN,TMX= 0.39904E-01-0.16467E-01  0.28186E-01  A= -33.5 SIGE= 0.50206E-01
BOT SX,SY,TXY=-0.38954       -0.74596E-01 -16.585       SMX,SMN,TMX=  16.353       -16.818        16.585      A= -44.7 SIGE=  28.728

EL=   73  NODES=   41  122   MAT=  2   TEMPS=     0.0      0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2  CABLE  10

EL=   74  NODES=   42  123   MAT=  2   TEMPS=     0.0      0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2  CABLE  10

EL=   75  NODES=   43  124   MAT=  2   TEMPS=     0.0      0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2  CABLE  10

EL=   76  NODES=   44  125   MAT=  2   TEMPS=     0.0      0.0  FORC=-0.36970        SIG=-0.98586        EP=-0.001774  STAT=  1  CABLE  10

EL=   77  NODES=   45  126   MAT=  2   TEMPS=     0.0      0.0  FORC=-0.44827        SIG= -2.3908        EP=-0.004302  STAT=  1  CABLE  10

EL=   78  NODES=   46   47   56   55        MAT=  1   AREA=  1.59       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.84493E-01 -0.90723E-01   0.31886       NX,NY= -0.80191E-01  0.67985      XC,YC,ZC= 0.750       3.34      0.000
TOP SX,SY,TXY=-0.93140       -1.1381        3.5009       SMX,SMN,TMX=  2.4677       -4.5372        3.5024      A=  45.8 SIGE=  6.1540
MID SX,SY,TXY=-0.30141E-01-0.17036        0.99767E-01  SMX,SMN,TMX= 0.21686E-01-0.22219         0.12194      A=  62.5 SIGE= 0.23379
BOT SX,SY,TXY= 0.87112        0.79734       -3.3014       SMX,SMN,TMX=  4.1358       -2.4673        3.3016      A= -45.3 SIGE=  5.7790

EL=   79  NODES=   47   48   57   56        MAT=  1   AREA=  1.59       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
[illegible]                                                               0.P[illegible]      XC,YC,ZC=  2.25       3.34      0.000
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MID SX,SY,TXY=-0.54527E-01 0.66476E-01 0.10308       SMX,SMN,TMX= 0.12500      -0.11343      0.11965      A= 27.7 SIGE= 0.20794
BOT SX,SY,TXY= 3.4463       2.6004     -4.2620       SMX,SMN,TMX= 7.3063       -1.2596       4.2829       A= -47.8 SIGE= 8.0107

EL= 80 NODES= 48 49 58 57          MAT= 1  AREA= 1.59       TTOP,TBOT=  0.0    0.0 PRESS= 0.0000         QUAD SHELL 63
MX,MY,MXY= -0.91497      -0.47500      0.80151       NX,NY= -0.39659       0.96563      XC,YC,ZC= 3.75    3.34     0.000
TOP SX,SY,TXY= -9.7784      -4.9443       8.5144       SMX,SMN,TMX= 1.4895       -16.212       8.8508       A= 37.1 SIGE= 17.006
MID SX,SY,TXY=-0.18779E-01 0.12232    -0.35043E-01 SMX,SMN,TMX= 0.13055    -0.27003E-01 0.78775E-01  A= -13.2 SIGE= 0.14593
BOT SX,SY,TXY= 9.7409       5.1890      -8.5845       SMX,SMN,TMX= 16.346       -1.4161       8.8811       A= -52.4 SIGE= 17.098

EL= 81 NODES= 49 50 59 58          MAT= 1  AREA= 1.59       TTOP,TBOT=  0.0    0.0 PRESS= 0.0000         QUAD SHELL 63
MX,MY,MXY= -1.1443       -0.67618      1.3471        NX,NY= -0.10773E-01 0.59440      XC,YC,ZC= 5.25    3.34     0.000
TOP SX,SY,TXY= -12.111      -7.1988       14.234       SMX,SMN,TMX= 4.7895       -24.099       14.444       A= 40.1 SIGE= 26.817
MID SX,SY,TXY= 0.94996E-01 0.13783E-01-0.13525     SMX,SMN,TMX= 0.19561    -0.86826E-01 0.14122      A= -53.4 SIGE= 0.25057
BOT SX,SY,TXY= 12.301       7.2263      -14.504       SMX,SMN,TMX= 24.488       -4.9612       14.725       A= -50.0 SIGE= 27.309

EL= 82 NODES= 50 51 60 59          MAT= 1  AREA= 1.59       TTOP,TBOT=  0.0    0.0 PRESS= 0.0000         QUAD SHELL 63
MX,MY,MXY= -0.67941      -0.73483      1.5910        NX,NY= 0.25424       0.66489E-01  XC,YC,ZC= 6.75    3.34     0.000
TOP SX,SY,TXY= -7.0887      -7.8955       16.919       SMX,SMN,TMX= 9.4318       -24.416       16.924       A= 45.7 SIGE= 30.255
MID SX,SY,TXY= 0.15836    -0.57375E-01-0.51639E-01 SMX,SMN,TMX= 0.17008    -0.69098E-01 0.11959      A= -77.2 SIGE= 0.21320
BOT SX,SY,TXY= 7.4054       7.7808      -17.022       SMX,SMN,TMX= 24.616       -9.4303       17.023       A= -44.7 SIGE= 30.447

EL= 83 NODES= 51 52 61 60          MAT= 1  AREA= 0.532      TTOP,TBOT=  0.0    0.0 PRESS= 0.0000         QUAD SHELL 63
MX,MY,MXY= -0.37007      -0.74913      1.6029        NX,NY= 0.65258       -0.18580     XC,YC,ZC= 7.75    3.34     0.000
TOP SX,SY,TXY= -3.8266      -7.9755       17.146       SMX,SMN,TMX= 11.370       -23.172       17.271       A= 48.4 SIGE= 30.491
MID SX,SY,TXY= 0.12086     0.15182E-01 0.48517E-01 SMX,SMN,TMX= 0.13976    -0.37136E-02 0.71734E-01  A= 68.7 SIGE= 0.14165
BOT SX,SY,TXY= 4.0683       8.0059      -17.049       SMX,SMN,TMX= 23.199       -11.125       17.162       A= -41.7 SIGE= 30.333

EL= 84 NODES= 52 53 62 61          MAT= 1  AREA= 0.531      TTOP,TBOT=  0.0    0.0 PRESS= 0.0000         QUAD SHELL 63
MX,MY,MXY= -0.19903      -0.73620      1.6190        NX,NY= 0.51897       0.12450E-01  XC,YC,ZC= 8.25    3.34     0.000
TOP SX,SY,TXY= -2.1080      -7.8297       17.269       SMX,SMN,TMX= 12.535       -22.473       17.504       A= 49.7 SIGE= 30.722
MID SX,SY,TXY= 0.15077E-01 0.23081E-01-0.66775E-03 SMX,SMN,TMX= 0.23137E-01 0.15022E-01 0.40575E-02 A= -4.7 SIGE= 0.20332E-01
BOT SX,SY,TXY= 2.1381       7.8759      -17.270       SMX,SMN,TMX= 22.514       -12.500       17.507       A= -40.3 SIGE= 30.733

EL= 85 NODES= 53 54 63 62          MAT= 1  AREA= 0.531      TTOP,TBOT=  0.0    0.0 PRESS= 0.0000         QUAD SHELL 63
MX,MY,MXY= -0.53209E-01 -0.70862      1.6422        NX,NY= 0.42834       -0.60012     XC,YC,ZC= 8.75    3.34     0.000
TOP SX,SY,TXY=-0.54099     -7.5351       17.532       SMX,SMN,TMX= 13.839       -21.915       17.877       A= 50.6 SIGE= 31.227
MID SX,SY,TXY= 0.26576E-01 0.23598E-01 0.15003E-01 SMX,SMN,TMX= 0.40163E-01 0.10010E-01 0.15076E-01 A= 47.8 SIGE= 0.36211E-01
BOT SX,SY,TXY= 0.59414      7.5823      -17.502       SMX,SMN,TMX= 21.936       -13.759       17.847       A= -39.4 SIGE= 31.182

EL= 86 NODES= 50 131 MAT= 2 TEMPS=   0.0    0.0 FORC= 0.00000     SIG= 0.00000      EP= 0.000000 STAT= 2 CABLE 10

EL= 87 NODES= 51 132 MAT= 2 TEMPS=   0.0    0.0 FORC= 0.00000     SIG= 0.00000      EP= 0.000000 STAT= 2 CABLE 10

EL= 88 NODES= 52 133 MAT= 2 TEMPS=   0.0    0.0 FORC= 0.00000     SIG= 0.00000      EP= 0.000000 STAT= 2 CABLE 10

EL= 89 NODES= 53 134 MAT= 2 TEMPS=   0.0    0.0 FORC= 0.00000     SIG= 0.00000      EP= 0.000000 STAT= 2 CABLE 10

EL= 90 NODES= 54 135 MAT= 2 TEMPS=   0.0    0.0 FORC=-0.42831     SIG= -1.6126      EP=-0.002902 STAT= 1 CABLE 10

EL= 91 NODES= 55 56 65 64          MAT= 1  AREA= 1.59       TTOP,TBOT=  0.0    0.0 PRESS= 0.0000         QUAD SHELL 63
MX,MY,MXY= -0.21717E-02 0.32364      0.29706       NX,NY= -0.36059E-01 0.77514      XC,YC,ZC= 0.750   4.41     0.000
TOP SX,SY,TXY=-0.39411E-01 3.1714       3.3102       SMX,SMN,TMX= 5.2449       -2.1130       3.6789       A= 32.1 SIGE= 6.5617
MID SX,SY,TXY=-0.16246E-01-0.28081     0.14152       SMX,SMN,TMX= 0.45189E-01-0.34224      0.19372      A= 66.5 SIGE= 0.36693
BOT SX,SY,TXY= 0.69188E-02 -3.7330      -3.0271       SMX,SMN,TMX= 1.6951       -5.4212       3.5581       A= -60.9 SIGE= 6.4383

EL= 92 NODES= 56 57 66 65          MAT= 1  AREA= 1.59       TTOP,TBOT=  0.0    0.0 PRESS= 0.0000         QUAD SHELL 63
MX,MY,MXY= 0.22390E-01 0.33576      0.36709       NX,NY= -0.30252       1.0537       XC,YC,ZC= 2.25    4.41     0.000
TOP SX,SY,TXY= 0.19910      3.7455       3.9995       SMX,SMN,TMX= 6.3472       -2.4027       4.3749       A= 33.0 SIGE= 7.8301
MID SX,SY,TXY=-0.39726E-01 0.16408     0.83813E-01 SMX,SMN,TMX= 0.19412    -0.69765E-01 0.13194      A= 19.7 SIGE= 0.23684
BOT SX,SY,TXY=-0.27856     -3.4173      -3.8319       SMX,SMN,TMX= 2.2929       -5.9887       4.1408       A= -56.1 SIGE= 7.4063

EL= 93 NODES= 57 58 67 66          MAT= 1  AREA= 1.59       TTOP,TBOT=  0.0    0.0 PRESS= 0.0000         QUAD SHELL 63
MX,MY,MXY= -0.28796      0.99709E-01  0.70917       NX,NY= -0.86314       1.0627       XC,YC,ZC= 3.75    4.41     0.000
TOP SX,SY,TXY= -2.9832      1.3973       7.4519       SMX,SMN,TMX= 6.9166       -8.5925       7.7546       A= 37.0 SIGE= 13.457
MID SX,SY,TXY= [illegible]                              SMX,SMN,TMX= 0.36256     0.29263E-01 0.13690      A= -27.7 SIGE= 0.28934
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EL=   94  NODES=   58   59   68   67        MAT=  1  AREA=  1.59        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY= -0.72758      -0.48958        1.1145       NX,NY=  -1.0002        0.30928       XC,YC,ZC=  5.25        4.41       0.000
TOP SX,SY,TXY= -7.5846      -5.1964       11.667       SMX,SMN,TMX=  5.3377      -18.119         11.728      A=  42.1 SIGE=  21.295
MID SX,SY,TXY= 0.17630       0.25882E-01-0.22112       SMX,SMN,TMX= 0.33465     -0.13247        0.23356      A= -54.4 SIGE= 0.41698
BOT SX,SY,TXY=  7.9372        5.2481      -12.109       SMX,SMN,TMX=  18.777      -5.5912         12.184      A= -48.2 SIGE=  22.109

EL=   95  NODES=   59   60   69   68        MAT=  1  AREA=  1.59        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY= -0.64832      -1.0336         1.3849       NX,NY= -0.60951       -0.16295       XC,YC,ZC=  6.75        4.41       0.000
TOP SX,SY,TXY= -6.5968      -11.257        14.666       SMX,SMN,TMX=  5.9229      -23.777         14.850      A=  49.5 SIGE=  27.226
MID SX,SY,TXY= 0.31864      -0.23176      -0.10643      SMX,SMN,TMX= 0.33850     -0.25163        0.29506      A= -79.4 SIGE= 0.51291
BOT SX,SY,TXY=  7.2341        10.794       -14.879       SMX,SMN,TMX=  23.999      -5.9710         14.985      A= -41.6 SIGE=  27.475

EL=   96  NODES=   60   61   70   69        MAT=  1  AREA= 0.531        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY= -0.44620      -1.2906         1.4385       NX,NY=  0.11845       -0.14263       XC,YC,ZC=  7.75        4.41       0.000
TOP SX,SY,TXY= -4.3399      -13.991        15.566       SMX,SMN,TMX=  7.1315      -25.463         16.297      A=  53.6 SIGE=  29.678
MID SX,SY,TXY= 0.41956      -0.22511       0.22236      SMX,SMN,TMX= 0.48881     -0.29436        0.39159      A=  72.7 SIGE= 0.68519
BOT SX,SY,TXY=  5.1790        13.541       -15.122       SMX,SMN,TMX=  25.049      -6.3288         15.689      A= -37.3 SIGE=  28.741

EL=   97  NODES=   61   62   71   70        MAT=  1  AREA= 0.531        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY= -0.34556      -1.4106         1.4632       NX,NY=  0.54133        0.61756E-01   XC,YC,ZC=  8.25        4.41       0.000
TOP SX,SY,TXY= -3.3759      -14.856        15.968       SMX,SMN,TMX=  7.8528      -26.085         16.969      A=  54.9 SIGE=  30.772
MID SX,SY,TXY= 0.31015       0.19054       0.36047      SMX,SMN,TMX= 0.61574     -0.11506        0.36540      A=  49.7 SIGE= 0.68060
BOT SX,SY,TXY=  3.9961        15.237       -15.247       SMX,SMN,TMX=  25.867      -6.6337         16.250      A= -34.9 SIGE=  29.744

EL=   98  NODES=   62   63   72   71        MAT=  1  AREA= 0.531        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY= -0.11029      -1.5372         1.4659       NX,NY=   1.3027       -0.67220        XC,YC,ZC=  8.75        4.41       0.000
TOP SX,SY,TXY= -1.2440      -16.125        15.698       SMX,SMN,TMX=  8.6876      -26.057         17.372      A=  57.7 SIGE=  31.318
MID SX,SY,TXY=-0.67574E-01 0.27108        0.61634E-01  SMX,SMN,TMX= 0.28195     -0.78443E-01 0.18020      A=  10.0 SIGE= 0.32828
BOT SX,SY,TXY=  1.1089        16.667       -15.575       SMX,SMN,TMX=  26.298      -8.5214         17.410      A= -31.7 SIGE=  31.437

EL=   99  NODES=   59  140  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  100  NODES=   60  141  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  101  NODES=   61  142  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  102  NODES=   62  143  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  103  NODES=   63  144  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.16947      SIG=-0.63807      EP=-0.001148  STAT=  1  CABLE  10

EL=  104  NODES=   64   65   74   73        MAT=  1  AREA=  1.59        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY=  0.81597E-01  0.70640        0.28960       NX,NY=  0.13491        0.93250       XC,YC,ZC= 0.750        5.47       0.000
TOP SX,SY,TXY= 0.77604       7.1340         3.2792       SMX,SMN,TMX=  8.5222      -0.61212         4.5672      A=  22.9 SIGE=  8.8442
MID SX,SY,TXY=-0.94332E-01-0.40087        0.19011      SMX,SMN,TMX=-0.34051E-02-0.49180        0.24420      A=  64.4 SIGE= 0.49010
BOT SX,SY,TXY=-0.96470       -7.9358        -2.8990      SMX,SMN,TMX= 0.83289E-01 -8.9838         4.5335      A= -70.1 SIGE=  9.0257

EL=  105  NODES=   65   66   75   74        MAT=  1  AREA=  1.59        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY=  0.63898       0.82891        0.43085       NX,NY=   1.7605        1.4430        XC,YC,ZC=  2.25        5.47       0.000
TOP SX,SY,TXY=  7.0077        9.1970         4.5216       SMX,SMN,TMX=  12.755        3.4502         4.6522      A=  38.2 SIGE=  11.427
MID SX,SY,TXY= 0.19191       0.35528      -0.74197E-01  SMX,SMN,TMX= 0.38395      0.16324        0.11035      A= -21.1 SIGE= 0.33375
BOT SX,SY,TXY= -6.6239       -8.4865        -4.6700      SMX,SMN,TMX= -2.7932      -12.317          4.7619      A= -50.6 SIGE=  11.185

EL=  106  NODES=   66   67   76   75        MAT=  1  AREA=  1.59        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY=  0.50598       0.66508        0.75898       NX,NY=   4.7191        1.4572        XC,YC,ZC=  3.75        5.47       0.000
TOP SX,SY,TXY=  5.7492        7.3992         7.9146       SMX,SMN,TMX=  14.532      -1.3832          7.9574      A= -48.7 SIGE= 0.45626
MID SX,SY,TXY= 0.35207       0.30502      -0.18126      SMX,SMN,TMX= 0.51133      0.14576        0.18278      A= -48.0 SIGE=  15.583
BOT SX,SY,TXY= -5.0451       -6.7892        -8.2771      SMX,SMN,TMX=  2.4058      -14.240          8.3229

EL=  107  NODES=   67   68   77   76        MAT=  1  AREA=  1.59        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY= -0.68951      -0.12756        0.95846       NX,NY=   4.5175        0.38540       XC,YC,ZC=  5.25        5.47       0.000
TOP SX,SY,TXY= -7.0020      -1.2777         10.007       SMX,SMN,TMX=  6.2684      -14.548         10.408      A=  37.0 SIGE=  18.497
MID SX,SY,TXY= 0.35282       0.82854E-01-0.21663       SMX,SMN,TMX= 0.47308     -0.37407E-01 0.25524      A= -61.0 SIGE= 0.49285
BOT SX,SY,TXY=  7.7076        1.4434        -10.440       SMX,SMN,TMX=  15.475      -6.3244         10.900      A= -53.3 SIGE=  19.426
                                                                                                               QUAD SHELL  63
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BOT SX,SY,TXY=  7.7076       1.4434      -10.440     SMX,SMN,TMX=  15.475       -6.3244        10.900       A= -53.3 SIGE=  19.426

EL=  108  NODES=   68   69   78   77       MAT=  1   AREA=  1.59        TTOP,TBOT=    0.0      0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.86782      -1.1114       0.99814      NX,NY=  0.63834      -0.13350      XC,YC,ZC=  6.75       5.47        0.000
TOP SX,SY,TXY= -8.9935      -12.320       10.427     SMX,SMN,TMX=-0.97470E-01 -21.216       10.559       A=  49.5 SIGE=  21.167
MID SX,SY,TXY= 0.26323      -0.46483     -0.21945     SMX,SMN,TMX= 0.32426      -0.52586      0.42506      A= -74.5 SIGE= 0.74310
BOT SX,SY,TXY=  9.5200       11.390      -10.866     SMX,SMN,TMX=  21.362      -0.45139       10.906       A= -42.5 SIGE=  21.591

EL=  109  NODES=   69   70   79   78       MAT=  1   AREA= 0.532        TTOP,TBOT=    0.0      0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.61129      -1.9126       0.94284      NX,NY= -0.18867      -0.37433      XC,YC,ZC=  7.75       5.47        0.000
TOP SX,SY,TXY= -6.3093      -21.210       10.225     SMX,SMN,TMX= -1.1082      -26.412       12.652       A=  63.0 SIGE=  25.875
MID SX,SY,TXY= 0.21109      -0.80902      0.16817     SMX,SMN,TMX= 0.23810      -0.83603      0.53707      A=  80.9 SIGE= 0.97709
BOT SX,SY,TXY=  6.7315       19.592      -9.8888     SMX,SMN,TMX=  24.958       1.3662        11.796       A= -28.5 SIGE=  24.303

EL=  110  NODES=   70   71   80   79       MAT=  1   AREA= 0.531        TTOP,TBOT=    0.0      0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.73243      -2.4815       0.90989      NX,NY=  0.21538E-01 -0.71135      XC,YC,ZC=  8.25       5.47        0.000
TOP SX,SY,TXY= -7.4901      -26.813       10.274     SMX,SMN,TMX= -3.0483      -31.255       14.103       A=  66.6 SIGE=  29.848
MID SX,SY,TXY= 0.32243      -0.34330      0.56868     SMX,SMN,TMX= 0.64850      -0.66938      0.65894      A=  60.2 SIGE=  1.1414
BOT SX,SY,TXY=  8.1350       26.126      -9.1368     SMX,SMN,TMX=  29.953       4.3087        12.822       A= -22.7 SIGE=  28.048

EL=  111  NODES=   71   72   81   80       MAT=  1   AREA= 0.531        TTOP,TBOT=    0.0      0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.47298      -2.8961       0.84637      NX,NY=  2.0758       -1.0967       XC,YC,ZC=  8.75       5.47        0.000
TOP SX,SY,TXY= -4.4108      -29.372       9.7954     SMX,SMN,TMX= -1.0259      -32.757       15.866       A=  70.9 SIGE=  32.256
MID SX,SY,TXY= 0.63431       1.5196       0.76746     SMX,SMN,TMX=  1.9629      0.19099       0.88595      A=  30.0 SIGE=  1.8747
BOT SX,SY,TXY=  5.6794       32.411      -8.2604     SMX,SMN,TMX=  34.758       3.3328        15.713       A= -15.9 SIGE=  33.217

EL=  112  NODES=   68  149  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  113  NODES=   69  150  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  114  NODES=   70  151  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  115  NODES=   71  152  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  116  NODES=   72  153  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  117  NODES=   77  158  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  118  NODES=   78  159  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  119  NODES=   79  160  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  120  NODES=   80  161  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  121  NODES=   81  162  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10

EL=  122  NODES=   40  364  FORC= 0.20008E-01  STRETCH=     0.000099  RATE=  202.600                                      SPRING  14

EL=  123  NODES=   40  445  FORC= 0.99914E-01  STRETCH=     0.000493  RATE=  202.600                                      SPRING  14

EL=  124  NODES=   40  121  MAT=  3  TEMPS=    0.0    0.0  FORC= 7.9160      SIG=  630.75      EP= 0.021750  STAT=  1  CABLE  10

EL=  125  NODES=   73   74  236  235       MAT=  4   AREA=  9.00        TTOP,TBOT=    0.0      0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY=  0.52716E-01 -0.25837E-02  0.23344      NX,NY=  0.18761       0.11439E-01  XC,YC,ZC= 0.750       6.00        3.00
TOP SX,SY,TXY= 0.59486       0.22304       2.6194     SMX,SMN,TMX=  3.0350      -2.2171        2.6260       A=  47.0 SIGE=  4.5667
MID SX,SY,TXY= 0.32548E-01  0.25060       0.12940     SMX,SMN,TMX= 0.31078      -0.27630E-01  0.16921      A=  24.9 SIGE= 0.32548
BOT SX,SY,TXY=-0.52976       0.27816      -2.3606     SMX,SMN,TMX=  2.2692      -2.5208        2.3950       A= -40.1 SIGE=  4.1501

EL=  126  NODES=   74   75  237  236       MAT=  4   AREA=  9.00        TTOP,TBOT=    0.0      0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY=  0.13363      -0.18454E-01  0.28044      NX,NY=  0.24763       0.26513E-01  XC,YC,ZC=  2.25       6.00        3.00
TOP SX,SY,TXY=  1.4423      -1.3009       2.8866     SMX,SMN,TMX=  3.2666      -3.1252        3.1959       A=  57.7 SIGE=  5.5359
MID SX,SY,TXY= 0.16930E-01 -1.1040      -0.10474     SMX,SMN,TMX= 0.26633E-01 -1.1137       0.57017      A= -84.7 SIGE=  1.1273
BOT SX,SY,TXY= -1.4084      -0.90716     -3.0961     SMX,SMN,TMX=  1.9484      -4.2640        3.1062       A= -42.7 SIGE=  5.5032
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TOP SX,SY,TXY= 1.4631      -1.3254       3.0497      SMX,SMN,TMX= 3.4212      -3.2966       3.3534        A= 57.3 SIGE= 5.8095
MID SX,SY,TXY=-0.21916E-01-0.25082      -0.60752     SMX,SMN,TMX= 0.48184     -0.75457      0.61820       A= -50.3 SIGE= 1.0794
BOT SX,SY,TXY= -1.5069      0.82677     -4.2647      SMX,SMN,TMX= 4.0814      -4.7615       4.4214        A= -37.3 SIGE= 7.6657

EL= 128  NODES=   76   77  239  238        MAT=  4   AREA=  9.00       TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY=  0.63304E-01 -0.22865         0.41345     NX,NY=  0.17946        0.31296E-01  XC,YC,ZC=  5.25     6.00        3.00
TOP SX,SY,TXY= 0.60473     -0.53413      3.8265      SMX,SMN,TMX=  3.9039     -3.8333       3.8686        A=  49.2 SIGE=  6.7007
MID SX,SY,TXY=-0.70512E-01  1.9048      -0.58363     SMX,SMN,TMX=  2.0643     -0.23007      1.1472        A= -15.3 SIGE=  2.1885
BOT SX,SY,TXY=-0.74575      4.3437      -4.0937      SMX,SMN,TMX=  7.4037     -3.8057       5.6047        A= -31.5 SIGE=  9.8729

EL= 129  NODES=   77   78  240  239        MAT=  4   AREA=  9.00       TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.28502E-01 -0.35831         0.45008     NX,NY=  0.22248        0.31672E-01  XC,YC,ZC=  6.75     6.00        3.00
TOP SX,SY,TXY=-0.42854     -1.9929       5.2817      SMX,SMN,TMX=  4.1286     -6.5501       5.3393        A=  49.2 SIGE=  9.3269
MID SX,SY,TXY=-0.12452      1.8291       0.48093     SMX,SMN,TMX=  1.9410     -0.23649      1.0888        A=  13.1 SIGE=  2.0694
BOT SX,SY,TXY= 0.17950      5.6511      -4.3199      SMX,SMN,TMX=  8.0286     -2.1980       5.1133        A= -28.8 SIGE=  9.3240

EL= 130  NODES=   78   79  241  240        MAT=  4   AREA=  3.00       TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.12936     -0.44253         0.46076     NX,NY=  0.51729       -0.20591E-01  XC,YC,ZC=  7.75     6.00        3.00
TOP SX,SY,TXY= -1.5195     -4.5791       5.8215      SMX,SMN,TMX=  2.9699     -9.0685       6.0192        A=  52.4 SIGE=  10.862
MID SX,SY,TXY=-0.13964      0.14118      0.90683     SMX,SMN,TMX= 0.91840     -0.91686      0.91763       A=  40.6 SIGE=  1.5894
BOT SX,SY,TXY=  1.2402      4.8615      -4.0079      SMX,SMN,TMX=  7.4488     -1.3471       4.3979        A= -32.8 SIGE=  8.2056

EL= 131  NODES=   79   80  242  241        MAT=  4   AREA=  3.00       TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.85705E-01 -0.43342         0.44701     NX,NY=  0.54336       -0.23321E-01  XC,YC,ZC=  8.25     6.00        3.00
TOP SX,SY,TXY= -1.0380     -6.3172       5.5486      SMX,SMN,TMX=  2.4669     -9.8221       6.1445        A=  57.7 SIGE=  11.260
MID SX,SY,TXY=-0.12382     -1.6940       0.78057     SMX,SMN,TMX= 0.19818     -2.0160       1.1071        A=  67.6 SIGE=  2.1221
BOT SX,SY,TXY= 0.79037      2.9291      -3.9875      SMX,SMN,TMX=  5.9881     -2.2686       4.1284        A= -37.5 SIGE=  7.3885

EL= 132  NODES=   80   81  243  242        MAT=  4   AREA=  3.00       TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.27747E-01 -0.41860         0.43441     NX,NY=  0.35287       -0.11712E-01  XC,YC,ZC=  8.75     6.00        3.00
TOP SX,SY,TXY=-0.40432     -8.1396       4.9683      SMX,SMN,TMX=  2.0243     -10.568       6.2962        A=  63.9 SIGE=  11.712
MID SX,SY,TXY=-0.10836     -3.6746       0.33455     SMX,SMN,TMX=-0.77244E-01 -3.7057       1.8142        A=  84.7 SIGE=  3.6677
BOT SX,SY,TXY= 0.18760      0.79047     -4.2992      SMX,SMN,TMX=  4.7988     -3.8207       4.3097        A= -43.0 SIGE=  7.4807

   0 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000        PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
 STEP=   1  ITER=  10  CUM. ITER.=    7  TIME=  0.000000

 *** STEP   1   ITER  10 COMPLETE.  TIME=  0.000000       KDIS=  1  KTEMP=    0  CUM. ITER.=    7


 ***** PROBLEM COMPLETED *****  CP =   18.883

 END OF INPUT ENCOUNTERED ON FILE TAPE18

 ENTER /NOTES CARD AFTER FINISH CARD (OR AT ANY CARD-A LEVEL)
  FOR DETAILED NOTES ON FEATURES, CHANGES, HELP, ETC.


 ***** RUN COMPLETED *****  CP =   18.883
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TUGC,CPSES,TYP ANCH L6X6X3/4,1-1.25 SUPER HILTI S CENTER
 ED LIU
XSEG        1.50       5    0.50       3
YSEG       .4375       4  1.0625       4
PLTK        0.75
ERC      3605.00
ESB     29000.00
ESP     29000.00
NUS         0.30
NUC         0.17
BULT      363.90       4                                                  +A1
+A1       202.60       5
FZ         1.0       238
MX         1.75      238
MY        27.0       238
AMSEG       0.75       1       9       9       9          6.0
CONSN          6     240
OPTION                                            1
ELD           60      61      62      63
ELD           77      78      79      80
ELD           94      95      96      97
ELD          111     112     113     114
ELD          128     129     130     131
ELD          137     138     139     140
END
```

CLIENT .... PROJECT ....

SUBJECT INPUT

[illegible] OGRAM USED ....

[illegible] BY J T Liu .... [illegible] 3/22/85

[illegible] BY S. R. [illegible] .... [illegible] 4/16/85

[illegible] NO. .... [illegible]

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10:39:19     0.0009    CSP     UNITED INFORMATION SERVICES, INC.     03/22/85
10:39:19     0.0009    CSP                 APEX/CRAY SERVICE
10:39:19     0.0009    CSP     CRAY-1 S/2000    COS LEVEL: C13 1.11-10/30/84
10:39:19     0.0009    CSP
10:39:19     0.0009    CSP     LIU,T200,CM500000,L15.
10:39:19     0.0009    CSP     ACCOUNT,E142430 TUG3317002
10:39:19     0.0010    CSP     CAPTION.  EDLIU
10:39:19     0.0080    CSP     ASSIGN,DN=DATA,A=FT20.
10:39:19     0.0083    CSP     GET,EMBEDPA(E142290)
10:39:25     0.0084    SCP      10.39.38.GET,SCR1=EMBEDPA(E142290.
10:39:25     0.0084    SCP      10.39.39.READY -    EMBEDPA
10:39:27     0.0084    CSP     EMBEDPA.
10:39:28     0.1197    USER    FT063 -     STOP                IN EMBEDP
10:39:28     0.1198    CSP     REWIND,DATA.
10:39:28     0.1199    CSP     ASSIGN,DN=DATA,A=FT05.
10:39:28     0.1202    CSP     GET,ANSYS,ANSYS1(CRY)
10:39:52     0.1202    SCP      10.39.47.GET,SCR1=ANSYS(CRY.
10:39:52     0.1202    SCP      10.39.47.DAF READY -           ANSYS
10:40:05     0.1203    SCP      10.40.17.GET,SCR1=ANSYS1(CRY.
10:40:05     0.1203    SCP      10.40.17.DAF READY -           ANSYS1
10:40:08     0.1204    CSP     ANSYS1.
10:40:09     0.1214    USER    FT059 -  ***** ANSYS ANALYSIS *****
10:41:34    18.8837    USER    FT063 -     STOP                IN VPSUB
10:41:35    18.8837    CSP     REWIND,$IN.
10:41:35    18.8840    CSP     COPYS,$IN,$OUT.
10:41:35    18.8854    CSP     COST.
10:41:35    18.8863    USER         JOBNAME = CHCVCAJ   USER NUMBER = E142430
10:41:35    18.8863    USER         CP SECONDS         =     18.886
10:41:35    18.8863    USER         AVERAGE MEMORY     =     0.1654
10:41:35    18.8863    USER         IO BLOCKS MOVED    =     12526.
10:41:35    18.8863    USER         IO REQUESTS        =      3019.
10:41:35    18.8863    USER         PF OPERATIONS      =         3.
10:41:35    18.8863    USER
10:41:35    18.8863    USER         ASU-2              =     341.01
10:41:35    18.8863    USER         PRIORITY           =         15
10:41:35    18.8864    USER         COST               =     113.56
10:41:35    18.8864    CSP     DFD,DFILE,R.
10:41:43    18.8885    SCP      10.41.59.PUT,SCR1=DFILE.
10:41:43    18.8885    SCP      10.42.00.READY -    DFILE
10:41:46    18.8885    CSP     END OF JOB
10:41:46    18.8886    CSP
10:41:46    18.8886    CSP
10:41:46    18.8888    USER    *************************************************************************
10:41:46    18.8889    USER    *                THE FOLLOWING WEEKEND SCHEDULE IS IN EFFECT:           *
10:41:46    18.8891    USER    *                   SATURDAY      5:00 A.M. TO 8:00 P.M. CDT           *
10:41:46    18.8892    USER    *                   SUNDAY        NOON      TO 7:00 P.M. CDT           *
10:41:46    18.8893    USER    *                          LIST CRYGRAM/CRY FOR DETAILS.                *
10:41:46    18.8894    USER    *************************************************************************
10:41:46    18.8901    USER         JOBNAME = CHCVCAJ   USER NUMBER = E142430
10:41:46    18.8901    USER         CP SECONDS         =     18.890
10:41:46    18.8901    USER         AVERAGE MEMORY     =     0.1654
10:41:46    18.8901    USER         IO BLOCKS MOVED    =     12651.
10:41:46    18.8901    USER         IO REQUESTS        =      3027.
10:41:46    18.8901    USER         PF OPERATIONS      =         4.
10:41:46    18.8901    USER         I/O/D BLOCKS       =       144.
10:41:46    18.8901    USER
10:41:46    18.8901    USER         ASU-2              =     342.31
10:41:46    18.8901    USER         PRIORITY           =         15
10:41:46    18.8901    USER         COST               =     113.99
```

LAST PAGE

D?LUC9J

UNITED INFORMATION SERVICES, INC. 66. APEX/SL D.4.7.5

16.14.52. 06/27/85.

```
DDDDDDDDDD      00000000     LL              UU          UU    CCCCCCCCCC      99999999     JJJJJJJJJJJ
DDDDDDDDDDD    00      00    LL              UU          UU   CCCCCCCCCCCC    9999999999    JJJJJJJJJJJ
DD        DD  00        00   LL              UU          UU   CC        CC   99        99       JJ
DD        DD  00        00   LL              UU          UU   CC             99        99       JJ
DD        DD  00        00   LL              UU          UU   CC             99        99       JJ
DD        DD  00        00   LL              UU          UU   CC             99        99       JJ
DD        DD  00        00   LL              UU          UU   CC             99        99       JJ
DD        DD  00        00   LL              UU          UU   CC             999999999999       JJ
DD        DD  00        00   LL              UU          UU   CC              99999999999       JJ
DD        DD  00        00   LL              UU          UU   CC                       99       JJ
DD        DD  00        00   LL              UU          UU   CC                       99       JJ
DD        DD  00        00   LL              UU          UU   CC                       99       JJ
DD        DD  00        00   LL              UU          UU   CC             9         99       JJ
DD        DD  00        00   LL          LL  UU          UU   CC        CC   99        99   JJ  JJ
DDDDDDDDDDD    00      00    LLLLLLLLLLLL    UUUUUUUUUUUU     CCCCCCCCCCCC    9999999999    JJJJJJ
DDDDDDDDDD      00000000     LLLLLLLLLLLL     UUUUUUUUUU       CCCCCCCCCC      99999999      JJJJ
```

∠8x6x¾, e=1.75

$K_T = 3500.$ K/IN

$M_y = 99.$

$T_h = 99/21 = 4.714$

$T = 14.456^K$

$\alpha = T/T_h = 3.07$

CLIENT TUGC	PROJECT CPSES-2
SUBJECT BASEANGLE ANALYSIS - ∠8x6x¾x2'-½ W/ BOLTS	
COMPUTER PROGRAM USED ANSYS	
PREPARED BY: JTLTU	DATE 6/27/85
CHECKED BY: S. P. [illegible]	DATE 6/27/85
REF. CALC. BOOK NO.	PRINTOUT BOOK NO.

AP?X/CRAY

```
  JJJJJ TTTTTTT LL        IIIII  UU    UU
  JJJJJ TTTTTTT LL        IIIII  UU    UU
    JJ    TT    LL         II    UU    UU
    JJ    TT    LL         II    UU    UU
    JJ    TT    LL         II    UU    UU
    JJ    TT    LL         II    UU    UU
    JJ    TT    LL         II    UU    UU
JJ  JJ    TT    LL         II    UU    UU
 JJJJJ    TT    LLLLLLL  IIIII   UUUUUUU
  JJJ     TT    LLLLLLL  IIIII    UUUUU
```

TUCC,CDSFS.TYP ANCH L X, Y3/AX?-3.KT=

```
****BASE PLATE MESH INFORMATION****

NO. OF GRID IN X  NO. OF GRID IN Y   X-DIMENSION  Y-DIMENSION

        20               10            24.500           8.000

X-COORD.=   0.000   0.400   0.800   1.200   1.750   3.250   5.250   7.250   9.250  11.250
13.250  15.250  17.250  19.250  21.250  22.750  23.300  23.700  24.100  24.500

Y-COORD.=   0.000   0.200   0.550   0.900   1.325   1.750   3.312   4.875   6.437   8.000


**** MATERIAL PROPERTIES ****

 PLATE THK    E OF PLATE   E OF BOLT   E OF CONCRET  MU STEEL    MU OF CONCRETE

0.75000E+00 0.29000E+05 0.29000E+05 0.36050E+04 0.30000E+00 0.17000E+00


****RC SPRING CONSTANT AT EACH NODE****
.5834E+010.1167E+020.1167E+020.1385E+020.2990E+020.5104E+020.5834E+020.5834E+020.5834E+020.5834E+020.5834E+020.5834E+020.5834E+02
.5834E+020.5104E+020.2990E+020.1385E+020.1167E+020.1167E+020.5834E+01
.1604E+020.3208E+020.3208E+020.3810E+020.8222E+020.1404E+030.1604E+030.1604E+030.1604E+030.1604E+030.1604E+030.1604E+030.1604E+03
.1604E+030.1404E+030.8222E+020.3810E+020.3208E+020.3208E+020.1604E+02
.2042E+020.4084E+020.4084E+020.4849E+020.1046E+030.1787E+030.2042E+030.2042E+030.2042E+030.2042E+030.2042E+030.2042E+030.2042E+03
.2042E+030.1787E+030.1046E+030.4849E+020.4084E+020.4084E+020.2042E+02
.2261E+020.4521E+020.4521E+020.5369E+020.1159E+030.1978E+030.2261E+030.2261E+030.2261E+030.2261E+030.2261E+030.2261E+030.2261E+03
.2261E+030.1978E+030.1159E+030.5369E+020.4521E+020.4521E+020.2261E+02
.2479E+020.4959E+020.4959E+020.5888E+020.1271E+030.2169E+030.2479E+030.2479E+030.2479E+030.2479E+030.2479E+030.2479E+030.2479E+03
.2479E+030.2169E+030.1271E+030.5888E+020.4959E+020.4959E+020.2479E+02
.5797E+020.1159E+030.1159E+030.1377E+030.2971E+030.5072E+030.5797E+030.5797E+030.5797E+030.5797E+030.5797E+030.5797E+030.5797E+03
.5797E+030.5072E+030.2971E+030.1377E+030.1159E+030.1159E+030.5797E+02
.9115E+020.1823E+030.1823E+030.2165E+030.4671E+030.7976E+030.9115E+030.9115E+030.9115E+030.9115E+030.9115E+030.9115E+030.9115E+03
.9115E+030.7976E+030.4671E+030.2165E+030.1823E+030.1823E+030.9115E+02
.9115E+020.1823E+030.1823E+030.2165E+030.4671E+030.7976E+030.9115E+030.9115E+030.9115E+030.9115E+030.9115E+030.9115E+030.9115E+03
.9115E+030.7976E+030.4671E+030.2165E+030.1823E+030.1823E+030.9115E+02
.9115E+020.1823E+030.1823E+030.2165E+030.4671E+030.7976E+030.9115E+030.9115E+030.9115E+030.9115E+030.9115E+030.9115E+030.9115E+03
.9115E+030.7976E+030.4671E+030.2165E+030.1823E+030.1823E+030.9115E+02
                                                                                          .4567E+030.4567E+03
```

.4557E+030.3988E+030.2336E+030.1082E+030.9115E+020.9115E+020.4557E+02

**** SPRING CONSTANTS****

SUM OF RC SPRING   BOLT SPRING

.5717E+05   0.3500E+040.3500E+04

****BOLT LOCATION****

X-COORD.=   1.750   22.750

Y-COORD.=   1.750   1.750

****PROPERTY OF ATTACHMENT AND STIFFENER****

THICKNESS   HEIGHT OF STIFFENER

0.750   6.000

****AREA CENTER OF ATTACHMENT****

XC=   0.00YC=   0.00ZC=   0.00

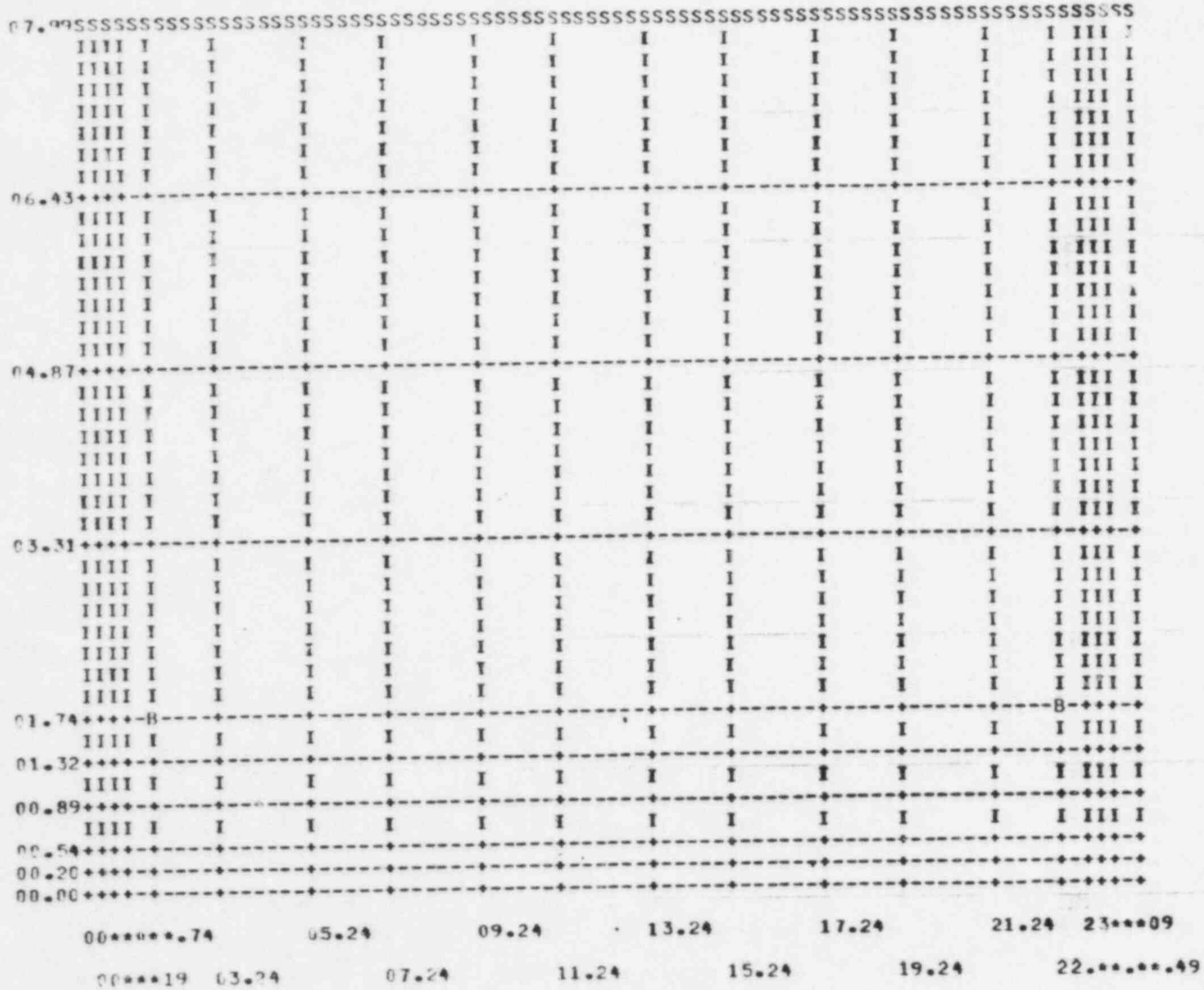
****APPLIED FORCE AND MOMENT****

FORCE COMP.	NODE NO.	FORCE MAGNITUDE
MY	190	49.50000
MY	191	49.50000

CLIENT TUGC PROJECT CPSES-2
SUBJECT INPUT

COMPUTER PROGRAM USED ANSYS
PREPARED BY: J T Liu DATE 6/27/85
CHECKED BY: INPUT DATE 6/27/85
REF. CALC. BOOK NO. PRINTOUT BOOK NO.

TUGC,CPSES,TYP ANCH L6X6X3/4X2-4,KT=3500



*********** ANSYS INPUT DATA LISTING (FILE18) ***********

```
     6     12    18    24    30    36    42    48    54    60    66    72    78
     V     V     V     V     V     V     V     V     V     V     V     V     V
TUGC,CPSES,TYP ANCH L8X6X3/4X2-4,KT=3500
J. T. LIU
           1                 99                0                   0           0

  1 43 02  0
  2 10 11  0
  3 10 10  0
  4 63 00  0
  5  4 00  0
 -1
0.7500E+00
0.2000E-01
0.4000E-01
0.4000E-01
0.4750E-01
0.1025E+00
0.1750E+00
0.2000E+00
0.2000E+00
0.2000E+00
0.2000E+00
0.2000E+00
0.2000E+00
0.2000E+00
0.2000E+00
0.1750E+00
0.1025E+00
0.4750E-01
0.4000E-01
0.4000E-01
0.2000E-01
0.5500E-01
0.1100E+00
0.1100E+00
0.1306E+00
0.2819E+00
0.4812E+00
0.5500E+00
0.5500E+00
0.5500E+00
0.5500E+00
0.5500E+00
0.5500E+00
0.5500E+00
0.5500E+00
0.4812E+00
0.2819E+00
0.1306E+00
0.1100E+00
0.1100E+00
     A     A     A     A     A     A     A     A     A     A     A     A     A
```

```
              6    12    18    24    30    36    42    48    54    60    65    72    78
              V     V     V     V     V     V     V     V     V     V     V     V     V
   51   0.5500E-01
   52   0.7000E-01
   53   0.1400E+00
   54   0.1400E+00
   55   0.1662E+00
   56   0.3587E+00
   57   0.6125E+00
   58   0.7000E+00
   59   0.7000E+00
   60   0.7000E+00
   61   0.7000E+00
   62   0.7000E+00
   63   0.7000E+00
   64   0.7000E+00
   65   0.7000E+00
   66   0.6125E+00
   67   0.3587E+00
   68   0.1662E+00
   69   0.1400E+00
   70   0.1400E+00
   71   0.7000E-01
   72   0.7750E-01
   73   0.1550E+00
   74   0.1550E+00
   75   0.1841E+00
   76   0.3972E+00
   77   0.6781E+00
   78   0.7750E+00
   79   0.7750E+00
   80   0.7750E+00
   81   0.7750E+00
   82   0.7750E+00
   83   0.7750E+00
   84   0.7750E+00
   85   0.7750E+00
   86   0.6781E+00
   87   0.3972E+00
   88   0.1841E+00
   89   0.1550E+00
   90   0.1550E+00
   91   0.7750E-01
   92   0.8500E-01
   93   0.1700E+00
   94   0.1700E+00
   95   0.2019E+00
   96   0.4356E+00
   97   0.7437E+00
   98   0.8500E+00
   99   0.8500E+00
  100   0.8500E+00
              A     A     A     A     A     A     A     A     A     A     A     A     A
```

```
              6    12    18    24    30    36    42    48    54    60    66    72    78
              V     V     V     V     V     V     V     V     V     V     V     V     V
101   0.8500E+00
102   0.8500E+00
103   0.8500E+00
104   0.8500E+00
105   0.8500E+00
106   0.7437E+00
107   0.4356E+00
108   0.2019E+00
109   0.1700E+00
110   0.1700E+00
111   0.8500E-01
112   0.1987E+00
113   0.3975E+00
114   0.3975E+00
115   0.4720E+00
116   0.1019E+01
117   0.1739E+01
118   0.1987E+01
119   0.1987E+01
120   0.1987E+01
121   0.1987E+01
122   0.1987E+01
123   0.1987E+01
124   0.1987E+01
125   0.1987E+01
126   0.1739E+01
127   0.1019E+01
128   0.4720E+00
129   0.3975E+00
130   0.3975E+00
131   0.1987E+00
132   0.3125E+00
133   0.6250E+00
134   0.6250E+00
135   0.7422E+00
136   0.1602E+01
137   0.2734E+01
138   0.3125E+01
139   0.3125E+01
140   0.3125E+01
141   0.3125E+01
142   0.3125E+01
143   0.3125E+01
144   0.3125E+01
145   0.3125E+01
146   0.2734E+01
147   0.1602E+01
148   0.7422E+00
149   0.6250E+00
150   0.6250E+00
              A     A     A     A     A     A     A     A     A     A     A     A     A
```

********** [illegible] INPUT DATA LISTING [illegible] **********

```
      6    12    18    24    30    36    42    48    54    60    66    72    78
      V     V     V     V     V     V     V     V     V     V     V     V     V
151  0.3125E+00
152  0.3125E+00
153  0.6250E+00
154  0.6250E+00
155  0.7422E+00
156  0.1602E+01
157  0.2734E+01
158  0.3125E+01
159  0.3125E+01
160  0.3125E+01
161  0.3125E+01
162  0.3125E+01
163  0.3125E+01
164  0.3125E+01
165  0.3125E+01
166  0.2734E+01
167  0.1602E+01
168  0.7422E+00
169  0.6250E+00
170  0.6250E+00
171  0.3125E+00
172  0.3125E+00
173  0.6250E+00
174  0.6250E+00
175  0.7422E+00
176  0.1602E+01
177  0.2734E+01
178  0.3125E+01
179  0.3125E+01
180  0.3125E+01
181  0.3125E+01
182  0.3125E+01
183  0.3125E+01
184  0.3125E+01
185  0.3125E+01
186  0.2734E+01
187  0.1602E+01
188  0.7422E+00
189  0.6250E+00
190  0.6250E+00
191  0.3125E+00
192  0.1562E+00
193  0.3125E+00
194  0.3125E+00
195  0.3711E+00
196  0.8008E+00
197  0.1367E+01
198  0.1562E+01
199  0.1562E+01
200  0.1562E+01
      A     A     A     A     A     A     A     A     A     A     A     A     A
```

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
201	0.1562E+01												
202	0.1562E+01												
203	0.1562E+01												
204	0.1562E+01												
205	0.1562E+01												
206	0.1367E+01												
207	0.8008E+00												
208	0.3711E+00												
209	0.3125E+00												
210	0.3125E+00												
211	0.1562E+00												
212	0.1207E+00												
213	0.1207E+00												
214	0.7500E+00												
215	0.1000E+030.1000E+060.1000E+060.1000E+010.1000E+01												
216		-1											
217	1	2	22	21					1	1	1		
218	2	3	23	22					1	1	1		
219	3	4	24	23					1	1	1		
220	4	5	25	24					1	1	1		
221	5	6	26	25					1	1	1		
222	6	7	27	26					1	1	1		
223	7	8	28	27					1	1	1		
224	8	9	29	28					1	1	1		
225	9	10	30	29					1	1	1		
226	10	11	31	30					1	1	1		
227	11	12	32	31					1	1	1		
228	12	13	33	32					1	1	1		
229	13	14	34	33					1	1	1		
230	14	15	35	34					1	1	1		
231	15	16	36	35					1	1	1		
232	16	17	37	36					1	1	1		
233	17	18	38	37					1	1	1		
234	18	19	39	38					1	1	1		
235	19	20	40	39					1	1	1		
236	1	201							2	2	2		
237	2	202							2	2	3		
238	3	203							2	2	4		
239	4	204							2	2	5		
240	5	205							2	2	6		
241	6	206							2	2	7		
242	7	207							2	2	8		
243	8	208							2	2	9		
244	9	209							2	2	10		
245	10	210							2	2	11		
246	11	211							2	2	12		
247	12	212							2	2	13		
248	13	213							2	2	14		
249	14	214							2	2	15		
250	15	215							2	2	16		
	A	A	A	A	A	A	A	A	A	A	A	A	A

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
251	16	216							2	2	17		
252	17	217							2	2	18		
253	18	218							2	2	19		
254	19	219							2	2	20		
255	20	220							2	2	21		
256	21	22	42	41					1	1	1		
257	22	23	43	42					1	1	1		
258	23	24	44	43					1	1	1		
259	24	25	45	44					1	1	1		
260	25	26	46	45					1	1	1		
261	26	27	47	46					1	1	1		
262	27	28	48	47					1	1	1		
263	28	29	49	48					1	1	1		
264	29	30	50	49					1	1	1		
265	30	31	51	50					1	1	1		
266	31	32	52	51					1	1	1		
267	32	33	53	52					1	1	1		
268	33	34	54	53					1	1	1		
269	34	35	55	54					1	1	1		
270	35	36	56	55					1	1	1		
271	36	37	57	56					1	1	1		
272	37	38	58	57					1	1	1		
273	38	39	59	58					1	1	1		
274	39	40	60	59					1	1	1		
275	21	221							2	2	22		
276	22	222							2	2	23		
277	23	223							2	2	24		
278	24	224							2	2	25		
279	25	225							2	2	26		
280	26	226							2	2	27		
281	27	227							2	2	28		
282	28	228							2	2	29		
283	29	229							2	2	30		
284	30	230							2	2	31		
285	31	231							2	2	32		
286	32	232							2	2	33		
287	33	233							2	2	34		
288	34	234							2	2	35		
289	35	235							2	2	36		
290	36	236							2	2	37		
291	37	237							2	2	38		
292	38	238							2	2	39		
293	39	239							2	2	40		
294	40	240							2	2	41		
295	41	42	62	61					1	1	1		
296	42	43	63	62					1	1	1		
297	43	44	64	63					1	1	1		
298	44	45	65	64					1	1	1		
299	45	46	66	65					1	1	1		
300	46	47	67	66					1	1	1		
	A	A	A	A	A	A	A	A	A	A	A	A	A

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
301	47	48	68	67					1	1	1		
302	48	49	69	68					1	1	1		
303	49	50	70	69					1	1	1		
304	50	51	71	70					1	1	1		
305	51	52	72	71					1	1	1		
306	52	53	73	72					1	1	1		
307	53	54	74	73					1	1	1		
308	54	55	75	74					1	1	1		
309	55	56	76	75					1	1	1		
310	56	57	77	76					1	1	1		
311	57	58	78	77					1	1	1		
312	58	59	79	78					1	1	1		
313	59	60	80	79					1	1	1		
314	41	241							2	2	42		
315	42	242							2	2	43		
316	43	243							2	2	44		
317	44	244							2	2	45		
318	45	245							2	2	46		
319	46	246							2	2	47		
320	47	247							2	2	48		
321	48	248							2	2	49		
322	49	249							2	2	50		
323	50	250							2	2	51		
324	51	251							2	2	52		
325	52	252							2	2	53		
326	53	253							2	2	54		
327	54	254							2	2	55		
328	55	255							2	2	56		
329	56	256							2	2	57		
330	57	257							2	2	58		
331	58	258							2	2	59		
332	59	259							2	2	60		
333	60	260							2	2	61		
334	61	62	82	81					1	1	1		
335	62	63	83	82					1	1	1		
336	63	64	84	83					1	1	1		
337	64	65	85	84					1	1	1		
338	65	66	86	85					1	1	1		
339	66	67	87	86					1	1	1		
340	67	68	88	87					1	1	1		
341	68	69	89	88					1	1	1		
342	69	70	90	89					1	1	1		
343	70	71	91	90					1	1	1		
344	71	72	92	91					1	1	1		
345	72	73	93	92					1	1	1		
346	73	74	94	93					1	1	1		
347	74	75	95	94					1	1	1		
348	75	76	96	95					1	1	1		
349	76	77	97	96					1	1	1		
350	77	78	98	97					1	1	1		
	A	A	A	A	A	A	A	A	A	A	A	A	A

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
351	78	79	99	98					1	1	1		
352	79	80	100	99					1	1	1		
353	61	261							2	2	62		
354	62	262							2	2	63		
355	63	263							2	2	64		
356	64	264							2	2	65		
357	65	265							2	2	66		
358	66	266							2	2	67		
359	67	267							2	2	68		
360	68	268							2	2	69		
361	69	269							2	2	70		
362	70	270							2	2	71		
363	71	271							2	2	72		
364	72	272							2	2	73		
365	73	273							2	2	74		
366	74	274							2	2	75		
367	75	275							2	2	76		
368	76	276							2	2	77		
369	77	277							2	2	78		
370	78	278							2	2	79		
371	79	279							2	2	80		
372	80	280							2	2	81		
373	81	82	102	101					1	1	1		
374	82	83	103	102					1	1	1		
375	83	84	104	103					1	1	1		
376	84	85	105	104					1	1	1		
377	85	86	106	105					1	1	1		
378	86	87	107	106					1	1	1		
379	87	88	108	107					1	1	1		
380	88	89	109	108					1	1	1		
381	89	90	110	109					1	1	1		
382	90	91	111	110					1	1	1		
383	91	92	112	111					1	1	1		
384	92	93	113	112					1	1	1		
385	93	94	114	113					1	1	1		
386	94	95	115	114					1	1	1		
387	95	96	116	115					1	1	1		
388	96	97	117	116					1	1	1		
389	97	98	118	117					1	1	1		
390	98	99	119	118					1	1	1		
391	99	100	120	119					1	1	1		
392	81	281							2	2	82		
393	82	282							2	2	83		
394	83	283							2	2	84		
395	84	284							2	2	85		
396	85	285							2	2	86		
397	86	286							2	2	87		
398	87	287							2	2	88		
399	88	288							2	2	89		
400	89	289							2	2	90		
	A	A	A	A	A	A	A	A	A	A	A	A	A

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
401	90	290							2	2	91		
402	91	291							2	2	92		
403	92	292							2	2	93		
404	93	293							2	2	94		
405	94	294							2	2	95		
406	95	295							2	2	96		
407	96	296							2	2	97		
408	97	297							2	2	98		
409	98	298							2	2	99		
410	99	299							2	2	100		
411	100	300							2	2	101		
412	101	102	122	121					1	1	1		
413	102	103	123	122					1	1	1		
414	103	104	124	123					1	1	1		
415	104	105	125	124					1	1	1		
416	105	106	126	125					1	1	1		
417	106	107	127	126					1	1	1		
418	107	108	128	127					1	1	1		
419	108	109	129	128					1	1	1		
420	109	110	130	129					1	1	1		
421	110	111	131	130					1	1	1		
422	111	112	132	131					1	1	1		
423	112	113	133	132					1	1	1		
424	113	114	134	133					1	1	1		
425	114	115	135	134					1	1	1		
426	115	116	136	135					1	1	1		
427	116	117	137	136					1	1	1		
428	117	118	138	137					1	1	1		
429	118	119	139	138					1	1	1		
430	119	120	140	139					1	1	1		
431	101	301							2	2	102		
432	102	302							2	2	103		
433	103	303							2	2	104		
434	104	304							2	2	105		
435	105	305							2	2	106		
436	106	306							2	2	107		
437	107	307							2	2	108		
438	108	308							2	2	109		
439	109	309							2	2	110		
440	110	310							2	2	111		
441	111	311							2	2	112		
442	112	312							2	2	113		
443	113	313							2	2	114		
444	114	314							2	2	115		
445	115	315							2	2	116		
446	116	316							2	2	117		
447	117	317							2	2	118		
448	118	318							2	2	119		
449	119	319							2	2	120		
450	120	320							2	2	121		
	A	A	A	A	A	A	A	A	A	A	A	A	A

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
451	121	122	142	141					1	1	1		
452	122	123	143	142					1	1	1		
453	123	124	144	143					1	1	1		
454	124	125	145	144					1	1	1		
455	125	126	146	145					1	1	1		
456	126	127	147	146					1	1	1		
457	127	128	148	147					1	1	1		
458	128	129	149	148					1	1	1		
459	129	130	150	149					1	1	1		
460	130	131	151	150					1	1	1		
461	131	132	152	151					1	1	1		
462	132	133	153	152					1	1	1		
463	133	134	154	153					1	1	1		
464	134	135	155	154					1	1	1		
465	135	136	156	155					1	1	1		
466	136	137	157	156					1	1	1		
467	137	138	158	157					1	1	1		
468	138	139	159	158					1	1	1		
469	139	140	160	159					1	1	1		
470	121	321							2	2	122		
471	122	322							2	2	123		
472	123	323							2	2	124		
473	124	324							2	2	125		
474	125	325							2	2	126		
475	126	326							2	2	127		
476	127	327							2	2	128		
477	128	328							2	2	129		
478	129	329							2	2	130		
479	130	330							2	2	131		
480	131	331							2	2	132		
481	132	332							2	2	133		
482	133	333							2	2	134		
483	134	334							2	2	135		
484	135	335							2	2	136		
485	136	336							2	2	137		
486	137	337							2	2	138		
487	138	338							2	2	139		
488	139	339							2	2	140		
489	140	340							2	2	141		
490	141	142	162	161					1	1	1		
491	142	143	163	162					1	1	1		
492	143	144	164	163					1	1	1		
493	144	145	165	164					1	1	1		
494	145	146	166	165					1	1	1		
495	146	147	167	166					1	1	1		
496	147	148	168	167					1	1	1		
497	148	149	169	168					1	1	1		
498	149	150	170	169					1	1	1		
499	150	151	171	170					1	1	1		
500	151	152	172	171					1	1	1		
	A	A	A	A	A	A	A	A	A	A	A	A	A

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
501	152	153	173	172					1	1	1		
502	153	154	174	173					1	1	1		
503	154	155	175	174					1	1	1		
504	155	156	176	175					1	1	1		
505	156	157	177	176					1	1	1		
506	157	158	178	177					1	1	1		
507	158	159	179	178					1	1	1		
508	159	160	180	179					1	1	1		
509	141	341							2	2	142		
510	142	342							2	2	143		
511	143	343							2	2	144		
512	144	344							2	2	145		
513	145	345							2	2	146		
514	146	346							2	2	147		
515	147	347							2	2	148		
516	148	348							2	2	149		
517	149	349							2	2	150		
518	150	350							2	2	151		
519	151	351							2	2	152		
520	152	352							2	2	153		
521	153	353							2	2	154		
522	154	354							2	2	155		
523	155	355							2	2	156		
524	156	356							2	2	157		
525	157	357							2	2	158		
526	158	358							2	2	159		
527	159	359							2	2	160		
528	160	360							2	2	161		
529	161	162	182	181					1	1	1		
530	162	163	183	182					1	1	1		
531	163	164	184	183					1	1	1		
532	164	165	185	184					1	1	1		
533	165	166	186	185					1	1	1		
534	166	167	187	186					1	1	1		
535	167	168	188	187					1	1	1		
536	168	169	189	188					1	1	1		
537	169	170	190	189					1	1	1		
538	170	171	191	190					1	1	1		
539	171	172	192	191					1	1	1		
540	172	173	193	192					1	1	1		
541	173	174	194	193					1	1	1		
542	174	175	195	194					1	1	1		
543	175	176	196	195					1	1	1		
544	176	177	197	196					1	1	1		
545	177	178	198	197					1	1	1		
546	178	179	199	198					1	1	1		
547	179	180	200	199					1	1	1		
548	161	361							2	2	162		
549	162	362							2	2	163		
550	163	363							2	2	164		
	A	A	A	A	A	A	A	A	A	A	A	A	A

*********** ARCYT INPUT DATA LISTING ([illegible]) ***********

	6 V	12 V	18 V	24 V	30 V	36 V	42 V	48 V	54 V	60 V	66 V	72 V	78 V
551	164	364							2	2	165		
552	165	365							2	2	166		
553	166	366							2	2	167		
554	167	367							2	2	168		
555	168	368							2	2	169		
556	169	369							2	2	170		
557	170	370							2	2	171		
558	171	371							2	2	172		
559	172	372							2	2	173		
560	173	373							2	2	174		
561	174	374							2	2	175		
562	175	375							2	2	176		
563	176	376							2	2	177		
564	177	377							2	2	178		
565	178	378							2	2	179		
566	179	379							2	2	180		
567	180	380							2	2	181		
568	181	381							2	2	182		
569	182	382							2	2	183		
570	183	383							2	2	184		
571	184	384							2	2	185		
572	185	385							2	2	186		
573	186	386							2	2	187		
574	187	387							2	2	188		
575	188	388							2	2	189		
576	189	389							2	2	190		
577	190	390							2	2	191		
578	191	391							2	2	192		
579	192	392							2	2	193		
580	193	393							2	2	194		
581	194	394							2	2	195		
582	195	395							2	2	196		
583	196	396							2	2	197		
584	197	397							2	2	198		
585	198	398							2	2	199		
586	199	399							2	2	200		
587	200	400							2	2	201		
588	105	305							3	3	202		
589	116	316							3	3	203		
590	181	182	582	581					4	4	204		
591	182	183	583	582					4	4	204		
592	183	184	584	583					4	4	204		
593	184	185	585	584					4	4	204		
594	185	186	586	585					4	4	204		
595	186	187	587	586					4	4	204		
596	187	188	588	587					4	4	204		
597	188	189	589	588					4	4	204		
598	189	190	590	589					4	4	204		
599	190	191	591	590					4	4	204		
600	191	192	592	591					4	4	204		
	A	A	A	A	A	A	A	A	A	A	A	A	A

********** ANSYS INPUT DATA LISTING [illegible] **********

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
601	192	193	593	592					4	4	204		
602	193	194	594	593					4	4	204		
603	194	195	595	594					4	4	204		
604	195	196	596	595					4	4	204		
605	196	197	597	596					4	4	204		
606	197	198	598	597					4	4	204		
607	198	199	599	598					4	4	204		
608	199	200	600	599					4	4	204		
609	-1												
610	1		0.0000E+00		0.0000E+00		0.0000E+00						
611	2		0.4000E+00		0.0000E+00		0.0000E+00						
612	3		0.8000E+00		0.0000E+00		0.0000E+00						
613	4		0.1200E+01		0.0000E+00		0.0000E+00						
614	5		0.1750E+01		0.0000E+00		0.0000E+00						
615	6		0.3250E+01		0.0000E+00		0.0000E+00						
616	7		0.5250E+01		0.0000E+00		0.0000E+00						
617	8		0.7250E+01		0.0000E+00		0.0000E+00						
618	9		0.9250E+01		0.0000E+00		0.0000E+00						
619	10		0.1125E+02		0.0000E+00		0.0000E+00						
620	11		0.1325E+02		0.0000E+00		0.0000E+00						
621	12		0.1525E+02		0.0000E+00		0.0000E+00						
622	13		0.1725E+02		0.0000E+00		0.0000E+00						
623	14		0.1925E+02		0.0000E+00		0.0000E+00						
624	15		0.2125E+02		0.0000E+00		0.0000E+00						
625	16		0.2275E+02		0.0000E+00		0.0000E+00						
626	17		0.2330E+02		0.0000E+00		0.0000E+00						
627	18		0.2370E+02		0.0000E+00		0.0000E+00						
628	19		0.2410E+02		0.0000E+00		0.0000E+00						
629	20		0.2450E+02		0.0000E+00		0.0000E+00						
630	21		0.0000E+00		0.2000E+00		0.0000E+00						
631	22		0.4000E+00		0.2000E+00		0.0000E+00						
632	23		0.8000E+00		0.2000E+00		0.0000E+00						
633	24		0.1200E+01		0.2000E+00		0.0000E+00						
634	25		0.1750E+01		0.2000E+00		0.0000E+00						
635	26		0.3250E+01		0.2000E+00		0.0000E+00						
636	27		0.5250E+01		0.2000E+00		0.0000E+00						
637	28		0.7250E+01		0.2000E+00		0.0000E+00						
638	29		0.9250E+01		0.2000E+00		0.0000E+00						
639	30		0.1125E+02		0.2000E+00		0.0000E+00						
640	31		0.1325E+02		0.2000E+00		0.0000E+00						
641	32		0.1525E+02		0.2000E+00		0.0000E+00						
642	33		0.1725E+02		0.2000E+00		0.0000E+00						
643	34		0.1925E+02		0.2000E+00		0.0000E+00						
644	35		0.2125E+02		0.2000E+00		0.0000E+00						
645	36		0.2275E+02		0.2000E+00		0.0000E+00						
646	37		0.2330E+02		0.2000E+00		0.0000E+00						
647	38		0.2370E+02		0.2000E+00		0.0000E+00						
648	39		0.2410E+02		0.2000E+00		0.0000E+00						
649	40		0.2450E+02		0.2000E+00		0.0000E+00						
650	41		0.0000E+00		0.5500E+00		0.0000E+00						
	A	A	A	A	A	A	A	A	A	A	A	A	A

********** [illegible] **********

```
             6    12    18    24    30    36    42    48    54    60    66    72    78
             V     V     V     V     V     V     V     V     V     V     V     V     V
 651        42          0.4000E+00  0.5500E+00  0.0000E+00
 652        43          0.8000E+00  0.5500E+00  0.0000E+00
 653        44          0.1200E+01  0.5500E+00  0.0000E+00
 654        45          0.1750E+01  0.5500E+00  0.0000E+00
 655        46          0.3250E+01  0.5500E+00  0.0000E+00
 656        47          0.5250E+01  0.5500E+00  0.0000E+00
 657        48          0.7250E+01  0.5500E+00  0.0000E+00
 658        49          0.9250E+01  0.5500E+00  0.0000E+00
 659        50          0.1125E+02  0.5500E+00  0.0000E+00
 660        51          0.1325E+02  0.5500E+00  0.0000E+00
 661        52          0.1525E+02  0.5500E+00  0.0000E+00
 662        53          0.1725E+02  0.5500E+00  0.0000E+00
 663        54          0.1925E+02  0.5500E+00  0.0000E+00
 664        55          0.2125E+02  0.5500E+00  0.0000E+00
 665        56          0.2275E+02  0.5500E+00  0.0000E+00
 666        57          0.2330E+02  0.5500E+00  0.0000E+00
 667        58          0.2370E+02  0.5500E+00  0.0000E+00
 668        59          0.2410E+02  0.5500E+00  0.0000E+00
 669        60          0.2450E+02  0.5500E+00  0.0000E+00
 670        61          0.0000E+00  0.9000E+00  0.0000E+00
 671        62          0.4000E+00  0.9000E+00  0.0000E+00
 672        63          0.8000E+00  0.9000E+00  0.0000E+00
 673        64          0.1200E+01  0.9000E+00  0.0000E+00
 674        65          0.1750E+01  0.9000E+00  0.0000E+00
 675        66          0.3250E+01  0.9000E+00  0.0000E+00
 676        67          0.5250E+01  0.9000E+00  0.0000E+00
 677        68          0.7250E+01  0.9000E+00  0.0000E+00
 678        69          0.9250E+01  0.9000E+00  0.0000E+00
 679        70          0.1125E+02  0.9000E+00  0.0000E+00
 680        71          0.1325E+02  0.9000E+00  0.0000E+00
 681        72          0.1525E+02  0.9000E+00  0.0000E+00
 682        73          0.1725E+02  0.9000E+00  0.0000E+00
 683        74          0.1925E+02  0.9000E+00  0.0000E+00
 684        75          0.2125E+02  0.9000E+00  0.0000E+00
 685        76          0.2275E+02  0.9000E+00  0.0000E+00
 686        77          0.2330E+02  0.9000E+00  0.0000E+00
 687        78          0.2370E+02  0.9000E+00  0.0000E+00
 688        79          0.2410E+02  0.9000E+00  0.0000E+00
 689        80          0.2450E+02  0.9000E+00  0.0000E+00
 690        81          0.0000E+00  0.1325E+01  0.0000E+00
 691        82          0.4000E+00  0.1325E+01  0.0000E+00
 692        83          0.8000E+00  0.1325E+01  0.0000E+00
 693        84          0.1200E+01  0.1325E+01  0.0000E+00
 694        85          0.1750E+01  0.1325E+01  0.0000E+00
 695        86          0.3250E+01  0.1325E+01  0.0000E+00
 696        87          0.5250E+01  0.1325E+01  0.0000E+00
 697        88          0.7250E+01  0.1325E+01  0.0000E+00
 698        89          0.9250E+01  0.1325E+01  0.0000E+00
 699        90          0.1125E+02  0.1325E+01  0.0000E+00
 700        91          0.1325E+02  0.1325E+01  0.0000E+00
             A     A     A     A     A     A     A     A     A     A     A     A     A
```

6 12 18 24 30 36 42 48 54 60 66 72 78
V V V V V V V V V V V V V

92	0.1525E+02	0.1325E+01	0.0000E+00
93	0.1725E+02	0.1325E+01	0.0000E+00
94	0.1925E+02	0.1325E+01	0.0000E+00
95	0.2125E+02	0.1325E+01	0.0000E+00
96	0.2275E+02	0.1325E+01	0.0000E+00
97	0.2330E+02	0.1325E+01	0.0000E+00
98	0.2370E+02	0.1325E+01	0.0000E+00
99	0.2410E+02	0.1325E+01	0.0000E+00
100	0.2450E+02	0.1325E+01	0.0000E+00
101	0.0000E+00	0.1750E+01	0.0000E+00
102	0.4000E+00	0.1750E+01	0.0000E+00
103	0.8000E+00	0.1750E+01	0.0000E+00
104	0.1200E+01	0.1750E+01	0.0000E+00
105	0.1750E+01	0.1750E+01	0.0000E+00
106	0.3250E+01	0.1750E+01	0.0000E+00
107	0.5250E+01	0.1750E+01	0.0000E+00
108	0.7250E+01	0.1750E+01	0.0000E+00
109	0.9250E+01	0.1750E+01	0.0000E+00
110	0.1125E+02	0.1750E+01	0.0000E+00
111	0.1325E+02	0.1750E+01	0.0000E+00
112	0.1525E+02	0.1750E+01	0.0000E+00
113	0.1725E+02	0.1750E+01	0.0000E+00
114	0.1925E+02	0.1750E+01	0.0000E+00
115	0.2125E+02	0.1750E+01	0.0000E+00
116	0.2275E+02	0.1750E+01	0.0000E+00
117	0.2330E+02	0.1750E+01	0.0000E+00
118	0.2370E+02	0.1750E+01	0.0000E+00
119	0.2410E+02	0.1750E+01	0.0000E+00
120	0.2450E+02	0.1750E+01	0.0000E+00
121	0.0000E+00	0.3312E+01	0.0000E+00
122	0.4000E+00	0.3312E+01	0.0000E+00
123	0.8000E+00	0.3312E+01	0.0000E+00
124	0.1200E+01	0.3312E+01	0.0000E+00
125	0.1750E+01	0.3312E+01	0.0000E+00
126	0.3250E+01	0.3312E+01	0.0000E+00
127	0.5250E+01	0.3312E+01	0.0000E+00
128	0.7250E+01	0.3312E+01	0.0000E+00
129	0.9250E+01	0.3312E+01	0.0000E+00
130	0.1125E+02	0.3312E+01	0.0000E+00
131	0.1325E+02	0.3312E+01	0.0000E+00
132	0.1525E+02	0.3312E+01	0.0000E+00
133	0.1725E+02	0.3312E+01	0.0000E+00
134	0.1925E+02	0.3312E+01	0.0000E+00
135	0.2125E+02	0.3312E+01	0.0000E+00
136	0.2275E+02	0.3312E+01	0.0000E+00
137	0.2330E+02	0.3312E+01	0.0000E+00
138	0.2370E+02	0.3312E+01	0.0000E+00
139	0.2410E+02	0.3312E+01	0.0000E+00
140	0.2450E+02	0.3312E+01	0.0000E+00
141	0.0000E+00	0.4875E+01	0.0000E+00

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.... ANSYS INPUT DATA LISTING (FILE18) ....

6 12 18 24 30 36 42 48 54 60 66 72 78
V V V V V V V V V V V V V

751	142	0.4000E+00	0.4875E+01	0.0000E+00
752	143	0.8000E+00	0.4875E+01	0.0000E+00
753	144	0.1200E+01	0.4875E+01	0.0000E+00
754	145	0.1750E+01	0.4875E+01	0.0000E+00
755	146	0.3250E+01	0.4875E+01	0.0000E+00
756	147	0.5250E+01	0.4875E+01	0.0000E+00
757	148	0.7250E+01	0.4875E+01	0.0000E+00
758	149	0.9250E+01	0.4875E+01	0.0000E+00
759	150	0.1125E+02	0.4875E+01	0.0000E+00
760	151	0.1325E+02	0.4875E+01	0.0000E+00
761	152	0.1525E+02	0.4875E+01	0.0000E+00
762	153	0.1725E+02	0.4875E+01	0.0000E+00
763	154	0.1925E+02	0.4875E+01	0.0000E+00
764	155	0.2125E+02	0.4875E+01	0.0000E+00
765	156	0.2275E+02	0.4875E+01	0.0000E+00
766	157	0.2330E+02	0.4875E+01	0.0000E+00
767	158	0.2370E+02	0.4875E+01	0.0000E+00
768	159	0.2410E+02	0.4875E+01	0.0000E+00
769	160	0.2450E+02	0.4875E+01	0.0000E+00
770	161	0.0000E+00	0.6437E+01	0.0000E+00
771	162	0.4000E+00	0.6437E+01	0.0000E+00
772	163	0.8000E+00	0.6437E+01	0.0000E+00
773	164	0.1200E+01	0.6437E+01	0.0000E+00
774	165	0.1750E+01	0.6437E+01	0.0000E+00
775	166	0.3250E+01	0.6437E+01	0.0000E+00
776	167	0.5250E+01	0.6437E+01	0.0000E+00
777	168	0.7250E+01	0.6437E+01	0.0000E+00
778	169	0.9250E+01	0.6437E+01	0.0000E+00
779	170	0.1125E+02	0.6437E+01	0.0000E+00
780	171	0.1325E+02	0.6437E+01	0.0000E+00
781	172	0.1525E+02	0.6437E+01	0.0000E+00
782	173	0.1725E+02	0.6437E+01	0.0000E+00
783	174	0.1925E+02	0.6437E+01	0.0000E+00
784	175	0.2125E+02	0.6437E+01	0.0000E+00
785	176	0.2275E+02	0.6437E+01	0.0000E+00
786	177	0.2330E+02	0.6437E+01	0.0000E+00
787	178	0.2370E+02	0.6437E+01	0.0000E+00
788	179	0.2410E+02	0.6437E+01	0.0000E+00
789	180	0.2450E+02	0.6437E+01	0.0000E+00
790	181	0.0000E+00	0.8000E+01	0.0000E+00
791	182	0.4000E+00	0.8000E+01	0.0000E+00
792	183	0.8000E+00	0.8000E+01	0.0000E+00
793	184	0.1200E+01	0.8000E+01	0.0000E+00
794	185	0.1750E+01	0.8000E+01	0.0000E+00
795	186	0.3250E+01	0.8000E+01	0.0000E+00
796	187	0.5250E+01	0.8000E+01	0.0000E+00
797	188	0.7250E+01	0.8000E+01	0.0000E+00
798	189	0.9250E+01	0.8000E+01	0.0000E+00
799	190	0.1125E+02	0.8000E+01	0.0000E+00
800	191	0.1325E+02	0.8000E+01	0.0000E+00

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********** [illegible] INPUT DATA LISTING [illegible] **********

	6	12	18 - 24	30 - 36	42 - 48	54	60	66	72	78
	V	V	V V	V V	V V	V	V	V	V	V
801	192		0.1525E+02	0.8000E+01	0.0000E+00					
802	193		0.1725E+02	0.8000E+01	0.0000E+00					
803	194		0.1925E+02	0.8000E+01	0.0000E+00					
804	195		0.2125E+02	0.8000E+01	0.0000E+00					
805	196		0.2275E+02	0.8000E+01	0.0000E+00					
806	197		0.2330E+02	0.8000E+01	0.0000E+00					
807	198		0.2370E+02	0.8000E+01	0.0000E+00					
808	199		0.2410E+02	0.8000E+01	0.0000E+00					
809	200		0.2450E+02	0.8000E+01	0.0000E+00					
810	201		0.0000E+00	0.0000E+00	-0.1000E+01					
811	202		0.4000E+00	0.0000E+00	-0.1000E+01					
812	203		0.8000E+00	0.0000E+00	-0.1000E+01					
813	204		0.1200E+01	0.0000E+00	-0.1000E+01					
814	205		0.1750E+01	0.0000E+00	-0.1000E+01					
815	206		0.3250E+01	0.0000E+00	-0.1000E+01					
816	207		0.5250E+01	0.0000E+00	-0.1000E+01					
817	208		0.7250E+01	0.0000E+00	-0.1000E+01					
818	209		0.9250E+01	0.0000E+00	-0.1000E+01					
819	210		0.1125E+02	0.0000E+00	-0.1000E+01					
820	211		0.1325E+02	0.0000E+00	-0.1000E+01					
821	212		0.1525E+02	0.0000E+00	-0.1000E+01					
822	213		0.1725E+02	0.0000E+00	-0.1000E+01					
823	214		0.1925E+02	0.0000E+00	-0.1000E+01					
824	215		0.2125E+02	0.0000E+00	-0.1000E+01					
825	216		0.2275E+02	0.0000E+00	-0.1000E+01					
826	217		0.2330E+02	0.0000E+00	-0.1000E+01					
827	218		0.2370E+02	0.0000E+00	-0.1000E+01					
828	219		0.2410E+02	0.0000E+00	-0.1000E+01					
829	220		0.2450E+02	0.0000E+00	-0.1000E+01					
830	221		0.0000E+00	0.2000E+00	-0.1000E+01					
831	222		0.4000E+00	0.2000E+00	-0.1000E+01					
832	223		0.8000E+00	0.2000E+00	-0.1000E+01					
833	224		0.1200E+01	0.2000E+00	-0.1000E+01					
834	225		0.1750E+01	0.2000E+00	-0.1000E+01					
835	226		0.3250E+01	0.2000E+00	-0.1000E+01					
836	227		0.5250E+01	0.2000E+00	-0.1000E+01					
837	228		0.7250E+01	0.2000E+00	-0.1000E+01					
838	229		0.9250E+01	0.2000E+00	-0.1000E+01					
839	230		0.1125E+02	0.2000E+00	-0.1000E+01					
840	231		0.1325E+02	0.2000E+00	-0.1000E+01					
841	232		0.1525E+02	0.2000E+00	-0.1000E+01					
842	233		0.1725E+02	0.2000E+00	-0.1000E+01					
843	234		0.1925E+02	0.2000E+00	-0.1000E+01					
844	235		0.2125E+02	0.2000E+00	-0.1000E+01					
845	236		0.2275E+02	0.2000E+00	-0.1000E+01					
846	237		0.2330E+02	0.2000E+00	-0.1000E+01					
847	238		0.2370E+02	0.2000E+00	-0.1000E+01					
848	239		0.2410E+02	0.2000E+00	-0.1000E+01					
849	240		0.2450E+02	0.2000E+00	-0.1000E+01					
850	241		0.0000E+00	0.5500E+00	-0.1000E+01					
	A	A	A A	A A	A A	A	A	A	A	A

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              6    12    18    24    30    36    42    48    54    60    66    72    78
              V     V     V     V     V     V     V     V     V     V     V     V     V
 851        242          0.4000E+00  0.5500E+00 -0.1000E+01
 852        243          0.8000E+00  0.5500E+00 -0.1000E+01
 853        244          0.1200E+01  0.5500E+00 -0.1000E+01
 854        245          0.1750E+01  0.5500E+00 -0.1000E+01
 855        246          0.3250E+01  0.5500E+00 -0.1000E+01
 856        247          0.5250E+01  0.5500E+00 -0.1000E+01
 857        248          0.7250E+01  0.5500E+00 -0.1000E+01
 858        249          0.9250E+01  0.5500E+00 -0.1000E+01
 859        250          0.1125E+02  0.5500E+00 -0.1000E+01
 860        251          0.1325E+02  0.5500E+00 -0.1000E+01
 861        252          0.1525E+02  0.5500E+00 -0.1000E+01
 862        253          0.1725E+02  0.5500E+00 -0.1000E+01
 863        254          0.1925E+02  0.5500E+00 -0.1000E+01
 864        255          0.2125E+02  0.5500E+00 -0.1000E+01
 865        256          0.2275E+02  0.5500E+00 -0.1000E+01
 866        257          0.2330E+02  0.5500E+00 -0.1000E+01
 867        258          0.2370E+02  0.5500E+00 -0.1000E+01
 868        259          0.2410E+02  0.5500E+00 -0.1000E+01
 869        260          0.2450E+02  0.5500E+00 -0.1000E+01
 870        261          0.0000E+00  0.9000E+00 -0.1000E+01
 871        262          0.4000E+00  0.9000E+00 -0.1000E+01
 872        263          0.8000E+00  0.9000E+00 -0.1000E+01
 873        264          0.1200E+01  0.9000E+00 -0.1000E+01
 874        265          0.1750E+01  0.9000E+00 -0.1000E+01
 875        266          0.3250E+01  0.9000E+00 -0.1000E+01
 876        267          0.5250E+01  0.9000E+00 -0.1000E+01
 877        268          0.7250E+01  0.9000E+00 -0.1000E+01
 878        269          0.9250E+01  0.9000E+00 -0.1000E+01
 879        270          0.1125E+02  0.9000E+00 -0.1000E+01
 880        271          0.1325E+02  0.9000E+00 -0.1000E+01
 881        272          0.1525E+02  0.9000E+00 -0.1000E+01
 882        273          0.1725E+02  0.9000E+00 -0.1000E+01
 883        274          0.1925E+02  0.9000E+00 -0.1000E+01
 884        275          0.2125E+02  0.9000E+00 -0.1000E+01
 885        276          0.2275E+02  0.9000E+00 -0.1000E+01
 886        277          0.2330E+02  0.9000E+00 -0.1000E+01
 887        278          0.2370E+02  0.9000E+00 -0.1000E+01
 888        279          0.2410E+02  0.9000E+00 -0.1000E+01
 889        280          0.2450E+02  0.9000E+00 -0.1000E+01
 890        281          0.0000E+00  0.1325E+01 -0.1000E+01
 891        282          0.4000E+00  0.1325E+01 -0.1000E+01
 892        283          0.8000E+00  0.1325E+01 -0.1000E+01
 893        284          0.1200E+01  0.1325E+01 -0.1000E+01
 894        285          0.1750E+01  0.1325E+01 -0.1000E+01
 895        286          0.3250E+01  0.1325E+01 -0.1000E+01
 896        287          0.5250E+01  0.1325E+01 -0.1000E+01
 897        288          0.7250E+01  0.1325E+01 -0.1000E+01
 898        289          0.9250E+01  0.1325E+01 -0.1000E+01
 899        290          0.1125E+02  0.1325E+01 -0.1000E+01
 900        291          0.1325E+02  0.1325E+01 -0.1000E+01
              A     A     A     A     A     A     A     A     A     A     A     A     A
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********** ANSYS INPUT DATA LISTING (FILE17) **********

	6	18	30	42
901	292	0.1525E+02	0.1325E+01	-0.1000E+01
902	293	0.1725E+02	0.1325E+01	-0.1000E+01
903	294	0.1925E+02	0.1325E+01	-0.1000E+01
904	295	0.2125E+02	0.1325E+01	-0.1000E+01
905	296	0.2275E+02	0.1325E+01	-0.1000E+01
906	297	0.2330E+02	0.1325E+01	-0.1000E+01
907	298	0.2370E+02	0.1325E+01	-0.1000E+01
908	299	0.2410E+02	0.1325E+01	-0.1000E+01
909	300	0.2450E+02	0.1325E+01	-0.1000E+01
910	301	0.0000E+00	0.1750E+01	-0.1000E+01
911	302	0.4000E+00	0.1750E+01	-0.1000E+01
912	303	0.8000E+00	0.1750E+01	-0.1000E+01
913	304	0.1200E+01	0.1750E+01	-0.1000E+01
914	305	0.1750E+01	0.1750E+01	-0.1000E+01
915	306	0.3250E+01	0.1750E+01	-0.1000E+01
916	307	0.5250E+01	0.1750E+01	-0.1000E+01
917	308	0.7250E+01	0.1750E+01	-0.1000E+01
918	309	0.9250E+01	0.1750E+01	-0.1000E+01
919	310	0.1125E+02	0.1750E+01	-0.1000E+01
920	311	0.1325E+02	0.1750E+01	-0.1000E+01
921	312	0.1525E+02	0.1750E+01	-0.1000E+01
922	313	0.1725E+02	0.1750E+01	-0.1000E+01
923	314	0.1925E+02	0.1750E+01	-0.1000E+01
924	315	0.2125E+02	0.1750E+01	-0.1000E+01
925	316	0.2275E+02	0.1750E+01	-0.1000E+01
926	317	0.2330E+02	0.1750E+01	-0.1000E+01
927	318	0.2370E+02	0.1750E+01	-0.1000E+01
928	319	0.2410E+02	0.1750E+01	-0.1000E+01
929	320	0.2450E+02	0.1750E+01	-0.1000E+01
930	321	0.0000E+00	0.3312E+01	-0.1000E+01
931	322	0.4000E+00	0.3312E+01	-0.1000E+01
932	323	0.8000E+00	0.3312E+01	-0.1000E+01
933	324	0.1200E+01	0.3312E+01	-0.1000E+01
934	325	0.1750E+01	0.3312E+01	-0.1000E+01
935	326	0.3250E+01	0.3312E+01	-0.1000E+01
936	327	0.5250E+01	0.3312E+01	-0.1000E+01
937	328	0.7250E+01	0.3312E+01	-0.1000E+01
938	329	0.9250E+01	0.3312E+01	-0.1000E+01
939	330	0.1125E+02	0.3312E+01	-0.1000E+01
940	331	0.1325E+02	0.3312E+01	-0.1000E+01
941	332	0.1525E+02	0.3312E+01	-0.1000E+01
942	333	0.1725E+02	0.3312E+01	-0.1000E+01
943	334	0.1925E+02	0.3312E+01	-0.1000E+01
944	335	0.2125E+02	0.3312E+01	-0.1000E+01
945	336	0.2275E+02	0.3312E+01	-0.1000E+01
946	337	0.2330E+02	0.3312E+01	-0.1000E+01
947	338	0.2370E+02	0.3312E+01	-0.1000E+01
948	339	0.2410E+02	0.3312E+01	-0.1000E+01
949	340	0.2450E+02	0.3312E+01	-0.1000E+01
950	341	0.0000E+00	0.4875E+01	-0.1000E+01

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              6    12    18    24    30    36    42    48    54    60    65    72    78
              V    V     V     V     V     V     V     V     V     V     V     V     V
  951        342         0.4000E+00  0.4875E+01 -0.1000E+01
  952        343         0.8000E+00  0.4875E+01 -0.1000E+01
  953        344         0.1200E+01  0.4875E+01 -0.1000E+01
  954        345         0.1750E+01  0.4875E+01 -0.1000E+01
  955        346         0.3250E+01  0.4875E+01 -0.1000E+01
  956        347         0.5250E+01  0.4875E+01 -0.1000E+01
  957        348         0.7250E+01  0.4875E+01 -0.1000E+01
  958        349         0.9250E+01  0.4875E+01 -0.1000E+01
  959        350         0.1125E+02  0.4875E+01 -0.1000E+01
  960        351         0.1325E+02  0.4875E+01 -0.1000E+01
  961        352         0.1525E+02  0.4875E+01 -0.1000E+01
  962        353         0.1725E+02  0.4875E+01 -0.1000E+01
  963        354         0.1925E+02  0.4875E+01 -0.1000E+01
  964        355         0.2125E+02  0.4875E+01 -0.1000E+01
  965        356         0.2275E+02  0.4875E+01 -0.1000E+01
  966        357         0.2330E+02  0.4875E+01 -0.1000E+01
  967        358         0.2370E+02  0.4875E+01 -0.1000E+01
  968        359         0.2410E+02  0.4875E+01 -0.1000E+01
  969        360         0.2450E+02  0.4875E+01 -0.1000E+01
  970        361         0.0000E+00  0.6437E+01 -0.1000E+01
  971        362         0.4000E+00  0.6437E+01 -0.1000E+01
  972        363         0.8000E+00  0.6437E+01 -0.1000E+01
  973        364         0.1200E+01  0.6437E+01 -0.1000E+01
  974        365         0.1750E+01  0.6437E+01 -0.1000E+01
  975        366         0.3250E+01  0.6437E+01 -0.1000E+01
  976        367         0.5250E+01  0.6437E+01 -0.1000E+01
  977        368         0.7250E+01  0.6437E+01 -0.1000E+01
  978        369         0.9250E+01  0.6437E+01 -0.1000E+01
  979        370         0.1125E+02  0.6437E+01 -0.1000E+01
  980        371         0.1325E+02  0.6437E+01 -0.1000E+01
  981        372         0.1525E+02  0.6437E+01 -0.1000E+01
  982        373         0.1725E+02  0.6437E+01 -0.1000E+01
  983        374         0.1925E+02  0.6437E+01 -0.1000E+01
  984        375         0.2125E+02  0.6437E+01 -0.1000E+01
  985        376         0.2275E+02  0.6437E+01 -0.1000E+01
  986        377         0.2330E+02  0.6437E+01 -0.1000E+01
  987        378         0.2370E+02  0.6437E+01 -0.1000E+01
  988        379         0.2410E+02  0.6437E+01 -0.1000E+01
  989        380         0.2450E+02  0.6437E+01 -0.1000E+01
  990        381         0.0000E+00  0.8000E+01 -0.1000E+01
  991        382         0.4000E+00  0.8000E+01 -0.1000E+01
  992        383         0.8000E+00  0.8000E+01 -0.1000E+01
  993        384         0.1200E+01  0.8000E+01 -0.1000E+01
  994        385         0.1750E+01  0.8000E+01 -0.1000E+01
  995        386         0.3250E+01  0.8000E+01 -0.1000E+01
  996        387         0.5250E+01  0.8000E+01 -0.1000E+01
  997        388         0.7250E+01  0.8000E+01 -0.1000E+01
  998        389         0.9250E+01  0.8000E+01 -0.1000E+01
  999        390         0.1125E+02  0.8000E+01 -0.1000E+01
 1000        391         0.1325E+02  0.8000E+01 -0.1000E+01
              A    A     A     A     A     A     A     A     A     A     A     A     A
```

```
              6    12    18    24    30    36    42    48    54    60    66    72    78
              V     V     V     V     V     V     V     V     V     V     V     V     V
 1001       392         0.1525E+02  0.8000E+01 -0.1000E+01
 1002       393         0.1725E+02  0.8000E+01 -0.1000E+01
 1003       394         0.1925E+02  0.8000E+01 -0.1000E+01
 1004       395         0.2125E+02  0.8000E+01 -0.1000E+01
 1005       396         0.2275E+02  0.8000E+01 -0.1000E+01
 1006       397         0.2330E+02  0.8000E+01 -0.1000E+01
 1007       398         0.2370E+02  0.8000E+01 -0.1000E+01
 1008       399         0.2410E+02  0.8000E+01 -0.1000E+01
 1009       400         0.2450E+02  0.8000E+01 -0.1000E+01
 1010       581         0.0000E+00  0.8000E+01  0.6000E+01
 1011       582         0.4000E+00  0.8000E+01  0.6000E+01
 1012       583         0.8000E+00  0.8000E+01  0.6000E+01
 1013       584         0.1200E+01  0.8000E+01  0.6000E+01
 1014       585         0.1750E+01  0.8000E+01  0.6000E+01
 1015       586         0.3250E+01  0.8000E+01  0.6000E+01
 1016       587         0.5250E+01  0.8000E+01  0.6000E+01
 1017       588         0.7250E+01  0.8000E+01  0.6000E+01
 1018       589         0.9250E+01  0.8000E+01  0.6000E+01
 1019       590         0.1125E+02  0.8000E+01  0.6000E+01
 1020       591         0.1325E+02  0.8000E+01  0.6000E+01
 1021       592         0.1525E+02  0.8000E+01  0.6000E+01
 1022       593         0.1725E+02  0.8000E+01  0.6000E+01
 1023       594         0.1925E+02  0.8000E+01  0.6000E+01
 1024       595         0.2125E+02  0.8000E+01  0.6000E+01
 1025       596         0.2275E+02  0.8000E+01  0.6000E+01
 1026       597         0.2330E+02  0.8000E+01  0.6000E+01
 1027       598         0.2370E+02  0.8000E+01  0.6000E+01
 1028       599         0.2410E+02  0.8000E+01  0.6000E+01
 1029       600         0.2450E+02  0.8000E+01  0.6000E+01
 1030        -1
 1031   EX      1       0.2900E+05
 1032   EY      1       0.2900E+05
 1033   NUXY    1       0.3000E+00
 1034   ALPX    1       0.0000E+00
 1035   ALPY    1       0.0000E+00
 1036   DENS    1       0.0000E+00
 1037   EX      2       0.2917E+03
 1038   ALPX    2       0.0000E+00
 1039   DENS    2       0.0000E+00
 1040   EX      3       0.2900E+05
 1041   ALPX    3       0.0000E+00
 1042   DENS    3       0.0000E+00
 1043   EX      4       0.2900E+05
 1044   EY      4       0.2900E+05
 1045   NUXY    4       0.3000E+00
 1046   ALPX    4       0.0000E+00
 1047   ALPY    4       0.0000E+00
 1048   DENS    4       0.0000E+00
 1049   EX      5       0.2900E+05
 1050   ALPX    5       0.0000E+00
              A     A     A     A     A     A     A     A     A     A     A     A     A
```

********** ANSYS INPUT DATA LISTING (PRINT 1) **********

```
NUXY    5        0.3000E+00
DENS    5        0.0000E+00
END
  1    -23 10                                                                 1
                                                       1
      1 UX       0.0000E+00                200             UY
    201 UX       0.0000E+00                400             UY      UZ
          END
    190 MY       0.4950E+02
    191 MY       0.4950E+02
           -1
     -1
FINISH
```

***** NOTICE ***** THIS IS THE ANSYS GENERAL PURPOSE FINITE ELEMENT COMPUTER PROGRAM. NEITHER SWANSON ANALYSIS SYSTEMS, INC. NOR THE CORPORATION SUPPLYING THE COMPUTER FACILITIES FOR THIS ANALYSIS ASSUME ANY RESPONSIBILITY FOR THE VALIDITY, ACCURACY, OR APPLICABILITY OF ANY RESULTS OBTAINED FROM THE ANSYS SYSTEM. THE USER MUST VERIFY HIS OWN RESULTS.

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***** ANALYST = J. T. LIU

***** ANALYSIS OPTIONS *****

	VALUE
ANALYSIS TYPE	0
ELEMENT CONSTANT TABLE . . .	1
POST-RUN PROCESS KEY	99
REFERENCE TEMPERATURE	0.00
UNIFORM TEMPERATURE	0.00

***** ELEMENT TYPES *****

TYPE	STIF	DESCRIPTION	KEY OPTIONS 1	2	3	4	5	6	7	8	9	NJ	INOTPR
1	43	RECT. FLAT SHELL, 3-D	0	0	2	0	0	0	0	0	0	0	0
2	10	CABLE	0	1	1	0	0	0	0	0	0	0	0
3	10	CABLE	0	1	0	0	0	0	0	0	0	0	0
4	63	QUAD. FLAT SHELL	0	0	0	0	0	0	0	0	0	0	0
5	4	ELASTIC BEAM, 3-D	0	0	0	0	0	0	0	0	0	0	0

NUMBER OF ELEMENT TYPES= 5

***** TABLE OF ELEMENT REAL CONSTANTS *****

NO.	
1	0.75000
2	0.20000E-01
3	0.40000E-01
4	0.40000E-01
5	0.47500E-01
6	0.16250
7	0.17500
8	0.2[illegible]
9	[illegible]
10	[illegible]
11	[illegible]

13	0.20000
14	0.20000
15	0.20000
16	0.17500
17	0.10250
18	0.47500E-01
19	0.4[illegible]00E-01
20	0.45000E-01
21	0.20000E-01
22	0.55000E-01
23	0.11000
24	0.11000
25	0.13060
26	0.28190
27	0.48120
28	0.55000
29	0.55000
30	0.55000
31	0.55000
32	0.55000
33	0.55000
34	0.55000
35	0.55000
36	0.48120
37	0.28190
38	0.13060
39	0.11000
40	0.11000
41	0.55000E-01
42	0.70000E-01
43	0.14000
44	0.14000
45	0.16620
46	0.35870
47	0.61250
48	0.70000
49	0.70000
50	0.70000
51	0.70000
52	0.70000
53	0.70000
54	0.70000
55	0.70000
56	0.61250
57	0.35870
58	0.16620
59	0.14000
60	0.14000
61	0.70000E-01
62	0.77500E-01
63	0.15500
64	0.15500
65	0.18410
66	0.39720
67	0.67810
68	0.77500
69	0.77500
70	0.77500
71	0.77500
72	0.77500
73	0.77500
74	0.77500
75	0.77500
76	[illegible]
77	[illegible]

79	0.15500
80	0.15500
81	0.77500E-01
82	0.85000E-01
83	0.17000
84	0.17000
85	0.20190
86	0.43560
87	0.74370
88	0.85000
89	0.85000
90	0.85000
91	0.85000
92	0.85000
93	0.85000
94	0.85000
95	0.85000
96	0.74370
97	0.43560
98	0.20190
99	0.17000
100	0.17000
101	0.85000E-01
102	0.19870
103	0.39750
104	0.39750
105	0.47200
106	1.0190
107	1.7390
108	1.9870
109	1.9870
110	1.9870
111	1.9870
112	1.9870
113	1.9870
114	1.9870
115	1.9870
116	1.7390
117	1.0190
118	0.47200
119	0.39750
120	0.39750
121	0.19870
122	0.31250
123	0.62500
124	0.62500
125	0.74220
126	1.6020
127	2.7340
128	3.1250
129	3.1250
130	3.1250
131	3.1250
132	3.1250
133	3.1250
134	3.1250
135	3.1250
136	2.7340
137	1.6020
138	0.74220
139	0.62500
140	0.62500
141	0.31250
[illegible]	[illegible]
[illegible]	[illegible]

```
145  0.74220
146    1.6020
147    2.7340
148    3.1250
149    3.1250
150    3.1250
151    3.1250
152    3.1250
153    3.1250
154    3.1250
155    3.1250
156    2.7340
157    1.6020
158  0.74220
159  0.62500
160  0.62500
161  0.31250
162  0.31250
163  0.62500
164  0.62500
165  0.74220
166    1.6020
167    2.7340
168    3.1250
169    3.1250
170    3.1250
171    3.1250
172    3.1250
173    3.1250
174    3.1250
175    3.1250
176    2.7340
177    1.6020
178  0.74220
179  0.62500
180  0.62500
181  0.31250
182  0.15620
183  0.31250
184  0.31250
185  0.37110
186  0.80080
187    1.3670
188    1.5620
189    1.5620
190    1.5620
191    1.5620
192    1.5620
193    1.5620
194    1.5620
195    1.5620
196    1.3670
197  0.80080
198  0.37110
199  0.31250
200  0.31250
201  0.15620
202  0.12070
203  0.12070
204  0.75000
205   100.00      0.10000E+06 0.13000E+06  1.0000       1.0000

NUMBER OF REAL CONSTANT SETS= 205
```

TUGC.CPSFS.TYP ANCH LPX6X3/4X?-9.KT=3?? 15.4728 6/27/85 CP= 1.037

***** ELEMENT DEFINITIONS *****

ELEMENT	NODES				MAT	TYPE	CLASS	ELEMENT REAL CONSTANTS				
								THK1	THK2	THK3	THK4	THET
1	1	2	22	21	1	1	0	0.750	0.750	0.750	0.750	0.000
2	2	3	23	22	1	1	0	0.750	0.750	0.750	0.750	0.000
3	3	4	24	23	1	1	0	0.750	0.750	0.750	0.750	0.000
4	4	5	25	24	1	1	0	0.750	0.750	0.750	0.750	0.000
5	5	6	26	25	1	1	0	0.750	0.750	0.750	0.750	0.000
6	6	7	27	26	1	1	0	0.750	0.750	0.750	0.750	0.000
7	7	8	28	27	1	1	0	0.750	0.750	0.750	0.750	0.000
8	8	9	29	28	1	1	0	0.750	0.750	0.750	0.750	0.000
9	9	10	30	29	1	1	0	0.750	0.750	0.750	0.750	0.000
10	10	11	31	30	1	1	0	0.750	0.750	0.750	0.750	0.000
11	11	12	32	31	1	1	0	0.750	0.750	0.750	0.750	0.000
12	12	13	33	32	1	1	0	0.750	0.750	0.750	0.750	0.000
13	13	14	34	33	1	1	0	0.750	0.750	0.750	0.750	0.000
14	14	15	35	34	1	1	0	0.750	0.750	0.750	0.750	0.000
15	15	16	36	35	1	1	0	0.750	0.750	0.750	0.750	0.000
16	16	17	37	36	1	1	0	0.750	0.750	0.750	0.750	0.000
17	17	18	38	37	1	1	0	0.750	0.750	0.750	0.750	0.000
18	18	19	39	38	1	1	0	0.750	0.750	0.750	0.750	0.000
19	19	20	40	39	1	1	0	0.750	0.750	0.750	0.750	0.000
								AREA	ISTR			
20	1	201			2	2	0	0.200E-01	0.000			
21	2	202			2	2	0	0.400E-01	0.000			
22	3	203			2	2	0	0.400E-01	0.000			
23	4	204			2	2	0	0.475E-01	0.000			
24	5	205			2	2	0	0.102	0.000			
25	6	206			2	2	0	0.175	0.000			
26	7	207			2	2	0	0.200	0.000			
27	8	208			2	2	0	0.200	0.000			
28	9	209			2	2	0	0.200	0.000			
29	10	210			2	2	0	0.200	0.000			
30	11	211			2	2	0	0.200	0.000			
31	12	212			2	2	0	0.200	0.000			
32	13	213			2	2	0	0.200	0.000			
33	14	214			2	2	0	0.200	0.000			
34	15	215			2	2	0	0.175	0.000			
35	16	216			2	2	0	0.102	0.000			
36	17	217			2	2	0	0.475E-01	0.000			
37	18	218			2	2	0	0.400E-01	0.000			
38	19	219			2	2	0	0.400E-01	0.000			
39	20	220			2	2	0	0.200E-01	0.000			
								THK1	THK2	THK3	THK4	THET
40	21	22	42	41	1	1	0	0.750	0.750	0.750	0.750	0.000
41	22	23	43	42	1	1	0	0.750	0.750	0.750	0.750	0.000
42	23	24	44	43	1	1	0	0.750	0.750	0.750	0.750	0.000
43	24	25	45	44	1	1	0	0.750	0.750	0.750	0.750	0.000
44	25	26	46	45	1	1	0	0.750	0.750	0.750	0.750	0.000
45	26	27	47	46	1	1	0	0.750	0.750	0.750	0.750	0.000
46	27	28	48	47	1	1	0	0.750	0.750	0.750	0.750	0.000
47	28	29	49	48	1	1	0	0.750	0.750	0.750	0.750	0.000
48	29	30	50	49	1	1	0	0.750	0.750	0.750	0.750	0.000
49	30	31	51	50	1	1	0	0.750	0.750	0.750	0.750	0.000
50	31	32	52	51	1	1	0	0.750	0.750	0.750	0.750	0.000
51	32	33	53	52	1	1	0	0.750	0.750	0.750	0.750	0.000
52	33	34	54	53	1	1	[illegible]	0.750	0.750	0.750	0.750	0.000
53	34	35	55	54	1	1	[illegible]	0.750	0.750	0.750	0.750	0.000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.750	0.750	0.750	0.750	0.000

56	37	38	58	57
57	38	39	59	58
58	39	40	60	59
59	21	221		
60	22	222		
61	23	223		
62	24	224		
63	25	225		
64	26	226		
65	27	227		
66	28	228		
67	29	229		
68	30	230		
69	31	231		
70	32	232		
71	33	233		
72	34	234		
73	35	235		
74	36	236		
75	37	237		
76	38	238		
77	39	239		
78	40	240		
79	41	42	62	61
80	42	43	63	62
81	43	44	64	63
82	44	45	65	64
83	45	46	66	65
84	46	47	67	66
85	47	48	68	67
86	48	49	69	68
87	49	50	70	69
88	50	51	71	70
89	51	52	72	71
90	52	53	73	72
91	53	54	74	73
92	54	55	75	74
93	55	56	76	75
94	56	57	77	76
95	57	58	78	77
96	58	59	79	78
97	59	60	80	79
98	41	241		
99	42	242		
100	43	243		
101	44	244		
102	45	245		
103	46	246		
104	47	247		
105	48	248		
106	49	249		
107	50	250		
108	51	251		
109	52	252		
110	53	253		
111	54	254		
112	55	255		
113	56	256		
114	57	257		
115	58	258		
116	[illegible]	[illegible]		
117	[illegible]	[illegible]		

1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
			AREA	ISTR			
2	2	0	0.550E-01	0.000			
2	2	0	0.110	0.000			
2	2	0	0.110	0.000			
2	2	0	0.131	0.000			
2	2	0	0.282	0.000			
2	2	0	0.481	0.000			
2	2	0	0.550	0.000			
2	2	0	0.550	0.000			
2	2	0	0.550	0.000			
2	2	0	0.550	0.000			
2	2	0	0.550	0.000			
2	2	0	0.550	0.000			
2	2	0	0.550	0.000			
2	2	0	0.550	0.000			
2	2	0	0.481	0.000			
2	2	0	0.282	0.000			
2	2	0	0.131	0.000			
2	2	0	0.110	0.000			
2	2	0	0.110	0.000			
2	2	0	0.550E-01	0.000			
			THK1	THK2	THK3	THK4	THET
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
			AREA	ISTR			
2	2	0	0.700E-01	0.000			
2	2	0	0.140	0.000			
2	2	0	0.140	0.000			
2	2	0	0.166	0.000			
2	2	0	0.359	0.000			
2	2	0	0.612	0.000			
2	2	0	0.700	0.000			
2	2	0	0.700	0.000			
2	2	0	0.700	0.000			
2	2	0	0.700	0.000			
2	2	0	0.700	0.000			
2	2	0	0.700	0.000			
2	2	0	0.700	0.000			
2	2	0	0.612	0.000			
2	2	0	0.359	0.000			
2	2	0	0.166	0.000			
2	2	0	0.140	0.000			
2	2	0	0.140	0.000			
[illegible]	[illegible]	[illegible]	[illegible]E-01	0.000			

118	61	62	82	81	1	1	0	0.750	0.750	0.750	0.750	0.000
119	62	63	83	82	1	1	0	0.750	0.750	0.750	0.750	0.000
120	63	64	84	83	1	1	0	0.750	0.750	0.750	0.750	0.000
121	64	65	85	84	1	1	0	0.750	0.750	0.750	0.750	0.000
122	65	66	86	85	1	1	0	0.750	0.750	0.750	0.750	0.000
123	66	67	87	86	1	1	0	0.750	0.750	0.750	0.750	0.000
124	67	68	88	87	1	1	0	0.750	0.750	0.750	0.750	0.000
125	68	69	89	88	1	1	0	0.750	0.750	0.750	0.750	0.000
126	69	70	90	89	1	1	0	0.750	0.750	0.750	0.750	0.000
127	70	71	91	90	1	1	0	0.750	0.750	0.750	0.750	0.000
128	71	72	92	91	1	1	0	0.750	0.750	0.750	0.750	0.000
129	72	73	93	92	1	1	0	0.750	0.750	0.750	0.750	0.000
130	73	74	94	93	1	1	0	0.750	0.750	0.750	0.750	0.000
131	74	75	95	94	1	1	0	0.750	0.750	0.750	0.750	0.000
132	75	76	96	95	1	1	0	0.750	0.750	0.750	0.750	0.000
133	76	77	97	96	1	1	0	0.750	0.750	0.750	0.750	0.000
134	77	78	98	97	1	1	0	0.750	0.750	0.750	0.750	0.000
135	78	79	99	98	1	1	0	0.750	0.750	0.750	0.750	0.000
136	79	80	100	99	1	1	0	0.750	0.750	0.750	0.750	0.000
								AREA	ISTR			
137	61	261			2	2	0	0.775E-01	0.000			
138	62	262			2	2	0	0.155	0.000			
139	63	263			2	2	0	0.155	0.000			
140	64	264			2	2	0	0.184	0.000			
141	65	265			2	2	0	0.397	0.000			
142	66	266			2	2	0	0.678	0.000			
143	67	267			2	2	0	0.775	0.000			
144	68	268			2	2	0	0.775	0.000			
145	69	269			2	2	0	0.775	0.000			
146	70	270			2	2	0	0.775	0.000			
147	71	271			2	2	0	0.775	0.000			
148	72	272			2	2	0	0.775	0.000			
149	73	273			2	2	0	0.775	0.000			
150	74	274			2	2	0	0.775	0.000			
151	75	275			2	2	0	0.678	0.000			
152	76	276			2	2	0	0.397	0.000			
153	77	277			2	2	0	0.184	0.000			
154	78	278			2	2	0	0.155	0.000			
155	79	279			2	2	0	0.155	0.000			
156	80	280			2	2	0	0.775E-01	0.000			
								THK1	THK2	THK3	THK4	THET
157	81	82	102	101	1	1	0	0.750	0.750	0.750	0.750	0.000
158	82	83	103	102	1	1	0	0.750	0.750	0.750	0.750	0.000
159	83	84	104	103	1	1	0	0.750	0.750	0.750	0.750	0.000
160	84	85	105	104	1	1	0	0.750	0.750	0.750	0.750	0.000
161	85	86	106	105	1	1	0	0.750	0.750	0.750	0.750	0.000
162	86	87	107	106	1	1	0	0.750	0.750	0.750	0.750	0.000
163	87	88	108	107	1	1	0	0.750	0.750	0.750	0.750	0.000
164	88	89	109	108	1	1	0	0.750	0.750	0.750	0.750	0.000
165	89	90	110	109	1	1	0	0.750	0.750	0.750	0.750	0.000
166	90	91	111	110	1	1	0	0.750	0.750	0.750	0.750	0.000
167	91	92	112	111	1	1	0	0.750	0.750	0.750	0.750	0.000
168	92	93	113	112	1	1	0	0.750	0.750	0.750	0.750	0.000
169	93	94	114	113	1	1	0	0.750	0.750	0.750	0.750	0.000
170	94	95	115	114	1	1	0	0.750	0.750	0.750	0.750	0.000
171	95	96	116	115	1	1	0	0.750	0.750	0.750	0.750	0.000
172	96	97	117	116	1	1	0	0.750	0.750	0.750	0.750	0.000
173	97	98	118	117	1	1	0	0.750	0.750	0.750	0.750	0.000
174	98	99	119	118	1	1	0	0.750	0.750	0.750	0.750	0.000
175	99	100	120	119	1	1	0	0.750	0.750	0.750	0.750	0.000
								AREA	ISTR			
176	81	281			2	2	0	0.850E-01	0.000			
177	82	282			2	2	0	0.170	0.000			
178	83	283			2	2	0	0.170	0.000			
[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	0.000			

181	86	286		
182	87	287		
183	88	288		
184	89	289		
185	90	290		
186	91	291		
187	92	292		
188	93	293		
189	94	294		
190	95	295		
191	96	296		
192	97	297		
193	98	298		
194	99	299		
195	100	300		
196	101	102	122	121
197	102	103	123	122
198	103	104	124	123
199	104	105	125	124
200	105	106	126	125
201	106	107	127	126
202	107	108	128	127
203	108	109	129	128
204	109	110	130	129
205	110	111	131	130
206	111	112	132	131
207	112	113	133	132
208	113	114	134	133
209	114	115	135	134
210	115	116	136	135
211	116	117	137	136
212	117	118	138	137
213	118	119	139	138
214	119	120	140	139
215	101	301		
216	102	302		
217	103	303		
218	104	304		
219	105	305		
220	106	306		
221	107	307		
222	108	308		
223	109	309		
224	110	310		
225	111	311		
226	112	312		
227	113	313		
228	114	314		
229	115	315		
230	116	316		
231	117	317		
232	118	318		
233	119	319		
234	120	320		
235	121	122	142	141
236	122	123	143	142
237	123	124	144	143
238	124	125	145	144
239	125	126	146	145
240	126	127	147	146
241	127	128	148	147
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

2	2	0	0.744	0.000			
2	2	0	0.850	0.000			
2	2	0	0.850	0.000			
2	2	0	0.850	0.000			
2	2	0	0.850	0.000			
2	2	0	0.850	0.000			
2	2	0	0.850	0.000			
2	2	0	0.850	0.000			
2	2	0	0.950	0.000			
2	2	0	0.744	0.000			
2	2	0	0.436	0.000			
2	2	0	0.202	0.000			
2	2	0	0.170	0.000			
2	2	0	0.170	0.000			
2	2	0	0.850E-01	0.000			
			THK1	THK2	THK3	THK4	THET
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
			AREA	ISTR			
2	2	0	0.199	0.000			
2	2	0	0.397	0.000			
2	2	0	0.397	0.000			
2	2	0	0.472	0.000			
2	2	0	1.02	0.000			
2	2	0	1.74	0.000			
2	2	0	1.99	0.000			
2	2	0	1.99	0.000			
2	2	0	1.99	0.000			
2	2	0	1.99	0.000			
2	2	0	1.99	0.000			
2	2	0	1.99	0.000			
2	2	0	1.99	0.000			
2	2	0	1.99	0.000			
2	2	0	1.74	0.000			
2	2	0	1.02	0.000			
2	2	0	0.472	0.000			
2	2	0	0.397	0.000			
2	2	0	0.397	0.000			
2	2	0	0.199	0.000			
			THK1	THK2	THK3	THK4	THET
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
[illegible]	1	[illegible]	[illegible]	0.750	0.750	0.750	0.000

244	130	131	151	150
245	131	132	152	151
246	132	133	153	152
247	133	134	154	153
248	134	135	155	154
249	135	136	156	155
250	136	137	157	156
251	137	138	158	157
252	138	139	159	158
253	139	140	160	159
254	121	321		
255	122	322		
256	123	323		
257	124	324		
258	125	325		
259	126	326		
260	127	327		
261	128	328		
262	129	329		
263	130	330		
264	131	331		
265	132	332		
266	133	333		
267	134	334		
268	135	335		
269	136	336		
270	137	337		
271	138	338		
272	139	339		
273	140	340		
274	141	142	162	161
275	142	143	163	162
276	143	144	164	163
277	144	145	165	164
278	145	146	166	165
279	146	147	167	166
280	147	148	168	167
281	148	149	169	168
282	149	150	170	169
283	150	151	171	170
284	151	152	172	171
285	152	153	173	172
286	153	154	174	173
287	154	155	175	174
288	155	156	176	175
289	156	157	177	176
290	157	158	178	177
291	158	159	179	178
292	159	160	180	179
293	141	341		
294	142	342		
295	143	343		
296	144	344		
297	145	345		
298	146	346		
299	147	347		
300	148	348		
301	149	349		
302	150	350		
303	151	351		
304	[illegible]	[illegible]		

1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
			AREA	ISTR			
2	2	0	0.312	0.000			
2	2	0	0.625	0.000			
2	2	0	0.625	0.000			
2	2	0	0.742	0.000			
2	2	0	1.60	0.000			
2	2	0	2.73	0.000			
2	2	0	3.12	0.000			
2	2	0	3.12	0.000			
2	2	0	3.12	0.000			
2	2	0	3.12	0.000			
2	2	0	3.12	0.000			
2	2	0	3.12	0.000			
2	2	0	3.12	0.000			
2	2	0	3.12	0.000			
2	2	0	2.73	0.000			
2	2	0	1.60	0.000			
2	2	0	0.742	0.000			
2	2	0	0.625	0.000			
2	2	0	0.625	0.000			
2	2	0	0.312	0.000			
			THK1	THK2	THK3	THK4	THET
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
1	1	0	0.750	0.750	0.750	0.750	0.000
			AREA	ISTR			
2	2	0	0.312	0.000			
2	2	0	0.625	0.000			
2	2	0	0.625	0.000			
2	2	0	0.742	0.000			
2	2	0	1.60	0.000			
2	2	0	2.73	0.000			
2	2	0	3.12	0.000			
2	2	0	3.12	0.000			
2	2	0	3.12	0.000			
2	2	0	3.12	0.000			
2	2	0	3.12	0.000			
2	2	0	3.12	0.000			
[illegible]	[illegible]	[illegible]	3.12	[illegible]			

307	155	355			2	2	0	2.73	0.000			
308	156	356			2	2	0	1.60	0.000			
309	157	357			2	2	0	0.742	0.000			
310	158	358			2	2	0	0.625	0.000			
311	159	359			2	2	0	0.625	0.000			
312	160	360			2	2	0	0.312	0.000			
								THK1	THK2	THK3	THK4	THET
313	161	162	182	181	1	1	0	0.750	0.750	0.750	0.750	0.000
314	162	163	183	182	1	1	0	0.750	0.750	0.750	0.750	0.000
315	163	164	184	183	1	1	0	0.750	0.750	0.750	0.750	0.000
316	164	165	185	184	1	1	0	0.750	0.750	0.750	0.750	0.000
317	165	166	186	185	1	1	0	0.750	0.750	0.750	0.750	0.000
318	166	167	187	186	1	1	0	0.750	0.750	0.750	0.750	0.000
319	167	168	188	187	1	1	0	0.750	0.750	0.750	0.750	0.000
320	168	169	189	188	1	1	0	0.750	0.750	0.750	0.750	0.000
321	169	170	190	189	1	1	0	0.750	0.750	0.750	0.750	0.000
322	170	171	191	190	1	1	0	0.750	0.750	0.750	0.750	0.000
323	171	172	192	191	1	1	0	0.750	0.750	0.750	0.750	0.000
324	172	173	193	192	1	1	0	0.750	0.750	0.750	0.750	0.000
325	173	174	194	193	1	1	0	0.750	0.750	0.750	0.750	0.000
326	174	175	195	194	1	1	0	0.750	0.750	0.750	0.750	0.000
327	175	176	196	195	1	1	0	0.750	0.750	0.750	0.750	0.000
328	176	177	197	196	1	1	0	0.750	0.750	0.750	0.750	0.000
329	177	178	198	197	1	1	0	0.750	0.750	0.750	0.750	0.000
330	178	179	199	198	1	1	0	0.750	0.750	0.750	0.750	0.000
331	179	180	200	199	1	1	0	0.750	0.750	0.750	0.750	0.000
								AREA	TSTR			
332	161	361			2	2	0	0.312	0.000			
333	162	362			2	2	0	0.625	0.000			
334	163	363			2	2	0	0.625	0.000			
335	164	364			2	2	0	0.742	0.000			
336	165	365			2	2	0	1.60	0.000			
337	166	366			2	2	0	2.73	0.000			
338	167	367			2	2	0	3.12	0.000			
339	168	368			2	2	0	3.12	0.000			
340	169	369			2	2	0	3.12	0.000			
341	170	370			2	2	0	3.12	0.000			
342	171	371			2	2	0	3.12	0.000			
343	172	372			2	2	0	3.12	0.000			
344	173	373			2	2	0	3.12	0.000			
345	174	374			2	2	0	3.12	0.000			
346	175	375			2	2	0	2.73	0.000			
347	176	376			2	2	0	1.60	0.000			
348	177	377			2	2	0	0.742	0.000			
349	178	378			2	2	0	0.625	0.000			
350	179	379			2	2	0	0.625	0.000			
351	180	380			2	2	0	0.312	0.000			
352	181	381			2	2	0	0.156	0.000			
353	182	382			2	2	0	0.312	0.000			
354	183	383			2	2	0	0.312	0.000			
355	184	384			2	2	0	0.371	0.000			
356	185	385			2	2	0	0.801	0.000			
357	186	386			2	2	0	1.37	0.000			
358	187	387			2	2	0	1.56	0.000			
359	188	388			2	2	0	1.56	0.000			
360	189	389			2	2	0	1.56	0.000			
361	190	390			2	2	0	1.55	0.000			
362	191	391			2	2	0	1.56	0.000			
363	192	392			2	2	0	1.56	0.000			
364	193	393			2	2	0	1.56	0.000			
365	194	394			2	2	0	1.56	0.000			
366	195	395			2	2	0	1.37	0.000			
367	196	396			2	2	0	0.801	0.000			
368	[illegible]	[illegible]			[illegible]	2	[illegible]	0.371	0.000			
[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	0.312	0.000			

371	201	[illegible]			2	2	[illegible]	[illegible]	[illegible]				
								AREA	ISTR				
372	105	305			3	3	0	0.121	0.000				
373	116	316			3	3	0	0.121	0.000				
								THK1	THK2	THK3	THK4	STIF	
374	181	182	582	581	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
375	182	183	583	582	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
376	183	184	584	583	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
377	184	185	585	584	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
378	185	186	586	585	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
379	186	187	587	586	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
380	187	188	588	587	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
381	188	189	589	588	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
382	189	190	590	589	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
383	190	191	591	590	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
384	191	192	592	591	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
385	192	193	593	592	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
386	193	194	594	593	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
387	194	195	595	594	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
388	195	196	596	595	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
389	196	197	597	596	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
390	197	198	598	597	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
391	198	199	599	598	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000
392	199	200	600	599	4	4	0	0.750	0.750	0.750	0.750	0.000	0.000

OCTAL STORAGE REQUIREMENTS FOR ELEMENT INPUT CP= 1.760 TIME= 15.47472
MEMORY I= 00005121 MEMORY II= 00002260 TOTAL= 00007401 MEMORY AVAILABLE= 00245772
MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 41172

NUMBER OF ELEMENTS = 392 MAXIMUM NODE NUMBER USED = 600

***** NODE DEFINITIONS *****

NODE	LOCATION X (OR R)	Y (OR THETA)	Z (OR PHI)	ROTATION (DEGREES) THXY (OR RT)	THYZ (TZ OR TP)	THXZ (RZ OR RP)
1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
2	0.40000	0.00000	0.00000	0.00000	0.00000	0.00000
3	0.80000	0.00000	0.00000	0.00000	0.00000	0.00000
4	1.2000	0.00000	0.00000	0.00000	0.00000	0.00000
5	1.7500	0.00000	0.00000	0.00000	0.00000	0.00000
6	3.2500	0.00000	0.00000	0.00000	0.00000	0.00000
7	5.2500	0.00000	0.00000	0.00000	0.00000	0.00000
8	7.2500	0.00000	0.00000	0.00000	0.00000	0.00000
9	9.2500	0.00000	0.00000	0.00000	0.00000	0.00000
10	11.250	0.00000	0.00000	0.00000	0.00000	0.00000
11	13.250	0.00000	0.00000	0.00000	0.00000	0.00000
12	15.250	0.00000	0.00000	0.00000	0.00000	0.00000
13	17.250	0.00000	0.00000	0.00000	0.00000	0.00000
14	19.250	0.00000	0.00000	0.00000	0.00000	0.00000
15	21.250	0.00000	0.00000	0.00000	0.00000	0.00000
16	22.750	0.00000	0.00000	0.00000	0.00000	0.00000
17	23.300	0.00000	0.00000	0.00000	0.00000	0.00000
18	23.700	0.00000	0.00000	0.00000	0.00000	0.00000
19	24.100	0.00000	0.00000	0.00000	0.00000	0.00000
20	24.500	0.00000	0.00000	0.00000	0.00000	0.00000
21	0.00000	0.20000	0.00000	0.00000	0.00000	0.00000
22	0.40000	0.20000	0.00000	0.00000	0.00000	0.00000
23	0.80000	0.20000	0.00000	0.00000	0.00000	0.00000
24	1.2000	0.20000	0.00000	0.00000	0.00000	0.00000
25	1.7500	0.20000	0.00000	0.00000	0.00000	0.00000
26	3.2500	0.20000	0.00000	0.00000	0.00000	0.00000
27	5.2500	0.20000	0.00000	0.00000	0.00000	0.00000
28	7.2500	0.20000	0.00000	0.00000	0.00000	0.00000
29	9.2500	0.20000	0.00000	0.00000	0.00000	0.00000
30	11.250	0.20000	0.00000	0.00000	0.00000	0.00000
31	13.250	0.20000	0.00000	0.00000	0.00000	0.00000
32	15.250	0.20000	0.00000	0.00000	0.00000	0.00000
33	17.250	0.20000	0.00000	0.00000	0.00000	0.00000
34	19.250	0.20000	0.00000	0.00000	0.00000	0.00000
35	21.250	0.20000	0.00000	0.00000	0.00000	0.00000
36	22.750	0.20000	0.00000	0.00000	0.00000	0.00000
37	23.300	0.20000	0.00000	0.00000	0.00000	0.00000
38	23.700	0.20000	0.00000	0.00000	0.00000	0.00000
39	24.100	0.20000	0.00000	0.00000	0.00000	0.00000
40	24.500	0.20000	0.00000	0.00000	0.00000	0.00000
41	0.00000	0.55000	0.00000	0.00000	0.00000	0.00000
42	0.40000	0.55000	0.00000	0.00000	0.00000	0.00000
43	0.80000	0.55000	0.00000	0.00000	0.00000	0.00000
44	1.2000	0.55000	0.00000	0.00000	0.00000	0.00000
45	1.7500	0.55000	0.00000	0.00000	0.00000	0.00000
46	3.2500	0.55000	0.00000	0.00000	0.00000	0.00000
47	5.2500	0.55000	0.00000	0.00000	0.00000	0.00000
48	7.2500	0.55000	0.00000	0.00000	0.00000	0.00000
49	9.2500	0.55000	0.00000	0.00000	0.00000	0.00000
50	11.250	0.55000	0.00000	0.00000	0.00000	0.00000
51	13.250	0.55000	0.00000	0.00000	0.00000	0.00000
52	15.250	0.55000	0.00000	0.00000	0.00000	0.00000
53	17.2[illegible]	[illegible]	[illegible]	[illegible]	0.00000	0.00000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.00000	0.00000

56	22.750	0.55000	0.00000	0.00000	0.00000	0.00000
57	23.300	0.55000	0.00000	0.00000	0.00000	0.00000
58	23.700	0.55000	0.00000	0.00000	0.00000	0.00000
59	24.100	0.55000	0.00000	0.00000	0.00000	0.00000
60	24.500	0.55000	0.00000	0.00000	0.00000	0.00000
61	0.00000	0.90000	0.00000	0.00000	0.00000	0.00000
62	0.40000	0.90000	0.00000	0.00000	0.00000	0.00000
63	0.80000	0.90000	0.00000	0.00000	0.00000	0.00000
64	1.2000	0.90000	0.00000	0.00000	0.00000	0.00000
65	1.7500	0.90000	0.00000	0.00000	0.00000	0.00000
66	3.2500	0.90000	0.00000	0.00000	0.00000	0.00000
67	5.2500	0.90000	0.00000	0.00000	0.00000	0.00000
68	7.2500	0.90000	0.00000	0.00000	0.00000	0.00000
69	9.2500	0.90000	0.00000	0.00000	0.00000	0.00000
70	11.250	0.90000	0.00000	0.00000	0.00000	0.00000
71	13.250	0.90000	0.00000	0.00000	0.00000	0.00000
72	15.250	0.90000	0.00000	0.00000	0.00000	0.00000
73	17.250	0.90000	0.00000	0.00000	0.00000	0.00000
74	19.250	0.90000	0.00000	0.00000	0.00000	0.00000
75	21.250	0.90000	0.00000	0.00000	0.00000	0.00000
76	22.750	0.90000	0.00000	0.00000	0.00000	0.00000
77	23.300	0.90000	0.00000	0.00000	0.00000	0.00000
78	23.700	0.90000	0.00000	0.00000	0.00000	0.00000
79	24.100	0.90000	0.00000	0.00000	0.00000	0.00000
80	24.500	0.90000	0.00000	0.00000	0.00000	0.00000
81	0.00000	1.3250	0.00000	0.00000	0.00000	0.00000
82	0.40000	1.3250	0.00000	0.00000	0.00000	0.00000
83	0.80000	1.3250	0.00000	0.00000	0.00000	0.00000
84	1.2000	1.3250	0.00000	0.00000	0.00000	0.00000
85	1.7500	1.3250	0.00000	0.00000	0.00000	0.00000
86	3.2500	1.3250	0.00000	0.00000	0.00000	0.00000
87	5.2500	1.3250	0.00000	0.00000	0.00000	0.00000
88	7.2500	1.3250	0.00000	0.00000	0.00000	0.00000
89	9.2500	1.3250	0.00000	0.00000	0.00000	0.00000
90	11.250	1.3250	0.00000	0.00000	0.00000	0.00000
91	13.250	1.3250	0.00000	0.00000	0.00000	0.00000
92	15.250	1.3250	0.00000	0.00000	0.00000	0.00000
93	17.250	1.3250	0.00000	0.00000	0.00000	0.00000
94	19.250	1.3250	0.00000	0.00000	0.00000	0.00000
95	21.250	1.3250	0.00000	0.00000	0.00000	0.00000
96	22.750	1.3250	0.00000	0.00000	0.00000	0.00000
97	23.300	1.3250	0.00000	0.00000	0.00000	0.00000
98	23.700	1.3250	0.00000	0.00000	0.00000	0.00000
99	24.100	1.3250	0.00000	0.00000	0.00000	0.00000
100	24.500	1.3250	0.00000	0.00000	0.00000	0.00000
101	0.00000	1.7500	0.00000	0.00000	0.00000	0.00000
102	0.40000	1.7500	0.00000	0.00000	0.00000	0.00000
103	0.80000	1.7500	0.00000	0.00000	0.00000	0.00000
104	1.2000	1.7500	0.00000	0.00000	0.00000	0.00000
105	1.7500	1.7500	0.00000	0.00000	0.00000	0.00000
106	3.2500	1.7500	0.00000	0.00000	0.00000	0.00000
107	5.2500	1.7500	0.00000	0.00000	0.00000	0.00000
108	7.2500	1.7500	0.00000	0.00000	0.00000	0.00000
109	9.2500	1.7500	0.00000	0.00000	0.00000	0.00000
110	11.250	1.7500	0.00000	0.00000	0.00000	0.00000
111	13.250	1.7500	0.00000	0.00000	0.00000	0.00000
112	15.250	1.7500	0.00000	0.00000	0.00000	0.00000
113	17.250	1.7500	0.00000	0.00000	0.00000	0.00000
114	19.250	1.7500	0.00000	0.00000	0.00000	0.00000
115	21.250	1.7500	0.00000	0.00000	0.00000	0.00000
116	22.750	1.7500	0.00000	0.00000	0.00000	0.00000
117	23.300	1.7500	0.00000	0.00000	0.00000	0.00000
118	23.70[illegible]	1.750[illegible]	[illegible]	[illegible]	0.00000	0.00000
119	24.1[illegible]	[illegible]	[illegible]	[illegible]	0.00000	0.00000
1[illegible]	24.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

122	0.40000	3.3120	0.00000	0.00000	0.00000	0.00000
123	0.80000	3.3120	0.00000	0.00000	0.00000	0.00000
124	1.2000	3.3120	0.00000	0.00000	0.00000	0.00000
125	1.7500	3.3120	0.00000	0.00000	0.00000	0.00000
126	3.2500	3.3120	0.00000	0.00000	0.00000	0.00000
127	5.2500	3.3120	0.00000	0.00000	0.00000	0.00000
128	7.2500	3.3120	0.00000	0.00000	0.00000	0.00000
129	9.2500	3.3120	0.00000	0.00000	0.00000	0.00000
130	11.250	3.3120	0.00000	0.00000	0.00000	0.00000
131	13.250	3.3120	0.00000	0.00000	0.00000	0.00000
132	15.250	3.3120	0.00000	0.00000	0.00000	0.00000
133	17.250	3.3120	0.00000	0.00000	0.00000	0.00000
134	19.250	3.3120	0.00000	0.00000	0.00000	0.00000
135	21.250	3.3120	0.00000	0.00000	0.00000	0.00000
136	22.750	3.3120	0.00000	0.00000	0.00000	0.00000
137	23.300	3.3120	0.00000	0.00000	0.00000	0.00000
138	23.700	3.3120	0.00000	0.00000	0.00000	0.00000
139	24.100	3.3120	0.00000	0.00000	0.00000	0.00000
140	24.500	3.3120	0.00000	0.00000	0.00000	0.00000
141	0.00000	4.8750	0.00000	0.00000	0.00000	0.00000
142	0.40000	4.8750	0.00000	0.00000	0.00000	0.00000
143	0.80000	4.8750	0.00000	0.00000	0.00000	0.00000
144	1.2000	4.8750	0.00000	0.00000	0.00000	0.00000
145	1.7500	4.8750	0.00000	0.00000	0.00000	0.00000
146	3.2500	4.8750	0.00000	0.00000	0.00000	0.00000
147	5.2500	4.8750	0.00000	0.00000	0.00000	0.00000
148	7.2500	4.8750	0.00000	0.00000	0.00000	0.00000
149	9.2500	4.8750	0.00000	0.00000	0.00000	0.00000
150	11.250	4.8750	0.00000	0.00000	0.00000	0.00000
151	13.250	4.8750	0.00000	0.00000	0.00000	0.00000
152	15.250	4.8750	0.00000	0.00000	0.00000	0.00000
153	17.250	4.8750	0.00000	0.00000	0.00000	0.00000
154	19.250	4.8750	0.00000	0.00000	0.00000	0.00000
155	21.250	4.8750	0.00000	0.00000	0.00000	0.00000
156	22.750	4.8750	0.00000	0.00000	0.00000	0.00000
157	23.300	4.8750	0.00000	0.00000	0.00000	0.00000
158	23.700	4.8750	0.00000	0.00000	0.00000	0.00000
159	24.100	4.8750	0.00000	0.00000	0.00000	0.00000
160	24.500	4.8750	0.00000	0.00000	0.00000	0.00000
161	0.00000	6.4370	0.00000	0.00000	0.00000	0.00000
162	0.40000	6.4370	0.00000	0.00000	0.00000	0.00000
163	0.80000	6.4370	0.00000	0.00000	0.00000	0.00000
164	1.2000	6.4370	0.00000	0.00000	0.00000	0.00000
165	1.7500	6.4370	0.00000	0.00000	0.00000	0.00000
166	3.2500	6.4370	0.00000	0.00000	0.00000	0.00000
167	5.2500	6.4370	0.00000	0.00000	0.00000	0.00000
168	7.2500	6.4370	0.00000	0.00000	0.00000	0.00000
169	9.2500	6.4370	0.00000	0.00000	0.00000	0.00000
170	11.250	6.4370	0.00000	0.00000	0.00000	0.00000
171	13.250	6.4370	0.00000	0.00000	0.00000	0.00000
172	15.250	6.4370	0.00000	0.00000	0.00000	0.00000
173	17.250	6.4370	0.00000	0.00000	0.00000	0.00000
174	19.250	6.4370	0.00000	0.00000	0.00000	0.00000
175	21.250	6.4370	0.00000	0.00000	0.00000	0.00000
176	22.750	6.4370	0.00000	0.00000	0.00000	0.00000
177	23.300	6.4370	0.00000	0.00000	0.00000	0.00000
178	23.700	6.4370	0.00000	0.00000	0.00000	0.00000
179	24.100	6.4370	0.00000	0.00000	0.00000	0.00000
180	24.500	6.4370	0.00000	0.00000	0.00000	0.00000
181	0.00000	8.0000	0.00000	0.00000	0.00000	0.00000
182	0.40000	8.0000	0.00000	0.00000	0.00000	0.00000
183	0.80000	8.0000	0.00000	0.00000	0.00000	0.00000
184	1.2000	8.0000	0.00000	0.00000	0.00000	0.00000
185	1.75[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

188	7.2500	8.0000	0.00000	0.00000	0.00000	0.00000
189	9.2500	8.0000	0.00000	0.00000	0.00000	0.00000
190	11.250	8.0000	0.00000	0.00000	0.00000	0.00000
191	13.250	8.0000	0.00000	0.00000	0.00000	0.00000
192	15.250	8.0000	0.00000	0.00000	0.00000	0.00000
193	17.250	8.0000	0.00000	0.00000	0.00000	0.00000
194	19.250	8.0000	0.00000	0.00000	0.00000	0.00000
195	21.250	8.0000	0.00000	0.00000	0.00000	0.00000
196	22.750	8.0000	0.00000	0.00000	0.00000	0.00000
197	23.300	8.0000	0.00000	0.00000	0.00000	0.00000
198	23.700	8.0000	0.00000	0.00000	0.00000	0.00000
199	24.100	8.0000	0.00000	0.00000	0.00000	0.00000
200	24.500	8.0000	0.00000	0.00000	0.00000	0.00000
201	0.00000	0.00000	-1.0000	0.00000	0.00000	0.00000
202	0.40000	0.00000	-1.0000	0.00000	0.00000	0.00000
203	0.80000	0.00000	-1.0000	0.00000	0.00000	0.00000
204	1.2000	0.00000	-1.0000	0.00000	0.00000	0.00000
205	1.7500	0.00000	-1.0000	0.00000	0.00000	0.00000
206	3.2500	0.00000	-1.0000	0.00000	0.00000	0.00000
207	5.2500	0.00000	-1.0000	0.00000	0.00000	0.00000
208	7.2500	0.00000	-1.0000	0.00000	0.00000	0.00000
209	9.2500	0.00000	-1.0000	0.00000	0.00000	0.00000
210	11.250	0.00000	-1.0000	0.00000	0.00000	0.00000
211	13.250	0.00000	-1.0000	0.00000	0.00000	0.00000
212	15.250	0.00000	-1.0000	0.00000	0.00000	0.00000
213	17.250	0.00000	-1.0000	0.00000	0.00000	0.00000
214	19.250	0.00000	-1.0000	0.00000	0.00000	0.00000
215	21.250	0.00000	-1.0000	0.00000	0.00000	0.00000
216	22.750	0.00000	-1.0000	0.00000	0.00000	0.00000
217	23.300	0.00000	-1.0000	0.00000	0.00000	0.00000
218	23.700	0.00000	-1.0000	0.00000	0.00000	0.00000
219	24.100	0.00000	-1.0000	0.00000	0.00000	0.00000
220	24.500	0.00000	-1.0000	0.00000	0.00000	0.00000
221	0.00000	0.20000	-1.0000	0.00000	0.00000	0.00000
222	0.40000	0.20000	-1.0000	0.00000	0.00000	0.00000
223	0.80000	0.20000	-1.0000	0.00000	0.00000	0.00000
224	1.2000	0.20000	-1.0000	0.00000	0.00000	0.00000
225	1.7500	0.20000	-1.0000	0.00000	0.00000	0.00000
226	3.2500	0.20000	-1.0000	0.00000	0.00000	0.00000
227	5.2500	0.20000	-1.0000	0.00000	0.00000	0.00000
228	7.2500	0.20000	-1.0000	0.00000	0.00000	0.00000
229	9.2500	0.20000	-1.0000	0.00000	0.00000	0.00000
230	11.250	0.20000	-1.0000	0.00000	0.00000	0.00000
231	13.250	0.20000	-1.0000	0.00000	0.00000	0.00000
232	15.250	0.20000	-1.0000	0.00000	0.00000	0.00000
233	17.250	0.20000	-1.0000	0.00000	0.00000	0.00000
234	19.250	0.20000	-1.0000	0.00000	0.00000	0.00000
235	21.250	0.20000	-1.0000	0.00000	0.00000	0.00000
236	22.750	0.20000	-1.0000	0.00000	0.00000	0.00000
237	23.300	0.20000	-1.0000	0.00000	0.00000	0.00000
238	23.700	0.20000	-1.0000	0.00000	0.00000	0.00000
239	24.100	0.20000	-1.0000	0.00000	0.00000	0.00000
240	24.500	0.20000	-1.0000	0.00000	0.00000	0.00000
241	0.00000	0.55000	-1.0000	0.00000	0.00000	0.00000
242	0.40000	0.55000	-1.0000	0.00000	0.00000	0.00000
243	0.80000	0.55000	-1.0000	0.00000	0.00000	0.00000
244	1.2000	0.55000	-1.0000	0.00000	0.00000	0.00000
245	1.7500	0.55000	-1.0000	0.00000	0.00000	0.00000
246	3.2500	0.55000	-1.0000	0.00000	0.00000	0.00000
247	5.2500	0.55000	-1.0000	0.00000	0.00000	0.00000
248	7.2500	0.55000	-1.0000	0.00000	0.00000	0.00000
249	9.2500	0.55000	-1.0000	0.00000	0.00000	0.00000
[illegible]	11.2[illegible]	[illegible]	-1.[illegible]	[illegible]	[illegible]	0.0000[illegible]
251	1[illegible]	[illegible]	-1.[illegible]	[illegible]	0.00000	0.0000[illegible]

254	19.250	0.55000	-1.0000	0.00000	0.00000	0.00000
255	21.250	0.55000	-1.0000	0.00000	0.00000	0.00000
256	22.750	0.55000	-1.0000	0.00000	0.00000	0.00000
257	23.300	0.55000	-1.0000	0.00000	0.00000	0.00000
258	23.700	0.55000	-1.0000	0.00000	0.00000	0.00000
259	24.100	0.55000	-1.0000	0.00000	0.00000	0.00000
260	24.500	0.55000	-1.0000	0.00000	0.00000	0.00000
261	0.00000	0.90000	-1.0000	0.00000	0.00000	0.00000
262	0.40000	0.90000	-1.0000	0.00000	0.00000	0.00000
263	0.80000	0.90000	-1.0000	0.00000	0.00000	0.00000
264	1.2000	0.90000	-1.0000	0.00000	0.00000	0.00000
265	1.7500	0.90000	-1.0000	0.00000	0.00000	0.00000
266	3.2500	0.90000	-1.0000	0.00000	0.00000	0.00000
267	5.2500	0.90000	-1.0000	0.00000	0.00000	0.00000
268	7.2500	0.90000	-1.0000	0.00000	0.00000	0.00000
269	9.2500	0.90000	-1.0000	0.00000	0.00000	0.00000
270	11.250	0.90000	-1.0000	0.00000	0.00000	0.00000
271	13.250	0.90000	-1.0000	0.00000	0.00000	0.00000
272	15.250	0.90000	-1.0000	0.00000	0.00000	0.00000
273	17.250	0.90000	-1.0000	0.00000	0.00000	0.00000
274	19.250	0.90000	-1.0000	0.00000	0.00000	0.00000
275	21.250	0.90000	-1.0000	0.00000	0.00000	0.00000
276	22.750	0.90000	-1.0000	0.00000	0.00000	0.00000
277	23.300	0.90000	-1.0000	0.00000	0.00000	0.00000
278	23.700	0.90000	-1.0000	0.00000	0.00000	0.00000
279	24.100	0.90000	-1.0000	0.00000	0.00000	0.00000
280	24.500	0.90000	-1.0000	0.00000	0.00000	0.00000
281	0.00000	1.3250	-1.0000	0.00000	0.00000	0.00000
282	0.40000	1.3250	-1.0000	0.00000	0.00000	0.00000
283	0.80000	1.3250	-1.0000	0.00000	0.00000	0.00000
284	1.2000	1.3250	-1.0000	0.00000	0.00000	0.00000
285	1.7500	1.3250	-1.0000	0.00000	0.00000	0.00000
286	3.2500	1.3250	-1.0000	0.00000	0.00000	0.00000
287	5.2500	1.3250	-1.0000	0.00000	0.00000	0.00000
288	7.2500	1.3250	-1.0000	0.00000	0.00000	0.00000
289	9.2500	1.3250	-1.0000	0.00000	0.00000	0.00000
290	11.250	1.3250	-1.0000	0.00000	0.00000	0.00000
291	13.250	1.3250	-1.0000	0.00000	0.00000	0.00000
292	15.250	1.3250	-1.0000	0.00000	0.00000	0.00000
293	17.250	1.3250	-1.0000	0.00000	0.00000	0.00000
294	19.250	1.3250	-1.0000	0.00000	0.00000	0.00000
295	21.250	1.3250	-1.0000	0.00000	0.00000	0.00000
296	22.750	1.3250	-1.0000	0.00000	0.00000	0.00000
297	23.300	1.3250	-1.0000	0.00000	0.00000	0.00000
298	23.700	1.3250	-1.0000	0.00000	0.00000	0.00000
299	24.100	1.3250	-1.0000	0.00000	0.00000	0.00000
300	24.500	1.3250	-1.0000	0.00000	0.00000	0.00000
301	0.00000	1.7500	-1.0000	0.00000	0.00000	0.00000
302	0.40000	1.7500	-1.0000	0.00000	0.00000	0.00000
303	0.80000	1.7500	-1.0000	0.00000	0.00000	0.00000
304	1.2000	1.7500	-1.0000	0.00000	0.00000	0.00000
305	1.7500	1.7500	-1.0000	0.00000	0.00000	0.00000
306	3.2500	1.7500	-1.0000	0.00000	0.00000	0.00000
307	5.2500	1.7500	-1.0000	0.00000	0.00000	0.00000
308	7.2500	1.7500	-1.0000	0.00000	0.00000	0.00000
309	9.2500	1.7500	-1.0000	0.00000	0.00000	0.00000
310	11.250	1.7500	-1.0000	0.00000	0.00000	0.00000
311	13.250	1.7500	-1.0000	0.00000	0.00000	0.00000
312	15.250	1.7500	-1.0000	0.00000	0.00000	0.00000
313	17.250	1.7500	-1.0000	0.00000	0.00000	0.00000
314	19.250	1.7500	-1.0000	0.00000	0.00000	0.00000
315	21.250	1.7500	-1.0000	0.00000	0.00000	0.00000
316	22.750	1.7500	-1.0000	0.00000	0.00000	0.00000
317	23.300	1.7500	-1.0000	0.00000	0.00000	0.00000

320	24.500	1.7500	-1.0000	0.00000	0.00000	0.00000
321	0.00000	3.3120	-1.0000	0.00000	0.00000	0.00000
322	0.40000	3.3120	-1.0000	0.00000	0.00000	0.00000
323	0.80000	3.3120	-1.0000	0.00000	0.00000	0.00000
324	1.2000	3.3120	-1.0000	0.00000	0.00000	0.00000
325	1.7500	3.3120	-1.0000	0.00000	0.00000	0.00000
326	3.2500	3.3120	-1.0000	0.00000	0.00000	0.00000
327	5.2500	3.3120	-1.0000	0.00000	0.00000	0.00000
328	7.2500	3.3120	-1.0000	0.00000	0.00000	0.00000
329	9.2500	3.3120	-1.0000	0.00000	0.00000	0.00000
330	11.250	3.3120	-1.0000	0.00000	0.00000	0.00000
331	13.250	3.3120	-1.0000	0.00000	0.00000	0.00000
332	15.250	3.3120	-1.0000	0.00000	0.00000	0.00000
333	17.250	3.3120	-1.0000	0.00000	0.00000	0.00000
334	19.250	3.3120	-1.0000	0.00000	0.00000	0.00000
335	21.250	3.3120	-1.0000	0.00000	0.00000	0.00000
336	22.750	3.3120	-1.0000	0.00000	0.00000	0.00000
337	23.300	3.3120	-1.0000	0.00000	0.00000	0.00000
338	23.700	3.3120	-1.0000	0.00000	0.00000	0.00000
339	24.100	3.3120	-1.0000	0.00000	0.00000	0.00000
340	24.500	3.3120	-1.0000	0.00000	0.00000	0.00000
341	0.00000	4.8750	-1.0000	0.00000	0.00000	0.00000
342	0.40000	4.8750	-1.0000	0.00000	0.00000	0.00000
343	0.80000	4.8750	-1.0000	0.00000	0.00000	0.00000
344	1.2000	4.8750	-1.0000	0.00000	0.00000	0.00000
345	1.7500	4.8750	-1.0000	0.00000	0.00000	0.00000
346	3.2500	4.8750	-1.0000	0.00000	0.00000	0.00000
347	5.2500	4.8750	-1.0000	0.00000	0.00000	0.00000
348	7.2500	4.8750	-1.0000	0.00000	0.00000	0.00000
349	9.2500	4.8750	-1.0000	0.00000	0.00000	0.00000
350	11.250	4.8750	-1.0000	0.00000	0.00000	0.00000
351	13.250	4.8750	-1.0000	0.00000	0.00000	0.00000
352	15.250	4.8750	-1.0000	0.00000	0.00000	0.00000
353	17.250	4.8750	-1.0000	0.00000	0.00000	0.00000
354	19.250	4.8750	-1.0000	0.00000	0.00000	0.00000
355	21.250	4.8750	-1.0000	0.00000	0.00000	0.00000
356	22.750	4.8750	-1.0000	0.00000	0.00000	0.00000
357	23.300	4.8750	-1.0000	0.00000	0.00000	0.00000
358	23.700	4.8750	-1.0000	0.00000	0.00000	0.00000
359	24.100	4.8750	-1.0000	0.00000	0.00000	0.00000
360	24.500	4.8750	-1.0000	0.00000	0.00000	0.00000
361	0.00000	6.4370	-1.0000	0.00000	0.00000	0.00000
362	0.40000	6.4370	-1.0000	0.00000	0.00000	0.00000
363	0.80000	6.4370	-1.0000	0.00000	0.00000	0.00000
364	1.2000	6.4370	-1.0000	0.00000	0.00000	0.00000
365	1.7500	6.4370	-1.0000	0.00000	0.00000	0.00000
366	3.2500	6.4370	-1.0000	0.00000	0.00000	0.00000
367	5.2500	6.4370	-1.0000	0.00000	0.00000	0.00000
368	7.2500	6.4370	-1.0000	0.00000	0.00000	0.00000
369	9.2500	6.4370	-1.0000	0.00000	0.00000	0.00000
370	11.250	6.4370	-1.0000	0.00000	0.00000	0.00000
371	13.250	6.4370	-1.0000	0.00000	0.00000	0.00000
372	15.250	6.4370	-1.0000	0.00000	0.00000	0.00000
373	17.250	6.4370	-1.0000	0.00000	0.00000	0.00000
374	19.250	6.4370	-1.0000	0.00000	0.00000	0.00000
375	21.250	6.4370	-1.0000	0.00000	0.00000	0.00000
376	22.750	6.4370	-1.0000	0.00000	0.00000	0.00000
377	23.300	6.4370	-1.0000	0.00000	0.00000	0.00000
378	23.700	6.4370	-1.0000	0.00000	0.00000	0.00000
379	24.100	6.4370	-1.0000	0.00000	0.00000	0.00000
380	24.500	6.4370	-1.0000	0.00000	0.00000	0.00000
381	0.00000	8.0000	-1.0000	0.00000	0.00000	0.00000
382	0.40000	8.0000	-1.0000	0.00000	0.00000	0.00000
383	[illegible]	[illegible]	-1.[illegible]	[illegible]	0.00000	0.00000
[illegible]	[illegible]	[illegible]	-1.	[illegible]	0.00000	0.00000

386	3.2500	8.0000	-1.0000	0.00000	0.00000	0.00000
387	5.2500	8.0000	-1.0000	0.00000	0.00000	0.00000
388	7.2500	8.0000	-1.0000	0.00000	0.00000	0.00000
389	9.2500	8.0000	-1.0000	0.00000	0.00000	0.00000
390	11.250	8.0000	-1.0000	0.00000	0.00000	0.00000
391	13.250	8.0000	-1.0000	0.00000	0.00000	0.00000
392	15.250	8.0000	-1.0000	0.00000	0.00000	0.00000
393	17.250	8.0000	-1.0000	0.00000	0.00000	0.00000
394	19.250	8.0000	-1.0000	0.00000	0.00000	0.00000
395	21.250	8.0000	-1.0000	0.00000	0.00000	0.00000
396	22.750	8.0000	-1.0000	0.00000	0.00000	0.00000
397	23.300	8.0000	-1.0000	0.00000	0.00000	0.00000
398	23.700	8.0000	-1.0000	0.00000	0.00000	0.00000
399	24.100	8.0000	-1.0000	0.00000	0.00000	0.00000
400	24.500	8.0000	-1.0000	0.00000	0.00000	0.00000
581	0.00000	8.0000	6.0000	0.00000	0.00000	0.00000
582	0.40000	8.0000	6.0000	0.00000	0.00000	0.00000
583	0.80000	8.0000	6.0000	0.00000	0.00000	0.00000
584	1.2000	8.0000	6.0000	0.00000	0.00000	0.00000
585	1.7500	8.0000	6.0000	0.00000	0.00000	0.00000
586	3.2500	8.0000	6.0000	0.00000	0.00000	0.00000
587	5.2500	8.0000	6.0000	0.00000	0.00000	0.00000
588	7.2500	8.0000	6.0000	0.00000	0.00000	0.00000
589	9.2500	8.0000	6.0000	0.00000	0.00000	0.00000
590	11.250	8.0000	6.0000	0.00000	0.00000	0.00000
591	13.250	8.0000	6.0000	0.00000	0.00000	0.00000
592	15.250	8.0000	6.0000	0.00000	0.00000	0.00000
593	17.250	8.0000	6.0000	0.00000	0.00000	0.00000
594	19.250	8.0000	6.0000	0.00000	0.00000	0.00000
595	21.250	8.0000	6.0000	0.00000	0.00000	0.00000
596	22.750	8.0000	6.0000	0.00000	0.00000	0.00000
597	23.300	8.0000	6.0000	0.00000	0.00000	0.00000
598	23.700	8.0000	6.0000	0.00000	0.00000	0.00000
599	24.100	8.0000	6.0000	0.00000	0.00000	0.00000
600	24.500	8.0000	6.0000	0.00000	0.00000	0.00000

XMIN= 0.0000 XMAX= 24.50 YMIN= 0.0000 YMAX= 8.000 ZMIN= -1.000 ZMAX= 6.000

OCTAL STORAGE REQUIREMENTS FOR NODE INPUT CP= 2.484 TIME= 15.47611
MEMORY I= 00000000 MEMORY II= 00007020 TOTAL= 00007020 MEMORY AVAILABLE= 00245772
MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 14164

***** MATERIAL PROPERTIES *****

MATERIAL 1

EX = 29000.0
EY = 29000.0
NUXY = 0.300000
ALPX = 0.000000
ALPY = 0.000000
DENS = 0.000000

MATERIAL 2

EX = 291.700
ALPX = 0.000000
DENS = 0.000000

MATERIAL 3

EX = 29000.0
ALPX = 0.000000
DENS = 0.000000

MATERIAL 4

EX = 29000.0
EY = 29000.0
NUXY = 0.300000
ALPX = 0.000000
ALPY = 0.000000
DENS = 0.000000

MATERIAL 5

EX = 29000.0
ALPX = 0.000000
NUXY = 0.300000
DENS = 0.000000

NUXY = 0.300000 (DEFAULT) FOR MATERIAL 2

NUXY = 0.300000 (DEFAULT) FOR MATERIAL 3

MAXIMUM MATERIAL NUMBER= 5

OCTAL STORAGE REQUIREMENTS FOR MATERIALS, ETC. INPUT CP= 2.543 TIME= 15.47695
MEMORY I= 00000240 MEMORY II= 00000000 TOTAL= 00000240 MEMORY AVAILABLE= 00245772

LOAD STEP NUMBER = 1

***** LOAD STEP OPTIONS (CARDS L AND M) *****

	VALUE	VARIABLE NAME	COLUMNS	FIELD	
LOAD STEP KEY	1	KDIS	2-3	1	
TEMPERATURE KEY	0	KTEMP	4-6	2	
NUMBER OF ITERATIONS.	-20	NITTER	7-9	3	
STRESS PRINTOUT FREQUENCY . .	10	NPRINT	10-12	4	
TIME AT END OF LOAD STEP. . .	0.00000	TIME	13-24	5	
DISPL. PRINTOUT FREQUENCY . .	10	NDPRNT	70-72	13	(CARD M)
MD CARD KEY	1	IMD	80	17	(CARD M)

***** SPECIAL LOADING PARAMETERS *****

PLASTICITY CONVERGENCE CRITERION = 0.0100

CREEP OPTIMIZATION CRITERION = 0.1000

CONVERGENCE CRITERIA - LARGE DEFLECTION = 0.001000

KEY TO TERMINATE RUN IF NO CONVERGENCE = 1.

***** SPECIFIED DISPLACEMENTS *****

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	0.000000	0.000000				
2	0.000000	0.000000				
3	0.000000	0.000000				
4	0.000000	0.000000				
5	0.000000	0.000000				
6	0.000000	0.000000				
7	0.000000	0.000000				
8	0.000000	0.000000				
9	0.000000	0.000000				
10	0.000000	0.000000				
11	0.000000	0.000000				
12	0.000000	0.000000				
13	0.000000	0.000000				
14	0.000000	0.000000				
15	0.000000	0.000000				
16	0.000000	0.000000				
17	0.000000	0.000000				
18	0.000000	0.000000				
19	0.000000	0.000000				
20	0.000000	0.000000				
21	0.000000	0.000000				
22	0.000000	0.000000				
23	0.000000	0.000000				
24	0.000000	0.000000				
25	0.000000	0.000000				
[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]				

29	0.000000	0.000000
30	0.000000	0.000000
31	0.000000	0.000000
32	0.000000	0.000000
33	0.000000	0.000000
34	0.000000	0.000000
35	0.000000	0.000000
36	0.000000	0.000000
37	0.000000	0.000000
38	0.000000	0.000000
39	0.000000	0.000000
40	0.000000	0.000000
41	0.000000	0.000000
42	0.000000	0.000000
43	0.000000	0.000000
44	0.000000	0.000000
45	0.000000	0.000000
46	0.000000	0.000000
47	0.000000	0.000000
48	0.000000	0.000000
49	0.000000	0.000000
50	0.000000	0.000000
51	0.000000	0.000000
52	0.000000	0.000000
53	0.000000	0.000000
54	0.000000	0.000000
55	0.000000	0.000000
56	0.000000	0.000000
57	0.000000	0.000000
58	0.000000	0.000000
59	0.000000	0.000000
60	0.000000	0.000000
61	0.000000	0.000000
62	0.000000	0.000000
63	0.000000	0.000000
64	0.000000	0.000000
65	0.000000	0.000000
66	0.000000	0.000000
67	0.000000	0.000000
68	0.000000	0.000000
69	0.000000	0.000000
70	0.000000	0.000000
71	0.000000	0.000000
72	0.000000	0.000000
73	0.000000	0.000000
74	0.000000	0.000000
75	0.000000	0.000000
76	0.000000	0.000000
77	0.000000	0.000000
78	0.000000	0.000000
79	0.000000	0.000000
80	0.000000	0.000000
81	0.000000	0.000000
82	0.000000	0.000000
83	0.000000	0.000000
84	0.000000	0.000000
85	0.000000	0.000000
86	0.000000	0.000000
87	0.000000	0.000000
88	0.000000	0.000000
89	0.000000	0.000000
90	0.000000	0.000000
91	0.000000	0.000000
92	[illegible]	0.000000

95	0.000000	0.000000
96	0.000000	0.000000
97	0.000000	0.000000
98	0.000000	0.000000
99	0.000000	0.000000
100	0.000000	0.000000
101	0.000000	0.000000
102	0.000000	0.000000
103	0.000000	0.000000
104	0.000000	0.000000
105	0.000000	0.000000
106	0.000000	0.000000
107	0.000000	0.000000
108	0.000000	0.000000
109	0.000000	0.000000
110	0.000000	0.000000
111	0.000000	0.000000
112	0.000000	0.000000
113	0.000000	0.000000
114	0.000000	0.000000
115	0.000000	0.000000
116	0.000000	0.000000
117	0.000000	0.000000
118	0.000000	0.000000
119	0.000000	0.000000
120	0.000000	0.000000
121	0.000000	0.000000
122	0.000000	0.000000
123	0.000000	0.000000
124	0.000000	0.000000
125	0.000000	0.000000
126	0.000000	0.000000
127	0.000000	0.000000
128	0.000000	0.000000
129	0.000000	0.000000
130	0.000000	0.000000
131	0.000000	0.000000
132	0.000000	0.000000
133	0.000000	0.000000
134	0.000000	0.000000
135	0.000000	0.000000
136	0.000000	0.000000
137	0.000000	0.000000
138	0.000000	0.000000
139	0.000000	0.000000
140	0.000000	0.000000
141	0.000000	0.000000
142	0.000000	0.000000
143	0.000000	0.000000
144	0.000000	0.000000
145	0.000000	0.000000
146	0.000000	0.000000
147	0.000000	0.000000
148	0.000000	0.000000
149	0.000000	0.000000
150	0.000000	0.000000
151	0.000000	0.000000
152	0.000000	0.000000
153	0.000000	0.000000
154	0.000000	0.000000
155	0.000000	0.000000
156	[illegible]	[illegible]
157	0.000000	0.000000
158	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

161	0.000000	0.000000	
162	0.000000	0.000000	
163	0.000000	0.000000	
164	0.000000	0.000000	
165	0.000000	0.000000	
166	0.000000	0.000000	
167	0.000000	0.000000	
168	0.000000	0.000000	
169	0.000000	0.000000	
170	0.000000	0.000000	
171	0.000000	0.000000	
172	0.000000	0.000000	
173	0.000000	0.000000	
174	0.000000	0.000000	
175	0.000000	0.000000	
176	0.000000	0.000000	
177	0.000000	0.000000	
178	0.000000	0.000000	
179	0.000000	0.000000	
180	0.000000	0.000000	
181	0.000000	0.000000	
182	0.000000	0.000000	
183	0.000000	0.000000	
184	0.000000	0.000000	
185	0.000000	0.000000	
186	0.000000	0.000000	
187	0.000000	0.000000	
188	0.000000	0.000000	
189	0.000000	0.000000	
190	0.000000	0.000000	
191	0.000000	0.000000	
192	0.000000	0.000000	
193	0.000000	0.000000	
194	0.000000	0.000000	
195	0.000000	0.000000	
196	0.000000	0.000000	
197	0.000000	0.000000	
198	0.000000	0.000000	
199	0.000000	0.000000	
200	0.000000	0.000000	
201	0.000000	0.000000	0.000000
202	0.000000	0.000000	0.000000
203	0.000000	0.000000	0.000000
204	0.000000	0.000000	0.000000
205	0.000000	0.000000	0.000000
206	0.000000	0.000000	0.000000
207	0.000000	0.000000	0.000000
208	0.000000	0.000000	0.000000
209	0.000000	0.000000	0.000000
210	0.000000	0.000000	0.000000
211	0.000000	0.000000	0.000000
212	0.000000	0.000000	0.000000
213	0.000000	0.000000	0.000000
214	0.000000	0.000000	0.00000
215	0.000000	0.000000	0.000000
216	0.000000	0.000000	0.000000
217	0.000000	0.000000	0.000000
218	0.000000	0.000000	0.000000
219	0.000000	0.000000	0.000000
220	0.000000	0.000000	0.000000
221	0.000000	0.000000	0.000000
222	0.000000	0.000000	0.000000
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

227	0.000000	0.000000	0.000000
228	0.000000	0.000000	0.000000
229	0.000000	0.000000	0.000000
230	0.000000	0.000000	0.000000
231	0.000000	0.000000	0.000000
232	0.000000	0.000000	0.000000
233	0.000000	0.000000	0.000000
234	0.000000	0.000000	0.000000
235	0.000000	0.000000	0.000000
236	0.000000	0.000000	0.000000
237	0.000000	0.000000	0.000000
238	0.000000	0.000000	0.000000
239	0.000000	0.000000	0.000000
240	0.000000	0.000000	0.000000
241	0.000000	0.000000	0.000000
242	0.000000	0.000000	0.000000
243	0.000000	0.000000	0.000000
244	0.000000	0.000000	0.000000
245	0.000000	0.000000	0.000000
246	0.000000	0.000000	0.000000
247	0.000000	0.000000	0.000000
248	0.000000	0.000000	0.000000
249	0.000000	0.000000	0.000000
250	0.000000	0.000000	0.000000
251	0.000000	0.000000	0.000000
252	0.000000	0.000000	0.000000
253	0.000000	0.000000	0.000000
254	0.000000	0.000000	0.000000
255	0.000000	0.000000	0.000000
256	0.000000	0.000000	0.000000
257	0.000000	0.000000	0.000000
258	0.000000	0.000000	0.000000
259	0.000000	0.000000	0.000000
260	0.000000	0.000000	0.000000
261	0.000000	0.000000	0.000000
262	0.000000	0.000000	0.000000
263	0.000000	0.000000	0.000000
264	0.000000	0.000000	0.000000
265	0.000000	0.000000	0.000000
266	0.000000	0.000000	0.000000
267	0.000000	0.000000	0.000000
268	0.000000	0.000000	0.000000
269	0.000000	0.000000	0.000000
270	0.000000	0.000000	0.000000
271	0.000000	0.000000	0.000000
272	0.000000	0.000000	0.000000
273	0.000000	0.000000	0.000000
274	0.000000	0.000000	0.000000
275	0.000000	0.000000	0.000000
276	0.000000	0.000000	0.000000
277	0.000000	0.000000	0.000000
278	0.000000	0.000000	0.000000
279	0.000000	0.000000	0.000000
280	0.000000	0.000000	0.000000
281	0.000000	0.000000	0.000000
282	0.000000	0.000000	0.000000
283	0.000000	0.000000	0.000000
284	0.000000	0.000000	0.000000
285	0.000000	0.000000	0.000000
286	0.000000	0.000000	0.000000
287	0.000000	0.000000	0.000000
288	0.000000	0.000000	0.000000
289	0.000000	0.000000	0.000000
290	[illegible]	[illegible]	[illegible]
291	[illegible]	[illegible]	[illegible]

293	0.000000	0.000000	0.000000
294	0.000000	0.000000	0.000000
295	0.000000	0.000000	0.000000
296	0.000000	0.000000	0.000000
297	0.000000	0.000000	0.000000
298	0.000000	0.000000	0.000000
299	0.000000	0.000000	0.000000
300	0.000000	0.000000	0.000000
301	0.000000	0.000000	0.000000
302	0.000000	0.000000	0.000000
303	0.000000	0.000000	0.000000
304	0.000000	0.000000	0.000000
305	0.000000	0.000000	0.000000
306	0.000000	0.000000	0.000000
307	0.000000	0.000000	0.000000
308	0.000000	0.000000	0.000000
309	0.000000	0.000000	0.000000
310	0.000000	0.000000	0.000000
311	0.000000	0.000000	0.000000
312	0.000000	0.000000	0.000000
313	0.000000	0.000000	0.000000
314	0.000000	0.000000	0.000000
315	0.000000	0.000000	0.000000
316	0.000000	0.000000	0.000000
317	0.000000	0.000000	0.000000
318	0.000000	0.000000	0.000000
319	0.000000	0.000000	0.000000
320	0.000000	0.000000	0.000000
321	0.000000	0.000000	0.000000
322	0.000000	0.000000	0.000000
323	0.000000	0.000000	0.000000
324	0.000000	0.000000	0.000000
325	0.000000	0.000000	0.000000
326	0.000000	0.000000	0.000000
327	0.000000	0.000000	0.000000
328	0.000000	0.000000	0.000000
329	0.000000	0.000000	0.000000
330	0.000000	0.000000	0.000000
331	0.000000	0.000000	0.000000
332	0.000000	0.000000	0.000000
333	0.000000	0.000000	0.000000
334	0.000000	0.000000	0.000000
335	0.000000	0.000000	0.000000
336	0.000000	0.000000	0.000000
337	0.000000	0.000000	0.000000
338	0.000000	0.000000	0.000000
339	0.000000	0.000000	0.000000
340	0.000000	0.000000	0.000000
341	0.000000	0.000000	0.000000
342	0.000000	0.000000	0.000000
343	0.000000	0.000000	0.000000
344	0.000000	0.000000	0.000000
345	0.000000	0.000000	0.000000
346	0.000000	0.000000	0.000000
347	0.000000	0.000000	0.000000
348	0.000000	0.000000	0.000000
349	0.000000	0.000000	0.000000
350	0.000000	0.000000	0.000000
351	0.000000	0.000000	0.000000
352	0.000000	0.000000	0.000000
353	0.000000	0.000000	0.000000
354	0.000000	0.000000	0.000000
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

359	0.000000	0.000000	0.000000
360	0.000000	0.000000	0.000000
361	0.000000	0.000000	0.000000
362	0.000000	0.000000	0.000000
363	0.000000	0.000000	0.000000
364	0.000000	0.000000	0.000000
365	0.000000	0.000000	0.000000
366	0.000000	0.000000	0.000000
367	0.000000	0.000000	0.000000
368	0.000000	0.000000	0.000000
369	0.000000	0.000000	0.000000
370	0.000000	0.000000	0.000000
371	0.000000	0.000000	0.000000
372	0.000000	0.000000	0.000000
373	0.000000	0.000000	0.000000
374	0.000000	0.000000	0.000000
375	0.000000	0.000000	0.000000
376	0.000000	0.000000	0.000000
377	0.000000	0.000000	0.000000
378	0.000000	0.000000	0.000000
379	0.000000	0.000000	0.000000
380	0.000000	0.000000	0.000000
381	0.000000	0.000000	0.000000
382	0.000000	0.000000	0.000000
383	0.000000	0.000000	0.000000
384	0.000000	0.000000	0.000000
385	0.000000	0.000000	0.000000
386	0.000000	0.000000	0.000000
387	0.000000	0.000000	0.000000
388	0.000000	0.000000	0.000000
389	0.000000	0.000000	0.000000
390	0.000000	0.000000	0.000000
391	0.000000	0.000000	0.000000
392	0.000000	0.000000	0.000000
393	0.000000	0.000000	0.000000
394	0.000000	0.000000	0.000000
395	0.000000	0.000000	0.000000
396	0.000000	0.000000	0.000000
397	0.000000	0.000000	0.000000
398	0.000000	0.000000	0.000000
399	0.000000	0.000000	0.000000
400	0.000000	0.000000	0.000000

***** SPECIFIED FORCES *****

NO.	NODE	DIRECTION	VALUE
1	190	MY	49.5000
2	191	MY	49.5000

***** LOAD SUMMARY - 1000 DISPLACEMENTS 2 FORCES 0 PRESSURES *****

OCTAL STORAGE REQUIREMENTS FOR LOAD DATA INPUT CP= 3.312 TIME= 15.48361
MEMORY I= [illegible]12653 MEMORY II= [illegible] TOTAL= [illegible]12653 MEMORY AVAILABLE= 00245772

RANGE OF ELEMENT MAXIMUM STIFFNESS IN GLOBAL COORDINATES

MAXIMUM= [illegible] AT ELEMENT 19.

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OCTAL STORAGE REQUIREMENTS FOR ELEMENT FORMULATION            CP=     5.917  TIME= 15.50111
MEMORY I= 00012051  MEMORY II= 00000000  TOTAL= 00012051  MEMORY AVAILABLE= 00245772

 *** ELEMENT STIFFNESS FORMULATION TIMES
 TYPE  NUMBER  STIF  TOTAL CP   AVE CP

   1     171    43    2.049     0.012
   2     200    10    0.108     0.001
   3       2    10    0.001     0.001
   4      19    63    0.359     0.019

TIME AT END OF ELEMENT STIFFNESS FORMULATION  CP=       5.919

MAXIMUM IN-CORE WAVE FRONT ALLOWED FOR REQUESTED MEMORY SIZE=  397.

OCTAL STORAGE REQUIREMENTS FOR WAVE FRONT MATRIX SOLUTION      CP=     7.000  TIME= 15.50278
MEMORY I= 00012051  MEMORY II= 00020000  TOTAL= 00032051  MEMORY AVAILABLE= 00245772

MAXIMUM IN-CORE WAVE FRONT=     126.

     MATRIX SOLUTION TIMES
 READ IN ELEMENT STIFFNESSES   CP=            0.173

 NODAL COORD. TRANSFORMATION   CP=            0.00?
 MATRIX TRIANGULARIZATION      CP=            0.848

TIME AT END OF MATRIX TRIANGULARIZATION  CP=          7.002

OCTAL STORAGE REQUIREMENTS FOR BACK SUBSTITUTION              CP=     7.063  TIME= 15.50722
MEMORY I= 00012051  MEMORY II= 00007027  TOTAL= 00021100  MEMORY AVAILABLE= 00245772

 *** ELEM. STRESS CALC. TIMES
 TYPE  NUMBER  STIF  TOTAL CP   AVE CP

   1     171    43    0.231    0.001
   2     200    10    0.099    0.000
   3       2    10    0.001    0.000
   4      19    63    0.025    0.001

 STATUS CHANGED FOR  101 BILINEAR ELEM THIS ITER
*** LOAD STEP     1   ITER     1  COMPLETED.  TIME=  0.000000      TIME INC=  0.000000     NEW TRIANG MATRIX  CUM. ITER.=    1

OCTAL STORAGE REQUIREMENTS FOR STRESS AND FORCE CALCULATIONS   CP=     7.450  TIME= 15.51722
MEMORY I= 00012051  MEMORY II= 00007020  TOTAL= 00021071  MEMORY AVAILABLE= 00245772

 *** STORAGE REQUIREMENT SUMMARY
MAXIMUM CENTRAL MEMORY USED  = 00012053
MAXIMUM AUXILIARY MEMORY USED= 00020000
MAXIMUM TOTAL MEMORY USED    = 00032051
MAXIMUM AUXILIARY AVAILABLE  = 00233720

  *** PROBLEM STATISTICS
  NO. OF ACTIVE DEGREES OF FREEDOM =     74?
  R.M.S. WAVEFRONT SIZE =     8?.8
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BUFFER SIZE USED= 1022
RESTART DATA WRITTEN ON FILE 3   (  164444 WORDS)
TRIANGULARIZED MATRIX WRITTEN ON FILE11   (    66243 WORDS)

 STATUS CHANGED FOR    74 BILINEAR ELEM THIS ITER
*** LOAD STEP    1    ITER      2  COMPLETED.  TIME=  0.000000      TIME INC=  0.000000      NEW TRIANG MATRIX  CUM. ITER.=    2

 STATUS CHANGED FOR    37 BILINEAR ELEM THIS ITER
*** LOAD STEP    1    ITER      3  COMPLETED.  TIME=  0.000000      TIME INC=  0.000000      NEW TRIANG MATRIX  CUM. ITER.=    3

 STATUS CHANGED FOR    54 BILINEAR ELEM THIS ITER
*** LOAD STEP    1    ITER      4  COMPLETED.  TIME=  0.000000      TIME INC=  0.000000      NEW TRIANG MATRIX  CUM. ITER.=    4

 STATUS CHANGED FOR    16 BILINEAR ELEM THIS ITER
*** LOAD STEP    1    ITER      5  COMPLETED.  TIME=  0.000000      TIME INC=  0.000000      NEW TRIANG MATRIX  CUM. ITER.=    5

 STATUS CHANGED FOR    11 BILINEAR ELEM THIS ITER
*** LOAD STEP    1    ITER      6  COMPLETED.  TIME=  0.000000      TIME INC=  0.000000      NEW TRIANG MATRIX  CUM. ITER.=    6

 STATUS CHANGED FOR     2 BILINEAR ELEM THIS ITER
*** LOAD STEP    1    ITER      7  COMPLETED.  TIME=  0.000000      TIME INC=  0.000000      NEW TRIANG MATRIX  CUM. ITER.=    7

 STATUS CHANGED FOR     0 BILINEAR ELEM THIS ITER
*** LOAD STEP    1    ITER      8  COMPLETED.  TIME=  0.000000      TIME INC=  0.000000      NEW TRIANG MATRIX  CUM. ITER.=    8

 *** SOLUTION CONVERGED - LOAD STEP    1  CONVERGED AFTER ITERATION      8  CUM. ITER.=     8
      NEXT ITERATION (IDENTIFIED AS ITERATION     20) SATISFIES PRINTOUT OR POST DATA REQUEST.
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***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 20 CUM. ITER.= 9

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	0.000000	0.000000	-0.132790E-01	0.896322E-02	-0.650015E-03	
2	0.000000	0.000000	-0.130190E-01	0.894794E-02	-0.657437E-03	
3	0.000000	0.000000	-0.127444E-01	0.890834E-02	-0.729333E-03	
4	0.000000	0.000000	-0.124217E-01	0.885636E-02	-0.899850E-03	
5	0.000000	0.000000	-0.118279E-01	0.880508E-02	-0.127797E-02	
6	0.000000	0.000000	-0.917413E-02	0.877251E-02	-0.209788E-02	
7	0.000000	0.000000	-0.520924E-02	0.856346E-02	-0.172164E-02	
8	0.000000	0.000000	-0.249949E-02	0.802506E-02	-0.995016E-03	
9	0.000000	0.000000	-0.110304E-02	0.724213E-02	-0.433838E-03	
10	0.000000	0.000000	-0.609868E-03	0.628042E-02	-0.857436E-04	
11	0.000000	0.000000	-0.603717E-03	0.521897E-02	0.534507E-04	
12	0.000000	0.000000	-0.705778E-03	0.413547E-02	0.361077E-04	
13	0.000000	0.000000	-0.719788E-03	0.307350E-02	-0.153316E-04	
14	0.000000	0.000000	-0.671755E-03	0.205875E-02	-0.170192E-04	
15	0.000000	0.000000	-0.682541E-03	0.113834E-02	0.445595E-04	
16	0.000000	0.000000	-0.827700E-03	0.583564E-03	0.157964E-03	
17	0.000000	0.000000	-0.939525E-03	0.433475E-03	0.244777E-03	
18	0.000000	0.000000	-0.105033E-02	0.354116E-03	0.307933E-03	
19	0.000000	0.000000	-0.118450E-02	0.300119E-03	0.360467E-03	
20	0.000000	0.000000	-0.133456E-02	0.273693E-03	0.380043E-03	
21	0.000000	0.000000	-0.114854E-01	0.897628E-02	-0.646129E-03	
22	0.000000	0.000000	-0.112290E-01	0.895575E-02	-0.640737E-03	
23	0.000000	0.000000	-0.109639E-01	0.890001E-02	-0.701130E-03	
24	0.000000	0.000000	-0.106534E-01	0.882833E-02	-0.871784E-03	
25	0.000000	0.000000	-0.100721E-01	0.875400E-02	-0.126492E-02	
26	0.000000	0.000000	-0.741980E-02	0.877332E-02	-0.208787E-02	
27	0.000000	0.000000	-0.349368E-02	0.859402E-02	-0.168362E-02	
28	0.000000	0.000000	-0.892276E-03	0.804808E-02	-0.929036E-03	
29	0.000000	0.000000	0.346877E-03	0.725775E-02	-0.346889E-03	
30	0.000000	0.000000	0.647021E-03	0.628884E-02	0.152198E-04	
31	0.000000	0.000000	0.440215E-03	0.522049E-02	0.160533E-03	
32	0.000000	0.000000	0.121131E-03	0.413367E-02	0.143100E-03	
33	0.000000	0.000000	-0.105199E-03	0.307241E-02	0.881001E-04	
34	0.000000	0.000000	-0.259941E-03	0.205928E-02	0.793132E-04	
35	0.000000	0.000000	-0.454668E-03	0.113993E-02	0.128585E-03	
36	0.000000	0.000000	-0.710517E-03	0.587137E-03	0.224422E-03	
37	0.000000	0.000000	-0.852141E-03	0.438829E-03	0.291854E-03	
38	0.000000	0.000000	-0.978928E-03	0.358278E-03	0.341737E-03	
39	0.000000	0.000000	-0.112419E-02	0.301098E-03	0.381684E-03	
40	0.000000	0.000000	-0.128039E-02	0.265371E-03	0.392938E-03	
41	0.000000	0.000000	-0.832665E-02	0.910195E-02	-0.649401E-03	
42	0.000000	0.000000	-0.807916E-02	0.907060E-02	-0.595177E-03	
43	0.000000	0.000000	-0.783966E-02	0.897868E-02	-0.622236E-03	
44	0.000000	0.000000	-0.756267E-02	0.885544E-02	-0.788736E-03	
45	0.000000	0.000000	-0.701621E-02	0.872643E-02	-0.123035E-02	
46	0.000000	0.000000	-0.433997E-02	0.884512E-02	-0.209865E-02	
47	0.000000	0.000000	-0.471179E-03	0.868741E-02	-0.161575E-02	
48	0.000000	0.000000	0.193389E-02	0.810523E-02	-0.809163E-03	
49	0.000000	0.000000	0.289322E-02	0.729479E-02	-0.191128E-03	
50	0.000000	0.000000	0.285144E-02	0.630900E-02	0.196075E-03	
51	0.000000	0.000000	0.226814E-02	0.522524E-02	0.351117E-03	

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 20 CUM. ITER.= 9

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	0.000000	0.000000	0.156748E-02	0.413133E-02	0.331436E-03	
53	0.000000	0.000000	0.969887E-03	0.307114E-02	0.269606E-03	
54	0.000000	0.000000	0.460869E-03	0.205965E-02	0.249040E-03	
55	0.000000	0.000000	-0.558229E-04	0.113864E-02	0.275625E-03	
56	0.000000	0.000000	-0.505857E-03	0.579749E-03	0.333169E-03	
57	0.000000	0.000000	-0.699486E-03	0.430266E-03	0.372953E-03	
58	0.000000	0.000000	-0.855095E-03	0.345505E-03	0.404614E-03	
59	0.000000	0.000000	-0.102198E-02	0.278545E-03	0.427104E-03	
60	0.000000	0.000000	-0.119357E-02	0.225924E-03	0.425471E-03	
61	0.000000	0.000000	-0.509021E-02	0.943178E-02	-0.653532E-03	
62	0.000000	0.000000	-0.485610E-02	0.938648E-02	-0.527177E-03	
63	0.000000	0.000000	-0.465547E-02	0.925815E-02	-0.499779E-03	
64	0.000000	0.000000	-0.443257E-02	0.907156E-02	-0.650648E-03	
65	0.000000	0.000000	-0.394499E-02	0.885737E-02	-0.117397E-02	
66	0.000000	0.000000	-0.121125E-02	0.906179E-02	-0.213189E-02	
67	0.000000	0.000000	0.259386E-02	0.883509E-02	-0.153901E-02	
68	0.000000	0.000000	0.478401E-02	0.818487E-02	-0.681933E-03	
69	0.000000	0.000000	0.545462E-02	0.734375E-02	-0.309569E-04	
70	0.000000	0.000000	0.506413E-02	0.633609E-02	0.381643E-03	
71	0.000000	0.000000	0.409819E-02	0.523263E-02	0.545222E-03	
72	0.000000	0.000000	0.301319E-02	0.413009E-02	0.520589E-03	
73	0.000000	0.000000	0.204476E-02	0.307123E-02	0.451106E-03	
74	0.000000	0.000000	0.118182E-02	0.206004E-02	0.419740E-03	
75	0.000000	0.000000	0.342061E-03	0.113465E-02	0.424593E-03	
76	0.000000	0.000000	-0.306098E-03	0.560306E-03	0.441610E-03	
77	0.000000	0.000000	-0.552771E-03	0.406175E-03	0.457716E-03	
78	0.000000	0.000000	-0.739247E-03	0.314083E-03	0.474698E-03	
79	0.000000	0.000000	-0.931686E-03	0.234715E-03	0.485404E-03	
80	0.000000	0.000000	-0.112485E-02	0.164045E-03	0.475882E-03	
81	0.000000	0.000000	-0.935075E-03	0.101669E-01	-0.647679E-03	
82	0.000000	0.000000	-0.727244E-03	0.101064E-01	-0.423155E-03	
83	0.000000	0.000000	-0.586279E-03	0.996247E-02	-0.306114E-03	
84	0.000000	0.000000	-0.455061E-03	0.973201E-02	-0.397404E-03	
85	0.000000	0.000000	-0.859384E-04	0.938251E-02	-0.105877E-02	
86	0.000000	0.000000	0.273583E-02	0.955516E-02	-0.216225E-02	
87	0.000000	0.000000	0.639685E-02	0.906955E-02	-0.141964E-02	
88	0.000000	0.000000	0.828813E-02	0.831023E-02	-0.514415E-03	
89	0.000000	0.000000	0.859106E-02	0.741869E-02	0.170845E-03	
90	0.000000	0.000000	0.776557E-02	0.637826E-02	0.614504E-03	
91	0.000000	0.000000	0.632457E-02	0.524500E-02	0.786683E-03	
92	0.000000	0.000000	0.476844E-02	0.413019E-02	0.751527E-03	
93	0.000000	0.000000	0.335045E-02	0.307370E-02	0.671277E-03	
94	0.000000	0.000000	0.205743E-02	0.206050E-02	0.628185E-03	
95	0.000000	0.000000	0.822828E-03	0.112741E-02	0.608809E-03	
96	0.000000	0.000000	-0.742014E-04	0.530710E-03	0.578152E-03	
97	0.000000	0.000000	-0.388274E-03	0.367167E-03	0.568504E-03	
98	0.000000	0.000000	-0.616482E-03	0.261883E-03	0.573177E-03	
99	0.000000	0.000000	-0.846383E-03	0.164382E-03	0.574688E-03	
100	0.000000	0.000000	-0.107390E-02	0.728769E-04	0.558589E-03	
101	0.000000	0.000000	0.359923E-02	0.112456E-01	-0.602030E-03	
102	0.000000	0.000000	0.377960E-02	0.111393E-01	-0.312881E-03	

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 20 CUM. ITER.= 9

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
103	0.000000	0.000000	0.386396E-02	0.110258E-01	-0.131455E-03	
104	0.000000	0.000000	0.390877E-02	0.108750E-01	-0.128847E-03	
105	0.000000	0.000000	0.413001E-02	0.106248E-01	-0.893925E-03	
106	0.000000	0.000000	0.693411E-02	0.102098E-01	-0.210003E-02	
107	0.000000	0.000000	0.103105E-01	0.935800E-02	-0.125712E-02	
108	0.000000	0.000000	0.118514E-01	0.846106E-02	-0.328983E-03	
109	0.000000	0.000000	0.117628E-01	0.750989E-02	0.384665E-03	
110	0.000000	0.000000	0.104871E-01	0.643060E-02	0.860971E-03	
111	0.000000	0.000000	0.855689E-02	0.526052E-02	0.103949E-02	
112	0.000000	0.000000	0.652409E-02	0.413199E-02	0.986306E-03	
113	0.000000	0.000000	0.465788E-02	0.307951E-02	0.892111E-03	
114	0.000000	0.000000	0.293333E-02	0.206160E-02	0.838512E-03	
115	0.000000	0.000000	0.129978E-02	0.111586E-02	0.795617E-03	
116	0.000000	0.000000	0.146235E-03	0.510242E-03	0.723255E-03	
117	0.000000	0.000000	-0.240949E-03	0.326012E-03	0.693202E-03	
118	0.000000	0.000000	-0.517632E-03	0.202353E-03	0.690933E-03	
119	0.000000	0.000000	-0.793508E-03	0.842687E-04	0.687218E-03	
120	0.000000	0.000000	-0.106560E-02	-0.394201E-04	0.670019E-03	
121	0.000000	0.000000	0.242905E-01	0.151345E-01	-0.730625E-04	
122	0.000000	0.000000	0.242756E-01	0.149139E-01	0.126155E-03	
123	0.000000	0.000000	0.242073E-01	0.147323E-01	0.191307E-03	
124	0.000000	0.000000	0.241423E-01	0.145669E-01	0.107359E-03	
125	0.000000	0.000000	0.241505E-01	0.142695E-01	-0.139113E-03	
126	0.000000	0.000000	0.248385E-01	0.126124E-01	-0.662568E-03	
127	0.000000	0.000000	0.258850E-01	0.106079E-01	-0.228778E-03	
128	0.000000	0.000000	0.255770E-01	0.912863E-02	0.524409E-03	
129	0.000000	0.000000	0.238135E-01	0.794154E-02	0.120255E-02	
130	0.000000	0.000000	0.207275E-01	0.670440E-02	0.176335E-02	
131	0.000000	0.000000	0.168338E-01	0.533788E-02	0.194089E-02	
132	0.000000	0.000000	0.129983E-01	0.416245E-02	0.179547E-02	
133	0.000000	0.000000	0.950781E-02	0.314559E-02	0.169387E-02	
134	0.000000	0.000000	0.616408E-02	0.208062E-02	0.164567E-02	
135	0.000000	0.000000	0.298630E-02	0.103306E-02	0.151315E-02	
136	0.000000	0.000000	0.830397E-03	0.324870E-03	0.136025E-02	
137	0.000000	0.000000	0.970465E-04	0.752513E-04	0.130751E-02	
138	0.000000	0.000000	-0.419413E-03	-0.102083E-03	0.127632E-02	
139	0.000000	0.000000	-0.924774E-03	-0.275860E-03	0.125095E-02	
140	0.000000	0.000000	-0.141945E-02	-0.449007E-03	0.122012E-02	
141	0.000000	0.000000	0.499685E-01	0.173120E-01	0.129373E-02	
142	0.000000	0.000000	0.494375E-01	0.169246E-01	0.135370E-02	
143	0.000000	0.000000	0.488913E-01	0.165361E-01	0.137099E-02	
144	0.000000	0.000000	0.483445E-01	0.161452E-01	0.136038E-02	
145	0.000000	0.000000	0.476063E-01	0.155855E-01	0.131736E-02	
146	0.000000	0.000000	0.457439E-01	0.139154E-01	0.117473E-02	
147	0.000000	0.000000	0.433318E-01	0.116279E-01	0.132321E-02	
148	0.000000	0.000000	0.403277E-01	0.969252E-02	0.164783E-02	
149	0.000000	0.000000	0.366129E-01	0.843580E-02	0.225272E-02	
150	0.000000	0.000000	0.315150E-01	0.714148E-02	0.329625E-02	
151	0.000000	0.000000	0.252181E-01	0.536116E-02	0.343317E-02	
152	0.000000	0.000000	0.195476E-01	0.422397E-02	0.270118E-02	
153	0.000000	0.000000	0.145554E-01	0.335034E-02	0.249086E-02	

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 20 CUM. ITER.= 9

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
154	0.000000	0.000000	0.946177E-02	0.214545E-02	0.254185E-02	
155	0.000000	0.000000	0.452375E-02	0.947572E-03	0.236839E-02	
156	0.000000	0.000000	0.111943E-02	0.517117E-04	0.217032E-02	
157	0.000000	0.000000	-0.550257E-04	-0.270584E-03	0.210383E-02	
158	0.000000	0.000000	-0.889351E-03	-0.504625E-03	0.207023E-02	
159	0.000000	0.000000	-0.171236E-02	-0.741719E-03	0.204508E-02	
160	0.000000	0.000000	-0.252422E-02	-0.980983E-03	0.201111E-02	
161	0.000000	0.000000	0.773940E-01	0.173873E-01	0.306300E-02	
162	0.000000	0.000000	0.761817E-01	0.170064E-01	0.300221E-02	
163	0.000000	0.000000	0.749881E-01	0.166128E-01	0.297187E-02	
164	0.000000	0.000000	0.738010E-01	0.162113E-01	0.296600E-02	
165	0.000000	0.000000	0.721697E-01	0.156486E-01	0.296523E-02	
166	0.000000	0.000000	0.677483E-01	0.140838E-01	0.291912E-02	
167	0.000000	0.000000	0.619036E-01	0.120451E-01	0.297549E-02	
168	0.000000	0.000000	0.557576E-01	0.100654E-01	0.312523E-02	
169	0.000000	0.000000	0.500698E-01	0.872385E-02	0.258536E-02	
170	0.000000	0.000000	0.429776E-01	0.743679E-02	0.215003E-02	
171	0.000000	0.000000	0.336811E-01	0.557954E-02	0.222083E-02	
172	0.000000	0.000000	0.262972E-01	0.448232E-02	0.280910E-02	
173	0.000000	0.000000	0.199910E-01	0.356975E-02	0.351983E-02	
174	0.000000	0.000000	0.129105E-01	0.228953E-02	0.349474E-02	
175	0.000000	0.000000	0.605671E-02	0.107614E-02	0.336227E-02	
176	0.000000	0.000000	0.111136E-02	0.130741E-04	0.321169E-02	
177	0.000000	0.000000	-0.634446E-03	-0.401369E-03	0.314026E-02	
178	0.000000	0.000000	-0.188359E-02	-0.701741E-03	0.311044E-02	
179	0.000000	0.000000	-0.312678E-02	-0.994431E-03	0.311068E-02	
180	0.000000	0.000000	-0.437295E-02	-0.127052E-02	0.311604E-02	
181	0.000000	0.000000	0.103207	0.151630E-01	0.436765E-02	0.176518E-04
182	0.000000	0.000000	0.101497	0.149655E-01	0.421927E-02	0.325535E-06
183	0.000000	0.000000	0.998109E-01	0.147683E-01	0.422443E-02	0.549778E-05
184	0.000000	0.000000	0.981125E-01	0.145694E-01	0.426264E-02	0.375256E-05
185	0.000000	0.000000	0.957559E-01	0.142873E-01	0.430810E-02	0.160257E-04
186	0.000000	0.000000	0.892713E-01	0.133403E-01	0.430666E-02	0.555292E-04
187	0.000000	0.000000	0.806671E-01	0.118595E-01	0.434836E-02	0.633864E-04
188	0.000000	0.000000	0.717094E-01	0.103208E-01	0.470181E-02	0.524320E-04
189	0.000000	0.000000	0.638062E-01	0.888650E-02	0.142234E-02	0.347478E-04
190	0.000000	0.000000	0.546521E-01	0.750038E-02	0.211734E-01	0.477386E-04
191	0.000000	0.000000	0.427756E-01	0.606622E-02	0.211759E-01	0.45[illegible]07E-04
192	0.000000	0.000000	0.336100E-01	0.484249E-02	0.143062E-02	0.264773E-04
193	0.000000	0.000000	0.256822E-01	0.371588E-02	0.471894E-02	0.377221E-04
194	0.000000	0.000000	0.166887E-01	0.258367E-02	0.437435E-02	0.444625E-04
195	0.000000	0.000000	0.806138E-02	0.151585E-02	0.430874E-02	0.400048E-04
196	0.000000	0.000000	0.161176E-02	0.801963E-03	0.426179E-02	0.132212E-04
197	0.000000	0.000000	-0.725956E-03	0.587725E-03	0.419861E-02	0.281349E-05
198	0.000000	0.000000	-0.239455E-02	0.436509E-03	0.414412E-02	0.426192E-05
199	0.000000	0.000000	-0.404466E-02	0.286351E-03	0.411508E-02	0.324487E-06
200	0.000000	0.000000	-0.576502E-02	0.136024E-03	0.422582E-02	0.134260E-04
201	0.000000	0.000000	0.000000			
202	0.000000	0.000000	0.000000			
203	0.000000	0.000000	0.000000			
204	0.000000	0.000000	0.000000			

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 20 CUM. ITER.= 9

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
205	0.000000	0.000000	0.000000			
206	0.000000	0.000000	0.000000			
207	0.000000	0.000000	0.000000			
208	0.000000	0.000000	0.000000			
209	0.000000	0.000000	0.000000			
210	0.000000	0.000000	0.000000			
211	0.000000	0.000000	0.000000			
212	0.000000	0.000000	0.000000			
213	0.000000	0.000000	0.000000			
214	0.000000	0.000000	0.000000			
215	0.000000	0.000000	0.000000			
216	0.000000	0.000000	0.000000			
217	0.000000	0.000000	0.000000			
218	0.000000	0.000000	0.000000			
219	0.000000	0.000000	0.000000			
220	0.000000	0.000000	0.000000			
221	0.000000	0.000000	0.000000			
222	0.000000	0.000000	0.000000			
223	0.000000	0.000000	0.000000			
224	0.000000	0.000000	0.000000			
225	0.000000	0.000000	0.000000			
226	0.000000	0.000000	0.000000			
227	0.000000	0.000000	0.000000			
228	0.000000	0.000000	0.000000			
229	0.000000	0.000000	0.000000			
230	0.000000	0.000000	0.000000			
231	0.000000	0.000000	0.000000			
232	0.000000	0.000000	0.000000			
233	0.000000	0.000000	0.000000			
234	0.000000	0.000000	0.000000			
235	0.000000	0.000000	0.000000			
236	0.000000	0.000000	0.000000			
237	0.000000	0.000000	0.000000			
238	0.000000	0.000000	0.000000			
239	0.000000	0.000000	0.000000			
240	0.000000	0.000000	0.000000			
241	0.000000	0.000000	0.000000			
242	0.000000	0.000000	0.000000			
243	0.000000	0.000000	0.000000			
244	0.000000	0.000000	0.000000			
245	0.000000	0.000000	0.000000			
246	0.000000	0.000000	0.000000			
247	0.000000	0.000000	0.000000			
248	0.000000	0.000000	0.000000			
249	0.000000	0.000000	0.000000			
250	0.000000	0.000000	0.000000			
251	0.000000	0.000000	0.000000			
252	0.000000	0.000000	0.000000			
253	0.000000	0.000000	0.000000			
254	0.000000	0.000000	0.000000			
255	0.000000	0.000000	0.000000			

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 20 CUM. ITER.= 9

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
256	0.000000	0.000000	0.000000			
257	0.000000	0.000000	0.000000			
258	0.000000	0.000000	0.000000			
259	0.000000	0.000000	0.000000			
260	0.000000	0.000000	0.000000			
261	0.000000	0.000000	0.000000			
262	0.000000	0.000000	0.000000			
263	0.000000	0.000000	0.000000			
264	0.000000	0.000000	0.000000			
265	0.000000	0.000000	0.000000			
266	0.000000	0.000000	0.000000			
267	0.000000	0.000000	0.000000			
268	0.000000	0.000000	0.000000			
269	0.000000	0.000000	0.000000			
270	0.000000	0.000000	0.000000			
271	0.000000	0.000000	0.000000			
272	0.000000	0.000000	0.000000			
273	0.000000	0.000000	0.000000			
274	0.000000	0.000000	0.000000			
275	0.000000	0.000000	0.000000			
276	0.000000	0.000000	0.000000			
277	0.000000	0.000000	0.000000			
278	0.000000	0.000000	0.000000			
279	0.000000	0.000000	0.000000			
280	0.000000	0.000000	0.000000			
281	0.000000	0.000000	0.000000			
282	0.000000	0.000000	0.000000			
283	0.000000	0.000000	0.000000			
284	0.000000	0.000000	0.000000			
285	0.000000	0.000000	0.000000			
286	0.000000	0.000000	0.000000			
287	0.000000	0.000000	0.000000			
288	0.000000	0.000000	0.000000			
289	0.000000	0.000000	0.000000			
290	0.000000	0.000000	0.000000			
291	0.000000	0.000000	0.000000			
292	0.000000	0.000000	0.000000			
293	0.000000	0.000000	0.000000			
294	0.000000	0.000000	0.000000			
295	0.000000	0.000000	0.000000			
296	0.000000	0.000000	0.000000			
297	0.000000	0.000000	0.000000			
298	0.000000	0.000000	0.000000			
299	0.000000	0.000000	0.000000			
300	0.000000	0.000000	0.000000			
301	0.000000	0.000000	0.000000			
302	0.000000	0.000000	0.000000			
303	0.000000	0.000000	0.000000			
304	0.000000	0.000000	0.000000			
305	0.000000	0.000000	0.000000			
306	0.000000	0.000000	0.000000			

***** DISPLACEMENT SOLUTION *****   TIME = 0.00000   LOAD STEP= 1   ITERATION= 20   CUM. ITER.= 9

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
307	0.000000	0.000000	0.000000			
308	0.000000	0.000000	0.000000			
309	0.000000	0.000000	0.000000			
310	0.000000	0.000000	0.000000			
311	0.000000	0.000000	0.000000			
312	0.000000	0.000000	0.000000			
313	0.000000	0.000000	0.000000			
314	0.000000	0.000000	0.000000			
315	0.000000	0.000000	0.000000			
316	0.000000	0.000000	0.000000			
317	0.000000	0.000000	0.000000			
318	0.000000	0.000000	0.000000			
319	0.000000	0.000000	0.000000			
320	0.000000	0.000000	0.000000			
321	0.000000	0.000000	0.000000			
322	0.000000	0.000000	0.000000			
323	0.000000	0.000000	0.000000			
324	0.000000	0.000000	0.000000			
325	0.000000	0.000000	0.000000			
326	0.000000	0.000000	0.000000			
327	0.000000	0.000000	0.000000			
328	0.000000	0.000000	0.000000			
329	0.000000	0.000000	0.000000			
330	0.000000	0.000000	0.000000			
331	0.000000	0.000000	0.000000			
332	0.000000	0.000000	0.000000			
333	0.000000	0.000000	0.000000			
334	0.000000	0.000000	0.000000			
335	0.000000	0.000000	0.000000			
336	0.000000	0.000000	0.000000			
337	0.000000	0.000000	0.000000			
338	0.000000	0.000000	0.000000			
339	0.000000	0.000000	0.000000			
340	0.000000	0.000000	0.000000			
341	0.000000	0.000000	0.000000			
342	0.000000	0.000000	0.000000			
343	0.000000	0.000000	0.000000			
344	0.000000	0.000000	0.000000			
345	0.000000	0.000000	0.000000			
346	0.000000	0.000000	0.000000			
347	0.000000	0.000000	0.000000			
348	0.000000	0.000000	0.000000			
349	0.000000	0.000000	0.000000			
350	0.000000	0.000000	0.000000			
351	0.000000	0.000000	0.000000			
352	0.000000	0.000000	0.000000			
353	0.000000	0.000000	0.000000			
354	0.000000	0.000000	0.000000			
355	0.000000	0.000000	0.000000			
356	0.000000	0.000000	0.000000			
357	0.000000	0.000000	0.000000			

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000   LOAD STEP= 1 ITERATION= 20 CUM. ITER.= 9

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
358	0.000000	0.000000	0.000000			
359	0.000000	0.000000	0.000000			
360	0.000000	0.000000	0.000000			
361	0.000000	0.000000	0.000000			
362	0.000000	0.000000	0.000000			
363	0.000000	0.000000	0.000000			
364	0.000000	0.000000	0.000000			
365	0.000000	0.000000	0.000000			
366	0.000000	0.000000	0.000000			
367	0.000000	0.000000	0.000000			
368	0.000000	0.000000	0.000000			
369	0.000000	0.000000	0.000000			
370	0.000000	0.000000	0.000000			
371	0.000000	0.000000	0.000000			
372	0.000000	0.000000	0.000000			
373	0.000000	0.000000	0.000000			
374	0.000000	0.000000	0.000000			
375	0.000000	0.000000	0.000000			
376	0.000000	0.000000	0.000000			
377	0.000000	0.000000	0.000000			
378	0.000000	0.000000	0.000000			
379	0.000000	0.000000	0.000000			
380	0.000000	0.000000	0.000000			
381	0.000000	0.000000	0.000000			
382	0.000000	0.000000	0.000000			
383	0.000000	0.000000	0.000000			
384	0.000000	0.000000	0.000000			
385	0.000000	0.000000	0.000000			
386	0.000000	0.000000	0.000000			
387	0.000000	0.000000	0.000000			
388	0.000000	0.000000	0.000000			
389	0.000000	0.000000	0.000000			
390	0.000000	0.000000	0.000000			
391	0.000000	0.000000	0.000000			
392	0.000000	0.000000	0.000000			
393	0.000000	0.000000	0.000000			
394	0.000000	0.000000	0.000000			
395	0.000000	0.000000	0.000000			
396	0.000000	0.000000	0.000000			
397	0.000000	0.000000	0.000000			
398	0.000000	0.000000	0.000000			
399	0.000000	0.000000	0.000000			
400	0.000000	0.000000	0.000000			
581	0.265009E-01	-0.840180E-01	0.103684	0.128430E-01	0.428205E-02	0.296761E-02
582	0.264880E-01	-0.828403E-01	0.101871	0.126486E-01	0.425935E-02	0.293057E-02
583	0.264794E-01	-0.816712E-01	0.100055	0.124555E-01	0.424367E-02	0.292352E-02
584	0.264754E-01	-0.804978E-01	0.982618E-01	0.122625E-01	0.427216E-02	0.295123E-02
585	0.264762E-01	-0.788607E-01	0.958325E-01	0.119993E-01	0.430835E-02	0.301414E-02
586	0.265050E-01	-0.742028E-01	0.892949E-01	0.113989E-01	0.434057E-02	0.323885E-02
587	0.266097E-01	-0.674136E-01	0.805292E-01	0.106114E-01	0.444089E-02	0.354076E-02
588	0.267518E-01	-0.606995E-01	0.720776E-01	0.968565E-02	0.459986E-02	0.372851E-02

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 20 CUM. ITER.= 9

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
589	0.270588E-01	-0.525429E-01	0.625456E-01	0.862429E-02	0.798426E-02	0.378372E-02
590	0.275187E-01	-0.449961E-01	0.528726E-01	0.752823E-02	0.145862E-01	0.371383E-02
591	0.275229E-01	-0.376883E-01	0.445384E-01	0.647397E-02	0.145891E-01	0.353776E-02
592	0.270701E-01	-0.308157E-01	0.348553E-01	0.543912E-02	0.799330E-02	0.328647E-02
593	0.267649E-01	-0.244996E-01	0.253081E-01	0.447915E-02	0.461514E-02	0.300240E-02
594	0.266156E-01	-0.187530E-01	0.168496E-01	0.367334E-02	0.445496E-02	0.271996E-02
595	0.264944E-01	-0.135870E-01	0.809574E-02	0.301646E-02	0.433852E-02	0.244770E-02
596	0.264530E-01	-0.100639E-01	0.156622E-02	0.255279E-02	0.428199E-02	0.228196E-02
597	0.264498E-01	-0.882287E-02	-0.873206E-03	0.235363E-02	0.421402E-02	0.224843E-02
598	0.264537E-01	-0.793150E-02	-0.268038E-02	0.220728E-02	0.416169E-02	0.222228E-02
599	0.264642E-01	-0.704251E-02	-0.452115E-02	0.206058E-02	0.415444E-02	0.222924E-02
600	0.264816E-01	-0.614649E-02	-0.637618E-02	0.191278E-02	0.416507E-02	0.225824E-02
MAXIMUMS						
NODE	591	581	581	161	191	589
VALUE	0.275229E-01	-0.840180E-01	0.103684	0.173873E-01	0.211759E-01	0.378372E-02

```
TUGC,CPSES,TYP ANCH L8X6X3/4X2-4,KT=35                                        15.6265    6/27/85 CP=      20.847

 ***** ELEMENT STRESSES *****  TIME =  0.000000        LOAD STEP=     1   ITERATION=    20   CUM. ITER.=     9

EL=    1  NODES=     1     2    22    21      MAT=  1  AREA= 0.800E-01     TTOP,TBOT=     0.0     0.0                  RECT SHELL  43
XC,YC,ZC= 0.200      0.100       0.000        PRS= 0.0000      0.0000      0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000        MX,MY,MXY= -0.20381E-01 -0.59313E-01  0.33175E-01  NX,NY= -0.17901      -0.48330
TOP SX,SY,SXY,SZ=-0.21739     -0.63268      0.35386      0.00000        SIG1,SIG2,SIG3=-0.23601E-13-0.14751E-01-0.83532
 S.I.= 0.83532        SIGE= 0.82804
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.21739      0.63268     -0.35386      0.00000        SIG1,SIG2,SIG3= 0.83532      0.14751E-01-0.31895E-11
 S.I.= 0.83532        SIGE= 0.82804

EL=    2  NODES=     2     3    23    22      MAT=  1  AREA= 0.800E-01     TTOP,TBOT=     0.0     0.0                  RECT SHELL  43
XC,YC,ZC= 0.600      0.100       0.000        PRS= 0.0000      0.0000      0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000        MX,MY,MXY= -0.18483      -0.54138E-01  0.94425E-01  NX,NY= -0.41069      -0.45590
TOP SX,SY,SXY,SZ= -1.9715     -0.57748      1.0072      0.00000        SIG1,SIG2,SIG3=-0.11557E-12-0.49640E-01 -2.4994
 S.I.=  2.4994        SIGE=  2.4749
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  1.9715      0.57748     -1.0072       0.00000        SIG1,SIG2,SIG3=  2.4994      0.49640E-01-0.94734E-11
 S.I.=  2.4994        SIGE=  2.4749

EL=    3  NODES=     3     4    24    23      MAT=  1  AREA= 0.800E-01     TTOP,TBOT=     0.0     0.0                  RECT SHELL  43
XC,YC,ZC=  1.00      0.100       0.000        PRS= 0.0000      0.0000      0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000        MX,MY,MXY= -0.44725      -0.41521E-01  0.12322      NX,NY= -0.47467      -0.39559
TOP SX,SY,SXY,SZ= -4.7707     -0.44289      1.3143      0.00000        SIG1,SIG2,SIG3=-0.38135E-12-0.75003E-01 -5.1386
 S.I.=  5.1386        SIGE=  5.1015
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  4.7707      0.44289     -1.3143       0.00000        SIG1,SIG2,SIG3=  5.1386      0.75003E-01-0.19432E-10
 S.I.=  5.1386        SIGE=  5.1015

EL=    4  NODES=     4     5    25    24      MAT=  1  AREA= 0.110         TTOP,TBOT=     0.0     0.0                  RECT SHELL  43
XC,YC,ZC=  1.47      0.100       0.000        PRS= 0.0000      0.0000      0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000        MX,MY,MXY= -0.71907      -0.14093E-01  0.92962E-01  NX,NY= -0.22518      -0.33574
TOP SX,SY,SXY,SZ= -7.6701     -0.15033      0.99159      0.00000        SIG1,SIG2,SIG3=-0.53137E-12-0.21768E-01 -7.7986
 S.I.=  7.7986        SIGE=  7.7878
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  7.6701      0.15033     -0.99159      0.00000        SIG1,SIG2,SIG3=  7.7986      0.21768E-01-0.29906E-10
 S.I.=  7.7986        SIGE=  7.7878

EL=    5  NODES=     5     6    26    25      MAT=  1  AREA= 0.300         TTOP,TBOT=     0.0     0.0                  RECT SHELL  43
XC,YC,ZC=  2.50      0.100       0.000        PRS= 0.0000      0.0000      0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000        MX,MY,MXY= -0.57129      -0.43257E-01 -0.16458E-01  NX,NY=  0.32316      -0.28287
TOP SX,SY,SXY,SZ= -6.0938     -0.46141     -0.17555      0.00000        SIG1,SIG2,SIG3=-0.86598E-13-0.45594      -6.0992
 S.I.=  6.0992        SIGE=  5.8845
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  6.0938      0.46141      0.17555      0.00000        SIG1,SIG2,SIG3=  6.0992      0.45594     -0.22017E-10
 S.I.=  6.0992        SIGE=  5.8845

EL=    6  NODES=     6     7    27    26      MAT=  1  AREA= 0.400         TTOP,TBOT=     0.0     0.0                  RECT SHELL  43
XC,YC,ZC=  4.25      0.100       0.100        PRS= 0.0000      0.0000      0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000        MX,MY,MXY=  0.19226      -0.22260E-01  0.66892E-01  NX,NY=  0.16876      -0.29222
TOP SX,SY,SXY,SZ=  2.6507     -0.23744      0.71352      0.00000        SIG1,SIG2,SIG3=  2.2550      0.21099E-10-0.44170
 S.I.=  2.6967        SIGE=  2.5052
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -2.6507      0.23744     -0.71352      0.00000        SIG1,SIG2,SIG3= 0.44170      0.21110E-10 -2.2550
 S.I.=  2.6967        SIGE=  2.5052

EL=    7  NODES=     7   [illegible]   [illegible]   27      MAT=  1  AREA=  .4   TTOP,TBOT=     0.0     0.0            RECT SHELL  43
```

```
TX,TY= 0.0000    0.0000      MX,MY,MXY= 0.36385    -0.2___E-01  0.21660      NX,NY= 0.28522E-02 -0.18810
TOP SX,SY,SXY,SZ=  3.9451    -0.27303     2.3104     0.00000      SIG1,SIG2,SIG3=  4.9643     0.49034E-10 -1.2923
 S.I.=  6.2566      SIGE=  5.7210
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.9451    0.27303     -2.3104     0.00000      SIG1,SIG2,SIG3=  1.2923     0.48992E-10 -4.9643
 S.I.=  6.2566      SIGE=  5.7210

EL=    8  NODES=     8    9   29   28      MAT=  1  AREA= 0.400       TTOP,TBOT=    0.0    0.0                          RECT SHELL  43
XC,YC,ZC=  8.25       0.100      0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY=  0.28776     -0.12173E-01  0.31265      NX,NY= -0.37413E-01 -0.86443E-01
TOP SX,SY,SXY,SZ=  3.0695    -0.12985     3.3349     0.00000      SIG1,SIG2,SIG3=  5.1685     0.57889E-10 -2.2289
 S.I.=  7.3974      SIGE=  6.5728
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.0695    0.12985     -3.3349     0.00000      SIG1,SIG2,SIG3=  2.2289     0.57895E-10 -5.1685
 S.I.=  7.3974      SIGE=  6.5728

EL=    9  NODES=     9   10   30   29      MAT=  1  AREA= 0.400       TTOP,TBOT=    0.0    0.0                          RECT SHELL  43
XC,YC,ZC=  10.2       0.100      0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY=  0.17872     -0.76599E-02  0.38344      NX,NY= -0.28488E-01 -0.51133E-01
TOP SX,SY,SXY,SZ=  1.9064    -0.81705E-01  4.0900    0.00000      SIG1,SIG2,SIG3=  5.1214     0.65853E-10 -3.2968
 S.I.=  8.4182      SIGE=  7.3473
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.9064    0.81705E-01 -4.0900     0.00000      SIG1,SIG2,SIG3=  3.2968     0.65912E-10 -5.1214
 S.I.=  8.4182      SIGE=  7.3473

EL=   10  NODES=    10   11   31   30      MAT=  1  AREA= 0.400       TTOP,TBOT=    0.0    0.0                          RECT SHELL  43
XC,YC,ZC=  12.2       0.100      0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY=  0.71334E-01 -0.39407E-02  0.42232      NX,NY= -0.28763E-01 -0.25723E-01
TOP SX,SY,SXY,SZ= 0.76089    -0.42034E-01  4.5048    0.00000      SIG1,SIG2,SIG3=  4.8821     0.70833E-10 -4.1632
 S.I.=  9.0453      SIGE=  7.8417
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.76089    0.42034E-01 -4.5048     0.00000      SIG1,SIG2,SIG3=  4.1632     0.70896E-10 -4.8821
 S.I.=  9.0453      SIGE=  7.8417

EL=   11  NODES=    11   12   32   31      MAT=  1  AREA= 0.400       TTOP,TBOT=    0.0    0.0                          RECT SHELL  43
XC,YC,ZC=  14.2       0.100      0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY= -0.95080E-02 -0.21477E-02  0.42839      NX,NY= -0.14164E-01 -0.16712E-01
TOP SX,SY,SXY,SZ=-0.10142    -0.22909E-01  4.5695    0.00000      SIG1,SIG2,SIG3=  4.5075     0.71531E-10 -4.6318
 S.I.=  9.1393      SIGE=  7.9151
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.10142    0.22909E-01 -4.5695     0.00000      SIG1,SIG2,SIG3=  4.6318     0.71519E-10 -4.5075
 S.I.=  9.1393      SIGE=  7.9151

EL=   12  NODES=    12   13   33   32      MAT=  1  AREA= 0.400       TTOP,TBOT=    0.0    0.0                          RECT SHELL  43
XC,YC,ZC=  16.2       0.100      0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY= -0.27380E-01 -0.83545E-03  0.41813      NX,NY=  0.77879E-02 -0.15388E-01
TOP SX,SY,SXY,SZ=-0.29206    -0.89115E-02  4.4601    0.00000      SIG1,SIG2,SIG3=  4.3118     0.69842E-10 -4.6128
 S.I.=  8.9246      SIGE=  7.7304
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.29206    0.89115E-02 -4.4601     0.00000      SIG1,SIG2,SIG3=  4.6128     0.69849E-10 -4.3118
 S.I.=  8.9246      SIGE=  7.7304

EL=   13  NODES=    13   14   34   33      MAT=  1  AREA= 0.400       TTOP,TBOT=    0.0    0.0                          RECT SHELL  43
XC,YC,ZC=  18.2       0.100      0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY= -0.24605E-02  0.69751E-03  0.40051      NX,NY=  0.19284E-01 -0.11299E-01
TOP SX,SY,SXY,SZ=-0.26245E-01 0.74401E-02  4.2721    0.00000      SIG1,SIG2,SIG3=  4.2628     0.56870E-10 -4.2816
 S.I.=  8.5443      SIGE=  7.3996
MID SX,SY,SXY,SZ= [illegible]                                     SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= [illegible]
```

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 S.I.=  8.5443      SIGE=  7.3995

                                                                                                   RECT SHELL  43
EL=   14  NODES=    14   15    35   34       MAT=  1  AREA= 0.400        TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  20.2        0.100        0.100        PRS= 0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000        0.00000        MX,MY,MXY=  0.29263E-01  0.33645E-02  0.36412        NX,NY=  0.22158E-01  0.13271E-01
TOP SX,SY,SXY,SZ= 0.31214      0.35888E-01   3.8839       0.00000        SIG1,SIG2,SIG3=  4.0604       0.60889E-10 -3.7124
 S.I.=  7.7728        SIGE=  6.7337
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.31214     -0.35888E-01  -3.8839       0.00000        SIG1,SIG2,SIG3=  3.7124       0.60900E-10 -4.0604
 S.I.=  7.7728        SIGE=  6.7337

                                                                                                   RECT SHELL  43
EL=   15  NODES=    15   16    36   35       MAT=  1  AREA= 0.300        TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  22.0        0.100        0.100        PRS= 0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000        0.00000        MX,MY,MXY=  0.73799E-01  0.89663E-02  0.28644        NX,NY=  0.23767E-01  0.67344E-01
TOP SX,SY,SXY,SZ= 0.78719      0.95641E-01   3.0553       0.00000        SIG1,SIG2,SIG3=  3.5163       0.48196E-10 -2.6334
 S.I.=  6.1497        SIGE=  5.3440
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.78719     -0.95641E-01  -3.0553       0.00000        SIG1,SIG2,SIG3=  2.6334       0.48161E-10 -3.5163
 S.I.=  6.1497        SIGE=  5.3440

                                                                                                   RECT SHELL  43
EL=   16  NODES=    16   17    37   36       MAT=  1  AREA= 0.110        TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  23.0        0.100        0.100        PRS= 0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000        0.00000        MX,MY,MXY=  0.14960      0.22127E-01  0.20723        NX,NY= -0.47220E-01  0.26398E-01
TOP SX,SY,SXY,SZ=  1.5957      0.23602       2.2104       0.00000        SIG1,SIG2,SIG3=  3.2285       0.36214E-10 -1.3967
 S.I.=  4.6252        SIGE=  4.1089
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.5957     -0.23602      -2.2104       0.00000        SIG1,SIG2,SIG3=  1.3967       0.36257E-10 -3.2285
 S.I.=  4.6252        SIGE=  4.1089

                                                                                                   RECT SHELL  43
EL=   17  NODES=    17   18    38   37       MAT=  1  AREA= 0.800E-01    TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  23.5        0.100        0.100        PRS= 0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000        0.00000        MX,MY,MXY=  0.15031      0.20837E-01  0.15575        NX,NY= -0.17742E-01  0.77250E-01
TOP SX,SY,SXY,SZ=  1.6033      0.22226       1.6613       0.00000        SIG1,SIG2,SIG3=  2.7119       0.28195E-10-0.88635
 S.I.=  3.5983        SIGE=  3.2471
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.6033     -0.22226      -1.6613       0.00000        SIG1,SIG2,SIG3= 0.88635       0.28186E-10 -2.7119
 S.I.=  3.5983        SIGE=  3.2471

                                                                                                   RECT SHELL  43
EL=   18  NODES=    18   19    39   38       MAT=  1  AREA= 0.800E-01    TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  23.9        0.100        0.000        PRS= 0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000        0.00000        MX,MY,MXY=  0.12520      0.24453E-01  0.10904        NX,NY= -0.87841E-01  0.11292
TOP SX,SY,SXY,SZ=  1.3354      0.26083       1.1631       0.00000        SIG1,SIG2,SIG3=  2.0793       0.20059E-10-0.48307
 S.I.=  2.5624        SIGE=  2.3583
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.3354     -0.26083      -1.1631       0.00000        SIG1,SIG2,SIG3= 0.48307       0.20047E-10 -2.0793
 S.I.=  2.5624        SIGE=  2.3583

                                                                                                   RECT SHELL  43
EL=   19  NODES=    19   20    40   39       MAT=  1  AREA= 0.800E-01    TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  24.3        0.100        0.100        PRS= 0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000        0.00000        MX,MY,MXY=  0.49344E-01  0.33518E-01  0.56338E-01  NX,NY= -0.21010       0.26358
TOP SX,SY,SXY,SZ= 0.52634      0.35752       0.60054      0.00000        SIG1,SIG2,SIG3=  1.0488       0.95081E-11-0.16491
 S.I.=  1.2137        SIGE=  1.1402
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.52634     -0.35752      -0.60054      0.00000        SIG1,SIG2,SIG3= 0.16491       0.95092E-11 -1.0488
 S.I.=  1.2137        SIGE=  1.1402

EL=   20  NODES=    1   21   MAT=  2  TEMPS=    0.0     0.0  FORC=-0.77470E-01  SIG= -3.8735     EP=-0.013279  STAT=  1     GAP  10

[illegible]  FORC=-0.15191     SIG= -3.7976     EP=-0.013019  STAT=  1     GAP  10
```

```
EL=  22  NODES=   3  203  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.14870       SIG= -3.7175       EP=-0.012744  STAT=  1   GAP  10
EL=  23  NODES=   4  204  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.17211       SIG= -3.6234       EP=-0.012422  STAT=  1   GAP  10.
EL=  24  NODES=   5  205  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.35365       SIG= -3.4502       EP=-0.011828  STAT=  1   GAP  10.
EL=  25  NODES=   6  206  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.46832       SIG= -2.6761       EP=-0.009174  STAT=  1   GAP  10
EL=  26  NODES=   7  207  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.30391       SIG= -1.5195       EP=-0.005209  STAT=  1   GAP  10.
EL=  27  NODES=   8  208  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.14582       SIG=-0.72910       EP=-0.002499  STAT=  1   GAP  10.
EL=  28  NODES=   9  209  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.64351E-01  SIG=-0.32176       EP=-0.001103  STAT=  1   GAP  10.
EL=  29  NODES=  10  210  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.35580E-01  SIG=-0.17790       EP=-0.000610  STAT=  1   GAP  10.
EL=  30  NODES=  11  211  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.35221E-01  SIG=-0.17610       EP=-0.000604  STAT=  1   GAP  10.
EL=  31  NODES=  12  212  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.41175E-01  SIG=-0.20588       EP=-0.000706  STAT=  1   GAP  10
EL=  32  NODES=  13  213  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.41992E-01  SIG=-0.20996       EP=-0.000720  STAT=  1   GAP  10.
EL=  33  NODES=  14  214  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.39190E-01  SIG=-0.19595       EP=-0.000672  STAT=  1   GAP  10.
EL=  34  NODES=  15  215  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.34842E-01  SIG=-0.19910       EP=-0.000683  STAT=  1   GAP  10.
EL=  35  NODES=  16  216  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.24748E-01  SIG=-0.24144       EP=-0.000828  STAT=  1   GAP  10.
EL=  36  NODES=  17  217  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.13018E-01  SIG=-0.27406       EP=-0.000940  STAT=  1   GAP  10.
EL=  37  NODES=  18  218  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.12255E-01  SIG=-0.30638       EP=-0.001050  STAT=  1   GAP  10
EL=  38  NODES=  19  219  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.13821E-01  SIG=-0.34552       EP=-0.001184  STAT=  1   GAP  10.
EL=  39  NODES=  20  220  MAT=  2  TEMPS=   0.0   0.0  FORC=-0.77858E-02  SIG=-0.38929       EP=-0.001335  STAT=  1   GAP  10.
EL=   40  NODES=   21   22   42   41      MAT=  1  AREA= 0.140        TTOP,TBOT=    0.0    0.0                             RECT SHELL  43
XC,YC,ZC= 0.200      0.375      0.000      PRS= 0.0000      0.0000      0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.31995E-01 -0.35990       0.50892E-01  NX,NY= -0.16264        -1.1230
TOP SX,SY,SXY,SZ=-0.34128      -3.8389      0.54285      0.00000         SIG1,SIG2,SIG3= 0.13639E-13-0.25897        -3.9213
 S.I.=  3.9213       SIGE=   3.7984
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000         SIG1,SIG2,SIG3= 0.00000      0.00000       0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.34128       3.8389     -0.54285      0.00000         SIG1,SIG2,SIG3=  3.9213      0.25897      -0.14355E-10
 S.I.=  3.9213       SIGE=   3.7984
EL=   41  NODES=   22   23   43   42      MAT=  1  AREA= 0.140        TTOP,TBOT=    0.0    0.0                             RECT SHELL  43
XC,YC,ZC= 0.600      0.375      0.000      PRS= 0.0000      0.0000      0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.21539      -0.34647       0.14489      NX,NY= -0.47199        -1.1876
TOP SX,SY,SXY,SZ= -2.2975      -3.6957      1.5455       0.00000         SIG1,SIG2,SIG3=-0.13130E-13 -1.3004        -4.6928
 S.I.=  4.6928       SIGE=   4.1965
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000         SIG1,SIG2,SIG3= 0.00000      0.00000       0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=  2.2975       3.6957     -1.5455       0.00000         SIG1,SIG2,SIG3=  4.6928      1.3004       -0.13274E-10
 S.I.=  4.6928       SIGE=   4.1965
EL=   42  NODES=   23   24   44   43      MAT=  1  AREA= 0.140        TTOP,TBOT=    0.0    0.0                             RECT SHELL  43
XC,YC,ZC=  1.00      0.375      0.000      PRS= 0.0000      0.0000      0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.52296      -0.31095       0.18960      NX,NY= -0.55797        -1.2975
TOP SX,SY,SXY,SZ= -5.5782      -3.3168      2.3224       0.00000         SIG1,SIG2,SIG3= 0.00000     -2.1305        -6.7645
 S.I.=  6.7645       SIGE=   5.9905
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000         SIG1,SIG2,SIG3= 0.00000      0.00000       0.00000
 S.I.= [illegible]   SIGE= [illegible]
BOT SX,SY,SXY,SZ= [illegible]   3.3168     -2.3224      [illegible]      SIG1,SIG2,SIG3=  6.7645      2.1305       -0.18114E-10
 S.I.= [illegible]   SIGE= [illegible]
```

```
EL=   43  NODES=    24   25   45   44      MAT=  1  AREA= 0.193        TTOP,TBOT=    0.0    0.0                             RECT SHELL  43
XC,YC,ZC=  1.47        0.375      0.000        PRS= 0.0000       0.0000    0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY= -0.84999       -0.25433        0.14558      NX,NY= -0.29063      -1.4094
TOP SX,SY,SXY,SZ= -9.0665       -2.7128       1.5529       0.00000          SIG1,SIG2,SIG3= 0.32211E-13 -2.3536       -9.4258
 S.I.=  9.4258       SIGE=  8.4971
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000      0.00000          SIG1,SIG2,SIG3= 0.00000      0.00000       0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=  9.0665        2.7128       -1.5529      0.00000          SIG1,SIG2,SIG3=  9.4258      2.3536      -0.27734E-10
 S.I.=  9.4258       SIGE=  8.4971

EL=   44  NODES=    25   26   46   45      MAT=  1  AREA= 0.525        TTOP,TBOT=    0.0    0.0                             RECT SHELL  43
XC,YC,ZC=  2.50        0.375      0.000        PRS= 0.0000       0.0000    0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY= -0.65284       -0.26028       -0.66932E-01   NX,NY=  0.41964      -1.1356
TOP SX,SY,SXY,SZ= -6.9637       -2.7763       -0.71394      0.00000          SIG1,SIG2,SIG3= 0.74220E-13 -2.6579       -7.0820
 S.I.=  7.0820       SIGE=  6.1965
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000      0.00000          SIG1,SIG2,SIG3= 0.00000      0.00000       0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=  6.9637        2.7763       0.71394      0.00000          SIG1,SIG2,SIG3=  7.0820      2.6579      -0.17355E-10
 S.I.=  7.0820       SIGE=  6.1965

EL=   45  NODES=    26   27   47   46      MAT=  1  AREA= 0.700        TTOP,TBOT=    0.0    0.0                             RECT SHELL  43
XC,YC,ZC=  4.25        0.375      0.000        PRS= 0.0000       0.0000    0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  0.16917       -0.18985        0.63426E-01   NX,NY=  0.22508      -0.68077
TOP SX,SY,SXY,SZ=  1.8044       -2.0251       0.67655      0.00000          SIG1,SIG2,SIG3=  1.9204      0.31799E-10 -2.1411
 S.I.=  4.0616       SIGE=  3.5191
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000      0.00000          SIG1,SIG2,SIG3= 0.00000      0.00000       0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.8044        2.0251       -0.67655     0.00000          SIG1,SIG2,SIG3=  2.1411      0.31841E-10 -1.9204
 S.I.=  4.0616       SIGE=  3.5191

EL=   46  NODES=    27   28   48   47      MAT=  1  AREA= 0.700        TTOP,TBOT=    0.0    0.0                             RECT SHELL  43
XC,YC,ZC=  6.25        0.375      0.000        PRS= 0.0000       0.0000    0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  0.36498       -0.10976        0.22419      NX,NY=  0.31904E-01 -0.29508
TOP SX,SY,SXY,SZ=  3.8932       -1.1708       2.3913       0.00000          SIG1,SIG2,SIG3=  4.8439      0.54596E-10 -2.1216
 S.I.=  6.9655       SIGE=  6.1839
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000      0.00000          SIG1,SIG2,SIG3= 0.00000      0.00000       0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.8932        1.1708       -2.3913      0.00000          SIG1,SIG2,SIG3=  2.1216      0.54547E-10 -4.8439
 S.I.=  6.9655       SIGE=  6.1839

EL=   47  NODES=    28   29   49   48      MAT=  1  AREA= 0.700        TTOP,TBOT=    0.0    0.0                             RECT SHELL  43
XC,YC,ZC=  8.25        0.375      0.000        PRS= 0.0000       0.0000    0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  0.29094       -0.49883E-01  0.31566      NX,NY= -0.33128E-01 -0.10187
TOP SX,SY,SXY,SZ=  3.1034       -0.53209      3.3671       0.00000          SIG1,SIG2,SIG3=  5.1120      0.59985E-10 -2.5408
 S.I.=  7.6528       SIGE=  6.7510
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000      0.00000          SIG1,SIG2,SIG3= 0.00000      0.00000       0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.1034        0.53209      -3.3671      0.00000          SIG1,SIG2,SIG3=  2.5408      0.59925E-10 -5.1120
 S.I.=  7.6528       SIGE=  6.7510

EL=   48  NODES=    29   30   50   49      MAT=  1  AREA= 0.700        TTOP,TBOT=    0.0    0.0                             RECT SHELL  43
XC,YC,ZC=  10.2        0.375      0.000        PRS= 0.0000       0.0000    0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  0.18241       -0.28580E-01  0.38598      NX,NY= -0.30438E-01 -0.46516E-01
TOP SX,SY,SXY,SZ=  1.9457       -0.30486      4.1171       0.00000          SIG1,SIG2,SIG3=  5.0885      0.66917E-10 -3.4476
 S.I.=  8.5362       SIGE=  7.4379
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000      0.00000          SIG1,SIG2,SIG3= 0.00000      0.00000       0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.9457        0.30486      -4.1171      0.00000          SIG1,SIG2,SIG3=  3.4476      0.66833E-10 -5.0885
 S.I.=  8.5362       SIGE=  7.4379

EL=   49  NODES=    30   31   51   50      MAT=  1  AREA= 0.700        TTOP,TBOT=    0.0    0.0                             RECT SHELL  43
XC,YC,ZC=  12.2        0.375      0.000        PRS= 0.0000       0.0000    0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  0.72156E-01 -0.14632E-01  0.42457      NX,NY= -0.31752E-01 -0.28403E-01
TOP SX,SY,SXY,SZ=  .76977       -0.15[illegible]     4.5287       0.00000          SIG1,SIG2,SIG3=  4.8572      0.71301E-10 -4.2455
 S.I.= [illegible]     SIGE=  7.[illegible]
```

```
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.76977     0.15607     -4.5287      0.00000      SIG1,SIG2,SIG3=  4.2455      0.71358E-10 -4.8592
 S.I.=  9.1046       SIGE=  7.8908
                                                                                                          RECT SHELL  43
EL=   50  NODES=   31   32   52   51       MAT=  1  AREA= 0.700       TTOP,TBOT=    0.0     0.0
XC,YC,ZC=  14.2       0.375      0.000      PRS= 0.0000      0.0000      0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY= -0.11555E-01 -0.69855E-02  0.42897       NX,NY= -0.16869E-01 -0.20249E-01
TOP SX,SY,SXY,SZ=-0.12325     -0.74512E-01  4.5757      0.00000      SIG1,SIG2,SIG3=  4.4769      0.71623E-10 -4.6747
 S.I.=  9.1516       SIGE=  7.9261
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.12325      0.74512E-01 -4.5757      0.00000      SIG1,SIG2,SIG3=  4.6747      0.71619E-10 -4.4769
 S.I.=  9.1516       SIGE=  7.9261
                                                                                                          RECT SHELL  43
EL=   51  NODES=   32   33   53   52       MAT=  1  AREA= 0.700       TTOP,TBOT=    0.0     0.0
XC,YC,ZC=  16.2       0.375      0.000      PRS= 0.0000      0.0000      0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY= -0.30996E-01 -0.40586E-02  0.41675       NX,NY=  0.52861E-02 -0.21081E-01
TOP SX,SY,SXY,SZ=-0.33662     -0.43291E-01  4.4453      0.00000      SIG1,SIG2,SIG3=  4.2607      0.69611E-10 -4.6346
 S.I.=  8.8952       SIGE=  7.7058
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.33662      0.43291E-01 -4.4453      0.00000      SIG1,SIG2,SIG3=  4.6346      0.69619E-10 -4.2607
 S.I.=  8.8952       SIGE=  7.7058
                                                                                                          RECT SHELL  43
EL=   52  NODES=   33   34   54   53       MAT=  1  AREA= 0.700       TTOP,TBOT=    0.0     0.0
XC,YC,ZC=  18.2       0.375      0.000      PRS= 0.0000      0.0000      0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY= -0.77944E-02 -0.10428E-02  0.39860       NX,NY=  0.16111E-01 -0.24694E-01
TOP SX,SY,SXY,SZ=-0.83140E-01-0.11124E-01  4.2517      0.00000      SIG1,SIG2,SIG3=  4.2048      0.66579E-10 -4.2990
 S.I.=  8.5038       SIGE=  7.3647
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.83140E-01 0.11124E-01 -4.2517      0.00000      SIG1,SIG2,SIG3=  4.2990      0.66664E-10 -4.2048
 S.I.=  8.5038       SIGE=  7.3647
                                                                                                          RECT SHELL  43
EL=   53  NODES=   34   35   55   54       MAT=  1  AREA= 0.700       TTOP,TBOT=    0.0     0.0
XC,YC,ZC=  20.2       0.375      0.000      PRS= 0.0000      0.0000      0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  0.21689E-01  0.78484E-02  0.36358       NX,NY=  0.20445E-01 -0.21619E-01
TOP SX,SY,SXY,SZ= 0.23135      0.83717E-01  3.8781      0.00000      SIG1,SIG2,SIG3=  4.0364      0.60780E-10 -3.7213
 S.I.=  7.7577       SIGE=  6.7202
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.23135     -0.83717E-01 -3.8781      0.00000      SIG1,SIG2,SIG3=  3.7213      0.60773E-10 -4.0364
 S.I.=  7.7577       SIGE=  6.7202
                                                                                                          RECT SHELL  43
EL=   54  NODES=   35   36   56   55       MAT=  1  AREA= 0.525       TTOP,TBOT=    0.0     0.0
XC,YC,ZC=  22.0       0.375      0.000      PRS= 0.0000      0.0000      0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  0.61451E-01  0.31085E-01  0.29156       NX,NY=  0.43808E-01  0.45698E-02
TOP SX,SY,SXY,SZ= 0.65548      0.33157      3.1100      0.00000      SIG1,SIG2,SIG3=  3.6077      0.48723E-10 -2.6207
 S.I.=  6.2284       SIGE=  5.4165
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.65548     -0.33157     -3.1100      0.00000      SIG1,SIG2,SIG3=  2.6207      0.48766E-10 -3.6077
 S.I.=  6.2284       SIGE=  5.4165
                                                                                                          RECT SHELL  43
EL=   55  NODES=   36   37   57   56       MAT=  1  AREA= 0.193       TTOP,TBOT=    0.0     0.0
XC,YC,ZC=  23.0       0.375      0.000      PRS= 0.0000      0.0000      0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  0.11686      0.58290E-01  0.21124       NX,NY=  0.43478E-01 -0.12342E-02
TOP SX,SY,SXY,SZ=  1.2465      0.62176      2.2532      0.00000      SIG1,SIG2,SIG3=  3.2089      0.35646E-10 -1.3406
 S.I.=  4.5495       SIGE=  4.0492
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.2465     -0.62176     -2.2532      0.00000      SIG1,SIG2,SIG3=  1.3406      0.35638E-10 -3.2089
 S.I.=  4.5495       SIGE=  4.0492
                                                                                                          RECT SHELL  43
```

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TX,TY= 0.00000      0.00000        MX,MY,MXY=  0.12444          0.66408E-01  0.16124       NX,NY=  0.16421E-01  0.47619E-01
TOP SX,SY,SXY,SZ=  1.3274      0.72969        1.7198        0.00000          SIG1,SIG2,SIG3=  2.7742        0.27334E-10-0.71707
 S.I.=  3.4912         SIGE=  3.1937
MID SX,SY,SXY,SZ= 0.00000      0.00000        0.00000       0.00000          SIG1,SIG2,SIG3= 0.00000        0.00000       0.00000
 S.I.= 0.00000         SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.3274     -0.72969       -1.7198        0.00000          SIG1,SIG2,SIG3= 0.71707        0.27312E-10 -2.7742
 S.I.=  3.4912         SIGE=  3.1937

EL=   57  NODES=    38   39    59   58       MAT=  1  AREA= 0.140         TTOP,TBOT=     0.0     0.0                               RECT SHELL  43
XC,YC,ZC=  23.9       0.375       0.000.      PRS= 0.0000        0.0000       0.0000.     0.0000.      0.0000       0.0000
TX,TY= 0.00000        0.00000        MX,MY,MXY=  0.10440          0.82773E-01  0.12075      NX,NY= -0.39589E-01  0.86401E-01
TOP SX,SY,SXY,SZ=  1.1136      0.88291        1.2880        0.00000          SIG1,SIG2,SIG3=  2.2914        0.20257E-10-0.29484
 S.I.=  2.5862         SIGE=  2.4521
MID SX,SY,SXY,SZ= 0.00000      0.00000        0.00000       0.00000          SIG1,SIG2,SIG3= 0.00000        0.00000       0.00000
 S.I.= 0.00000         SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -1.1136     -0.88291       -1.2880        0.00000          SIG1,SIG2,SIG3= 0.29484        0.20266E-10 -2.2914
 S.I.=  2.5862         SIGE=  2.4521

EL=   58  NODES=    39   40    60   59       MAT=  1  AREA= 0.140         TTOP,TBOT=     0.0     0.0                               RECT SHELL  43
XC,YC,ZC=  24.3       0.375       0.000.      PRS= 0.0000        0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000        0.00000        MX,MY,MXY=  0.43242E-01  0.10328      0.85433E-01  NX,NY= -0.11148       0.15021
TOP SX,SY,SXY,SZ= 0.46125      1.1016       0.91128       0.00000          SIG1,SIG2,SIG3=  1.7473        0.15150E-10-0.18446
 S.I.=  1.9318         SIGE=  1.8465
MID SX,SY,SXY,SZ= 0.00000      0.00000        0.00000       0.00000          SIG1,SIG2,SIG3= 0.00000        0.00000       0.00000
 S.I.= 0.00000         SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.46125      -1.1016       -0.91128       0.00000          SIG1,SIG2,SIG3= 0.18446        0.15119E-10 -1.7473
 S.I.=  1.9318         SIGE=  1.8465

EL=   59  NODES=   21  221  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.18427      SIG= -3.3583       EP=-0.011485  STAT=  1    GAP  10.
EL=   60  NODES=   22  222  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.36031      SIG= -3.2755       EP=-0.011229  STAT=  1    GAP  10
EL=   61  NODES=   23  223  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.35180.     SIG= -3.1982       EP=-0.010964  STAT=  1    GAP  10.
EL=   62  NODES=   24  224  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.40585      SIG= -3.1076       EP=-0.010653  STAT=  1    GAP  10.
EL=   63  NODES=   25  225  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.82823      SIG= -2.9380       EP=-0.010072  STAT=  1    GAP  10
EL=   64  NODES=   26  226  MAT=  2  TEMPS=    0.0    0.0. FORC= -1.0415      SIG= -2.1644       EP=-0.007420  STAT=  1    GAP  10.
EL=   65  NODES=   27  227  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.56051      SIG= -1.0191       EP=-0.003494  STAT=  1    GAP  10.
EL=   66  NODES=   28  228  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.14315  .   SIG=-0.26028       EP=-0.000892  STAT=  1    GAP  10.
EL=   67  NODES=   29  229  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000       EP= 0.000000. STAT=  2    GAP  10.
EL=   68  NODES=   30  230  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10.
EL=   69  NODES=   31  231  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=   70  NODES=   32  232  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000       EP= 0.000000. STAT=  2    GAP  10.
EL=   71  NODES=   33  233  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.16878E-01  SIG=-0.30686E-01   EP=-0.000105  STAT=  1    GAP  10
EL=   72  NODES=   34  234  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.41704E-01  SIG=-0.75825E-01   EP=-0.000260  STAT=  1    GAP  10
EL=   73  NODES=   35  235  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.63820E-01  SIG=-0.13263       EP=-0.000455  STAT-  1    GAP  10
EL=   74  NODES=   36  236  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.58426E-01  SIG=-0.20726       EP=-0.000711  STAT=  1    GAP  10.
EL=   75  NODES=   37  237  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.32463E-01  SIG=-0.24857       EP=-0.000852  STAT=  1    GAP  10
EL=   76  NODES=   38  238  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.31411E-01  SIG=-0.28555       EP=-0.000979  STAT=  1    GAP  10
EL=   77  NODES=   [illegible]  MAT=  2  TEMPS=  [illegible]  FORC=[illegible]  SIG=-0.32733   EP=-0.001124  STAT=  1    GAP  10
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EL=   78  NODES=    46  248   MAT=  2  TEMPS=     0.      0.0  FORC=- .26542E-01  SIG=-0.37249          EPS=-0.001280  STAT=  1     GAP  10
                                                                                                              RECT SHELL  43
EL=   79  NODES=    41   42    62   61      MAT=  1  AREA= 0.140          TTOP,TBOT=     0.0     0.0
XC,YC,ZC= 0.200        0.725       0.000           PRS= 0.0000        0.0000       0.0000      0.0000      0.0000       0.0000
TX,TY= 0.00000         0.00000          MX,MY,MXY= -0.57154E-01 -0.95762          0.75546E-01   NX,NY= -0.24129        -1.6169
TOP SX,SY,SXY,SZ=-0.60964       -10.215        0.80583       0.00000         SIG1,SIG2,SIG3=-0.12701E-12-0.54250        -10.282
 S.I.=  10.282          SIGE=   10.021
MID SX,SY,SXY,SZ= 0.00000        0.00000       0.00000       0.00000         SIG1,SIG2,SIG3= 0.00000        0.00000        0.00000
 S.I.= 0.00000          SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.60964         10.215       -0.80583       0.00000         SIG1,SIG2,SIG3=  10.282         0.54250       -0.38031E-10
 S.I.=  10.282          SIGE=   10.021
                                                                                                              RECT SHELL  43
EL=   80  NODES=    42   43    63   62      MAT=  1  AREA= 0.140          TTOP,TBOT=     0.0     0.0
XC,YC,ZC= 0.600        0.725       0.000           PRS= 0.0000        0.0000       0.0000      0.0000      0.0000       0.0000
TX,TY= 0.00000         0.00000          MX,MY,MXY= -0.28539       -0.95273          0.22074      NX,NY= -0.62690        -1.7885
TOP SX,SY,SXY,SZ= -3.0441       -10.162        2.3546        0.00000         SIG1,SIG2,SIG3=-0.36104E-13 -2.3358        -10.871
 S.I.=  10.871          SIGE=   9.9115
MID SX,SY,SXY,SZ= 0.00000        0.00000       0.00000       0.00000         SIG1,SIG2,SIG3= 0.00000        0.00000        0.00000
 S.I.= 0.00000          SIGE= 0.00000
BOT SX,SY,SXY,SZ=  3.0441         10.162       -2.3546        0.00000         SIG1,SIG2,SIG3=  10.871         2.3358        -0.33378E-10
 S.I.=  10.871          SIGE=   9.9115
                                                                                                              RECT SHELL  43
EL=   81  NODES=    43   44    64   63      MAT=  1  AREA= 0.140          TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  1.00        0.725       0.000           PRS= 0.0000        0.0000       0.0000      0.0000      0.0000       0.0000
TX,TY= 0.00000         0.00000          MX,MY,MXY= -0.68242       -0.92653          0.30819      NX,NY= -0.79358        -2.1286
TOP SX,SY,SXY,SZ= -7.2791        -9.8830       3.2874        0.00000         SIG1,SIG2,SIG3=-0.35111E-13 -5.0452        -12.117
 S.I.=  12.117          SIGE=   10.542
MID SX,SY,SXY,SZ= 0.00000        0.00000       0.00000       0.00000         SIG1,SIG2,SIG3= 0.00000        0.00000        0.00000
 S.I.= 0.00000          SIGE= 0.00000
BOT SX,SY,SXY,SZ=  7.2791         9.8830       -3.2874        0.00000         SIG1,SIG2,SIG3=  12.117         5.0452        -0.27633E-10
 S.I.=  12.117          SIGE=   10.542
                                                                                                              RECT SHELL  43
EL=   82  NODES=    44   45    65   64      MAT=  1  AREA= 0.193          TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  1.47        0.725       0.000           PRS= 0.0000        0.0000       0.0000      0.0000      0.0000       0.0000
TX,TY= 0.00000         0.00000          MX,MY,MXY=  -1.1494       -0.85031          0.24855      NX,NY= -0.43279        -2.5253
TOP SX,SY,SXY,SZ= -12.261       -9.0699        2.6512        0.00000         SIG1,SIG2,SIG3= 0.00000       -7.5712        -13.759
 S.I.=  13.759          SIGE=   11.936
MID SX,SY,SXY,SZ= 0.00000        0.00000       0.00000       0.00000         SIG1,SIG2,SIG3= 0.00000        0.00000        0.00000
 S.I.= 0.00000          SIGE= 0.00000
BOT SX,SY,SXY,SZ=  12.261         9.0699       -2.6512        0.00000         SIG1,SIG2,SIG3=  13.759         7.5712        -0.24219E-10
 S.I.=  13.759          SIGE=   11.936
                                                                                                              RECT SHELL  43
EL=   83  NODES=    45   46    66   65      MAT=  1  AREA= 0.525          TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  2.50        0.725       0.000           PRS= 0.0000        0.0000       0.0000      0.0000      0.0000       0.0000
TX,TY= 0.00000         0.00000          MX,MY,MXY= -0.84892       -0.76096         -0.14222      NX,NY=  0.68891        -1.9231
TOP SX,SY,SXY,SZ= -9.0551       -8.1169       -1.5171        0.00000         SIG1,SIG2,SIG3=-0.64340E-13 -6.9981        -10.174
 S.I.=  10.174          SIGE=   9.0158
MID SX,SY,SXY,SZ= 0.00000        0.00000       0.00000       0.00000         SIG1,SIG2,SIG3= 0.00000        0.00000        0.00000
 S.I.= 0.00000          SIGE= 0.00000
BOT SX,SY,SXY,SZ=  9.0551         8.1169        1.5171        0.00000         SIG1,SIG2,SIG3=  10.174         6.9981        -0.12353E-10
 S.I.=  10.174          SIGE=   9.0158
                                                                                                              RECT SHELL  43
EL=   84  NODES=    46   47    67   66      MAT=  1  AREA= 0.700          TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  4.25        0.725       0.000           PRS= 0.0000        0.0000       0.0000      0.0000      0.0000       0.0000
TX,TY= 0.00000         0.00000          MX,MY,MXY=  0.12637       -0.49276          0.80393E-01  NX,NY=  0.35303        -0.84140
TOP SX,SY,SXY,SZ=  1.3479       -5.2561        0.85753       0.00000         SIG1,SIG2,SIG3=  1.4575        0.53392E-10 -5.3656
 S.I.=  6.8231          SIGE=   6.2237
MID SX,SY,SXY,SZ= 0.00000        0.00000       0.00000       0.00000         SIG1,SIG2,SIG3= 0.00000        0.00000        0.00000
 S.I.= 0.00000          SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.3479         5.2561       -0.85753       0.00000         SIG1,SIG2,SIG3=  5.3656        0.53396E-10 -1.4575
 S.I.=  6.8231          SIGE=   6.2237
                                                                                                              RECT SHELL  43
EL=   85  NODES=    47   48    68   67      MAT=  1  AREA= 0.70           TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  6.25         .725                       PRS= 0.000                      0.0000      0.0000      0.0000       0.0000
TX,TY=                                  MX,MY,MXY=                                  0.21651      NX,NY=  0.66327E-01 -0.23929
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 S.I.=  8.1269        SIGE=  7.0736
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.8362       2.3897       -2.6295       0.00000       SIG1,SIG2,SIG3=  3.3552      0.63587E-10 -4.7717
 S.I.=  8.1269        SIGE=  7.0736

EL=   86  NODES=   48   49   69   68      MAT=  1  AREA= 0.700      TTOP,TBOT=    0.0    0.0                        RECT SHELL  43
XC,YC,ZC=  8.25       0.725       0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000        0.00000          MX,MY,MXY=  0.29369      -0.99210E-01  0.32404      NX,NY= -0.20835E-01 -0.10282
TOP SX,SY,SXY,SZ=  3.1327       -1.0582       3.4564       0.00000       SIG1,SIG2,SIG3=  5.0792      0.63339E-10 -3.0048
 S.I.=  8.0840        SIGE=  7.0774
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.1327       1.0582       -3.4564       0.00000       SIG1,SIG2,SIG3=  3.0048      0.63329E-10 -5.0792
 S.I.=  8.0840        SIGE=  7.0774

EL=   87  NODES=   49   50   70   69      MAT=  1  AREA= 0.700      TTOP,TBOT=    0.0    0.0                        RECT SHELL  43
XC,YC,ZC=  10.2       0.725       0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000        0.00000          MX,MY,MXY=  0.18750      -0.54526E-01  0.39227      NX,NY= -0.29389E-01 -0.44954E-01
TOP SX,SY,SXY,SZ=  2.0000       -0.58161      4.1842       0.00000       SIG1,SIG2,SIG3=  5.0879      0.68582E-10 -3.6696
 S.I.=  8.7575        SIGE=  7.6173
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -2.0000       0.58161      -4.1842       0.00000       SIG1,SIG2,SIG3=  3.6696      0.68636E-10 -5.0879
 S.I.=  8.7575        SIGE=  7.6173

EL=   88  NODES=   50   51   71   70      MAT=  1  AREA= 0.700      TTOP,TBOT=    0.0    0.0                        RECT SHELL  43
XC,YC,ZC=  12.2       0.725       0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000        0.00000          MX,MY,MXY=  0.72688E-01 -0.28410E-01  0.43029      NX,NY= -0.31631E-01 -0.29832E-01
TOP SX,SY,SXY,SZ= 0.77534       -0.30305      4.5897       0.00000       SIG1,SIG2,SIG3=  4.8574      0.72453E-10 -4.3851
 S.I.=  9.2426        SIGE=  8.0078
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.77534       0.30305      -4.5897       0.00000       SIG1,SIG2,SIG3=  4.3851      0.72366E-10 -4.8574
 S.I.=  9.2426        SIGE=  8.0079

EL=   89  NODES=   51   52   72   71      MAT=  1  AREA= 0.700      TTOP,TBOT=    0.0    0.0                        RECT SHELL  43
XC,YC,ZC=  14.2       0.725       0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000        0.00000          MX,MY,MXY= -0.15359E-01 -0.13548E-01  0.43118      NX,NY= -0.17523E-01 -0.25142E-01
TOP SX,SY,SXY,SZ=-0.16383       -0.14452      4.5992       0.00000       SIG1,SIG2,SIG3=  4.4451      0.72100E-10 -4.7534
 S.I.=  9.1985        SIGE=  7.9676
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.16383       0.14452      -4.5992       0.00000       SIG1,SIG2,SIG3=  4.7534      0.72027E-10 -4.4451
 S.I.=  9.1985        SIGE=  7.9676

EL=   90  NODES=   52   53   73   72      MAT=  1  AREA= 0.700      TTOP,TBOT=    0.0    0.0                        RECT SHELL  43
XC,YC,ZC=  16.2       0.725       0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000        0.00000          MX,MY,MXY= -0.36224E-01 -0.91820E-02  0.41559      NX,NY=  0.34972E-02 -0.24457E-01
TOP SX,SY,SXY,SZ=-0.38639       -0.97942E-01  4.4330       0.00000       SIG1,SIG2,SIG3=  4.1932      0.69506E-10 -4.6775
 S.I.=  8.8707        SIGE=  7.6861
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.38639       0.97942E-01 -4.4330       0.00000       SIG1,SIG2,SIG3=  4.6775      0.69486E-10 -4.1932
 S.I.=  8.8707        SIGE=  7.6861

EL=   91  NODES=   53   54   74   73      MAT=  1  AREA= 0.700      TTOP,TBOT=    0.0    0.0                        RECT SHELL  43
XC,YC,ZC=  18.2       0.725       0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000        0.00000          MX,MY,MXY= -0.14778E-01 -0.51394E-02  0.39746      NX,NY=  0.14251E-01 -0.24017E-01
TOP SX,SY,SXY,SZ=-0.15764       -0.54821E-01  4.2396       0.00000       SIG1,SIG2,SIG3=  4.1337      0.66400E-10 -4.3461
 S.I.=  8.4798        SIGE=  7.3445
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.0000
BOT SX,SY,SXY,SZ= 0.15764       0.54821E-01 -4.2396       0.00000       SIG1,SIG2,SIG3=  4.3461      0.66467E-10 -4.1337
 S.I.= [illegible]    SIGE=  7.344[illegible]
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                                                                                                           RECT SHELL  43
EL=   92  NODES=   54   55   75   74      MAT=  1  AREA= 0.720          TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  20.2      0.725      0.000      PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000        MX,MY,MXY=  0.10530E-01  0.83905E-02  0.36382       NX,NY=  0.17552E-01 -0.25466E-01
TOP SX,SY,SXY,SZ= 0.11232      0.89499E-01  3.8808      0.00000        SIG1,SIG2,SIG3=  3.9817      0.60725E-10 -3.7799
 S.I.=  7.7616       SIGE=  6.7225
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.11232     -0.89499E-01 -3.8808      0.00000        SIG1,SIG2,SIG3=  3.7799      0.60761E-10 -3.9817
 S.I.=  7.7616       SIGE=  6.7225

EL=   93  NODES=   55   56   76   75      MAT=  1  AREA= 0.525          TTOP,TBOT=    0.0    0.0              RECT SHELL  43
XC,YC,ZC=  22.0      0.725      0.000      PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000        MX,MY,MXY=  0.39094E-01  0.45850E-01  0.29960       NX,NY=  0.49032E-01 -0.38208E-01
TOP SX,SY,SXY,SZ= 0.41701      0.48907      3.1958      0.00000        SIG1,SIG2,SIG3=  3.6490      0.50108E-10 -2.7429
 S.I.=  6.3919       SIGE=  5.5541
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.41701     -0.48907     -3.1958      0.00000        SIG1,SIG2,SIG3=  2.7429      0.50045E-10 -3.6490
 S.I.=  6.3919       SIGE=  5.5541

EL=   94  NODES=   56   57   77   76      MAT=  1  AREA= 0.193          TTOP,TBOT=    0.0    0.0              RECT SHELL  43
XC,YC,ZC=  23.0      0.725      0.000      PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000        MX,MY,MXY=  0.77827E-01  0.86753E-01  0.21575       NX,NY=  0.75394E-01 -0.45583E-01
TOP SX,SY,SXY,SZ= 0.83015      0.92537      2.3013      0.00000        SIG1,SIG2,SIG3=  3.1796      0.36039E-10 -1.4240
 S.I.=  4.6036       SIGE=  4.0823
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.83015     -0.92537     -2.3013      0.00000        SIG1,SIG2,SIG3=  1.4240      0.36092E-10 -3.1796
 S.I.=  4.6036       SIGE=  4.0823

EL=   95  NODES=   57   58   78   77      MAT=  1  AREA= 0.140          TTOP,TBOT=    0.0    0.0              RECT SHELL  43
XC,YC,ZC=  23.5      0.725      0.000      PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000        MX,MY,MXY=  0.94777E-01  0.10929      0.17240       NX,NY=  0.49243E-01  0.14494E-02
TOP SX,SY,SXY,SZ=  1.0110      1.1657       1.8389      0.00000        SIG1,SIG2,SIG3=  2.9289      0.28844E-10-0.75221
 S.I.=  3.6811       SIGE=  3.3686
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.0110     -1.1657      -1.8389      0.00000        SIG1,SIG2,SIG3= 0.75221      0.28834E-10 -2.9289
 S.I.=  3.6811       SIGE=  3.3686

EL=   96  NODES=   58   59   79   78      MAT=  1  AREA= 0.140          TTOP,TBOT=    0.0    0.0              RECT SHELL  43
XC,YC,ZC=  23.9      0.725      0.000      PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000        MX,MY,MXY=  0.82624E-01  0.13439      0.14264       NX,NY= -0.17385E-02  0.46060E-01
TOP SX,SY,SXY,SZ= 0.88132      1.4335       1.5215      0.00000        SIG1,SIG2,SIG3=  2.7037      0.24216E-10-0.38891
 S.I.=  3.0926       SIGE=  2.9177
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.88132     -1.4335      -1.5215      0.00000        SIG1,SIG2,SIG3= 0.38891      0.24238E-10 -2.7037
 S.I.=  3.0926       SIGE=  2.9177

EL=   97  NODES=   59   60   80   79      MAT=  1  AREA= 0.140.         TTOP,TBOT=    0.0.   0.0              RECT SHELL  43
XC,YC,ZC=  24.3      0.725      0.000      PRS= 0.0000      0.0000      0.0000.     0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000        MX,MY,MXY=  0.35134E-01  0.16450      0.12039       NX,NY= -0.63471E-01  0.85956E-01
TOP SX,SY,SXY,SZ= 0.37476      1.7547       1.2842      0.00000        SIG1,SIG2,SIG3=  2.5225      0.22850E-10-0.39310
 S.I.=  2.9156       SIGE=  2.7403
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.37476     -1.7547      -1.2842      0.00000        SIG1,SIG2,SIG3= 0.39310      0.22835E-10 -2.5225
 S.I.=  2.9156       SIGE=  2.7403

EL=   98  NODES=   41  241  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.17002      SIG= -2.4287      EP=-0.008327  STAT=  1    GAP  10

EL=   99  NODES=   42  242  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.32994      SIG= -2.3567      EP=-0.008079  STAT=  1    GAP  10

EL=  [illegible]  NODES=   43  243  MAT=  2  TEMPS=  [illegible]  FORC=-0.3[illegible]16      SIG= -2.2863      EP=-0.007840  STAT=  1    GAP  10
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EL= 101  NODES=  44  244  MAT= 2  TEMPS=  0.0   0.0  FORC=-0.36664        SIG= -2.2060          EP=-0.007563  STAT= 1   GAP 10
EL= 102  NODES=  45  245  MAT= 2  TEMPS=  0.0   0.0  FORC=-0.73413        SIG= -2.0466          EP=-0.007016  STAT= 1   GAP 10.
EL= 103  NODES=  46  246  MAT= 2  TEMPS=  0.0   0.0  FORC=-0.77541        SIG= -1.2660          EP=-0.004340  STAT= 1   GAP 10.
EL= 104  NODES=  47  247  MAT= 2  TEMPS=  0.0   0.0  FORC=-0.96210E-01    SIG=-0.13744          EP=-0.000471  STAT= 1   GAP 10.
EL= 105  NODES=  48  248  MAT= 2  TEMPS=  0.0   0.0  FORC= 0.00000        SIG= 0.00000          EP= 0.000000  STAT= 2   GAP 10.
EL= 106  NODES=  49  249  MAT= 2  TEMPS=  0.0   0.0  FORC= 0.00000        SIG= 0.00000          EP= 0.000000  STAT= 2   GAP 10.
EL= 107  NODES=  50  250  MAT= 2  TEMPS=  0.0   0.0  FORC= 0.00000        SIG= 0.00000          EP= 0.000000  STAT= 2   GAP 10.
EL= 108  NODES=  51  251  MAT= 2  TEMPS=  0.0   0.0  FORC= 0.00000        SIG= 0.00000          EP= 0.000000  STAT= 2   GAP 10.
EL= 109  NODES=  52  252  MAT= 2  TEMPS=  0.0   0.0  FORC= 0.00000        SIG= 0.00000          EP= 0.000000  STAT= 2   GAP 10
EL= 110  NODES=  53  253  MAT= 2  TEMPS=  0.0   0.0  FORC= 0.00000        SIG= 0.00000          EP= 0.000000  STAT= 2   GAP 10
EL= 111  NODES=  54  254  MAT= 2  TEMPS=  0.0   0.0  FORC= 0.00000        SIG= 0.00000          EP= 0.000000  STAT= 2   GAP 10.
EL= 112  NODES=  55  255  MAT= 2  TEMPS=  0.0   0.0  FORC=-0.99737E-02    SIG=-0.16284E-01      EP=-0.000056  STAT= 1   GAP 10.
EL= 113  NODES=  56  256  MAT= 2  TEMPS=  0.0   0.0  FORC=-0.52929E-01    SIG=-0.14756          EP=-0.000506  STAT= 1   GAP 10
EL= 114  NODES=  57  257  MAT= 2  TEMPS=  0.0   0.0  FORC=-0.33911E-01    SIG=-0.20404          EP=-0.000699  STAT= 1   GAP 10
EL= 115  NODES=  58  258  MAT= 2  TEMPS=  0.0   0.0  FORC=-0.34920E-01    SIG=-0.24943          EP=-0.000855  STAT= 1   GAP 10.
EL= 116  NODES=  59  259  MAT= 2  TEMPS=  0.0   0.0  FORC=-0.41736E-01    SIG=-0.29811          EP=-0.001022  STAT= 1   GAP 10.
EL= 117  NODES=  60  260  MAT= 2  TEMPS=  0.0   0.0  FORC=-0.24372E-01    SIG=-0.34816          EP=-0.001194  STAT= 1   GAP 10.

EL= 118  NODES=  61   62   82   81     MAT= 1  AREA= 0.170      TTOP,TBOT=    0.0    0.0                          RECT SHELL  43
XC,YC,ZC= 0.200      1.11      0.000       PRS= 0.0000      0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.83969E-01  -1.7704       0.10391      NX,NY= -0.34920      -1.7059
TOP SX,SY,SXY,SZ=-0.89567      -18.885       1.1083       0.00000       SIG1,SIG2,SIG3=-0.67092E-13-0.82764       -18.953
 S.I.=  18.953      SIGE=  18.553
MID SX,SY,SXY,SZ= 0.00000       0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.89567       18.885      -1.1083       0.00000       SIG1,SIG2,SIG3=  18.953       0.82764      -0.70883E-10
 S.I.=  18.953      SIGE=  18.553

EL= 119  NODES=  62   63   83   82     MAT= 1  AREA= 0.170      TTOP,TBOT=    0.0    0.0                          RECT SHELL  43
XC,YC,ZC= 0.600      1.11      0.000       PRS= 0.0000      0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.36091      -1.8166       0.27973      NX,NY= -0.91003      -1.9116
TOP SX,SY,SXY,SZ= -3.8497      -19.377       2.9838       0.00000       SIG1,SIG2,SIG3=-0.34421E-13 -3.2961       -19.931
 S.I.=  19.931      SIGE=  18.504
MID SX,SY,SXY,SZ= 0.00000       0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  3.8497       19.377      -2.9838       0.00000       SIG1,SIG2,SIG3=  19.931       3.2961       -0.65056E-10
 S.I.=  19.931      SIGE=  18.504

EL= 120  NODES=  63   64   84   83     MAT= 1  AREA= 0.170      TTOP,TBOT=    0.0    0.0                          RECT SHELL  43
XC,YC,ZC=  1.00      1.11      0.000       PRS= 0.0000      0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.87879      -1.9006       0.43535      NX,NY= -1.4616       -2.5357
TOP SX,SY,SXY,SZ= -9.3738      -20.273       4.6438       0.00000       SIG1,SIG2,SIG3= 0.72025E-13 -7.6636       -21.983
 S.I.=  21.983      SIGE=  19.327
MID SX,SY,SXY,SZ= 0.00000       0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000      SIGE= 0.0000
BOT SX,SY,SXY,SZ=  9.3738       20.273      -4.6438       0.00000       SIG1,SIG2,SIG3=  21.983       7.6636       -0.56107E-10
 S.I.=  21.983      SIGE=  19.327

EL= 121  NODES=  64  [illegible]  [illegible]  84     MAT= 1  AREA= 0.170      TTOP,TBOT=    0.0    0.0                          RECT SHELL  43
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TX,TY= 0.00000     0.0000       MX,MY,MXY=  -1.6754      -1.9247      0.42392       NX,NY=  -1.1907       -3.7418
TOP SX,SY,SXY,SZ= -17.871     -29.537      4.5219       0.00000       SIG1,SIG2,SIG3= 0.00000      -14.487       -23.914
 S.I.=  23.914      SIGE=  20.864
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  17.871      29.530      -4.5219       0.00000       SIG1,SIG2,SIG3=  23.914       14.487       -0.36833E-10
 S.I.=  23.914      SIGE=  20.864

EL=  122  NODES=   65   66   86   85      MAT=  1  AREA= 0.637        TTOP,TBOT=    0.0    0.0                                RECT SHELL  43
XC,YC,ZC=  2.50        1.11       0.000       PRS= 0.0000         0.0000          0.0000    0.0000     0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  -1.1726       -1.5734        -0.20668      NX,NY=   1.3709       -2.5189
TOP SX,SY,SXY,SZ= -12.508      -16.783      -2.2046       0.00000       SIG1,SIG2,SIG3=-0.59626E-13 -11.574        -17.716
 S.I.=  17.716      SIGE=  15.581
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  12.508      16.783       2.2046       0.00000       SIG1,SIG2,SIG3=  17.716       11.574       -0.24029E-10
 S.I.=  17.716      SIGE=  15.581

EL=  123  NODES=   66   67   87   86      MAT=  1  AREA= 0.850        TTOP,TBOT=    0.0    0.0                                RECT SHELL  43
XC,YC,ZC=  4.25        1.11       0.000       PRS= 0.0000         0.0000          0.0000    0.0000     0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  0.86258E-01 -0.84712        0.15519      NX,NY=  0.52062       -0.73690
TOP SX,SY,SXY,SZ= 0.92608      -9.0359      1.6553       0.00000       SIG1,SIG2,SIG3=  1.1881       0.82165E-10 -9.3039
 S.I.=  10.492      SIGE=  9.9513
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.92608       9.0359     -1.6553       0.00000       SIG1,SIG2,SIG3=  9.3039       0.82229E-10 -1.1881
 S.I.=  10.492      SIGE=  9.9513

EL=  124  NODES=   67   68   88   87      MAT=  1  AREA= 0.850        TTOP,TBOT=    0.0    0.0                                RECT SHELL  43
XC,YC,ZC=  6.25        1.11       0.000       PRS= 0.0000         0.0000          0.0000    0.0000     0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  0.35132       -0.32619        0.28097      NX,NY=  0.81968E-01 -0.18485
TOP SX,SY,SXY,SZ=  3.7474      -3.4794      2.9970       0.00000       SIG1,SIG2,SIG3=  4.8286       0.73603E-10 -4.5606
 S.I.=  9.3892      SIGE=  8.1324
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.7474       3.4794     -2.9970       0.00000       SIG1,SIG2,SIG3=  4.5606       0.73513E-10 -4.8286
 S.I.=  9.3892      SIGE=  8.1324

EL=  125  NODES=   68   69   89   88      MAT=  1  AREA= 0.850        TTOP,TBOT=    0.0    0.0                                RECT SHELL  43
XC,YC,ZC=  8.25        1.11       0.000       PRS= 0.0000         0.0000          0.0000    0.0000     0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  0.29507       -0.15173        0.33825      NX,NY= -0.31939E-02 -0.10080
TOP SX,SY,SXY,SZ=  3.1474      -1.6184      3.6080       0.00000       SIG1,SIG2,SIG3=  5.0883       0.67792E-10 -3.5594
 S.I.=  8.6477      SIGE=  7.5281
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.1474       1.6184     -3.6080       0.00000       SIG1,SIG2,SIG3=  3.5594       0.67709E-10 -5.0883
 S.I.=  8.6477      SIGE=  7.5281

EL=  126  NODES=   69   70   90   89      MAT=  1  AREA= 0.850        TTOP,TBOT=    0.0    0.0                                RECT SHELL  43
XC,YC,ZC=  10.2        1.11       0.000       PRS= 0.0000         0.0000          0.0000    0.0000     0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  0.19353       -0.82398E-01  0.40141      NX,NY= -0.23990E-01 -0.41489E-01
TOP SX,SY,SXY,SZ=  2.0643      -0.87891     4.2817       0.00000       SIG1,SIG2,SIG3=  5.1203       0.70885E-10 -3.9349
 S.I.=  9.0551      SIGE=  7.8644
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -2.0643       0.87891    -4.2817       0.00000       SIG1,SIG2,SIG3=  3.9349       0.70851E-10 -5.1203
 S.I.=  9.0551      SIGE=  7.8644

EL=  127  NODES=   70   71   91   90      MAT=  1  AREA= 0.850        TTOP,TBOT=    0.0    0.0                                RECT SHELL  43
XC,YC,ZC=  12.2        1.11       0.000       PRS= 0.0000         0.0000          0.0000    0.0000     0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  0.72480E-01 -0.43664E-01  0.43855      NX,NY= -0.27006E-01 -0.31266E-01
TOP SX,SY,SXY,SZ=  0.77312     -0.46575     4.6779       0.00000       SIG1,SIG2,SIG3=  4.8724       0.73912E-10 -4.5651
 S.I.=  9.4375      SIGE=  8.1745
MID SX,SY,SXY,SZ=                                                      SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
                                                                                                                  -4.8724
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S.I.=  9.4375       SIGE=  8.1745

EL=  128  NODES=   71   72   92   91      MAT=  1  AREA= 0.850        TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  14.2        1.11        0.000      PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.21676E-01 -0.21456E-01  0.43407       NX,NY= -0.15015E-01 -0.30157E-01
TOP SX,SY,SXY,SZ=-0.23121     -0.22887       4.6301      0.00000      SIG1,SIG2,SIG3=  4.4000      0.72544E-10 -4.8601
 S.I.=  9.2662       SIGE=  8.0228
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.23121      0.22887      -4.6301      0.00000      SIG1,SIG2,SIG3=  4.8601      0.72552E-10 -4.4000
 S.I.=  9.2662       SIGE=  8.0228

EL=  129  NODES=   72   73   93   92      MAT=  1  AREA= 0.850        TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  16.2        1.11        0.000      PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.42955E-01 -0.15967E-01  0.41408       NX,NY=  0.36709E-02 -0.28757E-01
TOP SX,SY,SXY,SZ=-0.45818     -0.17032       4.4169      0.00000      SIG1,SIG2,SIG3=  4.1050      0.69240E-10 -4.7335
 S.I.=  8.8384       SIGE=  7.6608
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.45818      0.17032      -4.4169      0.00000      SIG1,SIG2,SIG3=  4.7335      0.69248E-10 -4.1050
 S.I.=  8.8384       SIGE=  7.6608

EL=  130  NODES=   73   74   94   93      MAT=  1  AREA= 0.850        TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  18.2        1.11        0.000      PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.22011E-01 -0.10108E-01  0.39744       NX,NY=  0.14710E-01 -0.24531E-01
TOP SX,SY,SXY,SZ=-0.23478     -0.10782       4.2393      0.00000      SIG1,SIG2,SIG3=  4.0685      0.66351E-10 -4.4111
 S.I.=  8.4796       SIGE=  7.3456
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.23478      0.10782      -4.2393      0.00000      SIG1,SIG2,SIG3=  4.4111      0.66375E-10 -4.0685
 S.I.=  8.4796       SIGE=  7.3456

EL=  131  NODES=   74   75   95   94      MAT=  1  AREA= 0.850        TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  20.2        1.11        0.000      PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.13845E-02  0.77236E-02  0.36528       NX,NY=  0.15995E-01 -0.24974E-01
TOP SX,SY,SXY,SZ=-0.14768E-01 0.82385E-01  3.8963      0.00000      SIG1,SIG2,SIG3=  3.9305      0.61088E-10 -3.8628
 S.I.=  7.7933       SIGE=  6.7493
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.14768E-01-0.82385E-01 -3.8963      0.00000      SIG1,SIG2,SIG3=  3.8628      0.61022E-10 -3.9305
 S.I.=  7.7933       SIGE=  6.7493

EL=  132  NODES=   75   76   96   95      MAT=  1  AREA= 0.637        TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  22.0        1.11        0.000      PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY=  0.94721E-02  0.47025E-01  0.31128       NX,NY=  0.28703E-01 -0.72047E-01
TOP SX,SY,SXY,SZ= 0.10104      0.50160       3.3204      0.00000      SIG1,SIG2,SIG3=  3.6277      0.52050E-10 -3.0251
 S.I.=  6.6528       SIGE=  5.7694
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.10104     -0.50160      -3.3204      0.00000      SIG1,SIG2,SIG3=  3.0251      0.52081E-10 -3.6277
 S.I.=  6.6528       SIGE=  5.7694

EL=  133  NODES=   76   77   97   96      MAT=  1  AREA= 0.234        TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  23.0        1.11        0.000      PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY=  0.33705E-01  0.92398E-01  0.22492       NX,NY=  0.12186     -0.10447
TOP SX,SY,SXY,SZ= 0.35952      0.98558       2.3952      0.00000      SIG1,SIG2,SIG3=  3.0920      0.37902E-10 -1.7469
 S.I.=  4.8390       SIGE=  4.2443
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.35952     -0.98558      -2.3952      0.00000      SIG1,SIG2,SIG3=  1.7469      0.37919E-10 -3.0920
 S.I.=  4.8390       SIGE=  4.2443

EL=  134  NODES=   77   78   98   97      MAT=  1  AREA= 0.177        TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  [illegible]   1.11      [illegible]      PRS= [illegible]   [illegible]   0.0000      0.0000      0.0000      0.0000
TX,TY  [illegible]              MX,MY,MXY= [illegible]                 0.13175       NX,NY=  0.10131     -0.34418E-01
```

```
 S.I.=  4.1454        SIGE=  3.7387
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.70817       -1.3794       -2.0454       0.00000       SIG1,SIG2,SIG3=  1.0289      0.32438E-10 -3.1165
 S.I.=  4.1454        SIGE=  3.7387

EL=  135  NODES=   78   79   99   98     MAT=  1  AREA= 0.170        TTOP,TBOT=    0.0     0.0                    RECT SHELL  43
XC,YC,ZC=  23.9       1.11       0.000      PRS= 0.0000      0.0000     0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000       0.00000       MX,MY,MXY=  0.65562E-01  0.16664      0.17233      NX,NY=  0.41087E-01  0.15305E-01
TOP SX,SY,SXY,SZ= 0.69933       1.7775        1.8382        0.00000       SIG1,SIG2,SIG3=  3.1540      0.30004E-10-0.67717
 S.I.=  3.8312        SIGE=  3.5415
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.69933       -1.7775       -1.8382       0.00000       SIG1,SIG2,SIG3= 0.67717      0.30030E-10 -3.1540
 S.I.=  3.8312        SIGE=  3.5415

EL=  136  NODES=   79   80  100   99     MAT=  1  AREA= 0.170        TTOP,TBOT=    0.0     0.0                    RECT SHELL  43
XC,YC,ZC=  24.3       1.11       0.000      PRS= 0.0000      0.0000     0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000       0.00000       MX,MY,MXY=  0.27980E-01  0.20211      0.15815      NX,NY= -0.48709E-01  0.52610E-01
TOP SX,SY,SXY,SZ= 0.29845       2.1558        1.6870        0.00000       SIG1,SIG2,SIG3=  3.1528      0.30145E-10-0.69857
 S.I.=  3.8514        SIGE=  3.5540
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.29845       -2.1558       -1.6870       0.00000       SIG1,SIG2,SIG3= 0.69857      0.30199E-10 -3.1528
 S.I.=  3.8514        SIGE=  3.5540

EL=  137  NODES=   61  261  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.11508        SIG= -1.4848        EP=-0.005090  STAT=  1    GAP  10
EL=  138  NODES=   62  262  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.21956        SIG= -1.4165        EP=-0.004856  STAT=  1    GAP  10
EL=  139  NODES=   63  263  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.21049        SIG= -1.3580        EP=-0.004655  STAT=  1    GAP  10
EL=  140  NODES=   64  264  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.23804        SIG= -1.2930        EP=-0.004433  STAT=  1    GAP  10
EL=  141  NODES=   65  265  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.45708        SIG= -1.1508        EP=-0.003945  STAT=  1    GAP  10
EL=  142  NODES=   66  266  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.23961        SIG=-0.35335        EP=-0.001211  STAT=  1    GAP  10
EL=  143  NODES=   67  267  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  144  NODES=   68  268  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  145  NODES=   69  269  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  146  NODES=   70  270  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  147  NODES=   71  271  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  148  NODES=   72  272  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  149  NODES=   73  273  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  150  NODES=   74  274  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  151  NODES=   75  275  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  152  NODES=   76  276  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.35465E-01  SIG=-0.89289E-01  EP=-0.000306  STAT=  1    GAP  10
EL=  153  NODES=   77  277  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.29685E-01  SIG=-0.16124      EP=-0.000553  STAT=  1    GAP  10
EL=  154  NODES=   78  278  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.33424E-01  SIG=-0.21564      EP=-0.000739  STAT=  1    GAP  10
EL=  155  NODES=   79  279  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.42125E-01  SIG=-0.27177      EP=-0.000932  STAT=  1    GAP  10
EL=  [illegible]  NODES=  [illegible]  MAT=  [illegible]  TEMPS=  [illegible]  FORC=[illegible]  SIG=-0.328[illegible]  EP=-0.001125  STAT=  1    GAP  10
```

```
EL= 157  NODES=   81   82  102  101      MAT=  1  AREA=  .170          TTOP,TBOT=    0.0     0.0                                        RECT SHELL  43
XC,YC,ZC= 0.200        1.54      0.000         PRS= 0.0000       0.0000         0.0000      0.0000       0.0000       0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY= -0.11560         -2.5674          0.13659      NX,NY= -0.21677        -1.3016
TOP SX,SY,SXY,SZ= -1.2330       -27.386        1.4569        0.00000          SIG1,SIG2,SIG3=-0.43782E-12 -1.1521         -27.467
 S.I.=  27.467        SIGE=  26.909
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000        0.00000          SIG1,SIG2,SIG3= 0.00000       0.00000        0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  1.2330        27.386       -1.4569        0.00000          SIG1,SIG2,SIG3=  27.467       1.1521      -0.10255E-09
 S.I.=  27.467        SIGE=  26.909

EL= 158  NODES=   82   83  103  102      MAT=  1  AREA= 0.170          TTOP,TBOT=    0.0     0.0                                        RECT SHELL  43
XC,YC,ZC= 0.600        1.54      0.000         PRS= 0.0000       0.0000         0.0000      0.0000       0.0000       0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY= -0.41089         -2.6375          0.26459      NX,NY=  -1.1875        -1.1205
TOP SX,SY,SXY,SZ= -4.3828       -28.134        2.8223        0.00000          SIG1,SIG2,SIG3=-0.49975E-13 -4.0521         -28.464
 S.I.=  28.464        SIGE=  26.670
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000        0.00000          SIG1,SIG2,SIG3= 0.00000       0.00000        0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  4.3828        28.134       -2.8223        0.00000          SIG1,SIG2,SIG3=  28.464       4.0521      -0.95653E-10
 S.I.=  28.464        SIGE=  26.670

EL= 159  NODES=   83   84  104  103      MAT=  1  AREA= 0.170          TTOP,TBOT=    0.0     0.0                                        RECT SHELL  43
XC,YC,ZC=  1.00        1.54      0.000         PRS= 0.0000       0.0000         0.0000      0.0000       0.0000       0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY= -0.99661         -2.9453          0.40592      NX,NY=  -2.2831        -1.5630
TOP SX,SY,SXY,SZ= -10.631       -31.417        4.3298        0.00000          SIG1,SIG2,SIG3= 0.00000      -9.7647         -32.283
 S.I.=  32.283        SIGE=  28.675
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000        0.00000          SIG1,SIG2,SIG3= 0.00000       0.00000        0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  10.631        31.417       -4.3298        0.00000          SIG1,SIG2,SIG3=  32.283       9.7647      -0.88120E-10
 S.I.=  32.283        SIGE=  28.675

EL= 160  NODES=   84   85  105  104      MAT=  1  AREA= 0.234          TTOP,TBOT=    0.0     0.0                                        RECT SHELL  43
XC,YC,ZC=  1.47        1.54      0.000         PRS= 0.0000       0.0000         0.0000      0.0000       0.0000       0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  -2.3960         -3.5798          0.57860      NX,NY=  -4.1667        -4.9415
TOP SX,SY,SXY,SZ= -25.558       -38.184        6.1717        0.00000          SIG1,SIG2,SIG3= 0.00000      -23.042         -40.700
 S.I.=  40.700        SIGE=  35.350
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000        0.00000          SIG1,SIG2,SIG3= 0.00000       0.00000        0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  25.558        38.184       -6.1717        0.00000          SIG1,SIG2,SIG3=  40.700       23.042      -0.69050E-10
 S.I.=  40.700        SIGE=  35.350

EL= 161  NODES=   85   86  106  105      MAT=  1  AREA= 0.638          TTOP,TBOT=    0.0     0.0                                        RECT SHELL  43
XC,YC,ZC=  2.50        1.54      0.000         PRS= 0.0000       0.0000         0.0000      0.0000       0.0000       0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  -1.6126         -2.7590         -0.92965E-01 NX,NY=   2.9541        -3.4526
TOP SX,SY,SXY,SZ= -17.201       -29.429       -0.99163       0.00000          SIG1,SIG2,SIG3= 0.00000      -17.121         -29.509
 S.I.=  29.509        SIGE=  25.665
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000        0.00000          SIG1,SIG2,SIG3= 0.00000       0.00000        0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  17.201        29.429        0.99163       0.00000          SIG1,SIG2,SIG3=  29.509       17.121      -0.48513E-10
 S.I.=  29.509        SIGE=  25.665

EL= 162  NODES=   86   87  107  106      MAT=  1  AREA= 0.850          TTOP,TBOT=    0.0     0.0                                        RECT SHELL  43
XC,YC,ZC=  4.25        1.54      0.000         PRS= 0.0000       0.0000         0.0000      0.0000       0.0000       0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  0.71179E-01     -1.1098          0.29051      NX,NY=  0.56528        -0.21838
TOP SX,SY,SXY,SZ= 0.75924       -11.838        3.0988        0.00000          SIG1,SIG2,SIG3=  1.4802       0.10985E-09 -12.559
 S.I.=  14.039        SIGE=  13.361
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000        0.00000          SIG1,SIG2,SIG3= 0.00000       0.00000        0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.75924        11.838       -3.0988        0.00000          SIG1,SIG2,SIG3=  12.559       0.10992E-09 -1.4802
 S.I.=  14.039        SIGE=  13.361

EL= 163  NODES=   87   88  108  107      MAT=  1  AREA= 0.850          TTOP,TBOT=    0.0     0.0                                        RECT SHELL  43
XC,YC,ZC=  6.25        1.54      [illegible]   PRS= [illegible]  [illegible]    0.0000      0.0000       0.0000       0.0000
TX,TY= [illegible]   [illegible]    MX,MY,MXY= [illegible]      -0.42495          0.32368      NX,NY=  0.10745        -0.22375
TOP SX,SY,SXY,SZ= [illegible]   -4.[illegible]  [illegible]  [illegible]      SIG1,SIG2,SIG3=  4.8877       0.35634E-10 -5.7979
 S.I.= [illegible]    SIGE= [illegible]
```

```
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.6245      4.5328     -3.4526      0.00000       SIG1,SIG2,SIG3=  5.7979     0.83682E-10 -4.8897
 S.I.=  10.688       SIGE=  5.2669

                                                                                                       RECT SHELL  43
EL=  164  NODES=    88   89  109  108      MAT=  1  AREA= 0.850        TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  8.25        1.54      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY=  0.29612     -0.29147      0.35760     NX,NY=  0.16819E-01 -0.72018E-01
TOP SX,SY,SXY,SZ=  3.1586     -2.1490      3.8144      0.00000       SIG1,SIG2,SIG3=  5.1516     0.72858E-10 -4.1420
 S.I.=  9.2935       SIGE=  8.0643
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000       SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.1586      2.1490     -3.8144      0.00000       SIG1,SIG2,SIG3=  4.1420     0.72762E-10 -5.1516
 S.I.=  9.2935       SIGE=  8.0643

                                                                                                       RECT SHELL  43
EL=  165  NODES=    89   90  110  109      MAT=  1  AREA= 0.850        TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  10.2        1.54      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY=  0.20091     -0.11190      0.41063     NX,NY= -0.77750E-02 -0.39394E-01
TOP SX,SY,SXY,SZ=  2.1431     -1.1936      4.3801      0.00000       SIG1,SIG2,SIG3=  5.1618     0.73484E-10 -4.2123
 S.I.=  9.3741       SIGE=  8.1321
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000       SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -2.1431      1.1936     -4.3801      0.00000       SIG1,SIG2,SIG3=  4.2123     0.73399E-10 -5.1618
 S.I.=  9.3741       SIGE=  8.1321

                                                                                                       RECT SHELL  43
EL=  166  NODES=    90   91  111  110      MAT=  1  AREA= 0.850        TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  12.2        1.54      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY=  0.71392E-01 -0.59978E-01  0.44660     NX,NY= -0.99236E-02 -0.31392E-01
TOP SX,SY,SXY,SZ= 0.76152     -0.63976      4.7637      0.00000       SIG1,SIG2,SIG3=  4.8759     0.75387E-10 -4.7541
 S.I.=  9.6396       SIGE=  8.3400
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000       SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.76152      0.63976     -4.7637      0.00000       SIG1,SIG2,SIG3=  4.7541     0.75343E-10 -4.8759
 S.I.=  9.6396       SIGE=  8.3400

                                                                                                       RECT SHELL  43
EL=  167  NODES=    91   92  112  111      MAT=  1  AREA= 0.850        TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  14.2        1.54      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.31593E-01 -0.30260E-01  0.43475     NX,NY= -0.28611E-02 -0.37372E-01
TOP SX,SY,SXY,SZ=-0.33699     -0.32278      4.6373      0.00000       SIG1,SIG2,SIG3=  4.3074     0.72611E-10 -4.9672
 S.I.=  9.2746       SIGE=  8.0388
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000       SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.33699      0.32278     -4.6373      0.00000       SIG1,SIG2,SIG3=  4.9672     0.72710E-10 -4.3074
 S.I.=  9.2746       SIGE=  8.0388

                                                                                                       RECT SHELL  43
EL=  168  NODES=    92   93  113  112      MAT=  1  AREA= 0.850        TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  16.2        1.54      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.51874E-01 -0.24701E-01  0.41019     NX,NY=  0.98154E-02 -0.35080E-01
TOP SX,SY,SXY,SZ=-0.55332     -0.26348      4.3754      0.00000       SIG1,SIG2,SIG3=  3.9694     0.68610E-10 -4.7862
 S.I.=  8.7555       SIGE=  7.5935
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000       SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.55332      0.26348     -4.3754      0.00000       SIG1,SIG2,SIG3=  4.7862     0.68578E-10 -3.9694
 S.I.=  8.7555       SIGE=  7.5935

                                                                                                       RECT SHELL  43
EL=  169  NODES=    93   94  114  113      MAT=  1  AREA= 0.850        TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  18.2        1.54      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.29815E-01 -0.17232E-01  0.39829     NX,NY=  0.16737E-01 -0.30210E-01
TOP SX,SY,SXY,SZ=-0.31802     -0.18381      4.2484      0.00000       SIG1,SIG2,SIG3=  3.9980     0.66516E-10 -4.4999
 S.I.=  8.4979       SIGE=  7.3637
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000       SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.31802      0.18381     -4.2484      0.00000       SIG1,SIG2,SIG3=  4.4999     0.66496E-10 -3.9980
 S.I.=  8.4979       SIGE=  7.3637

                                                                                                       RECT SHELL  43
EL=  170  NODES=    94   95  115  114      MAT=  1  AREA= 0.850        TTOP,TBOT=     0.0     0.0
```

```
TX,TY= 0.00000     0.00000     MX,MY,MXY= -0.13366E-01  0.85510E-02  0.36878     NX,NY=  0.19165E-01 -0.13457E-01
TOP SX,SY,SXY,SZ=-0.14193     0.91211E-01  3.9336      0.00000      SIG1,SIG2,SIG3=  3.9100      0.61621E-10 -3.9607
 S.I.=  7.8707       SIGE=  6.8163
MID SX,SY,SXY,SZ= 0.00000     0.00000     0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.14193    -0.91211E-01 -3.9336      0.00000      SIG1,SIG2,SIG3=  3.9607      0.61702E-10 -3.9100
 S.I.=  7.8707       SIGE=  6.8163

EL=  171  NODES=    95   96  116  115     MAT=  1  AREA= 0.637       TTOP,TBOT=     0.0     0.0                  RECT SHELL  43
XC,YC,ZC=  22.0       1.54      0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0080      0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY= -0.25811E-01  0.39664E-01  0.32085     NX,NY= -0.26548E-01 -0.11815
TOP SX,SY,SXY,SZ=-0.27532     0.32708      3.4224      0.00000      SIG1,SIG2,SIG3=  3.4615      0.53867E-10 -3.4098
 S.I.=  6.8713       SIGE=  5.9508
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.27532    -0.32708     -3.4224      0.00000      SIG1,SIG2,SIG3=  3.4098      0.53797E-10 -3.4615
 S.I.=  6.8713       SIGE=  5.9508

EL=  172  NODES=    96   97  117  116     MAT=  1  AREA= 0.234       TTOP,TBOT=     0.0     0.0                  RECT SHELL  43
XC,YC,ZC=  23.0       1.54      0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY= -0.16069E-01  0.69093E-01  0.24215     NX,NY=  0.24460     -0.16274
TOP SX,SY,SXY,SZ=-0.17140     0.73699      2.5829      0.00000      SIG1,SIG2,SIG3=  2.9053      0.41041E-10 -2.3398
 S.I.=  5.2451       SIGE=  4.5512
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.17140    -0.73699     -2.5829      0.00000      SIG1,SIG2,SIG3=  2.3398      0.41057E-10 -2.9053
 S.I.=  5.2451       SIGE=  4.5512

EL=  173  NODES=    97   98  118  117     MAT=  1  AREA= 0.170       TTOP,TBOT=     0.0     0.0                  RECT SHELL  43
XC,YC,ZC=  23.5       1.54      0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY=  0.43179E-01  0.13372      0.22318     NX,NY=  0.14966     -0.26026E-01
TOP SX,SY,SXY,SZ= 0.46657     1.4263       2.3806      0.00000      SIG1,SIG2,SIG3=  3.3726      0.38051E-10 -1.4857
 S.I.=  4.8582       SIGE=  4.3118
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.46657    -1.4263      -2.3806      0.00000      SIG1,SIG2,SIG3=  1.4857      0.38072E-10 -3.3726
 S.I.=  4.8582       SIGE=  4.3118

EL=  174  NODES=    98   99  119  118     MAT=  1  AREA= 0.170       TTOP,TBOT=     0.0     0.0                  RECT SHELL  43
XC,YC,ZC=  23.5       1.54      0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY=  0.52133E-01  0.18314      0.21228     NX,NY=  0.75410E-01 -0.13637E-01
TOP SX,SY,SXY,SZ= 0.55609     1.9535       2.2644      0.00000      SIG1,SIG2,SIG3=  3.6245      0.37074E-10 -1.1149
 S.I.=  4.7394       SIGE=  4.2919
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.55609    -1.9535      -2.2644      0.00000      SIG1,SIG2,SIG3=  1.1149      0.37102E-10 -3.6245
 S.I.=  4.7394       SIGE=  4.2919

EL=  175  NODES=    99  100  120  119     MAT=  1  AREA= 0.170       TTOP,TBOT=     0.0     0.0                  RECT SHELL  43
XC,YC,ZC=  24.3       1.54      0.000       PRS= 0.0000      0.0000      0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY=  0.29450E-01  0.23962      0.20245     NX,NY=  0.53600E-01  0.10055
TOP SX,SY,SXY,SZ= 0.31413     2.5560       2.1594      0.00000      SIG1,SIG2,SIG3=  3.8681      0.38098E-10-0.99796
 S.I.=  4.8660       SIGE=  4.4517
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.31413    -2.5560      -2.1594      0.00000      SIG1,SIG2,SIG3= 0.99796      0.38066E-10 -3.8681
 S.I.=  4.8660       SIGE=  4.4517

EL=  176  NODES=   81  291  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.23284E-01  SIG=-0.27393     EP=-0.000939  STAT=  1    GAP  10

EL=  177  NODES=   82  292  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.36063E-01  SIG=-0.21214     EP=-0.000727  STAT=  1    GAP  10

EL=  178  NODES=   83  293  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.29073E-01  SIG=-0.17102     EP=-0.000586  STAT=  1    GAP  10

EL=  179  NODES=   84  294  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.25966E-01  SIG=-0.13274     EP=-0.000455  STAT=  1    GAP  10
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```
EL= 180  NODES=  85  285  MAT=  2  TEMPS=   0.0    0.0  FORC=-.19920E-01   SIG=-0.25068E-01  EP=-0.000086  STAT=  1   GAP  10
EL= 181  NODES=  86  286  MAT=  2  TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2   GAP  10
EL= 182  NODES=  87  287  MAT=  2  TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2   GAP  10
EL= 183  NODES=  88  288  MAT=  2  TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2   GAP  10
EL= 184  NODES=  89  289  MAT=  2  TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2   GAP  10
EL= 185  NODES=  90  290  MAT=  2  TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2   GAP  10
EL= 186  NODES=  91  291  MAT=  2  TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2   GAP  10
EL= 187  NODES=  92  292  MAT=  2  TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2   GAP  10
EL= 188  NODES=  93  293  MAT=  2  TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2   GAP  10
EL= 189  NODES=  94  294  MAT=  2  TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2   GAP  10
EL= 190  NODES=  95  295  MAT=  2  TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2   GAP  10
EL= 191  NODES=  96  296  MAT=  2  TEMPS=   0.0    0.0  FORC=-0.94284E-02  SIG=-0.21645E-01  EP=-0.000074  STAT=  1   GAP  10
EL= 192  NODES=  97  297  MAT=  2  TEMPS=   0.0    0.0  FORC=-0.22867E-01  SIG=-0.11326      EP=-0.000388  STAT=  1   GAP  10
EL= 193  NODES=  98  298  MAT=  2  TEMPS=   0.0    0.0  FORC=-0.30571E-01  SIG=-0.17983      EP=-0.000616  STAT=  1   GAP  10
EL= 194  NODES=  99  299  MAT=  2  TEMPS=   0.0    0.0  FORC=-0.41971E-01  SIG=-0.24689      EP=-0.000846  STAT=  1   GAP  10
EL= 195  NODES= 100  300  MAT=  2  TEMPS=   0.0    0.0  FORC=-0.26627E-01  SIG=-0.31326      EP=-0.001074  STAT=  1   GAP  10

                                                                                                              RECT SHELL  43
EL= 196  NODES= 101  102  122  121     MAT=  1  AREA= 0.625        TTOP,TBOT=     0.0     0.0
XC,YC,ZC= 0.200      2.53      0.000      PRS= 0.0000      0.0000      0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.14058       -2.5432       0.20842      NX,NY= -0.51648       0.25646
TOP SX,SY,SXY,SZ= -1.4995      -27.127       2.2232      0.00000       SIG1,SIG2,SIG3=-0.24094E-12 -1.3080      -27.319
 S.I.=  27.319       SIGE=   26.689
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=  1.4995       27.127      -2.2232      0.00000       SIG1,SIG2,SIG3=  27.319       1.3080      -0.10163E-09
 S.I.=  27.319       SIGE=   26.689

                                                                                                              RECT SHELL  43
EL= 197  NODES= 102  103  123  122     MAT=  1  AREA= 0.625        TTOP,TBOT=     0.0     0.0
XC,YC,ZC= 0.600      2.53      0.000      PRS= 0.0000      0.0000      0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.45956       -2.5793       0.14288      NX,NY= -0.88302       0.45255
TOP SX,SY,SXY,SZ= -4.9019      -27.513       1.5241      0.00000       SIG1,SIG2,SIG3=-0.48873E-13 -4.7997      -27.615
 S.I.=  27.615       SIGE=   25.556
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=  4.9019       27.513      -1.5241      0.00000       SIG1,SIG2,SIG3=  27.615       4.7997      -0.89437E-10
 S.I.=  27.615       SIGE=   25.556

                                                                                                              RECT SHELL  43
EL= 198  NODES= 103  104  124  123     MAT=  1  AREA= 0.625        TTOP,TBOT=     0.0     0.0
XC,YC,ZC= 1.00       2.53      0.000      PRS= 0.0000      0.0000      0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.90990       -2.6875       0.50525E-01  NX,NY= -1.2897        0.88511
TOP SX,SY,SXY,SZ= -9.7056      -28.666       0.53893      0.00000       SIG1,SIG2,SIG3= 0.00000      -9.6903      -28.682
 S.I.=  28.682       SIGE=   25.271
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=  9.7056       28.666      -0.53893      0.00000       SIG1,SIG2,SIG3=  28.682       9.6903      -0.74345E-10
 S.I.=  28.682       SIGE=   25.271

                                                                                                              RECT SHELL  43
EL= 199  NODES= 104  105  125  124     MAT=  1  AREA= [illegible]   TTOP,TBOT=     0.0     0.0
XC,YC,ZC= [illegible]   [illegible]   [illegible]   PRS= [illegible]   [illegible]   0.0000     0.0000      0.0000      0.0000
TX,TY= [illegible]      MX,MY,MXY= [illegible]   [illegible]   [illegible]-01  NX,NY= -2.3858        2.3370
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 S.I.=  31.408        SIGE=  27.445
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  19.409       31.362     -0.74673      0.00000      SIG1,SIG2,SIG3=  31.408       19.361     -0.47243E-10
 S.I.=  31.408        SIGE=  27.445

EL=  200   NODES=  105  106  126  125      MAT=  1   AREA=   2.34        TTOP,TBOT=    0.0     0.0                                RECT SHELL  43
XC,YC,ZC=  2.50        2.53       0.000        PRS= 0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  -1.2965       -2.3625         0.87060       NX,NY=   1.8794         1.4875
TOP SX,SY,SXY,SZ= -13.830      -25.200       9.2864       0.00000      SIG1,SIG2,SIG3=-0.17906E-12 -8.6266      -30.404
 S.I.=  30.404        SIGE=  27.139
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  13.830       25.200      -9.2864       0.00000      SIG1,SIG2,SIG3=  30.404       8.6266     -0.85053E-10
 S.I.=  30.404        SIGE=  27.139

EL=  201   NODES=  106  107  127  126      MAT=  1   AREA=   3.12        TTOP,TBOT=    0.0     0.0                                RECT SHELL  43
XC,YC,ZC=  4.25        2.53       0.000        PRS= 0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.35382E-01  -1.2026         0.58023       NX,NY=  0.55998      -0.38352E-01
TOP SX,SY,SXY,SZ=-0.37740      -12.828       6.1892       0.00000      SIG1,SIG2,SIG3=  2.1757      0.13750E-09 -15.381
 S.I.=  17.557        SIGE=  16.576
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.37740       12.828      -6.1892       0.00000      SIG1,SIG2,SIG3=  15.381      0.13732E-09 -2.1757
 S.I.=  17.557        SIGE=  16.576

EL=  202   NODES=  107  108  128  127      MAT=  1   AREA=   3.12        TTOP,TBOT=    0.0     0.0                                RECT SHELL  43
XC,YC,ZC=  6.25        2.53       0.000        PRS= 0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  0.26463      -0.54638         0.45920       NX,NY=  0.16038      -0.11694
TOP SX,SY,SXY,SZ=  2.8227      -5.8280       4.8981       0.00000      SIG1,SIG2,SIG3=  5.0319      0.10240E-09 -8.0372
 S.I.=  13.069        SIGE=  11.417
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -2.8227       5.8280      -4.8981       0.00000      SIG1,SIG2,SIG3=  8.0372      0.10237E-09 -5.0319
 S.I.=  13.069        SIGE=  11.417

EL=  203   NODES=  108  109  129  128      MAT=  1   AREA=   3.12        TTOP,TBOT=    0.0     0.0                                RECT SHELL  43
XC,YC,ZC=  8.25        2.53       0.000        PRS= 0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  0.27156      -0.27727         0.42153       NX,NY=  0.26336E-01 -0.63500E-01
TOP SX,SY,SXY,SZ=  2.8967      -2.9575       4.4963       0.00000      SIG1,SIG2,SIG3=  5.3347      0.83971E-10 -5.3955
 S.I.=  10.730        SIGE=  9.2927
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -2.8967       2.9575      -4.4963       0.00000      SIG1,SIG2,SIG3=  5.3955      0.83980E-10 -5.3347
 S.I.=  10.730        SIGE=  9.2927

EL=  204   NODES=  109  110  130  129      MAT=  1   AREA=   3.12        TTOP,TBOT=    0.0     0.0                                RECT SHELL  43
XC,YC,ZC=  10.2        2.53       0.000        PRS= 0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  0.21459      -0.16585         0.46594       NX,NY= -0.69623E-01 -0.31230E-01
TOP SX,SY,SXY,SZ=  2.2889      -1.7691       4.9700       0.00000      SIG1,SIG2,SIG3=  5.6281      0.84092E-10 -5.1083
 S.I.=  10.736        SIGE=  9.3016
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -2.2889       1.7691      -4.9700       0.00000      SIG1,SIG2,SIG3=  5.1083      0.84133E-10 -5.6281
 S.I.=  10.736        SIGE=  9.3016

EL=  205   NODES=  110  111  131  130      MAT=  1   AREA=   3.12        TTOP,TBOT=    0.0     0.0                                RECT SHELL  43
XC,YC,ZC=  12.2        2.53       0.000        PRS= 0.0000       0.0000       0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  0.61946E-01 -0.96019E-01  0.51075       NX,NY= -0.11373      -0.32971E-01
TOP SX,SY,SXY,SZ= 0.66075      -1.0242       5.4480       0.00000      SIG1,SIG2,SIG3=  5.3310      0.86324E-10 -5.6945
 S.I.=  11.025        SIGE=  9.5561
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.66075       1.0242      -5.4480       0.00000      SIG1,SIG2,SIG3=  5.6945      0.86430E-10 -5.3310
 S.I.= [illegible]    SIGE= [illegible]
```

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                                                                                                    RECT SHELL  43
EL=  206  NODES=  111  112  132  131      MAT=  1  AREA=  3.12        TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  14.2       2.53      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.67227E-01 -0.55355E-01  0.46453      NX,NY= -0.72359E-01 -0.40465E-01
TOP SX,SY,SXY,SZ=-0.71709     -0.59046        4.9550       0.00000         SIG1,SIG2,SIG3=  4.3016      0.77656E-10 -5.6092
 S.I.=  9.9108        SIGE=  8.6078
MID SX,SY,SXY,SZ= 0.00000     0.00000        0.00000      0.00000         SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.71709      0.59046       -4.9550       0.00000         SIG1,SIG2,SIG3=  5.6092      0.77636E-10 -4.3016
 S.I.=  9.9108        SIGE=  8.6078
                                                                                                    RECT SHELL  43
EL=  207  NODES=  112  113  133  132      MAT=  1  AREA=  3.12        TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  16.2       2.53      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.65225E-01 -0.51071E-01  0.41046      NX,NY= -0.34971E-02 -0.30195E-01
TOP SX,SY,SXY,SZ=-0.69574     -0.54476        4.3782       0.00000         SIG1,SIG2,SIG3=  3.7586      0.68549E-10 -4.9991
 S.I.=  8.7578        SIGE=  7.6098
MID SX,SY,SXY,SZ= 0.00000     0.00000        0.00000      0.00000         SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.69574      0.54476       -4.3782       0.00000         SIG1,SIG2,SIG3=  4.9991      0.68530E-10 -3.7586
 S.I.=  8.7578        SIGE=  7.6098
                                                                                                    RECT SHELL  43
EL=  208  NODES=  113  114  134  133      MAT=  1  AREA=  3.12        TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  18.2       2.53      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.37669E-01 -0.39072E-01  0.40682      NX,NY=  0.18456E-01 -0.26603E-01
TOP SX,SY,SXY,SZ=-0.40181     -0.41677        4.3394       0.00000         SIG1,SIG2,SIG3=  3.9301      0.68020E-10 -4.7487
 S.I.=  8.6788        SIGE=  7.5272
MID SX,SY,SXY,SZ= 0.00000     0.00000        0.00000      0.00000         SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.40181      0.41677       -4.3394       0.00000         SIG1,SIG2,SIG3=  4.7487      0.67956E-10 -3.9301
 S.I.=  8.6788        SIGE=  7.5272
                                                                                                    RECT SHELL  43
EL=  209  NODES=  114  115  135  134      MAT=  1  AREA=  3.12        TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  20.2       2.53      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.42270E-01  0.81313E-02  0.38855      NX,NY=  0.21069E-01 -0.25245E-01
TOP SX,SY,SXY,SZ=-0.45088      0.86734E-01  4.1445       0.00000         SIG1,SIG2,SIG3=  3.9711      0.64990E-10 -4.3353
 S.I.=  8.3064        SIGE=  7.1959
MID SX,SY,SXY,SZ= 0.00000     0.00000        0.00000      0.00000         SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.45088     -0.86734E-01 -4.1445       0.00000         SIG1,SIG2,SIG3=  4.3353      0.65024E-10 -3.9711
 S.I.=  8.3064        SIGE=  7.1959
                                                                                                    RECT SHELL  43
EL=  210  NODES=  115  116  136  135      MAT=  1  AREA=  2.34        TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  22.0       2.53      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.55273E-01  0.70926E-01  0.32928      NX,NY=  0.18688E-01  0.32326E-01
TOP SX,SY,SXY,SZ=-0.58958      0.75665        3.5123       0.00000         SIG1,SIG2,SIG3=  3.6598      0.55990E-10 -3.4927
 S.I.=  7.1525        SIGE=  6.1948
MID SX,SY,SXY,SZ= 0.00000     0.00000        0.00000      0.00000         SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.58958     -0.75665       -3.5123       0.00000         SIG1,SIG2,SIG3=  3.4927      0.55962E-10 -3.6598
 S.I.=  7.1525        SIGE=  6.1948
                                                                                                    RECT SHELL  43
EL=  211  NODES=  116  117  137  136      MAT=  1  AREA= 0.859        TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  23.0       2.53      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.37408E-01  0.13111      0.32030      NX,NY=  0.19133      0.70152E-01
TOP SX,SY,SXY,SZ=-0.39902      1.3985         3.4165       0.00000         SIG1,SIG2,SIG3=  4.0325      0.55309E-10 -3.0330
 S.I.=  7.0654        SIGE=  6.1392
MID SX,SY,SXY,SZ= 0.00000     0.00000        0.00000      0.00000         SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.39902     -1.3985        -3.4165       0.00000         SIG1,SIG2,SIG3=  3.0330      0.55283E-10 -4.0325
 S.I.=  7.0654        SIGE=  6.1392
                                                                                                    RECT SHELL  43
EL=  212  NODES=  117  118  138  137      MAT=  1  AREA= 0.625        TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  23.5       2.53      0.000     PRS= 0.0000      0.0000     0.0000     0.0000     0.0000     0.0000
TX,TY= [illegible]  [illegible]        MX,MY,MXY= [illegible]  [illegible]  0.30382      NX,NY=  0.14310      0.26662E-01
TOP SX,SY,SXY,SZ= [illegible]  [illegible]  [illegible]  [illegible]   SIG1,SIG2,SIG3=  4.4233      0.52829E-10 -2.3127
 S.I.= [illegible]    SIGE= [illegible]
```

```
  S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.13734     -1.9739      -3.2407      0.00000      SIG1,SIG2,SIG3=  2.3127      0.52729E-10 -4.4239
  S.I.=  6.7367       SIGE=  5.9288

EL=  213  NODES=  118  119  139  138     MAT=  1  AREA= 0.625        TTOP,TBOT=    0.0     0.0                      RECT SHELL  43
XC,YC,ZC=  23.9        2.53        0.000       PRS= 0.0000       0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.0000       0.00000         MX,MY,MXY=  0.30772E-01  0.22612       0.28881      NX,NY=  0.83756E-01  0.28684E-01
TOP SX,SY,SXY,SZ= 0.32824       2.4119       3.0606       0.00000      SIG1,SIG2,SIG3=  4.6221      0.50947E-10 -1.8819
  S.I.=  6.5040       SIGE=  5.7969
MID SX,SY,SXY,SZ= 0.00000       0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
  S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.32824      -2.4119      -3.0606       0.00000      SIG1,SIG2,SIG3=  1.8819      0.50963E-10 -4.6221
  S.I.=  6.5040       SIGE=  5.7969

EL=  214  NODES=  119  120  140  139     MAT=  1  AREA= 0.625        TTOP,TBOT=    0.0     0.0                      RECT SHELL  43
XC,YC,ZC=  24.3        2.53        0.000       PRS= 0.0000       0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000         MX,MY,MXY=  0.15553E-01  0.25587       0.27346      NX,NY= -0.27046E-01  0.56671E-01
TOP SX,SY,SXY,SZ= 0.16589       2.7292       2.9169       0.00000      SIG1,SIG2,SIG3=  4.6336      0.49939E-10 -1.7385
  S.I.=  6.3722       SIGE=  5.7052
MID SX,SY,SXY,SZ= 0.00000       0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
  S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.16589      -2.7292      -2.9169       0.00000      SIG1,SIG2,SIG3=  1.7385      0.49908E-10 -4.6336
  S.I.=  6.3722       SIGE=  5.7052

EL=  215  NODES=  101  301  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  216  NODES=  102  302  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  217  NODES=  103  303  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  218  NODES=  104  304  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  219  NODES=  105  305  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  220  NODES=  106  306  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  221  NODES=  107  307  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  222  NODES=  108  308  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  223  NODES=  109  309  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  224  NODES=  110  310  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  225  NODES=  111  311  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  226  NODES=  112  312  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  227  NODES=  113  313  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  228  NODES=  114  314  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  229  NODES=  115  315  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  230  NODES=  116  316  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000          SIG= 0.00000        EP= 0.000000  STAT=  2    GAP  10
EL=  231  NODES=  117  317  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.33174E-01  SIG=-0.70285E-01  EP=-0.000241  STAT=  1    GAP  10
EL=  232  NODES=  118  318  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.60020E-01  SIG=-0.15099      EP=-0.000518  STAT=  1    GAP  10
EL=  233  NODES=  119  319  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.92008E-01  SIG=-0.23147      EP=-0.000794  STAT=  1    GAP  10
EL=  234  NODES=  120  320  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.61763E-01  SIG=-0.31084      EP=-0.001066  STAT=  1    GAP  10

EL=  235  NODES=  [illegible]     MAT=  1  AREA= [illegible]     TTOP,TBOT=    0.0     0.0                      RECT SHELL  43
```

```
TX,TY= 0.00000     0.00000       MX,MY,MXY= -0.97331E- 1  -1.3921       0.67138     NX,NY= -0.30759      0.80895
TOP SX,SY,SXY,SZ=-5.93153      -14.850      7.1614      0.00000      SIG1,SIG2,SIG3=  2.0951      0.15669E-09 -17.876
 S.I.=  19.971      SIGE=  19.011
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= 5.93153      14.850      -7.1614      0.00000      SIG1,SIG2,SIG3=  17.876      0.15626E-09 -2.0951
 S.I.=  19.971      SIGE=  19.011

                                                                                                              RECT SHELL  43
EL=  236  NODES=  122  123  143  142      MAT=  1  AREA= 0.625      TTOP,TBOT=     0.0     0.0
XC,YC,ZC= 0.660       4.09       0.000        PRS= 0.0000       0.0000       0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000     0.00000       MX,MY,MXY= -0.29469       -1.3325        0.61765     NX,NY= -0.26519      0.84358
TOP SX,SY,SXY,SZ= -3.1433      -14.213      6.5883      0.00000      SIG1,SIG2,SIG3=-0.24491E-11-0.73603E-01 -17.283
 S.I.=  17.283      SIGE=  17.246
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  3.1433      14.213      -6.5883      0.00000      SIG1,SIG2,SIG3=  17.283      0.73603E-01-0.64989E-10
 S.I.=  17.283      SIGE=  17.246

                                                                                                              RECT SHELL  43
EL=  237  NODES=  123  124  144  143      MAT=  1  AREA= 0.625      TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  1.08       4.09       0.000        PRS= 0.0000       0.0000       0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000     0.00000       MX,MY,MXY= -0.49606       -1.2519        0.63086     NX,NY= -0.28400      0.92097
TOP SX,SY,SXY,SZ= -5.2914      -13.354      6.7292      0.00000      SIG1,SIG2,SIG3=-0.47441E-13 -1.4782      -17.167
 S.I.=  17.167      SIGE=  16.477
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  5.2914      13.354      -6.7292      0.00000      SIG1,SIG2,SIG3=  17.167      1.4782      -0.61342E-10
 S.I.=  17.167      SIGE=  16.477

                                                                                                              RECT SHELL  43
EL=  238  NODES=  124  125  145  144      MAT=  1  AREA= 0.860      TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  1.47       4.09       0.000        PRS= 0.0000       0.0000       0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000     0.00000       MX,MY,MXY= -0.60605       -1.1258        0.71634     NX,NY=  0.24600      0.83717
TOP SX,SY,SXY,SZ= -6.4645      -12.008      7.6410      0.00000      SIG1,SIG2,SIG3=-0.85325E-13 -1.1082      -17.365
 S.I.=  17.365      SIGE=  16.838
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  6.4645      12.008      -7.6410      0.00000      SIG1,SIG2,SIG3=  17.365      1.1082      -0.63652E-10
 S.I.=  17.365      SIGE=  16.838

                                                                                                              RECT SHELL  43
EL=  239  NODES=  125  126  146  145      MAT=  1  AREA=  2.34      TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  2.50       4.09       0.000        PRS= 0.0000       0.0000       0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000     0.00000       MX,MY,MXY= -0.53035       -1.0133        0.85825     NX,NY=  0.19217      0.70675
TOP SX,SY,SXY,SZ= -5.6570      -10.808      9.1546      0.00000      SIG1,SIG2,SIG3=  1.2774      0.14906E-09 -17.743
 S.I.=  19.020      SIGE=  18.415
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  5.6570      10.808      -9.1546      0.00000      SIG1,SIG2,SIG3=  17.743      0.14895E-09 -1.2774
 S.I.=  19.020      SIGE=  18.415

                                                                                                              RECT SHELL  43
EL=  240  NODES=  126  127  147  146      MAT=  1  AREA=  3.13      TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  4.25       4.09       0.000        PRS= 0.0000       0.0000       0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000     0.00000       MX,MY,MXY= -0.86680E-01 -0.78364       0.88949     NX,NY=  0.38400      0.32626
TOP SX,SY,SXY,SZ=-0.92459      -8.3588      9.4878      0.00000      SIG1,SIG2,SIG3=  5.5483      0.15966E-09 -14.832
 S.I.=  20.380      SIGE=  18.250
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.92459       8.3588      -9.4878      0.00000      SIG1,SIG2,SIG3=  14.832      0.15966E-09 -5.5483
 S.I.=  20.380      SIGE=  18.250

                                                                                                              RECT SHELL  43
EL=  241  NODES=  127  128  148  147      MAT=  1  AREA=  3.13      TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  6.25       4.09       0.000        PRS= 0.0000       0.0000       0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000     0.00000       MX,MY,MXY= 0.13158        -0.47711       0.68241     NX,NY=  0.12526      0.42804E-01
TOP SX,SY,SXY,SZ=  1.4035      -5.2892      7.2790      0.00000      SIG1,SIG2,SIG3=  6.1273      0.12493E-09 -9.8130
 S.I.=  15.941      SIGE=  13.927
MID SX,SY,SXY,SZ= 0.00000 [illegible]                                 SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
```

```
S.I.= 15.940       SIGE= 13.927

EL=  242  NODES=  128  129  149  148      MAT=  1  AREA=  3.13        TTOP,TBOT=    0.0     0.0                        RECT SHELL  43
XC,YC,ZC=  8.25        4.09      0.000         PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000          MX,MY,MXY=  6.24559      -0.27144        0.46692      NX,NY=  0.15034       0.48546E-01
TOP SX,SY,SXY,SZ=  2.6196       -2.8953        4.9805       0.00000         SIG1,SIG2,SIG3=  5.5551       0.89137E-10 -5.8308
 S.I.=  11.386        SIGE=  9.8614
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000         SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -2.6196        2.8953       -4.9805       0.00000         SIG1,SIG2,SIG3=  5.8308       0.89076E-10 -5.5551
 S.I.=  11.386        SIGE=  9.8614

EL=  243  NODES=  129  130  150  149      MAT=  1  AREA=  3.13        TTOP,TBOT=    0.0     0.0                        RECT SHELL  43
XC,YC,ZC=  10.2        4.09      0.000         PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000          MX,MY,MXY=  0.34922      -0.19899        0.43726      NX,NY=  0.29859       0.11568
TOP SX,SY,SXY,SZ=  3.7250       -2.1226        4.6641       0.00000         SIG1,SIG2,SIG3=  6.3060       0.86251E-10 -4.7036
 S.I.=  11.010        SIGE=  9.5682
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000         SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.7250        2.1226       -4.6641       0.00000         SIG1,SIG2,SIG3=  4.7036       0.86255E-10 -6.3060
 S.I.=  11.010        SIGE=  9.5682

EL=  244  NODES=  130  131  151  150      MAT=  1  AREA=  3.13        TTOP,TBOT=    0.0     0.0                        RECT SHELL  43
XC,YC,ZC=  12.2        4.09      0.000         PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000          MX,MY,MXY=  0.38577E-01 -0.13857        0.51790      NX,NY=  0.35251      -0.32265E-01
TOP SX,SY,SXY,SZ= 0.41148       -1.4781        5.5243       0.00000         SIG1,SIG2,SIG3=  5.0712       0.87830E-10 -6.1378
 S.I.=  11.209        SIGE=  9.7219
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000         SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.41148        1.4781       -5.5243       0.00000         SIG1,SIG2,SIG3=  6.1378       0.87806E-10 -5.0712
 S.I.=  11.209        SIGE=  9.7219

EL=  245  NODES=  131  132  152  151      MAT=  1  AREA=  3.13        TTOP,TBOT=    0.0     0.0                        RECT SHELL  43
XC,YC,ZC=  14.2        4.09      0.000         PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000          MX,MY,MXY= -0.25487      -0.10412        0.39318      NX,NY=  0.29284      -0.17799
TOP SX,SY,SXY,SZ= -2.7187       -1.1106        4.1939       0.00000         SIG1,SIG2,SIG3=  2.3556       0.66818E-10 -6.1849
 S.I.=  8.5406        SIGE=  7.6401
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000         SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  2.7187        1.1106       -4.1939       0.00000         SIG1,SIG2,SIG3=  6.1849       0.66863E-10 -2.3556
 S.I.=  8.5406        SIGE=  7.6401

EL=  246  NODES=  132  133  153  152      MAT=  1  AREA=  3.13        TTOP,TBOT=    0.0     0.0                        RECT SHELL  43
XC,YC,ZC=  16.2        4.09      0.000         PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000          MX,MY,MXY= -0.11599      -0.12164        0.35463      NX,NY=  0.11552      -0.98249E-01
TOP SX,SY,SXY,SZ= -1.2373       -1.2975        3.7827       0.00000         SIG1,SIG2,SIG3=  2.5154       0.59239E-10 -5.0502
 S.I.=  7.5657        SIGE=  6.6735
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000         SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  1.2373        1.2975       -3.7827       0.00000         SIG1,SIG2,SIG3=  5.0502       0.59306E-10 -2.5154
 S.I.=  7.5657        SIGE=  6.6735

EL=  247  NODES=  133  134  154  153      MAT=  1  AREA=  3.13        TTOP,TBOT=    0.0     0.0                        RECT SHELL  43
XC,YC,ZC=  18.2        4.09      0.000         PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000          MX,MY,MXY= -0.28206E-01 -0.96387E-01  0.44310      NX,NY= -0.45228E-02 -0.24323E-01
TOP SX,SY,SXY,SZ=-0.30087       -1.0281        4.7264       0.00000         SIG1,SIG2,SIG3=  4.0759       0.74164E-10 -5.4049
 S.I.=  9.4808        SIGE=  8.2374
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000         SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.30087        1.0281       -4.7264       0.00000         SIG1,SIG2,SIG3=  5.4049       0.74233E-10 -4.0759
 S.I.=  9.4808        SIGE=  8.2374

EL=  248  NODES=  134  135  155  154      MAT=  1  AREA=  3.13        TTOP,TBOT=    0.0     0.0                        RECT SHELL  43
XC,YC,ZC=  20.2        4.09      0.000         PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY=                               MX,MY,MXY=                              0.44340      NX,NY=  0.14587E-01 -0.41801E-01
```

```
 S.I.=  9.4848       SIGE=  8.2320
MID SX,SY,SXY,SZ= 0.00000     0.00000     0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.89645     0.19527    -4.7296      0.00000        SIG1,SIG2,SIG3=  5.2852     0.74347E-10 -4.1995
 S.I.=  9.4848       SIGE=  8.2320

EL=  249  NODES=  135  136  156  155     MAT=  1  AREA=  2.34       TTOP,TBOT=    0.0     0.0                          RECT SHELL  43
XC,YC,ZC=  22.0       4.09      0.000     PRS= 0.0000      0.0000      0.0000    0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.92509E-01  0.89219E-01  0.41665      NX,NY=  0.87399E-01 -0.49209E-01
TOP SX,SY,SXY,SZ=-0.98676     0.95167      4.4442      0.00000        SIG1,SIG2,SIG3=  4.5311     0.71241E-10 -4.5662
 S.I.=  9.0974       SIGE=  7.8786
MID SX,SY,SXY,SZ= 0.00000     0.00000     0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.98676    -0.95167     -4.4442      0.00000        SIG1,SIG2,SIG3=  4.5662     0.71302E-10 -4.5311
 S.I.=  9.0974       SIGE=  7.8786

EL=  250  NODES=  136  137  157  156     MAT=  1  AREA= 0.860       TTOP,TBOT=    0.0     0.0                          RECT SHELL  43
XC,YC,ZC=  23.0       4.09      0.000     PRS= 0.0000      0.0000      0.0000    0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.54885E-01  0.18542      0.39945      NX,NY=  0.14396     -0.26160E-01
TOP SX,SY,SXY,SZ=-0.58543     1.9778       4.2608      0.00000        SIG1,SIG2,SIG3=  5.1456     0.69649E-10 -3.7532
 S.I.=  8.8988       SIGE=  7.7380
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.58543    -1.9778      -4.2608      0.00000        SIG1,SIG2,SIG3=  3.7532     0.69636E-10 -5.1456
 S.I.=  8.8988       SIGE=  7.7380

EL=  251  NODES=  137  138  158  157     MAT=  1  AREA= 0.625       TTOP,TBOT=    0.0     0.0                          RECT SHELL  43
XC,YC,ZC=  23.5       4.09      0.000     PRS= 0.0000      0.0000      0.0000    0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.10264E-01  0.24100      0.39634      NX,NY=  0.18488      0.41119E-02
TOP SX,SY,SXY,SZ=-0.10948     2.5707       4.2277      0.00000        SIG1,SIG2,SIG3=  5.6656     0.69500E-10 -3.2044
 S.I.=  8.8700       SIGE=  7.7796
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.10948    -2.5707      -4.2277      0.00000        SIG1,SIG2,SIG3=  3.2044     0.69481E-10 -5.6656
 S.I.=  8.8700       SIGE=  7.7796

EL=  252  NODES=  138  139  159  158     MAT=  1  AREA= 0.625       TTOP,TBOT=    0.0     0.0                          RECT SHELL  43
XC,YC,ZC=  23.9       4.09      0.000     PRS= 0.0000      0.0000      0.0000    0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY=  0.22617E-01  0.29001      0.39632      NX,NY=  0.12893      0.21258E-01
TOP SX,SY,SXY,SZ= 0.24125     3.0934       4.2274      0.00000        SIG1,SIG2,SIG3=  6.1288     0.69950E-10 -2.7941
 S.I.=  8.9229       SIGE=  7.9053
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.24125    -3.0934      -4.2274      0.00000        SIG1,SIG2,SIG3=  2.7941     0.69860E-10 -6.1288
 S.I.=  8.9229       SIGE=  7.9053

EL=  253  NODES=  139  140  160  159     MAT=  1  AREA= 0.625       TTOP,TBOT=    0.0     0.0                          RECT SHELL  43
XC,YC,ZC=  24.3       4.09      0.000     PRS= 0.0000      0.0000      0.0000    0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY=  0.16540E-01  0.33040      0.39477      NX,NY=  0.53991E-02  0.30317E-01
TOP SX,SY,SXY,SZ= 0.17643     3.5243       4.2109      0.00000        SIG1,SIG2,SIG3=  6.3818     0.71001E-10 -2.6811
 S.I.=  9.0629       SIGE=  8.0638
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000     0.00000     0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.17643    -3.5243      -4.2109      0.00000        SIG1,SIG2,SIG3=  2.6811     0.71001E-10 -6.3818
 S.I.=  9.0629       SIGE=  8.0638

EL=  254  NODES=  121  321  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10

EL=  255  NODES=  122  322  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10

EL=  256  NODES=  123  323  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10

EL=  257  NODES=  124  324  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10

EL= [illegible]  NODES= [illegible]  MAT= [illegible]  TEMPS= [illegible]  FORC= [illegible]      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10
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```
EL=  259  NODES=  126  326  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10
EL=  260  NODES=  127  327  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000.     EP= 0.000000  STAT=  2    GAP  10.
EL=  261  NODES=  128  328  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10
EL=  262  NODES=  129  329  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10
EL=  263  NODES=  130  330  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10
EL=  264  NODES=  131  331  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10.
EL=  265  NODES=  132  332  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10
EL=  266  NODES=  133  333  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10
EL=  267  NODES=  134  334  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10
EL=  268  NODES=  135  335  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10
EL=  269  NODES=  136  336  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10
EL=  270  NODES=  137  337  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10
EL=  271  NODES=  138  338  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.76464E-01  SIG=-0.12234      EP=-0.000419  STAT=  1    GAP  10
EL=  272  NODES=  139  339  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.16860      SIG=-0.26976      EP=-0.000925  STAT=  1    GAP  10
EL=  273  NODES=  140  340  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.12939      SIG=-0.41405      EP=-0.001419  STAT=  1    GAP  10.

EL=  274  NODES=  141  142  162  161     MAT=  1  AREA= 0.625        TTOP,TBOT=     0.0     0.0                                RECT SHELL  43
XC,YC,ZC= 0.200        5.66      0.000        PRS= 0.0000      0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000          MX,MY,MXY= -0.18061E-01 -0.56693E-01  0.90467        NX,NY= -0.88410E-01  0.78806
TOP SX,SY,SXY,SZ=-0.19265     -0.60473       9.6498      0.00000          SI61,SI62,SI63=  9.2534      0.15101E-09 -10.051
 S.I.=  19.304       SIGE=  16.723
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000          SI61,SI62,SI63= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.19265      0.60473      -9.6498      0.00000          SI61,SI62,SI63=  10.051      0.15114E-09 -9.2534
 S.I.=  19.304       SIGE=  16.723

EL=  275  NODES=  142  143  163  162     MAT=  1  AREA= 0.625        TTOP,TBOT=     0.0.    0.0                                RECT SHELL  43
XC,YC,ZC= 0.600        5.66      0.000        PRS= 0.0000      0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000     0.00000          MX,MY,MXY= -0.35316E-01 -0.62293E-01  0.83413        NX,NY= -0.30700E-02  0.71136
TOP SX,SY,SXY,SZ=-0.37670     -0.66446       8.8974      0.00000.         SI61,SI62,SI63=  8.3780      0.13938E-09 -9.4192
 S.I.=  17.797       SIGE=  15.422
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000          SI61,SI62,SI63= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.37670      0.66446      -8.8974      0.00000.         SI61,SI62,SI63=  9.4192      0.13948E-09 -8.3780
 S.I.=  17.797       SIGE=  15.422

EL=  276  NODES=  143  144  164  163     MAT=  1  AREA= 0.625        TTOP,TBOT=     0.0     0.0                                RECT SHELL  43
XC,YC,ZC=  1.00        5.66      0.000        PRS= 0.0000      0.0000       0.0000.     0.0000.     0.0000      0.0000
TX,TY= 0.00000     0.00000          MX,MY,MXY= -0.38430E-01 -0.58129E-01  0.81658        NX,NY=  0.15074E-01  0.70276
TOP SX,SY,SXY,SZ=-0.40992     -0.62005       8.7101      0.00000          SI61,SI62,SI63=  8.1958      0.13644E-09 -9.2258
 S.I.=  17.422       SIGE=  15.096
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000          SI61,SI62,SI63= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.40992      0.62005      -8.7101      0.00000          SI61,SI62,SI63=  9.2258      0.13654E-09 -8.1958
 S.I.=  17.422       SIGE=  15.096

EL=  277  NODES=  144  145  165  164     MAT=  1  AREA= 0.859        TTOP,TBOT=     0.0     0.0                                RECT SHELL  43
XC,YC,ZC=  1.47        5.66      0.000        PRS= 0.0000      0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= [illegible]                  MX,MY,MXY= -0.58513E-01 -0.59750E-01  0.82207        NX,NY= -0.75689E-01  0.68237
TOP SX,SY,SXY,SZ=-0.[illegible]  [illegible]  8.7617  [illegible]          SI61,SI62,SI63=  8.1380      0.13728E-09 -9.3994
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```
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.62414      0.63733      -8.7687      0.00000        SIG1,SIG2,SIG3=  9.3994      0.13723E-09 -8.1380
 S.I.=  17.537       SIGE=  15.201

EL=  278  NODES=  145  146  166  165      MAT=  1  AREA=  2.34       TTOP,TBOT=     0.0     0.0                     RECT SHELL  43
XC,YC,ZC=  2.50        5.66      0.000      PRS= 0.0000      0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY= -0.95404E-01 -0.10420        0.86446      NX,NY= -0.53459E-01  0.58695
TOP SX,SY,SXY,SZ= -1.0176      -1.1115       9.2209      0.00000        SIG1,SIG2,SIG3=  8.1565      0.14430E-09 -10.286
 S.I.=  18.442       SIGE=  16.007
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=  1.0176       1.1115      -9.2209      0.00000        SIG1,SIG2,SIG3=  10.286      0.14437E-09 -8.1565
 S.I.=  18.442       SIGE=  16.007

EL=  279  NODES=  146  147  167  166      MAT=  1  AREA=  3.12       TTOP,TBOT=     0.0     0.0                     RECT SHELL  43
XC,YC,ZC=  4.25        5.66      0.000      PRS= 0.0000      0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY= -0.56273E-02 -0.19280        0.87298      NX,NY=  0.24952E-01  0.35557
TOP SX,SY,SXY,SZ=-0.60625E-01 -2.0565       9.3118      0.00000        SIG1,SIG2,SIG3=  8.3069      0.14675E-09 -10.423
 S.I.=  18.730       SIGE=  16.255
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.60625E-01  2.0565      -9.3118      0.00000        SIG1,SIG2,SIG3=  10.423      0.14673E-09 -8.3069
 S.I.=  18.730       SIGE=  16.255

EL=  280  NODES=  147  148  168  167      MAT=  1  AREA=  3.12       TTOP,TBOT=     0.0     0.0                     RECT SHELL  43
XC,YC,ZC=  6.25        5.66      0.000      PRS= 0.0000      0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY=  0.47867E-01 -0.24346        0.80088      NX,NY= -0.49919E-01  0.82399E-01
TOP SX,SY,SXY,SZ= 0.51058      -2.5969       8.5427      0.00000        SIG1,SIG2,SIG3=  7.6397      0.13608E-09 -9.7260
 S.I.=  17.366       SIGE=  15.075
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.51058       2.5969      -8.5427      0.00000        SIG1,SIG2,SIG3=  9.7260      0.13602E-09 -7.6397
 S.I.=  17.366       SIGE=  15.075

EL=  281  NODES=  148  149  169  168      MAT=  1  AREA=  3.12       TTOP,TBOT=     0.0     0.0                     RECT SHELL  43
XC,YC,ZC=  8.25        5.66      0.000      PRS= 0.0000      0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY= -0.52890E-01 -0.23154        0.50871      NX,NY=  0.20553     -0.31496
TOP SX,SY,SXY,SZ=-0.56416      -2.4698       5.4263      0.00000        SIG1,SIG2,SIG3=  3.9923      0.86216E-10 -7.0263
 S.I.=  11.019       SIGE=  9.6622
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.56416       2.4698      -5.4263      0.00000        SIG1,SIG2,SIG3=  7.0263      0.86255E-10 -3.9923
 S.I.=  11.019       SIGE=  9.6622

EL=  282  NODES=  149  150  170  169      MAT=  1  AREA=  3.12       TTOP,TBOT=     0.0     0.0                     RECT SHELL  43
XC,YC,ZC=  10.2        5.66      0.000      PRS= 0.0000      0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY=  0.10759     -0.15810        0.85038      NX,NY=  -1.6039     -0.29732
TOP SX,SY,SXY,SZ=  1.1476      -1.6864       9.0707      0.00000        SIG1,SIG2,SIG3=  8.9114      0.14376E-09 -9.4501
 S.I.=  18.361       SIGE=  15.904
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.1476       1.6864      -9.0707      0.00000        SIG1,SIG2,SIG3=  9.4501      0.14394E-09 -8.9114
 S.I.=  18.361       SIGE=  15.904

EL=  283  NODES=  150  151  171  170      MAT=  1  AREA=  3.12       TTOP,TBOT=     0.0     0.0                     RECT SHELL  43
XC,YC,ZC=  12.2        5.66      0.000      PRS= 0.0000      0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY=  0.29104E-02 -0.16677        1.4455      NX,NY=  -3.7479     -0.32097E-01
TOP SX,SY,SXY,SZ= 0.31044E-01 -1.7789       15.418      0.00000        SIG1,SIG2,SIG3=  14.571      0.24194E-09 -16.319
 S.I.=  30.89[illegible]     SIGE=  26.766
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.31044E-01  1.7789      -15.418      0.00000        SIG1,SIG2,SIG3=  16.319      0.24207E-09 -14.571
 S.I.=  3[illegible]  SIGE=  26.765

EL=  [illegible]  NODES=  [illegible]      MAT=  [illegible]  AREA=  [illegible]       TTOP,TBOT=     0.0     0.0                     RECT SHELL  43
```

```
TX,TY= 0.00000     0.00000     MX,MY,MXY= -0.91547E-01 -0.18365      0.77989      NX,NY=  -1.6025      0.24108
TOP SX,SY,SXY,SZ=-6.97650     -1.9525      8.3188      0.00000      SIG1,SIG2,SIG3=  6.8686      0.13042E-09 -9.7977
 S.I.=  16.666        SIGE=  14.508
MID SX,SY,SXY,SZ= 0.00000      0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000     0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 6.97650      1.9525     -8.3188      0.00000      SIG1,SIG2,SIG3=  9.7977      0.13045E-09 -6.8686
 S.I.=  16.666        SIGE=  14.508

EL=  285  NODES=  152  153  173  172      MAT=  1   AREA=  3.12        TTOP,TBOT=    0.0    0.0                     RECT SHELL  43
XC,YC,ZC=  16.2       5.66       0.000      PRS= 0.0000      0.0000     0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY=  0.88760E-01 -0.12929        0.34189     NX,NY=  0.20088      0.29669
TOP SX,SY,SXY,SZ= 0.94678     -1.3791      3.6469      0.00000      SIG1,SIG2,SIG3=  3.6116      0.59933E-10 -4.0440
 S.I.=  7.6556        SIGE=  6.6335
MID SX,SY,SXY,SZ= 0.00000      0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000     0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ=-0.94678      1.3791     -3.6469      0.00000      SIG1,SIG2,SIG3=  4.0440      0.59895E-10 -3.6116
 S.I.=  7.6556        SIGE=  6.6335

EL=  286  NODES=  153  154  174  173      MAT=  1   AREA=  3.12        TTOP,TBOT=    0.0    0.0                     RECT SHELL  43
XC,YC,ZC=  18.2       5.66       0.000      PRS= 0.0000      0.0000     0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY= -0.31855E-01 -0.12818        0.50518     NX,NY= -0.79474E-01  0.10309E-02
TOP SX,SY,SXY,SZ=-0.33979     -1.3673      5.3886      0.00000      SIG1,SIG2,SIG3=  4.5595      0.84856E-10 -6.2665
 S.I.=  10.826        SIGE=  9.4144
MID SX,SY,SXY,SZ= 0.00000      0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000     0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.33979      1.3673     -5.3886      0.00000      SIG1,SIG2,SIG3=  6.2665      0.84775E-10 -4.5595
 S.I.=  10.826        SIGE=  9.4144

EL=  287  NODES=  154  155  175  174      MAT=  1   AREA=  3.12        TTOP,TBOT=    0.0    0.0                     RECT SHELL  43
XC,YC,ZC=  20.2       5.66       0.000      PRS= 0.0000      0.0000     0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY= -0.11502     -0.12349        0.48115     NX,NY= -0.15118E-01 -0.95571E-01
TOP SX,SY,SXY,SZ= -1.2269     -1.3172      5.1322      0.00000      SIG1,SIG2,SIG3=  3.8604      0.80300E-10 -6.4045
 S.I.=  10.265        SIGE=  8.9802
MID SX,SY,SXY,SZ= 0.00000      0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000     0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  1.2269      1.3172     -5.1322      0.00000      SIG1,SIG2,SIG3=  6.4045      0.80364E-10 -3.8604
 S.I.=  10.265        SIGE=  8.9802

EL=  288  NODES=  155  156  176  175      MAT=  1   AREA=  2.34        TTOP,TBOT=    0.0    0.0                     RECT SHELL  43
XC,YC,ZC=  22.0       5.66       0.000      PRS= 0.0000      0.0000     0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY= -0.13988     -0.71314E-01  0.52012      NX,NY=  0.49739E-01 -0.16465
TOP SX,SY,SXY,SZ= -1.4921     -0.76068     5.5479      0.00000      SIG1,SIG2,SIG3=  4.4336      0.87070E-10 -6.6864
 S.I.=  11.120        SIGE=  9.6958
MID SX,SY,SXY,SZ= 0.00000      0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000     0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  1.4921      0.76068    -5.5479      0.00000      SIG1,SIG2,SIG3=  6.6864      0.87169E-10 -4.4336
 S.I.=  11.120        SIGE=  9.6958

EL=  289  NODES=  156  157  177  176      MAT=  1   AREA= 0.859        TTOP,TBOT=    0.0    0.0                     RECT SHELL  43
XC,YC,ZC=  23.0       5.66       0.000      PRS= 0.0000      0.0000     0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY= -0.12224      0.18620E-01  0.51971      NX,NY=  0.19753      -0.20627
TOP SX,SY,SXY,SZ= -1.3039      0.19862     5.5436      0.00000      SIG1,SIG2,SIG3=  5.0416      0.87585E-10 -6.1469
 S.I.=  11.189        SIGE=  9.7053
MID SX,SY,SXY,SZ= 0.00000      0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000     0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  1.3039     -0.19862    -5.5436      0.00000      SIG1,SIG2,SIG3=  6.1469      0.87543E-10 -5.0416
 S.I.=  11.189        SIGE=  9.7053

EL=  290  NODES=  157  158  178  177      MAT=  1   AREA= 0.625        TTOP,TBOT=    0.0    0.0                     RECT SHELL  43
XC,YC,ZC=  23.5       5.66       0.000      PRS= 0.0000      0.0000     0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY= -0.53531E-01  0.90953E-01  0.51875      NX,NY=  0.27525      -0.18141
TOP SX,SY,SXY,SZ=-0.57100      .97016      5.5333      0.00000      SIG1,SIG2,SIG3=  5.7863      0.87519E-10 -5.3871
 S.I.=  11.173        SIGE=  9.6785
MID SX,SY,SXY,SZ= 0.00000      0.00000     0.00000     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000     0.00000
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 S.I.=  11.172      SIGE=  9.6785

EL=  291  NODES=  158  159  179  178      MAT=  1  AREA= 0.625          TTOP,TBOT=     0.0     0.0                        RECT SHELL  43
XC,YC,ZC=  23.9       5.66      0.000         PRS= 0.0000      0.0000      0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  0.13504E-01  0.15085        0.53085       NX,NY=  0.21351      -0.14946
TOP SX,SY,SXY,SZ= 0.14404      1.6091       5.6623       0.00000        SIG1,SIG2,SIG3=  6.5861       0.89431E-10 -4.8330
 S.I.=  11.419      SIGE=  9.9280
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.14404     -1.6091      -5.6623       0.00000        SIG1,SIG2,SIG3=  4.8330       0.89489E-10 -6.5861
 S.I.=  11.419      SIGE=  9.9280

EL=  292  NODES=  159  160  180  179      MAT=  1  AREA= 0.625          TTOP,TBOT=     0.0     0.0                        RECT SHELL  43
XC,YC,ZC=  24.3       5.66      0.000         PRS= 0.0000      0.0000      0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  0.18269E-01  0.18245        0.56525       NX,NY= -0.85564E-01 -0.19194
TOP SX,SY,SXY,SZ= 0.19487      1.9461       6.0293       0.00000        SIG1,SIG2,SIG3=  7.1631       0.95401E-10 -5.0221
 S.I.=  12.185      SIGE=  10.607
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=-0.19487     -1.9461      -6.0293       0.00000        SIG1,SIG2,SIG3=  5.0221       0.95324E-10 -7.1631
 S.I.=  12.185      SIGE=  10.607

EL=  293  NODES=  141  341  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  294  NODES=  142  342  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  295  NODES=  143  343  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  296  NODES=  144  344  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  297  NODES=  145  345  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  298  NODES=  146  346  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  299  NODES=  147  347  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  300  NODES=  148  348  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  301  NODES=  149  349  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  302  NODES=  150  350  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  303  NODES=  151  351  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  304  NODES=  152  352  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  305  NODES=  153  353  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  306  NODES=  154  354  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  307  NODES=  155  355  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  308  NODES=  156  356  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  309  NODES=  157  357  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.11913E-01  SIG=-0.16051E-01  EP=-0.000055  STAT=  1    GAP  10
EL=  310  NODES=  158  358  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.16214      SIG=-0.25942      EP=-0.000889  STAT=  1    GAP  10
EL=  311  NODES=  159  359  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.31218      SIG=-0.49950      EP=-0.001712  STAT=  1    GAP  10
EL=  312  NODES=  160  360  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.23010      SIG=-0.73631      EP=-0.002524  STAT=  1    GAP  10

EL=  313  NODES=  161  162  182  181      MAT=  1  AREA= 0.625          TTOP,TBOT=     0.0     0.0                        RECT SHELL  43
XC,YC,ZC= [illegible]      7.[illegible]                PRS= [illegible]      [illegible]      0.0000     0.0000      0.0000      0.0000
TX,TY= [illegible]                 MX,MY,MXY= [illegible]         [illegible]        0.54662       NX,NY=  0.62251      1.0829
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S.I.= 19.372       SIGE= 18.838
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.7670    -15.368     -5.8973     0.00000        SIG1,SIG2,SIG3=  1.1186      0.15176E-09 -18.254
 S.I.= 19.372       SIGE= 18.838

EL= 314  NODES=  162  163  183  182      MAT=  1  AREA= 0.625       TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC= 0.600       7.22       0.000          PRS= 0.0000         0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000          MX,MY,MXY=  0.38250         1.3819         0.63727      NX,NY= -0.38832E-02   1.1697
TOP SX,SY,SXY,SZ=  4.0803      14.741       6.7976     0.00000        SIG1,SIG2,SIG3=  18.049      0.77204     -0.67661E-10
 S.I.= 18.049       SIGE=  17.675
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -4.0803    -14.741     -6.7976     0.00000        SIG1,SIG2,SIG3=-0.26185E-13-0.77204      -18.049
 S.I.= 18.049       SIGE=  17.675

EL= 315  NODES=  163  164  184  183      MAT=  1  AREA= 0.625       TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  1.00       7.22       0.000          PRS= 0.0000         0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000          MX,MY,MXY=  0.42014         1.2631         0.66615      NX,NY= -0.30672       1.0577
TOP SX,SY,SXY,SZ=  4.4815      13.473       7.1056     0.00000        SIG1,SIG2,SIG3=  17.386      0.56891     -0.65362E-10
 S.I.= 17.386       SIGE=  17.108
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -4.4815    -13.473     -7.1056     0.00000        SIG1,SIG2,SIG3=-0.45473E-12-0.56891      -17.386
 S.I.= 17.386       SIGE=  17.108

EL= 316  NODES=  164  165  185  184      MAT=  1  AREA= 0.860       TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  1.47       7.22       0.000          PRS= 0.0000         0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000          MX,MY,MXY=  0.36843         1.0900         0.69317      NX,NY= -0.40177       0.84999
TOP SX,SY,SXY,SZ=  3.9299      11.627       7.3938     0.00000        SIG1,SIG2,SIG3=  16.114      0.13036E-09-0.55703
 S.I.= 16.671       SIGE=  16.399
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.9299    -11.627     -7.3938     0.00000        SIG1,SIG2,SIG3= 0.55703      0.13086E-09 -16.114
 S.I.= 16.671       SIGE=  16.399

EL= 317  NODES=  165  166  186  185      MAT=  1  AREA=  2.34       TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  2.50       7.22       0.000          PRS= 0.0000         0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000          MX,MY,MXY=  0.20856         0.74906        0.70944      NX,NY= -0.35832       0.51822
TOP SX,SY,SXY,SZ=  2.2246      7.9900       7.5674     0.00000        SIG1,SIG2,SIG3=  13.205      0.12686E-09 -2.9906
 S.I.= 16.196       SIGE=  14.927
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -2.2246    -7.9900     -7.5674     0.00000        SIG1,SIG2,SIG3=  2.9906      0.12691E-09 -13.205
 S.I.= 16.196       SIGE=  14.927

EL= 318  NODES=  166  167  187  186      MAT=  1  AREA=  3.13       TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  4.25       7.22       0.000          PRS= 0.0000         0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000          MX,MY,MXY=  0.12737         0.34123        0.69334      NX,NY= -0.11529       0.29949
TOP SX,SY,SXY,SZ=  1.3586      3.6398       7.3956     0.00000        SIG1,SIG2,SIG3=  9.9823      0.11723E-09 -4.9839
 S.I.= 14.966       SIGE=  13.200
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.3586    -3.6398     -7.3956     0.00000        SIG1,SIG2,SIG3=  4.9839      0.11726E-09 -9.9823
 S.I.= 14.966       SIGE=  13.200

EL= 319  NODES=  167  168  188  187      MAT=  1  AREA=  3.13       TTOP,TBOT=    0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  6.25       7.22       0.000          PRS= 0.0000         0.0000       0.0000      0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000          MX,MY,MXY=  0.13342         0.17222E-01   0.69588      NX,NY= -0.11840       0.25269
TOP SX,SY,SXY,SZ=  1.4231      1.1837       7.4228     0.00000        SIG1,SIG2,SIG3=  8.2520      0.11670E-09 -6.6452
 S.I.= 14.897       SIGE=  12.926
MID SX,SY,SXY,SZ= 0.00000    0.00000     0.00000     0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -1.4231    -1.1837     -7.4228     0.00000        SIG1,SIG2,SIG3=  6.6452      0.11671E-09 -8.2520
 S.I.= [illegible]  SIGE= [illegible]
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                                                                                                   RECT SHELL  43
EL=  320  NODES=  168  169  189  188     MAT=  1  AREA=  3.13          TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  8.25       7.22      0.000        PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  -1.1147       -0.47079        0.78757     NX,NY=  -1.4425     -0.99240
TOP SX,SY,SXY,SZ= -11.890      -5.0217       8.4007       0.00000       SIG1,SIG2,SIG3= 0.61961      0.14251E-09 -17.532
 S.I.=  18.151      SIGE=  17.850
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  11.890      5.0217       -8.4007       0.00000       SIG1,SIG2,SIG3=  17.532      0.14191E-09-0.61961
 S.I.=  18.151      SIGE=  17.850
                                                                                                   RECT SHELL  43
EL=  321  NODES=  169  170  190  189     MAT=  1  AREA=  3.13          TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  10.2       7.22      0.000        PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=   5.3858        1.5420        -1.4679     NX,NY=   9.3498       7.1911
TOP SX,SY,SXY,SZ=  57.449      16.448       -15.657       0.00000       SIG1,SIG2,SIG3=  62.744      11.152     -0.20155E-09
 S.I.=  62.744      SIGE=  57.978
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -57.449     -16.448        15.657       0.00000       SIG1,SIG2,SIG3=-0.61230E-12 -11.152      -62.744
 S.I.=  62.744      SIGE=  57.978
                                                                                                   RECT SHELL  43
EL=  322  NODES=  170  171  191  190     MAT=  1  AREA=  3.13          TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  12.2       7.22      0.000        PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.38651E-01 -0.19106       -3.7922     NX,NY=   21.315     -0.34078E-01
TOP SX,SY,SXY,SZ=-0.41228      -2.0380      -40.450       0.00000       SIG1,SIG2,SIG3=  39.233      0.63369E-09 -41.683
 S.I.=  80.916      SIGE=  70.086
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= 0.41228      2.0380        40.450       0.00000       SIG1,SIG2,SIG3=  41.683      0.63415E-09 -39.233
 S.I.=  80.916      SIGE=  70.086
                                                                                                   RECT SHELL  43
EL=  323  NODES=  171  172  192  191     MAT=  1  AREA=  3.13          TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  14.2       7.22      0.000        PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  -5.4567       -1.9132        -1.5383     NX,NY=   9.3614      -7.2544
TOP SX,SY,SXY,SZ= -58.205     -20.408       -16.409       0.00000       SIG1,SIG2,SIG3=-0.10339E-12 -14.278      -64.335
 S.I.=  64.325      SIGE=  58.517
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  58.205      20.408        16.409       0.00000       SIG1,SIG2,SIG3=  64.335      14.278     -0.19583E-09
 S.I.=  64.335      SIGE=  58.517
                                                                                                   RECT SHELL  43
EL=  324  NODES=  172  173  193  192     MAT=  1  AREA=  3.13          TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  16.2       7.22      0.000        PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=   1.0657        0.15458        0.63623     NX,NY=  -1.3984       0.96430
TOP SX,SY,SXY,SZ=  11.367      1.6488        6.7864       0.00000       SIG1,SIG2,SIG3=  14.855      0.13078E-09 -1.8387
 S.I.=  16.693      SIGE=  15.854
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ= -11.367     -1.6488       -6.7864       0.00000       SIG1,SIG2,SIG3=  1.8387      0.13078E-09 -14.855
 S.I.=  16.693      SIGE=  15.854
                                                                                                   RECT SHELL  43
EL=  325  NODES=  173  174  194  193     MAT=  1  AREA=  3.13          TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  18.2       7.22      0.000        PRS= 0.0000       0.0000       0.0000     0.0000      0.0060      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.15088       -0.18885        0.46266     NX,NY= -0.24542E-01 -0.17204
TOP SX,SY,SXY,SZ= -1.6094     -2.0144        4.9350       0.00000       SIG1,SIG2,SIG3=  3.1273      0.77398E-10 -6.7511
 S.I.=  9.8784      SIGE=  8.7447
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  1.6094      2.0144       -4.9350       0.00000       SIG1,SIG2,SIG3=  6.7511      0.77381E-10 -3.1273
 S.I.=  9.8784      SIGE=  8.7447
                                                                                                   RECT SHELL  43
EL=  326  NODES=  174  175  195  194     MAT=  1  AREA=  3.13          TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  20.2       7.22      0.000        PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -.13339        -0.27966        0.43718     NX,NY= -0.26448E-02 -0.66154E-01
TOP SX,SY,SXY,SZ= -1.4334     -2.[illegible]        4.[illegible]                   SIG1,SIG2,SIG3=  2.5130      0.74923E-10 -6.9354
 S.I.=  [illegible]      SIGE=  [illegible]
```

```
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  1.4334      2.9830      -4.6633      0.00000       SIG1,SIG2,SIG3=  6.9354      0.73965E-10 -2.5190
 S.I.=  9.4544        SIGE=  8.4803

EL=  327  NODES=  175  176  196  195      MAT=  1  AREA=  2.34          TTOP,TBOT=     0.0     0.0                          RECT SHELL  43
XC,YC,ZC=  22.0        7.22       0.000          PRS= 0.0000         0.0000        0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000       0.00000          MX,MY,MXY= -0.20587        -0.46246          0.53036        NX,NY= -0.25971       -0.24540
TOP SX,SY,SXY,SZ= -2.1959      -4.9329       5.6572       0.00000       SIG1,SIG2,SIG3=  2.2560      0.91177E-10 -9.3848
 S.I.=  11.641        SIGE=  10.693
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  2.1959       4.9329      -5.6572       0.00000       SIG1,SIG2,SIG3=  9.3848      0.91237E-10 -2.2560
 S.I.=  11.641        SIGE=  10.693

EL=  328  NODES=  176  177  197  196      MAT=  1  AREA= 0.860          TTOP,TBOT=     0.0     0.0                          RECT SHELL  43
XC,YC,ZC=  23.0        7.22       0.000          PRS= 0.0000         0.0000        0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000       0.00000          MX,MY,MXY= -0.32827        -0.67836          0.57314        NX,NY= -0.26594       -0.66476
TOP SX,SY,SXY,SZ= -3.5016      -7.2359       6.1135       0.00000       SIG1,SIG2,SIG3=  1.0236      0.10015E-09 -11.761
 S.I.=  12.785        SIGE=  12.305
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  3.5016       7.2359      -6.1135       0.00000       SIG1,SIG2,SIG3=  11.761      0.10018E-09 -1.0236
 S.I.=  12.785        SIGE=  12.305

EL=  329  NODES=  177  178  198  197      MAT=  1  AREA= 0.625          TTOP,TBOT=     0.0     0.0                          RECT SHELL  43
XC,YC,ZC=  23.5        7.22       0.000          PRS= 0.0000         0.0000        0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000       0.00000          MX,MY,MXY= -0.34680.       -0.79786          0.56855        NX,NY= -0.16719       -0.99634
TOP SX,SY,SXY,SZ= -3.6992      -8.5106       6.0646       0.00000       SIG1,SIG2,SIG3= 0.41941       0.10227E-09 -12.629
 S.I.=  13.049        SIGE=  12.844
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  3.6992       8.5106      -6.0646       0.00000       SIG1,SIG2,SIG3=  12.629      0.10197E-09-0.41941
 S.I.=  13.049        SIGE=  12.844

EL=  330  NODES=  178  179  199  198      MAT=  1  AREA= 0.625          TTOP,TBOT=     0.0     0.0                          RECT SHELL  43
XC,YC,ZC=  23.9        7.22       0.000          PRS= 0.0000         0.0000        0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000       0.00000          MX,MY,MXY= -0.30043        -0.87908          0.54816        NX,NY=  0.33980E-01  -1.2288
TOP SX,SY,SXY,SZ= -3.2045      -9.3769       5.8470       0.00000       SIG1,SIG2,SIG3= 0.32080       0.10369E-09 -12.902
 S.I.=  13.223        SIGE=  13.066
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  3.2045       9.3769      -5.8470       0.00000       SIG1,SIG2,SIG3=  12.902      0.10330E-09-0.32080
 S.I.=  13.223        SIGE=  13.066

EL=  331  NODES=  179  180  200  199      MAT=  1  AREA= 0.625          TTOP,TBOT=     0.0     0.0                          RECT SHELL  43
XC,YC,ZC=  24.3        7.22       0.000          PRS= 0.0000         0.0000        0.0000       0.0000       0.0000       0.0000
TX,TY= 0.00000       0.00000          MX,MY,MXY= -0.12636        -0.91437          0.56490        NX,NY=  0.50989       -1.2371
TOP SX,SY,SXY,SZ= -1.3478      -9.7532       6.0257       0.00000       SIG1,SIG2,SIG3=  1.7960      0.11497E-09 -12.897
 S.I.=  14.693        SIGE=  13.882
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ=  1.3478       9.7532      -6.0257       0.00000       SIG1,SIG2,SIG3=  12.897      0.11499E-09 -1.7960
 S.I.=  14.693        SIGE=  13.882

EL=  332  NODES=  161  361  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10

EL=  333  NODES=  162  362  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10

EL=  334  NODES=  163  363  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10

EL=  335  NODES=  164  364  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10

EL=  336  NODES=  165  365  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10

EL=  337  NODES=  [illegible]  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10
```

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EL=  338  NODES=  167  367  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  339  NODES=  168  368  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  340  NODES=  169  369  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  341  NODES=  170  370  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  342  NODES=  171  371  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  343  NODES=  172  372  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  344  NODES=  173  373  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  345  NODES=  174  374  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  346  NODES=  175  375  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  347  NODES=  176  376  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  348  NODES=  177  377  MAT=  2  TEMPS=  0.0  0.0  FORC=-0.13736      SIG=-0.18507    EP=-0.000634  STAT=  1  GAP  10
EL=  349  NODES=  178  378  MAT=  2  TEMPS=  0.0  0.0  FORC=-0.34348      SIG=-0.54944    EP=-0.001884  STAT=  1  GAP  10
EL=  350  NODES=  179  379  MAT=  2  TEMPS=  0.0  0.0  FORC=-0.57005      SIG=-0.91208    EP=-0.003127  STAT=  1  GAP  10
EL=  351  NODES=  180  380  MAT=  2  TEMPS=  0.0  0.0  FORC=-0.39862      SIG= -1.2756    EP=-0.004373  STAT=  1  GAP  10
EL=  352  NODES=  181  381  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  353  NODES=  182  382  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  354  NODES=  183  383  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  355  NODES=  184  384  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  356  NODES=  185  385  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  357  NODES=  186  386  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  358  NODES=  187  387  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  359  NODES=  188  388  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  360  NODES=  189  389  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  361  NODES=  190  390  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  362  NODES=  191  391  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  363  NODES=  192  392  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  364  NODES=  193  393  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  365  NODES=  194  394  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  366  NODES=  195  395  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  367  NODES=  196  396  MAT=  2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000    EP= 0.000000  STAT=  2  GAP  10
EL=  368  NODES=  197  397  MAT=  2  TEMPS=  0.0  0.0  FORC=-0.78585E-01  SIG=-0.21176    EP=-0.000726  STAT=  1  GAP  10
EL=  369  NODES=  198  398  MAT=  2  TEMPS=  0.0  0.0  FORC=-0.21828      SIG=-0.69849    EP=-0.002395  STAT=  1  GAP  10
[illegible]  NODES= [illegible]  MAT= [illegible]  TEMPS= [illegible]  FORC= [illegible] .3687  SIG= -1.1798    EP=-0.004045  STAT=  1  GAP  10
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EL=  371  NODES=  200  400  MAT=  2  TEMPS=     0.0     0.0  FORC=-0.25994      SIG= -1.6642       EP=-0.005705  STAT=  1   GAP  10
EL=  372  NODES=  105  305  MAT=  3  TEMPS=     0.0     0.0  FORC=  14.456      SIG=  119.77       EP= 0.004130  STAT=  1  CABLE  10
EL=  373  NODES=  116  316  MAT=  3  TEMPS=     0.0     0.0  FORC= 0.51187      SIG=  4.2408       EP= 0.000146  STAT=  1  CABLE  10
EL=  374  NODES=  181  182  582  581      MAT=  4  AREA=  2.40      TTOP,TBOT=     0.0     0.0                        QUAD SHELL  63
XC,YC,ZC= 0.2000       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY=  0.53743E-01  0.41008        0.38463
TOP  SX,SY,SXY,SZ= 0.73863       6.4817        4.2488       0.00000       SIG1,SIG2,SIG3=  8.7384       0.80275E-10 -1.5180
     S.I.=   10.256      SIGE=  5.5879
MID  SX,SY,SXY,SZ= 0.16537       2.1076        0.14608      0.00000       SIG1,SIG2,SIG3=  2.1185       0.15445     -0.76710E-11
     S.I.=   2.1185      SIGE=  2.0457
BOT  SX,SY,SXY,SZ=-0.40789      -2.2666       -3.9566       0.00000       SIG1,SIG2,SIG3=  2.7271       0.63618E-10 -5.4016
     S.I.=   8.1287      SIGE=  7.1655
EL=  375  NODES=  182  183  583  582      MAT=  4  AREA=  2.40      TTOP,TBOT=     0.0     0.0                        QUAD SHELL  63
XC,YC,ZC= 0.6000       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY=  0.12703       0.43145       0.38217
TOP  SX,SY,SXY,SZ=  1.5045       6.1397        4.4670       0.00000       SIG1,SIG2,SIG3=  8.8545       0.78755E-10 -1.2103
     S.I.=   10.065      SIGE=  9.5176
MID  SX,SY,SXY,SZ= 0.14945       1.5376        0.39050      0.00000       SIG1,SIG2,SIG3=  1.6399       0.47144E-01-0.61974E-11
     S.I.=   1.6399      SIGE=  1.6168
BOT  SX,SY,SXY,SZ= -1.2056      -3.0645       -3.6860       0.00000       SIG1,SIG2,SIG3=  1.6663       0.59577E-10 -5.9364
     S.I.=   7.6027      SIGE=  6.9217
EL=  376  NODES=  183  184  584  583      MAT=  4  AREA=  2.40      TTOP,TBOT=     0.0     0.0                        QUAD SHELL  63
XC,YC,ZC=  1.000       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY=  0.16575       0.44221       0.38352
TOP  SX,SY,SXY,SZ=  1.9241       5.7114        4.6484       0.00000       SIG1,SIG2,SIG3=  8.8370       0.78678E-10 -1.2015
     S.I.=   10.039      SIGE=  9.4950
MID  SX,SY,SXY,SZ= 0.15611       0.99440       0.55745      0.00000       SIG1,SIG2,SIG3=  1.2727       0.10913E-10-0.12219
     S.I.=   1.3949      SIGE=  1.3380
BOT  SX,SY,SXY,SZ= -1.6119      -3.7226       -3.5335       0.00000       SIG1,SIG2,SIG3=  1.0205       0.57774E-10 -6.3549
     S.I.=   7.3754      SIGE=  6.9218
EL=  377  NODES=  184  185  585  584      MAT=  4  AREA=  3.30      TTOP,TBOT=     0.0     0.0                        QUAD SHELL  63
XC,YC,ZC=  1.475       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY=  0.20528       0.45197       0.38893
TOP  SX,SY,SXY,SZ=  2.3911       5.4250        4.8278       0.00000       SIG1,SIG2,SIG3=  8.9686       0.79310E-10 -1.1525
     S.I.=   10.121      SIGE=  9.5969
MID  SX,SY,SXY,SZ= 0.20140       0.60395       0.67926      0.00000       SIG1,SIG2,SIG3=  1.1111       0.11091E-10-0.30578
     S.I.=   1.4169      SIGE=  1.2915
BOT  SX,SY,SXY,SZ= -1.9883      -4.2171       -3.4693       0.00000       SIG1,SIG2,SIG3= 0.54123       0.57074E-10 -6.7466
     S.I.=   7.2878      SIGE=  7.0329
EL=  378  NODES=  185  186  586  585      MAT=  4  AREA   9.00      TTOP,TBOT=     0.0     0.0                        QUAD SHELL  63
XC,YC,ZC=  2.500       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY=  0.21713       0.42448       0.40535
TOP  SX,SY,SXY,SZ=  2.7013       4.8857        5.1532       0.00000       SIG1,SIG2,SIG3=  9.0612       0.82450E-10 -1.4742
     S.I.=   10.535      SIGE=  9.8811
MID  SX,SY,SXY,SZ= 0.38518       0.35795       0.82950      0.00000       SIG1,SIG2,SIG3=  1.2012       0.12993E-10-0.45805
     S.I.=   1.6592      SIGE=  1.4842
BOT  SX,SY,SXY,SZ= -1.9309      -4.1698       -3.4942       0.00000       SIG1,SIG2,SIG3= 0.61878       0.57450E-10 -6.7195
     S.I.=   7.3383      SIGE=  7.0493
EL=  379  NODES=  186  187  587  586      MAT=  4  AREA=  12.0      TTOP,TBOT=     0.0     0.0                        QUAD SHELL  63
XC,YC,ZC=  4.250       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY=  0.17610       0.32392       0.44248
TOP  SX,SY,SXY,SZ=  2.6218       2.4008        5.6537       0.00000       SIG1,SIG2,SIG3=  8.6784       0.88679E-10 -2.6558
     S.I.=   11.324      SIGE=  10.267
MID  SX,SY,SXY,SZ= 0.74336      -0.53246E-01 0.93394       0.00000       SIG1,SIG2,SIG3=  1.3694       0.15890E-10-0.67027
     S.I.=   2.0397      SIGE=  1.7721
BOT  SX,SY,SXY,SZ= -1.135       -3.[illegible]  -3.7[illegible]     0.00000       SIG1,SIG2,SIG3=  1.6461       0.62038E-10 -6.2884
     S.I.=   7.[illegible]   SIGE=  7.[illegible]
```

```
EL=  380  NODES=  187  188  588  587      MAT=  4  AREA=  12.0      TTOP,TBOT=    0.0    0.0                          QUAD SHELL  63
XC,YC,ZC=  6.250      8.000      3.000       PRESS= 0.00000      0.00000
MX,MY,MXY=  0.10227     0.19069      0.47712
TOP SX,SY,SXY,SZ=  2.4065      2.9851       6.1432      0.00000      SIG1,SIG2,SIG3=  8.8459     0.96423E-10 -3.4542
    S.I.=   12.300      SIGE=  10.988
MID SX,SY,SXY,SZ=  1.3157      0.95110      1.0539      0.00000      SIG1,SIG2,SIG3=  2.2030     0.63790E-01-0.83527E-11
    S.I.=   2.2030      SIGE=  2.1718
BOT SX,SY,SXY,SZ= 0.22478     -1.0829      -4.0353      0.00000      SIG1,SIG2,SIG3=  3.6589     0.64000E-10 -4.5170
    S.I.=   8.1759      SIGE=  7.0936

EL=  381  NODES=  188  189  589  588      MAT=  4  AREA=  12.0      TTOP,TBOT=    0.0    0.0                          QUAD SHELL  63
XC,YC,ZC=  8.250      8.000      3.000       PRESS= 0.00000      0.00000
MX,MY,MXY=  0.35646E-01  0.86936E-01  0.49167
TOP SX,SY,SXY,SZ=  2.1150     -0.70906      6.6432      0.00000      SIG1,SIG2,SIG3=  7.4946     0.10634E-09 -6.0887
    S.I.=   13.583      SIGE=  11.784
MID SX,SY,SXY,SZ=  1.7348     -1.6364       1.3988      0.00000      SIG1,SIG2,SIG3=  2.2396     0.34317E-10 -2.1412
    S.I.=   4.3808      SIGE=  3.7942
BOT SX,SY,SXY,SZ=  1.3546     -2.5637      -3.8457      0.00000      SIG1,SIG2,SIG3=  3.7114     0.67582E-10 -4.9205
    S.I.=   8.6319      SIGE=  7.4998

EL=  382  NODES=  189  190  590  589      MAT=  4  AREA=  12.0      TTOP,TBOT=    0.0    0.0                          QUAD SHELL  63
XC,YC,ZC=  10.25      8.000      3.000       PRESS= 0.00000      0.00000
MX,MY,MXY= -0.93747E-02  0.17098E-01  0.49069
TOP SX,SY,SXY,SZ=  1.1417     -6.7921       3.4645      0.00000      SIG1,SIG2,SIG3=  2.4416     0.82406E-10 -8.0920
    S.I.=   10.534      SIGE=  9.5498
MID SX,SY,SXY,SZ=  1.2417     -6.9745      -1.7696      0.00000      SIG1,SIG2,SIG3=  1.6066     0.70111E-10 -7.3394
    S.I.=   8.9461      SIGE=  8.2608
BOT SX,SY,SXY,SZ=  1.3417     -7.1569      -7.0036      0.00000      SIG1,SIG2,SIG3=  5.2843     0.12842E-09 -11.099
    S.I.=   16.384      SIGE=  14.484

EL=  383  NODES=  190  191  591  590      MAT=  4  AREA=  12.0      TTOP,TBOT=    0.0    0.0                          QUAD SHELL  63
XC,YC,ZC=  12.25      8.000      3.000       PRESS= 0.00000      0.00000
MX,MY,MXY= -0.62282E-01 -0.55694E-01  0.47804
TOP SX,SY,SXY,SZ=-0.64355     -0.62822     -0.97174E-01 0.00000      SIG1,SIG2,SIG3=-0.68590E-14-0.53841     -0.73336
    S.I.=   0.73336     SIGE= 0.65791
MID SX,SY,SXY,SZ= 0.20790E-01-0.34150E-01 -5.1963      0.00000      SIG1,SIG2,SIG3=  5.1897     0.81407E-10 -5.2030
    S.I.=   10.393      SIGE=  9.0003
BOT SX,SY,SXY,SZ= 0.68513      0.55992     -10.295      0.00000      SIG1,SIG2,SIG3=  10.918     0.16142E-09 -9.6730
    S.I.=   20.591      SIGE=  17.843

EL=  384  NODES=  191  192  592  591      MAT=  4  AREA=  12.0      TTOP,TBOT=    0.0    0.0                          QUAD SHELL  63
XC,YC,ZC=  14.25      8.000      3.000       PRESS= 0.00000      0.00000
MX,MY,MXY= -0.10370      -0.11644      0.44645
TOP SX,SY,SXY,SZ= -2.3178      5.6640       2.9466      0.00000      SIG1,SIG2,SIG3=  6.6339     0.77734E-10 -3.2877
    S.I.=   9.9217      SIGE=  8.7538
MID SX,SY,SXY,SZ= -1.2116      6.9061      -1.8155      0.00000      SIG1,SIG2,SIG3=  7.2936     0.69693E-10 -1.5992
    S.I.=   8.8928      SIGE=  8.2108
BOT SX,SY,SXY,SZ=-0.10546      8.1482      -6.5776      0.00000      SIG1,SIG2,SIG3=  11.786     0.12157E-09 -3.7437
    S.I.=   15.530      SIGE=  14.038

EL=  385  NODES=  192  193  593  592      MAT=  4  AREA=  12.0      TTOP,TBOT=    0.0    0.0                          QUAD SHELL  63
XC,YC,ZC=  16.25      8.000      3.000       PRESS= 0.00000      0.00000
MX,MY,MXY= -0.11449      -0.14989      0.41118
TOP SX,SY,SXY,SZ= -2.9583     -0.14593E-01  5.6964      0.00000      SIG1,SIG2,SIG3=  4.3970     0.92228E-10 -7.3699
    S.I.=   11.767      SIGE=  10.298
MID SX,SY,SXY,SZ= -1.7370      1.5842       1.3105      0.00000      SIG1,SIG2,SIG3=  2.0390     0.33136E-10 -2.1918
    S.I.=   4.2309      SIGE=  3.6648
BOT SX,SY,SXY,SZ=-0.51579      3.1830      -3.0754      0.00000      SIG1,SIG2,SIG3=  4.9222     0.56202E-10 -2.2550
    S.I.=   7.1773      SIGE=  6.3571

EL=  386  NODES=  193  194  594  593      MAT=  4  AREA=  12.0      TTOP,TBOT=    0.0    0.0                          QUAD SHELL  63
XC,YC,ZC=  18.25      8.000      3.000       PRESS= 0.00000      0.00000
MX,MY,MXY= -0.12914      -0.15617      0.37514
TOP SX,SY,SXY,SZ= -2.7360     -3.3158       4.[illegible]    [illegible]      SIG1,SIG2,SIG3=  2.0794     0.77657E-10 -7.8320
    S.I.=   [illegible]      SIGE=  [illegible]
```

```
EL= 386  NODES= 193  194  594  593       MAT=  4  AREA=  12.0       TTOP,TBOT=    0.0    0.0                              QUAD SHELL  63
XC,YC,ZC=  18.25       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY= -0.12914      -0.19617          0.37514
TOP SX,SY,SXY,SZ= -2.7368      -3.0158          4.9538        0.00000        SIG1,SIG2,SIG3=  2.0794       0.77657E-10 -7.8320
    S.I.=    9.9114      SIGE=  9.0527
MID SX,SY,SXY,SZ= -1.3594      -0.92339         0.95228       0.00000        SIG1,SIG2,SIG3=-0.48296E-14-0.16443      -2.1183
    S.I.=    2.1183      SIGE=  2.0410
BOT SX,SY,SXY,SZ= 0.18048E-01  1.1692          -3.0492        0.00000        SIG1,SIG2,SIG3=  3.6967       0.48640E-10 -2.5094
    S.I.=    6.2061      SIGE=  5.4073

EL= 387  NODES= 194  195  595  594       MAT=  4  AREA=  12.0       TTOP,TBOT=    0.0    0.0                              QUAD SHELL  63
XC,YC,ZC=  20.25       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY= -0.15006      -0.26509          0.33681
TOP SX,SY,SXY,SZ= -2.4110      -2.5990          4.4910        0.00000        SIG1,SIG2,SIG3=  1.9870       0.70275E-10 -6.9969
    S.I.=    8.9839      SIGE=  8.1736
MID SX,SY,SXY,SZ=-0.81034       0.22866         0.89836       0.00000        SIG1,SIG2,SIG3= 0.74691       0.16271E-10 -1.3286
    S.I.=    2.0755      SIGE=  1.8208
BOT SX,SY,SXY,SZ= 0.79027       3.0563          -2.6943        0.00000        SIG1,SIG2,SIG3=  4.8461       0.45745E-10-0.99953
    S.I.=    5.8456      SIGE=  5.4155

EL= 388  NODES= 195  196  596  595       MAT=  4  AREA=  9.00       TTOP,TBOT=    0.0    0.0                              QUAD SHELL  63
XC,YC,ZC=  22.00       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY= -0.16297      -0.32514          0.30691
TOP SX,SY,SXY,SZ= -2.1787      -3.6031          4.1946        0.00000        SIG1,SIG2,SIG3=  1.3638       0.66666E-10 -7.1455
    S.I.=    8.5093      SIGE=  7.9160
MID SX,SY,SXY,SZ=-0.44035      -0.13494         0.92095       0.00000        SIG1,SIG2,SIG3= 0.64588       0.14617E-10 -1.2212
    S.I.=    1.8670      SIGE=  1.6423
BOT SX,SY,SXY,SZ=  1.2980       3.3332          -2.3527        0.00000        SIG1,SIG2,SIG3=  4.8789       0.40167E-10-0.24779
    S.I.=    5.1267      SIGE=  5.0074

EL= 389  NODES= 196  197  597  596       MAT=  4  AREA=  3.30       TTOP,TBOT=    0.0    0.0                              QUAD SHELL  63
XC,YC,ZC=  23.02       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY= -0.15140      -0.34421          0.29484
TOP SX,SY,SXY,SZ= -1.8536      -4.1849          3.9793        0.00000        SIG1,SIG2,SIG3=  1.1272       0.64919E-10 -7.1657
    S.I.=    8.2929      SIGE=  7.7907
MID SX,SY,SXY,SZ=-0.23869      -0.51333         0.83433       0.00000        SIG1,SIG2,SIG3= 0.46955       0.13232E-10 -1.2216
    S.I.=    1.6911      SIGE=  1.5120
BOT SX,SY,SXY,SZ=  1.3763       3.1582          -2.3106        0.00000        SIG1,SIG2,SIG3=  4.7436       0.38676E-10-0.20919
    S.I.=    4.9528      SIGE=  4.8516

EL= 390  NODES= 197  198  598  597       MAT=  4  AREA=  2.40       TTOP,TBOT=    0.0    0.0                              QUAD SHELL  63
XC,YC,ZC=  23.50       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY= -0.12244      -0.33721          0.29133
TOP SX,SY,SXY,SZ= -1.4960      -4.7905          3.8205        0.00000        SIG1,SIG2,SIG3=  1.0446       0.64912E-10 -7.2411
    S.I.=    8.2857      SIGE=  7.8159
MID SX,SY,SXY,SZ=-0.18995      -1.1036          0.71290       0.00000        SIG1,SIG2,SIG3= 0.19993       0.13266E-10 -1.4935
    S.I.=    1.6934      SIGE=  1.6028
BOT SX,SY,SXY,SZ=  1.1161       2.4933          -2.3947        0.00000        SIG1,SIG2,SIG3=  4.2964       0.39064E-10-0.68699
    S.I.=    4.9834      SIGE=  4.6779

EL= 391  NODES= 198  199  599  598       MAT=  4  AREA=  2.40       TTOP,TBOT=    0.0    0.0                              QUAD SHELL  63
XC,YC,ZC=  23.90       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY= -0.95060E-01 -0.32970          0.29061
TOP SX,SY,SXY,SZ= -1.2021      -5.4156          3.6153        0.00000        SIG1,SIG2,SIG3= 0.87551       0.65560E-10 -7.4932
    S.I.=    8.3687      SIGE=  7.9671
MID SX,SY,SXY,SZ=-0.18816      -1.8987          0.51554       0.00000        SIG1,SIG2,SIG3=-0.80947E-13-0.44801E-01 -2.0421
    S.I.=    2.0421      SIGE=  2.0201
BOT SX,SY,SXY,SZ= 0.82581       1.6181          -2.5843        0.00000        SIG1,SIG2,SIG3=  3.8364       0.40952E-10 -1.3925
    S.I.=    5.2289      SIGE=  4.6903

EL= 392  NODES= 199  200  600  599       MAT=  4  AREA=  2.40       TTOP,TBOT=    0.0    0.0                              QUAD SHELL  63
XC,YC,ZC=  24.30       8.000        3.000        PRESS= 0.00000        0.00000
MX,MY,MXY= -0.43499E-01 -0.31394          0.28064
TOP SX,SY,SXY,SZ= [illegible]  -0.1111      [illegible]   [illegible]    SIG1,SIG2,SIG3= 0.90193       0.47767E-10 -7.7441
```

```
BOT SX,SY,SXY,SZ= 0.20897     0.50728     -2.9217     0.00000     SIG1,SIG2,SIG3=  3.2836     0.45781E-10 -2.5673
    S.I.=   5.8599       SIGE=  5.0737

 STATUS CHANGED FOR     0 BILINEAR ELEM THIS ITER
*** LOAD STEP    1   ITER    20  COMPLETED.  TIME=  0.000000       TIME INC=  0.000000      NEW TRIANG MATRIX  CUM. ITER.=    9
```

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 8 UIS CRAY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

TUGC,CPSES,TYP ANCH L8X6X3/4X2-4,KT=3500 15.6350 6/27/85 CP= 21.720

***** ANSYS RUN TIME ESTIMATOR *****

***** ANSYS RUN TIME ESTIMATOR *****

```
COMPUTER = CRAY                    NUMBER OF MASTER DOF =    0
ANALYSIS TYPE =  0                 RMS WAVE FRONT =    83
NUMBER OF NODES =     124          TOTAL NO. OF ITERATIONS =      1
MAX. DOF PER NODE =   6            STIFF. MATRIX SAVE KEY = 0
NUMBER OF MATRICES = 1             ELEM. MATRIX SAVE KEY = 0
NUMBER OF STRESS SOLUTIONS=     1  ROTATED NODE FRACTION= 0.000
```

STIF	NUMBER	FORM. TIME	STRESS TIME	NAME
10	202	0.026	0.044	CABLE
43	171	1.823	0.445	RECT. FLAT SHELL, 3-D
63	19	1.440	0.693	QUAD. FLAT SHELL

ANALYSIS PHASE	FIRST ITERATION	SUBSEQUENT ITERATIONS	TOTAL
ELEMENT FORMULATION	4.49	4.49	4.49
WAVE FRONT SOLUTION	1.00	1.00	1.00
BACK SUBSTITUTION	0.08	0.08	0.08
ELEMENT STRESSES	1.28	1.28	1.28
TOTAL TIME (SEC)	6.85	6.85	6.85

***** ROUTINE COMPLETED ***** CP = 21.724

END OF INPUT ENCOUNTERED ON FILE18

***** RUN COMPLETED ***** CP= 21.7245 TIME= 15.6350

```
15:26:26    0.0009      CSP     UIS COMPANY   KANSAS CITY, MISSOURI  06/27/85
15:26:26    0.0009      CSP                     APEX/CRAY SERVICE
15:26:26    0.0009      CSP     CRAY-1 S/2000   COS LEVEL:  C14 1.12-06/19/85
15:26:26    0.0009      CSP
15:26:26    0.0009      CSP     LIU,T200,L15.
15:26:26    0.0009      CSP     ACCOUNT,E142430 TUG3317002
15:26:26    0.0013      CSP     CAPTION.   JTLIU
15:26:26    0.0089      CSP     MEMORY,FL=249856,USER.
15:26:26    0.0092      CSP     GET,EMBPROC/1148021/CI=TTY.
15:26:31    0.0093      SCP      15.26.41.GET,SCR1=EMBPROC/1148021.
15:26:31    0.0093      SCP      15.26.41.READY -    EMBPROC
15:26:33    0.0093      SCP     DATASET RECEIVED FROM FRONT END.
15:26:35    0.0094      CSP     CALL,DN=EMBPROC.
15:26:36    0.0101 1 CSP     GET,EMBEDP4/1148019.
15:26:39    0.0101 1 SCP      15.26.50.GET,SCR1=EMBEDP4/1148019.
15:26:39    0.0101 1 SCP      15.26.50.READY -    EMBEDP4
15:26:41    0.0101 1 SCP     DATASET RECEIVED FROM FRONT END.
15:26:47    0.0102 1 CSP     ASSIGN,DN=ANSIN,A=FT20.
15:26:47    0.0105 1 CSP     ASSIGN,DN=$IN,A=FT05.
15:26:47    0.0110 1 CSP     EMBEDP4.
15:26:50    0.2030 1 USER    FT063 -     STOP                     IN EMBEDP
15:26:51    0.2031 1 CSP     REWIND,ANSIN.
15:26:51    0.2033 1 CSP     ASSIGN,DN=ANSIN,A=FT05.
15:26:51    0.2035 1 CSP     ASSIGN,DN=FT25,RDM.
15:26:51    0.2041 1 CSP     WRITEDS,DN=FT25,RL=602,NR=99.
15:26:52    0.2071 1 CSP     ASSIGN,DN=FT30,RDM.
15:26:52    0.2078 1 CSP     WRITEDS,DN=FT30,RL=2044,NR=256.
15:26:56    0.2287 1 CSP     GET,ANSYS=ANSY418(CRY)
15:28:00    0.2287 1 SCP      15.27.10.GET,SCR1=ANSY418(CRY.
15:28:00    0.2287 1 SCP      15.27.10.DAF READY -          ANSY418
15:28:01    0.2287 1 SCP     DATASET RECEIVED FROM FRONT END.
15:28:05    0.2301 1 CSP     ANSYS.
15:28:05    0.2306 1 USER    FT059 -  ***** ANSYS ANALYSIS *****
15:38:06   21.7254 1 USER    FT054 - EXIT CALLED BY   DFILE
15:38:06   21.7254 1 USER    FT063 -     STOP                  IN VPSUB
15:38:06   21.7255 1 CSP     COST.
15:38:07   21.7265 1 USER          JOBNAME = DOLUC9J   USER NUMBER = E142430
15:38:07   21.7265 1 USER          CP SECONDS         =    21.726
15:38:07   21.7265 1 USER          AVERAGE MEMORY     =    0.2518
15:38:07   21.7265 1 USER          IO BLOCKS MOVED    =    22710.
15:38:07   21.7265 1 USER          IO REQUESTS        =     5306.
15:38:07   21.7266 1 USER          PF OPERATIONS      =        3.
15:38:07   21.7266 1 USER
15:38:07   21.7266 1 USER          ASU-2              =    177.30
15:38:07   21.7266 1 USER          PRIORITY           =        15
15:38:07   21.7266 1 USER          COST               =     60.64
15:38:07   21.7266 1 CSP     EXIT.
15:38:07   21.7267 1 CSP     END OF JOB
15:38:07   21.7267 1 CSP
15:38:07   21.7267 1 CSP
15:38:07   21.7278 1 USER          JOBNAME = DOLUC9J   USER NUMBER = E142430
15:38:07   21.7278 1 USER          CP SECONDS         =    21.727
15:38:07   21.7278 1 USER          AVERAGE MEMORY     =    0.2318
15:38:07   21.7278 1 USER          IO BLOCKS MOVED    =    22745.
15:38:07   21.7278 1 USER          IO REQUESTS        =     5308.
15:38:07   21.7278 1 USER          PF OPERATIONS      =        3.
15:38:07   21.7278 1 USER          I/O/D BLOCKS       =      304.
15:38:07   21.7278 1 USER
15:38:07   21.7278 1 USER          ASU-2              =    177.38
15:38:07   21.7278 1 USER          PRIORITY           =        15
15:38:07   21.7278 1 USER          COST               =     60.67
```

LAST PAGE

A P E X   R E M O T E   B A T C H

DOL3DFB

UNITED INFORMATION SERVICES, INC. 67. APEX/SL D.4.7.5

13.29.09.   06/07/85.

```
DDDDDDDDDD      OOOOOOOO.   LL          3333333333  DDDDDDDDDD    FFFFFFFFFFFF  BBBBBBBBBBB
DDDDDDDDDDD    OO       OO  LL         33333333333  DDDDDDDDDDD   FFFFFFFFFFFF  BBBBBBBBBBBB
DD       DD  OO.        OO  LL         3         33 DD       DD   FF            BB        BB
DD       DD  OO.        OO  LL                   33 DD       DD   FF            BB        BB
DD       DD  OO.        OO. LL                  33  DD       DD   FF            BB        BB
DD       DD  OO.        OO  LL                 33   DD       DD   FF            BB        BB
DD       DD  OO.        OO. LL                33    DD       DD   FF            BB        BB
DD       DD  OO.        OO. LL               33     DD       DD   FFFFFFFF      BBBBBBBBBBBB
DD       DD  OO.        OO  LL               333    DD       DD   FFFFFFFF      BBBBBBBBBBB
DD       DD  OO         OO  LL                 33   DD       DD   FF            BB        BB
DD       DD  OO.        OO. LL                  33  DD       DD   FF            BB        BB
DD       DD  OO.        OO. LL                   33 DD       DD   FF            BB        BB
DD       DD  OO.        OO. LL                   33 DD       DD   FF            BB        BB
DD       DD  OO         OO  LL          LL 3     33 DD       DD   FF            BB        BB
DDDDDDDDDDD   OO       OO   LLLLLLLLLLLL 33333333333 DDDDDDDDDDD  FF            BBBBBBBBBBBB
DDDDDDDDDD     OOOOOOOO.    LLLLLLLLLLLL  333333333  DDDDDDDDDD   FF            BBBBBBBBBBB
```

$\text{PL } 1 \times 24 \times 2'\text{-}0$, edge = 1.75"

$K_T = 2200.\ ^{K}/_{in}$

$F_z = 22.22^K$

$T_R = 22.22/4 = 5.555^K$

$T = 10.54^K$

$\lambda = \text{—}/\text{—} = 1.93$

CLIENT: TUGC	PROJECT: CPSES-2
SUBJECT: BASEPLATE ANALYSIS – PL 1x24x24 W/4 BOLTS	
COMPUTER PROGRAM USED: ANSYS	
PREPARED BY: JTLon	DATE: 6/7/85
CHECKED BY: S.P.L.	DATE: 6/7/85
REF. CALC. BOOK NO.	PRINTOUT BOOK NO.

```
 JJJJJ TTTTTTT LL        IIIII  UU   UU
 JJJJJ TTTTTTT LL        IIIII  UU   UU
    JJ    TT   LL          II   UU   UU
    JJ    TT   LL          II   UU   UU
    JJ    TT   LL          II   UU   UU
    JJ    TT   LL          II   UU   UU
    JJ    TT   LL          II   UU   UU
JJ  JJ    TT   LL          II   UU   UU
 JJJJJ    TT   LLLLLLL   IIIII  UUUUUUU
  JJJ     TT   LLLLLLL   IIIII   UUUUU
```

TUGC-CEGSEO, BASE PL. 1X14X14, PRYING ACTION FACTORS, BOLT KT=22.0

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****BASE PLATE MESH INFORMATION****

NO. OF GRID IN X  NO. OF GRID IN Y   X-DIMENSION  Y-DIMENSION

        11                11            24.000          24.000

X-COORD.=  0.000  0.875  1.750  5.000  8.500  12.000  15.500  19.000  22.250  23.125
24.000

Y-COORD.=  0.000  0.875  1.750  5.000  8.500  12.000  15.500  19.000  22.250  23.125
24.000


 **** MATERIAL PROPERTIES ****

 PLATE THK    E OF PLATE   E OF BOLT    E OF CONCRET  MU STEEL    MU OF CONCRETE

.10000E+01 0.29000E+05 0.29000E+05 0.3625E+04 0.30000E+00 0.17000E+00


 ****RC SPRING CONSTANT AT EACH NODE****
.3257E+020.6513E+020.1535E+030.2512E+030.2605E+030.2605E+030.2605E+030.2512E+030.1535E+030.6513E+020.3257E+02
.6513E+020.1303E+030.3071E+030.5025E+030.5211E+030.5211E+030.5211E+030.5025E+030.3071E+030.1303E+030.6513E+02
.1535E+030.3071E+030.7238E+030.1184E+040.1228E+040.1228E+040.1228E+040.1184E+040.7238E+030.3071E+030.1535E+03
.2512E+030.5025E+030.1184E+040.1938E+040.2010E+040.2010E+040.2010E+040.1938E+040.1184E+040.5025E+030.2512E+03
.2605E+030.5211E+030.1228E+040.2010E+040.2084E+040.2084E+040.2084E+040.2010E+040.1228E+040.5211E+030.2605E+03
.2605E+030.5211E+030.1228E+040.2010E+040.2084E+040.2084E+040.2084E+040.2010E+040.1228E+040.5211E+030.2605E+03
.2605E+030.5211E+030.1228E+040.2010E+040.2084E+040.2084E+040.2084E+040.2010E+040.1228E+040.5211E+030.2605E+03
.2512E+030.5025E+030.1184E+040.1938E+040.2010E+040.2010E+040.2010E+040.1938E+040.1184E+040.5025E+030.2512E+03
.1535E+030.3071E+030.7238E+030.1184E+040.1228E+040.1228E+040.1228E+040.1184E+040.7238E+030.3071E+030.1535E+03
.6513E+020.1303E+030.3071E+030.5025E+030.5211E+030.5211E+030.5211E+030.5025E+030.3071E+030.1303E+030.6513E+02
.3257E+020.6513E+020.1535E+030.2512E+030.2605E+030.2605E+030.2605E+030.2512E+030.1535E+030.6513E+020.3257E+02


 **** SPRING CONSTANTS****

 SUM OF RC SPRING    BOLT SPRING

.9800E+05      0.2200E+040.2200E+040.2200E+040.2200E+04


 ****BOLT LOCATION****
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Y-COORD.= 1.750 1.750 22.250 22.250

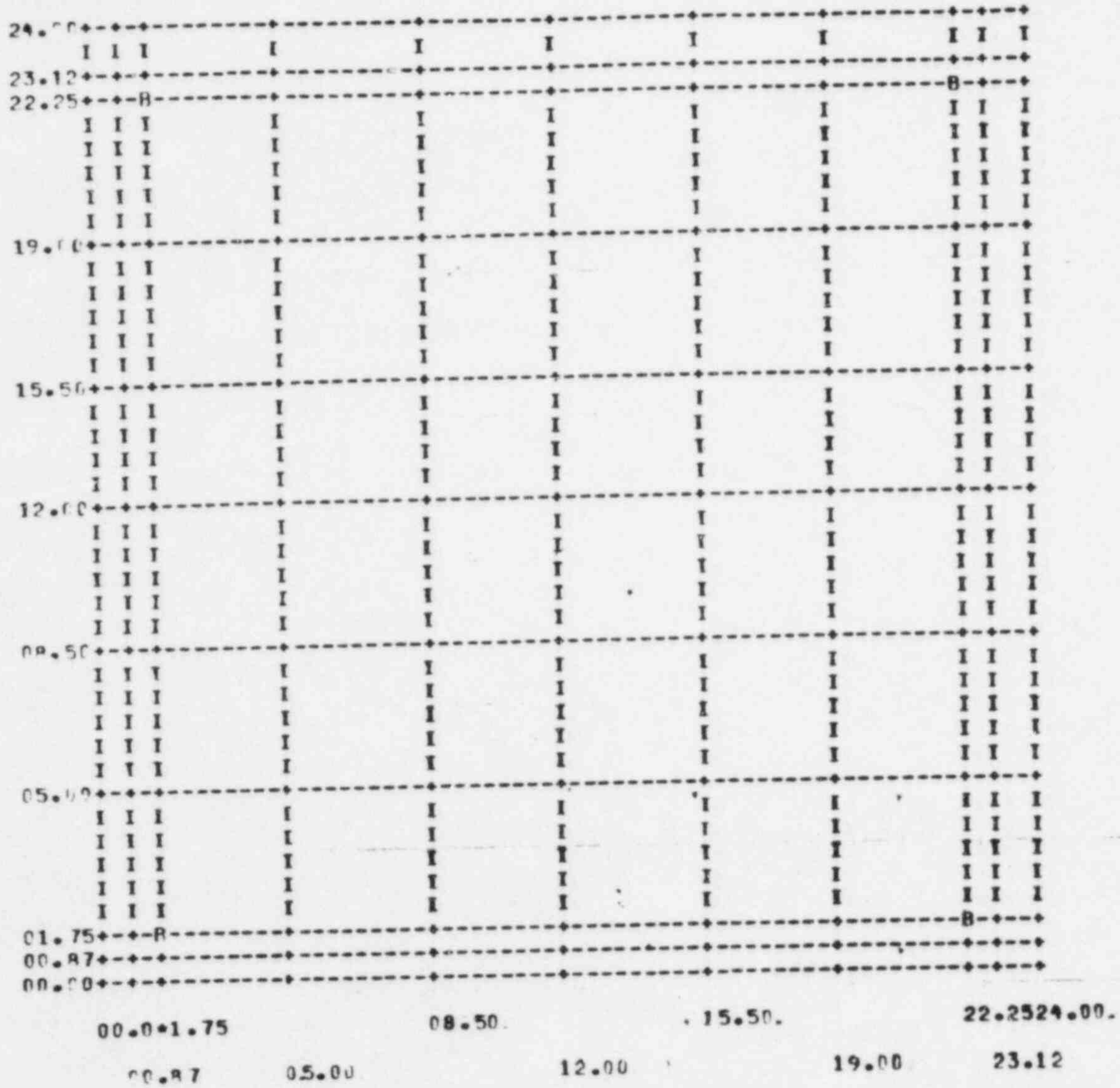
****APPLIED FORCE AND MOMENT****

FORCE COMP.	NODE NO.	FORCE MAGNITUDE
FZ	61	22.22000

CLIENT TUGC PROJECT CPSES-2
SUBJECT INPUT

COMPUTER PROGRAM USED ANSYS
PREPARED BY: JTCM DATE 6/7/85
CHECKED BY: C. P. L DATE 6/27/85
REF. CALC. BOOK NO. PRINTOUT BOOK NO.

UGC-CPSES2,BASE PL.1X24X24,PRYING ACTION FACTORS, BOLT KT=22



.... [illegible] ....

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     6     12    18    24    30    36    42    48    54    60    66    72    78
     V     V     V     V     V     V     V     V     V     V     V     V     V
TUGC-CPSES2,BASE PL.1X24X24,PRYING ACTION FACTORS, BOLT KT=2200
 J T LIU
           1                 99

  1 43 02  0
  2 10 11  0
  3 10 10  0
 -1
0.1000E+01
0.1914E+00
0.3828E+00
0.9023E+00
0.1477E+01
0.1531E+01
0.1531E+01
0.1531E+01
0.1477E+01
0.9023E+00
0.3828E+00
0.1914E+00
0.3828E+00
0.7656E+00
0.1805E+01
0.2953E+01
0.3062E+01
0.3062E+01
0.3062E+01
0.2953E+01
0.1805E+01
0.7656E+00
0.3828E+00
0.9023E+00
0.1805E+01
0.4254E+01
0.6961E+01
0.7219E+01
0.7219E+01
0.7219E+01
0.6961E+01
0.4254E+01
0.1805E+01
0.9023E+00
0.1477E+01
0.2953E+01
0.6961E+01
0.1139E+02
0.1181E+02
0.1181E+02
0.1181E+02
0.1139E+02
     A     A     A     A     A     A     A     A     A     A     A     A     A
```

6 12 18 24 3 36 42

51	0.6961E+01
52	0.2953E+01
53	0.1477E+01
54	0.1531E+01
55	0.3062E+01
56	0.7219E+01
57	0.1181E+02
58	0.1225E+02
59	0.1225E+02
60	0.1225E+02
61	0.1181E+02
62	0.7219E+01
63	0.3062E+01
64	0.1531E+01
65	0.1531E+01
66	0.3062E+01
67	0.7219E+01
68	0.1181E+02
69	0.1225E+02
70	0.1225E+02
71	0.1225E+02
72	0.1181E+02
73	0.7219E+01
74	0.3062E+01
75	0.1531E+01
76	0.1531E+01
77	0.3062E+01
78	0.7219E+01
79	0.1181E+02
80	0.1225E+02
81	0.1225E+02
82	0.1225E+02
83	0.1181E+02
84	0.7219E+01
85	0.3062E+01
86	0.1531E+01
87	0.1477E+01
88	0.2953E+01
89	0.6961E+01
90	0.1139E+02
91	0.1181E+02
92	0.1181E+02
93	0.1181E+02
94	0.1139E+02
95	0.6961E+01
96	0.2953E+01
97	0.1477E+01
98	0.9028E+00
99	0.1865E+01
100	0.4254E+01

```
              6     12     18     24     30     36     42     48     54     60     66     72     78
              V      V      V      V      V      V      V      V      V      V      V      V      V
 101    0.6961E+01
 102    0.7219E+01
 103    0.7219E+01
 104    0.7219E+01
 105    0.6961E+01
 106    0.4254E+01
 107    0.1805E+01
 108    0.9023E+00
 109    0.3828E+00
 110    0.7656E+00
 111    0.1805E+01
 112    0.2953E+01
 113    0.3062E+01
 114    0.3062E+01
 115    0.3062E+01
 116    0.2953E+01
 117    0.1805E+01
 118    0.7656E+00
 119    0.3828E+00
 120    0.1914E+00
 121    0.3828E+00
 122    0.9023E+00
 123    0.1477E+01
 124    0.1531E+01
 125    0.1531E+01
 126    0.1531E+01
 127    0.1477E+01
 128    0.9023E+00
 129    0.3828E+00
 130    0.1914E+00
 131    0.7586E-01
 132    0.7586E-01
 133    0.7586E-01
 134    0.7586E-01
 135            -1                                                  1      1      1
 136         1      2     13     12                                 1      1      1
 137         2      3     14     13                                 1      1      1
 138         3      4     15     14                                 1      1      1
 139         4      5     16     15                                 1      1      1
 140         5      6     17     16                                 1      1      1
 141         6      7     18     17                                 1      1      1
 142         7      8     19     18                                 1      1      1
 143         8      9     20     19                                 1      1      1
 144         9     10     21     20                                 1      1      1
 145        10     11     22     21                                 2      2      2
 146         1    122                                               2      2      3
 147         2    123                                               2      2      4
 148         3    124                                               2      2      5
 149         4    125                                               2      2      6
 150         5    126                                               A      A      A      A      A
             A      A      A      A      A      A      A      A
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.... [illegible] ....

	6	12	18	24	[illegible]	36	42	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	V	V	V	V	V	V	V	V	V	V	V	V	V
									2	2	7		
151	6	127							2	2	8		
152	7	128							2	2	9		
153	8	129							2	2	10		
154	9	130							2	2	11		
155	10	131							2	2	12		
156	11	132							1	1	1		
157	12	13	24	23					1	1	1		
158	13	14	25	24					1	1	1		
159	14	15	26	25					1	1	1		
160	15	16	27	26					1	1	1		
161	16	17	28	27					1	1	1		
162	17	18	29	28					1	1	1		
163	18	19	30	29					1	1	1		
164	19	20	31	30					1	1	1		
165	20	21	32	31					1	1	1		
166	21	22	33	32					2	2	13		
167	12	133							2	2	14		
168	13	134							2	2	15		
169	14	135							2	2	16		
170	15	136							2	2	17		
171	16	137							2	2	18		
172	17	138							2	2	19		
173	18	139							2	2	20		
174	19	140							2	2	21		
175	20	141							2	2	22		
176	21	142							2	2	23		
177	22	143							1	1	1		
178	23	24	35	34					1	1	1		
179	24	25	36	35					1	1	1		
180	25	26	37	36					1	1	1		
181	26	27	38	37					1	1	1		
182	27	28	39	38					1	1	1		
183	28	29	40	39					1	1	1		
184	29	30	41	40					1	1	1		
185	30	31	42	41					1	1	1		
186	31	32	43	42					1	1	1		
187	32	33	44	43					2	2	24		
188	23	144							2	2	25		
189	24	145							2	2	26		
190	25	146							2	2	27		
191	26	147							2	2	28		
192	27	148							2	2	29		
193	28	149							2	2	30		
194	29	150							2	2	31		
195	30	151							2	2	32		
196	31	152							2	2	33		
197	32	153							2	2	34		
198	33	154							1	1	1		
199	34	35	46	45					1	1	1		
200	35	36	47	46	A	A	A	A	A	A	A	A	A
	A	A	A	A									

.... [illegible] ....

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
201	36	37	48	47					1	1	1		
202	37	38	49	48					1	1	1		
203	38	39	50	49					1	1	1		
204	39	40	51	50					1	1	1		
205	40	41	52	51					1	1	1		
206	41	42	53	52					1	1	1		
207	42	43	54	53					1	1	1		
208	43	44	55	54					1	1	1		
209	34	155							2	2	35		
210	35	156							2	2	36		
211	36	157							2	2	37		
212	37	158							2	2	38		
213	38	159							2	2	39		
214	39	160							2	2	40		
215	40	161							2	2	41		
216	41	162							2	2	42		
217	42	163							2	2	43		
218	43	164							2	2	44		
219	44	165							2	2	45		
220	45	46	57	56					1	1	1		
221	46	47	58	57					1	1	1		
222	47	48	59	58					1	1	1		
223	48	49	60	59					1	1	1		
224	49	50	61	60					1	1	1		
225	50	51	62	61					1	1	1		
226	51	52	63	62					1	1	1		
227	52	53	64	63					1	1	1		
228	53	54	65	64					1	1	1		
229	54	55	66	65					1	1	1		
230	45	166							2	2	46		
231	46	167							2	2	47		
232	47	168							2	2	48		
233	48	169							2	2	49		
234	49	170							2	2	50		
235	50	171							2	2	51		
236	51	172							2	2	52		
237	52	173							2	2	53		
238	53	174							2	2	54		
239	54	175							2	2	55		
240	55	176							2	2	56		
241	56	57	68	67					1	1	1		
242	57	58	69	68					1	1	1		
243	58	59	70	69					1	1	1		
244	59	60	71	70					1	1	1		
245	60	61	72	71					1	1	1		
246	61	62	73	72					1	1	1		
247	62	63	74	73					1	1	1		
248	63	64	75	74					1	1	1		
249	64	65	76	75					1	1	1		
250	65	66	77	76					1	1	1		
	A	A	A	A	A	A	A	A	A	A	A	A	A

.... [illegible] ....

	6	12	18	24	30	36	42	48	[illegible]	[illegible]	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
									2	2	57		
251	56	177							2	2	58		
252	57	178							2	2	59		
253	58	179							2	2	60		
254	59	180							2	2	61		
255	60	181							2	2	62		
256	61	182							2	2	63		
257	62	183							2	2	64		
258	63	184							2	2	65		
259	64	185							2	2	66		
260	65	186							2	2	67		
261	66	187							1	1	1		
262	67	68	79	79					1	1	1		
263	68	69	80	79					1	1	1		
264	69	70	81	80					1	1	1		
265	70	71	82	81					1	1	1		
266	71	72	83	82					1	1	1		
267	72	73	84	83					1	1	1		
268	73	74	85	84					1	1	1		
269	74	75	86	85					1	1	1		
270	75	76	87	86					1	1	1		
271	76	77	88	87					2	2	68		
272	67	188							2	2	69		
273	68	189							2	2	70		
274	69	190							2	2	71		
275	70	191							2	2	72		
276	71	192							2	2	73		
277	72	193							2	2	74		
278	73	194							2	2	75		
279	74	195							2	2	76		
280	75	196							2	2	77		
281	76	197							2	2	78		
282	77	198							1	1	1		
283	78	79	90	89					1	1	1		
284	79	80	91	90					1	1	1		
285	80	81	92	91					1	1	1		
286	81	82	93	92					1	1	1		
287	82	83	94	93					1	1	1		
288	83	84	95	94					1	1	1		
289	84	85	96	95					1	1	1		
290	85	86	97	96					1	1	1		
291	86	87	98	97					1	1	1		
292	87	88	99	98					2	2	79		
293	78	199							2	2	80		
294	79	200							2	2	81		
295	80	201							2	2	82		
296	81	202							2	2	93		
297	82	203							2	2	84		
298	83	204							2	2	85		
299	84	205							2	2	86		
300	85	206											
	A	A	A	A	A	A	A	A	A	A	A	A	A

.... [illegible] INPUT [illegible] ....

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
301	86	207							2	2	87		
302	87	208							2	2	88		
303	88	209							2	2	89		
304	89	90	101	100					1	1	1		
305	90	91	102	101					1	1	1		
306	91	92	103	102					1	1	1		
307	92	93	104	103					1	1	1		
308	93	94	105	104					1	1	1		
309	94	95	106	105					1	1	1		
310	95	96	107	106					1	1	1		
311	96	97	108	107					1	1	1		
312	97	98	109	108					1	1	1		
313	98	99	110	109					1	1	1		
314	89	210							2	2	90		
315	90	211							2	2	91		
316	91	212							2	2	92		
317	92	213							2	2	93		
318	93	214							2	2	94		
319	94	215							2	2	95		
320	95	216							2	2	96		
321	96	217							2	2	97		
322	97	218							2	2	98		
323	98	219							2	2	99		
324	99	220							2	2	100		
325	100	101	112	111					1	1	1		
326	101	102	113	112					1	1	1		
327	102	103	114	113					1	1	1		
328	103	104	115	114					1	1	1		
329	104	105	116	115					1	1	1		
330	105	106	117	116					1	1	1		
331	106	107	118	117					1	1	1		
332	107	108	119	118					1	1	1		
333	108	109	120	119					1	1	1		
334	109	110	121	120					1	1	1		
335	100	221							2	2	101		
336	101	222							2	2	102		
337	102	223							2	2	103		
338	103	224							2	2	104		
339	104	225							2	2	105		
340	105	226							2	2	106		
341	106	227							2	2	107		
342	107	228							2	2	108		
343	108	229							2	2	109		
344	109	230							2	2	110		
345	110	231							2	2	111		
346	111	232							2	2	112		
347	112	233							2	2	113		
348	113	234							2	2	114		
349	114	235							2	2	115		
350	115	236							2	2	116		
	A	A	A	A	A	A	A	A	A	A	A	A	A

	6	12	18 24	30 36	42 48	54	60	66	72	78
	V	V	V V	V V	V V	V	V	V	V	V
351	116	237				2	2	117		
352	117	238				2	2	118		
353	118	239				2	2	119		
354	119	240				2	2	120		
355	120	241				2	2	121		
356	121	242				2	2	122		
357	25	146				3	3	123		
358	31	152				3	3	124		
359	91	212				3	3	125		
360	97	218				3	3	126		
361	-1									
362	1		0.0000E+00	0.0000E+00	0.0000E+00					
363	2		0.8750E+00	0.0000E+00	0.0000E+00					
364	3		0.1750E+01	0.0000E+00	0.0000E+00					
365	4		0.5000E+01	0.0000E+00	0.0000E+00					
366	5		0.8500E+01	0.0000E+00	0.0000E+00					
367	6		0.1200E+02	0.0000E+00	0.0000E+00					
368	7		0.1550E+02	0.0000E+00	0.0000E+00					
369	8		0.1900E+02	0.0000E+00	0.0000E+00					
370	9		0.2225E+02	0.0000E+00	0.0000E+00					
371	10		0.2312E+02	0.0000E+00	0.0000E+00					
372	11		0.2400E+02	0.0000E+00	0.0000E+00					
373	12		0.0000E+00	0.8750E+00	0.0000E+00					
374	13		0.8750E+00	0.8750E+00	0.0000E+00					
375	14		0.1750E+01	0.8750E+00	0.0000E+00					
376	15		0.5000E+01	0.8750E+00	0.0000E+00					
377	16		0.8500E+01	0.8750E+00	0.0000E+00					
378	17		0.1200E+02	0.8750E+00	0.0000E+00					
379	18		0.1550E+02	0.8750E+00	0.0000E+00					
380	19		0.1900E+02	0.8750E+00	0.0000E+00					
381	20		0.2225E+02	0.8751E+00	0.0000E+00					
382	21		0.2312E+02	0.8750E+00	0.0000E+00					
383	22		0.2400E+02	0.8750E+00	0.0000E+00					
384	23		0.0000E+00	0.1750E+01	0.0000E+00					
385	24		0.8750E+00	0.1750E+01	0.0000E+00					
386	25		0.1750E+01	0.1750E+01	0.0000E+00					
387	26		0.5000E+01	0.1750E+01	0.0000E+00					
388	27		0.8500E+01	0.1750E+01	0.0000E+00					
389	28		0.1200E+02	0.1750E+01	0.0000E+00					
390	29		0.1550E+02	0.1750E+01	0.0000E+00					
391	30		0.1900E+02	0.1750E+01	0.0000E+00					
392	31		0.2225E+02	0.1750E+01	0.0000E+00					
393	32		0.2312E+02	0.1750E+01	0.0000E+00					
394	33		0.2400E+02	0.1750E+01	0.0000E+00					
395	34		0.0000E+00	0.5000E+01	0.0000E+00					
396	35		0.8750E+00	0.5000E+01	0.0000E+00					
397	36		0.1750E+01	0.5000E+01	0.0000E+00					
398	37		0.5000E+01	0.5000E+01	0.0000E+00					
399	38		0.8500E+01	0.5000E+01	0.0000E+00					
400	39		0.1200E+02	0.5000E+01	0.0000E+00					
	A	A	A A	A A	A A	A	A	A	A	A

.... [illegible] ....

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
401	40		0.1550E+02		0.5000E+01		0.0000E+00.						
402	41		0.1900E+02		0.5000E+01		0.000 E+00.						
403	42		0.2225E+02		0.5000E+01		0.0000E+00.						
404	43		0.2312E+02		0.5000E+01		0.0000E+00.						
405	44		0.2400E+02		0.5000E+01		0.0000E+00						
406	45		0.0000E+00.		0.8500E+01		0.0000E+00.						
407	46		0.8750E+00.		0.8500E+01		0.0000E+00.						
408	47		0.1750E+01		0.8500E+01		0.0000E+00.						
409	48		0.5000E+01		0.8500E+01		0.0000E+00.						
410	49		0.8500E+01		0.8500E+01		0.0000E+00.						
411	50		0.1200E+02		0.8500E+01		0.0000E+00						
412	51		0.1550E+02		0.8500E+01		0.0000E+00.						
413	52		0.1900E+02		0.8500E+01		0.0000E+00.						
414	53		0.2225E+02		0.8500E+01		0.0000E+00.						
415	54		0.2312E+02		0.8500E+01		0.0000E+00						
416	55		0.2400E+02		0.8500E+01		0.0000E+00.						
417	56		0.0000E+00.		0.1200E+02		0.0000E+00						
418	57		0.8750E+00.		0.1200E+02		0.0000E+00.						
419	58		0.1750E+01		0.1200E+02		0.0000E+00.						
420	59		0.5000E+01		0.1200E+02		0.0000E+00.						
421	60		0.8500E+01		0.1200E+02		0.0000E+00						
422	61		0.1200E+02		0.1200E+02		0.0000E+00.						
423	62		0.1550E+02		0.1200E+02		0.0000E+00.						
424	63		0.1900E+02		0.1200E+02.		0.0000E+00.						
425	64		0.2225E+02		0.1200E+02		0.0000E+00						
426	65		0.2312E+02		0.1200E+02		0.0000E+00						
427	66		0.2400E+02		0.1200E+02		0.0000E+00.						
428	67		0.0000E+00.		0.1550E+02		0.0000E+00						
429	68		0.8750E+00.		0.1550E+02		0.0000E+00.						
430	69		0.1750E+01		0.1550E+02		0.0000E+00.						
431	70		0.5000E+01		0.1550E+02		0.0000E+00.						
432	71		0.8500E+01		0.1550E+02		0.0000E+00.						
433	72		0.1200E+02		0.1550E+02		0.0000E+00.						
434	73		0.1550E+02		0.1550E+02		0.0000E+00						
435	74		0.1900E+02		0.1550E+02		0.0000E+00.						
436	75		0.2225E+02		0.1550E+02		0.0000E+00						
437	76		0.2312E+02		0.1550E+02		0.0000E+00.						
438	77		0.2400E+02		0.1550E+02		0.0000E+00.						
439	78		0.0000E+00.		0.1900E+02		0.0000E+00.						
440	79		0.8750E+00.		0.1900E+02		0.0000E+00.						
441	80		0.1750E+01		0.1900E+02		0.0000E+00.						
442	81		0.5000E+01		0.1900E+02		0.0000E+00						
443	82		0.8500E+01		0.1900E+02		0.0000E+00.						
444	83		0.1200E+02		0.1900E+02		0.0000E+00.						
445	84		0.1550E+02		0.1900E+02		0.0000E+00.						
446	85		0.1900E+02		0.190 E+02		0.0000E+00						
447	86		0.2225E+02		0.1900E+02		0.0000E+00						
448	87		0.2312E+02		0.1900E+02		0.0000E+00.						
449	88		0.2400E+02		0.1900E+02		0.0000E+00.						
450	89		0.0000E+00.		0.2225E+02		0.0000E+00.						
	A	A	A	A	A	A	A	A	A	A	A	A	A

.... [illegible] ....

	6	12	18	24	30	36	42	48	54	60	66	72	78
451	90		0.8750E+00		0.2225E+02		0.0000E+00						
452	91		0.1750E+01		0.2225E+02		0.0000E+00						
453	92		0.5000E+01		0.2225E+02		0.0000E+00						
454	93		0.8500E+01		0.2225E+02		0.0000E+00						
455	94		0.1200E+02		0.2225E+02		0.0000E+00						
456	95		0.1550E+02		0.2225E+02		0.0000E+00						
457	96		0.1900E+02		0.2225E+02		0.0000E+00						
458	97		0.2225E+02		0.2225E+02		0.0000E+00						
459	98		0.2312E+02		0.2225E+02		0.0000E+00						
460	99		0.2400E+02		0.2225E+02		0.0000E+00						
461	100		0.0000E+00		0.2312E+02		0.0000E+00						
462	101		0.8750E+00		0.2312E+02		0.0000E+00						
463	102		0.1750E+01		0.2312E+02		0.0000E+00						
464	103		0.5000E+01		0.2312E+02		0.0000E+00						
465	104		0.8500E+01		0.2312E+02		0.0000E+00						
466	105		0.1200E+02		0.2312E+02		0.0000E+00						
467	106		0.1550E+02		0.2312E+02		0.0000E+00						
468	107		0.1900E+02		0.2312E+02		0.0000E+00						
469	108		0.2225E+02		0.2312E+02		0.0000E+00						
470	109		0.2312E+02		0.2312E+02		0.0000E+00						
471	110		0.2400E+02		0.2312E+02		0.0000E+00						
472	111		0.0000E+00		0.2400E+02		0.0000E+00						
473	112		0.8750E+00		0.2400E+02		0.0000E+00						
474	113		0.1750E+01		0.2400E+02		0.0000E+00						
475	114		0.5000E+01		0.2400E+02		0.0000E+00						
476	115		0.8500E+01		0.2400E+02		0.0000E+00						
477	116		0.1200E+02		0.2400E+02		0.0000E+00						
478	117		0.1550E+02		0.2400E+02		0.0000E+00						
479	118		0.1900E+02		0.2400E+02		0.0000E+00						
480	119		0.2225E+02		0.2400E+02		0.0000E+00						
481	120		0.2312E+02		0.2400E+02		0.0000E+00						
482	121		0.2400E+02		0.2400E+02		0.0000E+00						
483	122		0.0000E+00		0.0000E+00		-0.1000E+01						
484	123		0.8750E+00		0.0000E+00		-0.1000E+01						
485	124		0.1750E+01		0.0000E+00		-0.1000E+01						
486	125		0.5000E+01		0.0000E+00		-0.1000E+01						
487	126		0.8500E+01		0.0000E+00		-0.1000E+01						
488	127		0.1200E+02		0.0000E+00		-0.1000E+01						
489	128		0.1550E+02		0.0000E+00		-0.1000E+01						
490	129		0.1900E+02		0.0000E+00		-0.1000E+01						
491	130		0.2225E+02		0.0000E+00		-0.1000E+01						
492	131		0.2312E+02		0.0000E+00		-0.1000E+01						
493	132		0.2400E+02		0.0000E+00		-0.1000E+01						
494	133		0.0000E+00		0.8750E+00		-0.1000E+01						
495	134		0.8750E+00		0.8750E+00		-0.1000E+01						
496	135		0.1750E+01		0.8750E+00		-0.1000E+01						
497	136		0.5000E+01		0.8750E+00		-0.1000E+01						
498	137		0.8500E+01		0.8750E+00		-0.1000E+01						
499	138		0.1200E+02		0.8750E+00		-0.1000E+01						
500	139		0.1550E+02		0.8750E+00		-0.1000E+01						

	6	12	18	24	30	36	42	48	54	60	66	72	78
501	140		0.1900E+02		0.8750E+00		-0.1000E+01						
502	141		0.2225E+02		0.8750E+00		-0.1000E+01						
503	142		0.2312E+02		0.8750E+00		-0.1000E+01						
504	143		0.2400E+02		0.8750E+00		-0.1000E+01						
505	144		0.0000E+00		0.1750E+01		-0.1000E+01						
506	145		0.8750E+00		0.1750E+01		-0.1000E+01						
507	146		0.1750E+01		0.1750E+01		-0.1000E+01						
508	147		0.5000E+01		0.1750E+01		-0.1000E+01						
509	148		0.8500E+01		0.1750E+01		-0.1000E+01						
510	149		0.1200E+02		0.1750E+01		-0.1000E+01						
511	150		0.1550E+02		0.1750E+01		-0.1000E+01						
512	151		0.1900E+02		0.1750E+01		-0.1000E+01						
513	152		0.2225E+02		0.1750E+01		-0.1000E+01						
514	153		0.2312E+02		0.1750E+01		-0.1000E+01						
515	154		0.2400E+02		0.1750E+01		-0.1000E+01						
516	155		0.0000E+00		0.5000E+01		-0.1000E+01						
517	156		0.8750E+00		0.5000E+01		-0.1000E+01						
518	157		0.1750E+01		0.5000E+01		-0.1000E+01						
519	158		0.5000E+01		0.5000E+01		-0.1000E+01						
520	159		0.8500E+01		0.5000E+01		-0.1000E+01						
521	160		0.1200E+02		0.5000E+01		-0.1000E+01						
522	161		0.1550E+02		0.5000E+01		-0.1000E+01						
523	162		0.1900E+02		0.5000E+01		-0.1000E+01						
524	163		0.2225E+02		0.5000E+01		-0.1000E+01						
525	164		0.2312E+02		0.5000E+01		-0.1000E+01						
526	165		0.2400E+02		0.5000E+01		-0.1000E+01						
527	166		0.0000E+00		0.8500E+01		-0.1000E+01						
528	167		0.8750E+00		0.8500E+01		-0.1000E+01						
529	168		0.1750E+01		0.8500E+01		-0.1000E+01						
530	169		0.5000E+01		0.8500E+01		-0.1000E+01						
531	170		0.8500E+01		0.8500E+01		-0.1000E+01						
532	171		0.1200E+02		0.8500E+01		-0.1000E+01						
533	172		0.1550E+02		0.8500E+01		-0.1000E+01						
534	173		0.1900E+02		0.8500E+01		-0.1000E+01						
535	174		0.2225E+02		0.8500E+01		-0.1000E+01						
536	175		0.2312E+02		0.8500E+01		-0.1000E+01						
537	176		0.2400E+02		0.8500E+01		-0.1000E+01						
538	177		0.0000E+00		0.1200E+02		-0.1000E+01						
539	178		0.8750E+00		0.1200E+02		-0.1000E+01						
540	179		0.1750E+01		0.1200E+02		-0.1000E+01						
541	180		0.5000E+01		0.1200E+02		-0.1000E+01						
542	181		0.8500E+01		0.1200E+02		-0.1000E+01						
543	182		0.1200E+02		0.1200E+02		-0.1000E+01						
544	183		0.1550E+02		0.1200E+02		-0.1000E+01						
545	184		0.1900E+02		0.1200E+02		-0.1000E+01						
546	185		0.2225E+02		0.1200E+02		-0.1000E+01						
547	186		0.2312E+02		0.1200E+02		-0.1000E+01						
548	187		0.2400E+02		0.1200E+02		-0.1000E+01						
549	188		0.0000E+00		0.1550E+02		-0.1000E+01						
550	189		0.8750E+00		0.1550E+02		-0.1000E+01						

190	0.1750E+01	0.1550E+02	-0.1000E+01
191	0.5000E+01	0.1550E+02	-0.1000E+01
192	0.8500E+01	0.1550E+02	-0.1000E+01
193	0.1200E+02	0.1550E+02	-0.1000E+01
194	0.1550E+02	0.1550E+02	-0.1000E+01
195	0.1900E+02	0.1550E+02	-0.1000E+01
196	0.2225E+02	0.1550E+02	-0.1000E+01
197	0.2312E+02	0.1550E+02	-0.1000E+01
198	0.2400E+02	0.1550E+02	-0.1000E+01
199	0.0000E+00	0.1900E+02	-0.1000E+01
200	0.8750E+00	0.1900E+02	-0.1000E+01
201	0.1750E+01	0.1900E+02	-0.1000E+01
202	0.5000E+01	0.1900E+02	-0.1000E+01
203	0.8500E+01	0.1900E+02	-0.1000E+01
204	0.1200E+02	0.1900E+02	-0.1000E+01
205	0.1550E+02	0.1900E+02	-0.1000E+01
206	0.1900E+02	0.1900E+02	-0.1000E+01
207	0.2225E+02	0.1900E+02	-0.1000E+01
208	0.2312E+02	0.1900E+02	-0.1000E+01
209	0.2400E+02	0.1900E+02	-0.1000E+01
210	0.0000E+00	0.2225E+02	-0.1000E+01
211	0.8750E+00	0.2225E+02	-0.1000E+01
212	0.1750E+01	0.2225E+02	-0.1000E+01
213	0.5000E+01	0.2225E+02	-0.1000E+01
214	0.8500E+01	0.2225E+02	-0.1000E+01
215	0.1200E+02	0.2225E+02	-0.1000E+01
216	0.1550E+02	0.2225E+02	-0.1000E+01
217	0.1900E+02	0.2225E+02	-0.1000E+01
218	0.2225E+02	0.2225E+02	-0.1000E+01
219	0.2312E+02	0.2225E+02	-0.1000E+01
220	0.2400E+02	0.2225E+02	-0.1000E+01
221	0.0000E+00	0.2312E+02	-0.1000E+01
222	0.8750E+00	0.2312E+02	-0.1000E+01
223	0.1750E+01	0.2312E+02	-0.1000E+01
224	0.5000E+01	0.2312E+02	-0.1000E+01
225	0.8500E+01	0.2312E+02	-0.1000E+01
226	0.1200E+02	0.2312E+02	-0.1000E+01
227	0.1550E+02	0.2312E+02	-0.1000E+01
228	0.1900E+02	0.2312E+02	-0.1000E+01
229	0.2225E+02	0.2312E+02	-0.1000E+01
230	0.2312E+02	0.2312E+02	-0.1000E+01
231	0.2400E+02	0.2312E+02	-0.1000E+01
232	0.0000E+00	0.2400E+02	-0.1000E+01
233	0.8750E+00	0.2400E+02	-0.1000E+01
234	0.1750E+01	0.2400E+02	-0.1000E+01
235	0.5000E+01	0.2400E+02	-0.1000E+01
236	0.8500E+01	0.2400E+02	-0.1000E+01
237	0.1200E+02	0.2400E+02	-0.1000E+01
238	0.1550E+02	0.2400E+02	-0.1000E+01
239	0.1900E+02	0.2400E+02	-0.1000E+01

.... ANSYS INPUT DATA LISTING ....

```
     6     12    18    24    30    36    42    48    54    60    66    72    78
     V     V     V     V     V     V     V     V     V     V     V     V     V
     240          0.2225E+02  0.2400E+02 -0.1000E+01
     241          0.2312E+02  0.2400E+02 -0.1000E+01
     242          0.2400E+02  0.2400E+02 -0.1000E+01
      -1
EX        1       0.2900E+05
EY        1       0.2900E+05
NUXY      1       0.3000E+00
ALPX      1       0.0000E+00
ALPY      1       0.0000E+00
DENS      1       0.0000E+00
EX        2       0.1701E+03
ALPX      2       0.0000E+00
DENS      2       0.0000E+00
EX        3       0.2900E+05
ALPX      3       0.0000E+00
DENS      3       0.0000E+00
END
   1    -10 10                                                        1
                                            1
                                  121      UY
     1 UX         0.0000E+00      242      UY      UZ
   122 UX         0.0000E+00
         END
    61 FZ         0.2222E+02
          -1
      -1
FINISH
```

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***** ANALYST = J T LIU

***** ANALYSIS OPTIONS *****

	VALUE
ANALYSIS TYPE	0
ELEMENT CONSTANT TABLE . . .	1
POST-RUN PROCESS KEY	99
REFERENCE TEMPERATURE	0.00
UNIFORM TEMPERATURE	0.00

***** ELEMENT TYPES *****

TYPE	STIF	DESCRIPTION	KEY OPTIONS 1	2	3	4	5	6	7	8	9	NJ	INOTPR
1	43	RECT. FLAT SHELL, 3-D	0	0	2	0	0	0	0	0	0	0	0
2	10	CABLE	0	1	1	0	0	0	0	0	0	0	0
3	10	CABLE	0	1	0	0	0	0	0	0	0	0	0

NUMBER OF ELEMENT TYPES= 3

***** TABLE OF ELEMENT REAL CONSTANTS *****

NO.	
1	1.0000
2	0.19140
3	0.38280
4	0.90230
5	1.4770
6	1.5310
7	1.5310
8	1.5310
9	1.4770
10	0.90230
11	.38280
12	.19140
13	[illegible]

15	1.8050
16	2.9530
17	3.0620
18	3.0620
19	3.0620
20	2.9530
21	1.8050
22	0.76560
23	0.38280
24	0.90230
25	1.8050
26	4.2540
27	6.9610
28	7.2190
29	7.2190
30	7.2190
31	6.9610
32	4.2540
33	1.8050
34	0.90230
35	1.4770
36	2.9530
37	6.9610
38	11.390
39	11.810
40	11.810
41	11.810
42	11.390
43	6.9610
44	2.9530
45	1.4770
46	1.5310
47	3.0620
48	7.2190
49	11.810
50	12.250
51	12.250
52	12.250
53	11.810
54	7.2190
55	3.0620
56	1.5310
57	1.5310
58	3.0620
59	7.2190
60	11.810
61	12.250
62	12.250
63	12.250
64	11.810
65	7.2190
66	3.0620
67	1.5310
68	1.5310
69	3.0620
70	7.2190
1	11.810
72	12.250
73	12.250
74	12.250
75	11.810
76	7.219[illegible]
77	3.[illegible]
79	1.[illegible]1
[illegible]	[illegible]

81	6.9610
82	11.390
83	11.810
84	11.810
85	11.810
86	11.390
87	6.9610
88	2.9530
89	1.4770
90	0.90230
91	1.8050
92	4.2540
93	6.9610
94	7.2190
95	7.2190
96	7.2190
97	6.9610
98	4.2540
99	1.8050
100	0.90230
101	0.38280
102	0.76560
103	1.8050
104	2.9530
105	3.0620
106	3.0620
107	3.0620
108	2.9530
109	1.8050
110	0.76560
111	0.38280
112	0.19140
113	0.38280
114	0.90230
115	1.4770
116	1.5310
117	1.5310
118	1.5310
119	1.4770
120	0.90230
121	0.38280
122	0.19140
123	0.75860E-01
124	0.75860E-01
125	0.75860E-01
126	0.75860E-01

NUMBER OF REAL CONSTANT SETS= 126

***** ELEMENT DEFINITIONS *****

ELEMENT REAL CONSTANTS

ELEMENT	NODES				MAT	TYPE	CLASS					
								THK1	THK2	THK3	THK4	THET
1	1	2	13	12	1	1	0.	1.00.	1.00	1.00	1.00	0.000
2	2	3	14	13	1	1	0.	1.00.	1.00	1.00	1.00.	0.000
3	3	4	15	14	1	1	0	1.00.	1.00	1.00	1.00	0.000
4	4	5	16	15	1	1	0	1.00.	1.00	1.00	1.00.	0.000.
5	5	6	17	16	1	1	0	1.00.	1.00.	1.00	1.00	0.000
6	6	7	18	17	1	1	0	1.00.	1.00.	1.00	1.00.	0.000.
7	7	8	19	18	1	1	0	1.00.	1.00.	1.00	1.00	0.000.
8	8	9	20	19	1	1	0.	1.00.	1.00.	1.00	1.00	0.000
9	9	10	21	20	1	1	0	1.00.	1.00	1.00	1.00.	0.000
10	10	11	22	21	1	1	0	1.00.	1.00.	1.00	1.00	0.000
								AREA	ISTR			
11	1	122			2	2	0	0.191	0.000.			
12	2	123			2	2	0.	0.383	0.000			
13	3	124			2	2	0.	0.902	0.000			
14	4	125			2	2	0	1.48	0.000.			
15	5	126			2	2	0	1.53	0.000			
16	6	127			2	2	0.	1.53	0.000			
17	7	128			2	2	0.	1.53	0.000			
18	8	129			2	2	0.	1.48	0.000.			
19	9	130			2	2	0.	0.902	0.000			
20	10	131			2	2	0.	0.383	0.000.			
21	11	132			2	2	0.	0.191	0.000.			
								THK1	THK2	THK3	THK4	THET
22	12	13	24	23	1	1	0.	1.00.	1.00	1.00	1.00.	0.000.
23	13	14	25	24	1	1	0	1.00.	1.00.	1.00	1.00	0.000.
24	14	15	26	25	1	1	0	1.00.	1.00.	1.00	1.00.	0.000.
25	15	16	27	26	1	1	0.	1.00.	1.00	1.00	1.00	0.000
26	16	17	28	27	1	1	0.	1.00.	1.00.	1.00	1.00.	0.000.
27	17	18	29	28	1	1	0.	1.00.	1.00	1.00.	1.00	0.000
28	18	19	30	29	1	1	0.	1.00.	1.00.	1.00.	1.00	0.000.
29	19	20	31	30	1	1	0.	1.00.	1.00.	1.00.	1.00.	0.000.
30	20	21	32	31	1	1	0	1.00.	1.00	1.00.	1.00.	0.000.
31	21	22	33	32	1	1	0.	1.00.	1.00	1.00	1.00.	0.000.
								AREA	ISTR			
32	12	133			2	2	0.	0.383	0.000.			
33	13	134			2	2	0.	0.766	0.000.			
34	14	135			2	2	0.	1.80.	0.000.			
35	15	136			2	2	0	2.95	0.000			
36	16	137			2	2	0.	3.06	0.000			
37	17	138			2	2	0	3.06	0.000			
38	18	139			2	2	0	3.06	0.000			
39	19	140			2	2	0.	2.95	0.000.			
40	20	141			2	2	0.	1.80.	0.000.			
41	21	142			2	2	0.	0.766	0.000.			
42	22	143			2	2	0	0.383	0.000			
								THK1	THK2	THK3	THK4	THET
43	23	24	35	[illegible]	1	1	0	1.00.	1.00.	1.00	1.00	0.000
44	24	25	36	35	1	1	0.	1.00.	1.00	1.00	1.00	0.000
45	25	26	37	36	1	1	0	1.00.	1.00	1.00	1.00.	0.000
46	26	27	38	37	1	1	0	1.00.	1.00	1.00	1.00	0.000
47	27	28	39	38	1	1	0	1.00	1.00	1.00	1.00	0.000
48	28	29	40	39	1	1	0	1.00	1.00	1.00	1.00	0.000
49	29	30	41	40	1	1	[illegible]	1.00	1.00	1.00	1.00	0.000
50	[illegible]	31	42	41	[illegible]	1	[illegible]	1.	1.0	1.00	1.	0.000
51	[illegible]	[illegible]	43	[illegible]	[illegible]	1	[illegible]	1.	1.	1.	1.	0.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.	1.	1.	1.	[illegible]

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 53  23  144                 2   2   0   [illegible]  [illegible]
 54  24  145                 2   2   0   1.80    0.000
 55  25  146                 2   2   0   4.25    0.000
 56  26  147                 2   2   0   6.96    0.000
 57  27  148                 2   2   0   7.22    0.000
 58  28  149                 2   2   0   7.22    0.000
 59  29  150                 2   2   0   7.22    0.000
 60  30  151                 2   2   0   6.96    0.000
 61  31  152                 2   2   0   4.25    0.000
 62  32  153                 2   2   0   1.80    0.000
 63  33  154                 2   2   0   0.9?2   0.000
                                         THK1    THK2    THK3    THK4    THET
 64  34   35   46   45       1   1   0   1.00    1.00    1.00    1.00    0.000
 65  35   36   47   46       1   1   0   1.00    1.00    1.00    1.00    0.000
 66  36   37   48   47       1   1   0   1.00    1.00    1.00    1.00    0.000
 67  37   38   49   48       1   1   0   1.00    1.00    1.00    1.00    0.000
 68  38   39   50   49       1   1   0   1.00    1.00    1.00    1.00    0.000
 69  39   40   51   50       1   1   0   1.00    1.00    1.00    1.00    0.000
 70  40   41   52   51       1   1   0   1.00    1.00    1.00    1.00    0.000
 71  41   42   53   52       1   1   0   1.00    1.00    1.00    1.00    0.000
 72  42   43   54   53       1   1   0   1.00    1.00    1.00    1.00    0.000
 73  43   44   55   54       1   1   0   1.00    1.00    1.00    1.00    0.000
                                         AREA    ISTR
 74  34  155                 2   2   0   1.48    0.000
 75  35  156                 2   2   0   2.95    0.000
 76  36  157                 2   2   0   6.96    0.000
 77  37  158                 2   2   0   11.4    0.000
 78  38  159                 2   2   0   11.8    0.000
 79  39  160                 2   2   0   11.8    0.000
 80  40  161                 2   2   0   11.8    0.000
 81  41  162                 2   2   0   11.4    0.000
 82  42  163                 2   2   0   6.96    0.000
 83  43  164                 2   2   0   2.95    0.000
 84  44  165                 2   2   0   1.48    0.000
                                         THK1    THK2    THK3    THK4    THET
 85  45   46   57   56       1   1   0   1.00    1.00    1.00    1.00    0.000
 86  46   47   58   57       1   1   0   1.00    1.00    1.00    1.00    0.000
 87  47   48   59   58       1   1   0   1.00    1.00    1.00    1.00    0.000
 88  48   49   60   59       1   1   0   1.00    1.00    1.00    1.00    0.000
 89  49   50   61   60       1   1   0   1.00    1.00    1.00    1.00    0.000
 90  50   51   62   61       1   1   0   1.00    1.00    1.00    1.00    0.000
 91  51   52   63   62       1   1   0   1.00    1.00    1.00    1.00    0.000
 92  52   53   64   63       1   1   0   1.00    1.00    1.00    1.00    0.000
 93  53   54   65   64       1   1   0   1.00    1.00    1.00    1.00    0.000
 94  54   55   66   65       1   1   0   1.00    1.00    1.00    1.00    0.000
                                         AREA    ISTR
 95  45  166                 2   2   0   1.53    0.000
 96  46  167                 2   2   0   3.06    0.000
 97  47  168                 2   2   0   7.22    0.000
 98  48  169                 2   2   0   11.8    0.000
 99  49  170                 2   2   0   12.2    0.000
100  50  171                 2   2   0   12.2    0.000
101  51  172                 2   2   0   12.2    0.000
102  52  173                 2   2   0   11.8    0.000
103  53  174                 2   2   0   7.22    0.00
104  54  175                 2   2   0   3.06    0.000
105  55  176                 2   2   0   1.53    0.00
                                         THK1    THK2    THK3    THK4    THET
106  56   57   68   67       1   1   0   1.00    1.00    1.00    1.00    0.000
107  57   58   69   68       1   1   0   1.00    1.00    1.00    1.00    0.000
108  58   59   70   69       1   1   0   1.00    1.00    1.00    1.00    0.000
109  59   60   71   70       1   1   0   1.00    1.00    1.00    1.00    0.000
[illegible]                  1   1   [illegible]
[illegible]                  1   1   [illegible]
[illegible]
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114	64	65	76	75	1	1	[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	1.0[illegible]	[illegible]
115	65	66	77	75	1	1	[illegible]	1.00	1.00	1.00	1.00	0.000
								AREA	ISTR			
116	56	177			2	2	[illegible]	1.53	0.000			
117	57	178			2	2	0	3.06	0.000			
118	58	179			2	2	0	7.22	0.000			
119	59	180			2	2	0	11.8	0.000			
120	60	181			2	2	0	12.2	0.000			
121	61	182			2	2	0	12.2	0.000			
122	62	183			2	2	0	12.2	0.000			
123	63	184			2	2	0	11.8	0.000			
124	64	185			2	2	0	7.22	0.000			
125	65	186			2	2	0	3.06	0.000			
126	66	187			2	2	0.	1.53	0.000			
								THK1	THK2	THK3	THK4	THET
127	67	68	79	78	1	1	0.	1.00.	1.00.	1.00	1.00.	0.000.
128	68	69	80	79	1	1	0	1.00.	1.00	1.00	1.00	0.000
129	69	70	81	80	1	1	0	1.00.	1.00	1.00	1.00	0.000
130	70	71	82	81	1	1	0	1.00.	1.00	1.00	1.00	0.000
131	71	72	83	82	1	1	0	1.00.	1.00	1.00	1.00	0.000.
132	72	73	84	83	1	1	0.	1.00.	1.00	1.00	1.00.	0.000.
133	73	74	85	84	1	1	0.	1.00.	1.00.	1.00.	1.00.	0.000.
134	74	75	86	85	1	1	0	1.00.	1.00.	1.00.	1.00.	0.000
135	75	76	87	86	1	1	0	1.00.	1.00	1.00	1.00	0.000
136	76	77	88	87	1	1	0.	1.00.	1.00	1.00.	1.00	0.000
								AREA	ISTR			
137	67	188			2	2	0	1.53	0.000			
138	68	189			2	2	0.	3.06	0.000.			
139	69	190			2	2	0	7.22	0.000			
140	70	191			2	2	0	11.8	0.000			
141	71	192			2	2	0.	12.2	0.000			
142	72	193			2	2	0	12.2	0.000.			
143	73	194			2	2	0	12.2	0.000.			
144	74	195			2	2	0.	11.8	0.000.			
145	75	196			2	2	0	7.22	0.000.			
146	76	197			2	2	0	3.06	0.00			
147	77	198			2	2	0.	1.53	0.000.			
								THK1	THK2	THK3	THK4	THET
148	78	79	90.	89	1	1	0.	1.00.	1.00	1.00.	1.00.	0.000.
149	79	80	91	90	1	1	0.	1.00.	1.00.	1.00	1.00.	0.000.
150	80	81	92	91	1	1	0	1.00.	1.00.	1.00	1.00.	0.000.
151	81	82	93	92	1	1	0	1.00.	1.00.	1.00.	1.00.	0.000
152	82	83	94	93	1	1	0.	1.00.	1.00.	1.00.	1.00	0.000.
153	83	84	95	94	1	1	0	1.00.	1.00	1.00	1.00.	0.000
154	84	85	96	95	1	1	0.	1.00.	1.00	1.00	1.00.	0.000.
155	85	86	97	96	1	1	0	1.00.	1.00.	1.00	1.00.	0.000.
156	86	87	98	97	1	1	0	1.00.	1.00.	1.00.	1.0[illegible].	0.000
157	87	88	99	98								
								AREA	ISTR			
158	78	199			2	2	0.	1.48	0.000			
159	79	200			2	2	0	2.95	0.000.			
160	80	201			2	2	0	6.96	0.000.			
161	81	202			2	2	0	11.4	0.000.			
162	82	203			2	2	0	11.8	0.000			
163	83	204			2	2	0	11.8	0.000			
164	84	205			2	2	0	11.8	0.000			
165	85	206			2	2	0	11.4	0.000.			
166	86	207			2	2	0	6.96	0.000.			
167	87	208			2	2	0	2.95	0.000			
168	88	209			2	2	0	1.48	0.000			
								THK1	THK2	THK3	THK4	THET
169	89	90	101	10[illegible]	1	1	0	1.[illegible]	1.[illegible]	1.00	1.00	0.000
170	[illegible]	[illegible]1	102	101	1	1	[illegible]	1.[illegible]	1.[illegible]	1.00	1.0[illegible]	0.000
171	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	[illegible]

174	94	95	106	105	1	1	0	1.00	1.00	1.00	1.00	0.000
175	95	96	107	106	1	1	0	1.00	1.00	1.00	1.00	0.000
176	96	97	108	107	1	1	0	1.00	1.00	1.00	1.00	0.000
177	97	98	109	108	1	1	0	1.00	1.00	1.00	1.00	0.000
178	98	99	110	109	1	1	0	1.00	1.00	1.00	1.00	0.000
								AREA	ISTR			
179	89	210			2	2	0	0.902	0.000			
180	90	211			2	2	0	1.80	0.000			
181	91	212			2	2	0	4.25	0.000			
182	92	213			2	2	0	6.96	0.000			
183	93	214			2	2	0	7.22	0.000			
184	94	215			2	2	0	7.22	0.000			
185	95	216			2	2	0	7.22	0.000			
186	96	217			2	2	0	6.96	0.000			
187	97	218			2	2	0	4.25	0.000			
188	98	219			2	2	0	1.80	0.000			
189	99	220			2	2	0	0.902	0.000			
								THK1	THK2	THK3	THK4	THET
190	100	101	112	111	1	1	0	1.00	1.00	1.00	1.00	0.000
191	101	102	113	112	1	1	0	1.00	1.00	1.00	1.00	0.000
192	102	103	114	113	1	1	0	1.00	1.00	1.00	1.00	0.000
193	103	104	115	114	1	1	0	1.00	1.00	1.00	1.00	0.000
194	104	105	116	115	1	1	0	1.00	1.00	1.00	1.00	0.000
195	105	106	117	116	1	1	0	1.00	1.00	1.00	1.00	0.000
196	106	107	118	117	1	1	0	1.00	1.00	1.00	1.00	0.000
197	107	108	119	118	1	1	0	1.00	1.00	1.00	1.00	0.000
198	108	109	120	119	1	1	0	1.00	1.00	1.00	1.00	0.000
199	109	110	121	120								
								AREA	ISTR			
200	100	221			2	2	0	0.383	0.000			
201	101	222			2	2	0	0.766	0.000			
202	102	223			2	2	0	1.80	0.000			
203	103	224			2	2	0	2.95	0.000			
204	104	225			2	2	0	3.06	0.000			
205	105	226			2	2	0	3.06	0.000			
206	106	227			2	2	0	3.06	0.000			
207	107	228			2	2	0	2.95	0.000			
208	108	229			2	2	0	1.80	0.000			
209	109	230			2	2	0	0.766	0.000			
210	110	231			2	2	0	0.383	0.000			
211	111	232			2	2	0	0.191	0.000			
212	112	233			2	2	0	0.383	0.000			
213	113	234			2	2	0	0.902	0.000			
214	114	235			2	2	0	1.48	0.000			
215	115	236			2	2	0	1.53	0.000			
216	116	237			2	2	0	1.53	0.000			
217	117	238			2	2	0	1.53	0.000			
218	118	239			2	2	0	1.48	0.000			
219	119	240			2	2	0	0.902	0.000			
220	120	241			2	2	0	0.383	0.000			
221	121	242			2	2	0	0.191	0.000			
								AREA	ISTR			
222	25	146			3	3	0	0.759E-01	0.000			
223	31	152			3	3	0	0.759E-01	0.000			
224	91	212			3	3	0	0.759E-01	0.000			
225	97	218			3	3	0	0.759E-01	0.000			

OCTAL STORAGE REQUIREMENTS FOR ELEMENT INPUT CP= 1.[illegible]67 TIME= 13.31417
MEMORY I= [illegible]3731 MEMORY II= 00000744 TOTAL= 00004675 MEMORY AVAILABLE= 00245772
MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 4148P

NUMBER OF ELEMENTS = 225 MAXIMUM NODE NUMBER USED = 242

***** NODE DEFINITIONS *****

NODE	LOCATION X (OR R)	Y (OR THETA)	Z (OR PHI)	ROTATION (DEGREES) THXY (OR RT)	THYZ (TZ OR TP)	THXZ (RZ OR RP)
1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
2	0.87500	0.00000	0.00000	0.00000	0.00000	0.00000
3	1.7500	0.00000	0.00000	0.00000	0.00000	0.00000
4	5.0000	0.00000	0.00000	0.00000	0.00000	0.00000
5	8.5000	0.00000	0.00000	0.00000	0.00000	0.00000
6	12.000	0.00000	0.00000	0.00000	0.00000	0.00000
7	15.500	0.00000	0.00000	0.00000	0.00000	0.00000
8	19.000	0.00000	0.00000	0.00000	0.00000	0.00000
9	22.250	0.00000	0.00000	0.00000	0.00000	0.00000
10	23.120	0.00000	0.00000	0.00000	0.00000	0.00000
11	24.000	0.00000	0.00000	0.00000	0.00000	0.00000
12	0.00000	0.87500	0.00000	0.00000	0.00000	0.00000
13	0.87500	0.87500	0.00000	0.00000	0.00000	0.00000
14	1.7500	0.87500	0.00000	0.00000	0.00000	0.00000
15	5.0000	0.87500	0.00000	0.00000	0.00000	0.00000
16	8.5000	0.87500	0.00000	0.00000	0.00000	0.00000
17	12.000	0.87500	0.00000	0.00000	0.00000	0.00000
18	15.500	0.87500	0.00000	0.00000	0.00000	0.00000
19	19.000	0.87500	0.00000	0.00000	0.00000	0.00000
20	22.250	0.87500	0.00000	0.00000	0.00000	0.00000
21	23.120	0.87500	0.00000	0.00000	0.00000	0.00000
22	24.000	0.87500	0.00000	0.00000	0.00000	0.00000
23	0.00000	1.7500	0.00000	0.00000	0.00000	0.00000
24	0.87500	1.7500	0.00000	0.00000	0.00000	0.00000
25	1.7500	1.7500	0.00000	0.00000	0.00000	0.00000
26	5.0000	1.7500	0.00000	0.00000	0.00000	0.00000
27	8.5000	1.7500	0.00000	0.00000	0.00000	0.00000
28	12.000	1.7500	0.00000	0.00000	0.00000	0.00000
29	15.500	1.7500	0.00000	0.00000	0.00000	0.00000
30	19.000	1.7500	0.00000	0.00000	0.00000	0.00000
31	22.250	1.7500	0.00000	0.00000	0.00000	0.00000
32	23.120	1.7500	0.00000	0.00000	0.00000	0.00000
33	24.000	1.7500	0.00000	0.00000	0.00000	0.00000
34	0.00000	5.0000	0.00000	0.00000	0.00000	0.00000
35	0.87500	5.0000	0.00000	0.00000	0.00000	0.00000
36	1.7500	5.0000	0.00000	0.00000	0.00000	0.00000
37	5.0000	5.0000	0.00000	0.00000	0.00000	0.00000
38	8.5000	5.0000	0.00000	0.00000	0.00000	0.00000
39	12.000	5.0000	0.00000	0.00000	0.00000	0.00000
40	15.500	5.0000	0.00000	0.00000	0.00000	0.00000
41	19.000	5.0000	0.00000	0.00000	0.00000	0.00000
42	22.250	5.0000	0.00000	0.00000	0.00000	0.00000
43	23.120	5.0000	0.00000	0.00000	0.00000	0.00000
44	24.000	5.0000	0.00000	0.00000	0.00000	0.00000
45	0.00000	8.5000	0.00000	0.00000	0.00000	0.00000
46	0.87500	8.5000	0.00000	0.00000	0.00000	0.00000
47	1.7500	8.5000	0.00000	0.00000	0.00000	0.00000
48	5.0000	8.5000	0.00000	0.00000	0.00000	0.00000
49	8.5000	8.5000	0.00000	0.00000	0.00000	0.00000
50	12.000	8.5000	0.00000	0.00000	0.00000	0.00000
51	15.500	8.5000	0.00000	0.00000	0.00000	0.00000
52	19.000	8.5000	[illegible]	[illegible]	0.00000	0.00000
53	22.250	8.5000	[illegible]	[illegible]	0.00000	0.00000

56	0.00000	12.000	0.00000	0.00000	0.00000	0.00000
57	0.87500	12.000	0.00000	0.00000	0.00000	0.00000
58	1.7500	12.000	0.00000	0.00000	0.00000	0.00000
59	5.0000	12.000	0.00000	0.00000	0.00000	0.00000
60	8.5000	12.000	0.00000	0.00000	0.00000	0.00000
61	12.000	12.000	0.00000	0.00000	0.00000	0.00000
62	15.500	12.000	0.00000	0.00000	0.00000	0.00000
63	19.000	12.000	0.00000	0.00000	0.00000	0.00000
64	22.250	12.000	0.00000	0.00000	0.00000	0.00000
65	23.120	12.000	0.00000	0.00000	0.00000	0.00000
66	24.000	12.000	0.00000	0.00000	0.00000	0.00000
67	0.00000	15.500	0.00000	0.00000	0.00000	0.00000
68	0.87500	15.500	0.00000	0.00000	0.00000	0.00000
69	1.7500	15.500	0.00000	0.00000	0.00000	0.00000
70	5.0000	15.500	0.00000	0.00000	0.00000	0.00000
71	8.5000	15.500	0.00000	0.00000	0.00000	0.00000
72	12.000	15.500	0.00000	0.00000	0.00000	0.00000
73	15.500	15.500	0.00000	0.00000	0.00000	0.00000
74	19.000	15.500	0.00000	0.00000	0.00000	0.00000
75	22.250	15.500	0.00000	0.00000	0.00000	0.00000
76	23.120	15.500	0.00000	0.00000	0.00000	0.00000
77	24.000	15.500	0.00000	0.00000	0.00000	0.00000
78	0.00000	19.000	0.00000	0.00000	0.00000	0.00000
79	0.87500	19.000	0.00000	0.00000	0.00000	0.00000
80	1.7500	19.000	0.00000	0.00000	0.00000	0.00000
81	5.0000	19.000	0.00000	0.00000	0.00000	0.00000
82	8.5000	19.000	0.00000	0.00000	0.00000	0.00000
83	12.000	19.000	0.00000	0.00000	0.00000	0.00000
84	15.500	19.000	0.00000	0.00000	0.00000	0.00000
85	19.000	19.000	0.00000	0.00000	0.00000	0.00000
86	22.250	19.000	0.00000	0.00000	0.00000	0.00000
87	23.120	19.000	0.00000	0.00000	0.00000	0.00000
88	24.000	19.000	0.00000	0.00000	0.00000	0.00000
89	0.00000	22.250	0.00000	0.00000	0.00000	0.00000
90	0.87500	22.250	0.00000	0.00000	0.00000	0.00000
91	1.7500	22.250	0.00000	0.00000	0.00000	0.00000
92	5.0000	22.250	0.00000	0.00000	0.00000	0.00000
93	8.5000	22.250	0.00000	0.00000	0.00000	0.00000
94	12.000	22.250	0.00000	0.00000	0.00000	0.00000
95	15.500	22.250	0.00000	0.00000	0.00000	0.00000
96	19.000	22.250	0.00000	0.00000	0.00000	0.00000
97	22.250	22.250	0.00000	0.00000	0.00000	0.00000
98	23.120	22.250	0.00000	0.00000	0.00000	0.00000
99	24.000	22.250	0.00000	0.00000	0.00000	0.00000
100	0.00000	23.120	0.00000	0.00000	0.00000	0.00000
101	0.87500	23.120	0.00000	0.00000	0.00000	0.00000
102	1.7500	23.120	0.00000	0.00000	0.00000	0.00000
103	5.0000	23.120	0.00000	0.00000	0.00000	0.00000
104	8.5000	23.120	0.00000	0.00000	0.00000	0.00000
105	12.000	23.120	0.00000	0.00000	0.00000	0.00000
106	15.500	23.120	0.00000	0.00000	0.00000	0.00000
107	19.000	23.120	0.00000	0.00000	0.00000	0.00000
108	22.250	23.120	0.00000	0.00000	0.00000	0.00000
109	23.120	23.120	0.00000	0.00000	0.00000	0.00000
110	24.000	23.120	0.00000	0.00000	0.00000	0.00000
111	0.00000	24.000	0.00000	0.00000	0.00000	0.00000
112	0.87500	24.000	0.00000	0.00000	0.00000	0.00000
113	1.7500	24.000	0.00000	0.00000	0.00000	0.00000
114	5.0000	24.000	0.00000	0.00000	0.00000	0.00000
115	8.5000	24.000	0.00000	0.00000	0.00000	0.00000
116	12.000	24.000	0.00000	0.00000	0.00000	0.00000
117	15.500	24.000	0.00000	0.00000	0.00000	0.00000
118	19.000	24.000	[illegible]	[illegible]	0.00000	0.0000
119	[illegible]	24.000	[illegible]	[illegible]	[illegible]	[illegible]
120	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

122	0.00000	0.00000	-1.0000	0.00000	0.00000	0.00000
123	0.87500	0.00000	-1.0000	0.00000	0.00000	0.0000
124	1.7500	0.00000	-1.0000	0.00000	0.00000	0.0000
125	5.0000	0.00000	-1.0000	0.00000	0.00000	0.0000
126	8.5000	0.00000	-1.0000	0.00000	0.00000	0.00000
127	12.000	0.00000	-1.0000	0.00000	0.00000	0.00000
128	15.500	0.00000	-1.0000	0.00000	0.00000	0.00000
129	19.000	0.00000	-1.0000	0.00000	0.00000	0.00000
130	22.250	0.00000	-1.0000	0.00000	0.00000	0.00000
131	23.120	0.00000	-1.0000	0.00000	0.00000	0.00000
132	24.000	0.00000	-1.0000	0.00000	0.00000	0.00000
133	0.00000	0.87500	-1.0000	0.00000	0.00000	0.00000
134	0.87500	0.87500	-1.0000	0.00000	0.00000	0.00000
135	1.7500	0.87500	-1.0000	0.00000	0.00000	0.00000
136	5.0000	0.87500	-1.0000	0.00000	0.00000	0.00000
137	8.5000	0.87500	-1.0000	0.00000	0.00000	0.00000
138	12.000	0.87500	-1.0000	0.00000	0.00000	0.00000
139	15.500	0.87500	-1.0000	0.00000	0.00000	0.00000
140	19.000	0.87500	-1.0000	0.00000	0.00000	0.00000
141	22.250	0.87500	-1.0000	0.00000	0.00000	0.00000
142	23.120	0.87500	-1.0000	0.00000	0.00000	0.00000
143	24.000	0.87500	-1.0000	0.00000	0.00000	0.00000
144	0.00000	1.7500	-1.0000	0.00000	0.00000	0.00000
145	0.87500	1.7500	-1.0000	0.00000	0.00000	0.00000
146	1.7500	1.7500	-1.0000	0.00000	0.00000	0.0000
147	5.0000	1.7500	-1.0000	0.00000	0.00000	0.00000
148	8.5000	1.7500	-1.0000	0.00000	0.00000	0.00000
149	12.000	1.7500	-1.0000	0.00000	0.00000	0.00000
150	15.500	1.7500	-1.0000	0.00000	0.00000	0.0000
151	19.000	1.7500	-1.0000	0.00000	0.00000	0.00000
152	22.250	1.7500	-1.0000	0.00000	0.00000	0.0000
153	23.120	1.7500	-1.0000	0.00000	0.00000	0.00000
154	24.000	1.7500	-1.0000	0.00000	0.00000	0.0000
155	0.00000	5.0000	-1.0000	0.00000	0.00000	0.00000
156	0.87500	5.0000	-1.0000	0.00000	0.00000	0.0000
157	1.7500	5.0000	-1.0000	0.00000	0.00000	0.00000
158	5.0000	5.0000	-1.0000	0.00000	0.00000	0.00000
159	8.5000	5.0000	-1.0000	0.00000	0.00000	0.00000
160	12.000	5.0000	-1.0000	0.00000	0.00000	0.00000
161	15.500	5.0000	-1.0000	0.00000	0.00000	0.00000
162	19.000	5.0000	-1.0000	0.00000	0.00000	0.00000
163	22.250	5.0000	-1.0000	0.00000	0.00000	0.00000
164	23.120	5.0000	-1.0000	0.00000	0.00000	0.00000
165	24.000	5.0000	-1.0000	0.00000	0.00000	0.00000
166	0.00000	8.5000	-1.0000	0.00000	0.00000	0.00000
167	0.87500	8.5000	-1.0000	0.00000	0.00000	0.00000
168	1.7500	8.5000	-1.0000	0.00000	0.00000	0.00000
169	5.0000	8.5000	-1.0000	0.00000	0.00000	0.00000
170	8.5000	8.5000	-1.0000	0.00000	0.00000	0.00000
171	12.000	8.5000	-1.0000	0.00000	0.00000	0.00000
172	15.500	8.5000	-1.0000	0.00000	0.00000	0.00000
173	19.000	8.5000	-1.0000	0.00000	0.00000	0.0000
174	22.250	8.5000	-1.0000	0.00000	0.00000	0.00000
175	23.120	8.5000	-1.0000	0.00000	0.00000	0.00000
176	24.000	8.5000	-1.0000	0.00000	0.00000	0.00000
177	0.00000	12.000	-1.0000	0.00000	0.00000	0.00000
178	0.87500	12.000	-1.0000	0.00000	0.00000	0.00000
179	1.7500	12.000	-1.0000	0.00000	0.00000	0.00000
180	5.0000	12.000	-1.0000	0.00000	0.00000	0.00000
181	8.5000	12.000	-1.0000	0.00000	0.00000	0.00000
182	12.000	12.000	-1.0000	0.00000	0.00000	0.00000
183	15.500	12.000	-1.0000	0.00000	0.00000	0.00000
184	19.[illegible]	12.[illegible]	-1.0000	[illegible]	[illegible]	0.0000
185	22.2[illegible]	12.[illegible]	-1.	[illegible]	[illegible]	[illegible]
186	[illegible]	[illegible]	-1.	[illegible]	[illegible]	[illegible]

188	0.00000	15.500	-1.0000	0.00000	0.00000	0.00000
189	0.87500	15.500	-1.0000	0.00000	0.00000	0.00000
190	1.7500	15.500	-1.0000	0.00000	0.00000	0.00000
191	5.0000	15.500	-1.0000	0.00000	0.00000	0.00000
192	8.5000	15.500	-1.0000	0.00000	0.00000	0.00000
193	12.000	15.500	-1.0000	0.00000	0.00000	0.00000
194	15.500	15.500	-1.0000	0.00000	0.00000	0.00000
195	19.000	15.500	-1.0000	0.00000	0.00000	0.00000
196	22.250	15.500	-1.0000	0.00000	0.00000	0.00000
197	23.120	15.500	-1.0000	0.00000	0.00000	0.00000
198	24.000	15.500	-1.0000	0.00000	0.00000	0.00000
199	0.00000	19.000	-1.0000	0.00000	0.00000	0.00000
200	0.87500	19.000	-1.0000	0.00000	0.00000	0.00000
201	1.7500	19.000	-1.0000	0.00000	0.00000	0.00000
202	5.0000	19.000	-1.0000	0.00000	0.00000	0.00000
203	8.5000	19.000	-1.0000	0.00000	0.00000	0.00000
204	12.000	19.000	-1.0000	0.00000	0.00000	0.00000
205	15.500	19.000	-1.0000	0.00000	0.00000	0.00000
206	19.000	19.000	-1.0000	0.00000	0.00000	0.00000
207	22.250	19.000	-1.0000	0.00000	0.00000	0.00000
208	23.120	19.000	-1.0000	0.00000	0.00000	0.00000
209	24.000	19.000	-1.0000	0.00000	0.00000	0.00000
210	0.00000	22.250	-1.0000	0.00000	0.00000	0.00000
211	0.87500	22.250	-1.0000	0.00000	0.00000	0.00000
212	1.7500	22.250	-1.0000	0.00000	0.00000	0.00000
213	5.0000	22.250	-1.0000	0.00000	0.00000	0.00000
214	8.5000	22.250	-1.0000	0.00000	0.00000	0.00000
215	12.000	22.250	-1.0000	0.00000	0.00000	0.00000
216	15.500	22.250	-1.0000	0.00000	0.00000	0.00000
217	19.000	22.250	-1.0000	0.00000	0.00000	0.00000
218	22.250	22.250	-1.0000	0.00000	0.00000	0.00000
219	23.120	22.250	-1.0000	0.00000	0.00000	0.00000
220	24.000	22.250	-1.0000	0.00000	0.00000	0.00000
221	0.00000	23.120	-1.0000	0.00000	0.00000	0.00000
222	0.87500	23.120	-1.0000	0.00000	0.00000	0.00000
223	1.7500	23.120	-1.0000	0.00000	0.00000	0.00000
224	5.0000	23.120	-1.0000	0.00000	0.00000	0.00000
225	8.5000	23.120	-1.0000	0.00000	0.00000	0.00000
226	12.000	23.120	-1.0000	0.00000	0.00000	0.00000
227	15.500	23.120	-1.0000	0.00000	0.00000	0.00000
228	19.000	23.120	-1.0000	0.00000	0.00000	0.00000
229	22.250	23.120	-1.0000	0.00000	0.00000	0.00000
230	23.120	23.120	-1.0000	0.00000	0.00000	0.00000
231	24.000	23.120	-1.0000	0.00000	0.00000	0.00000
232	0.00000	24.000	-1.0000	0.00000	0.00000	0.00000
233	0.87500	24.000	-1.0000	0.00000	0.00000	0.00000
234	1.7500	24.000	-1.0000	0.00000	0.00000	0.00000
235	5.0000	24.000	-1.0000	0.00000	0.00000	0.00000
236	8.5000	24.000	-1.0000	0.00000	0.00000	0.00000
237	12.000	24.000	-1.0000	0.00000	0.00000	0.00000
238	15.500	24.000	-1.0000	0.00000	0.00000	0.00000
239	19.000	24.000	-1.0000	0.00000	0.00000	0.00000
240	22.250	24.000	-1.0000	0.00000	0.00000	0.00000
241	23.120	24.000	-1.0000	0.00000	0.00000	0.00000
242	24.000	24.000	-1.0000	0.00000	0.00000	0.00000

XMIN= 0.0000 XMAX= 24.00 YMIN= 0.0000 YMAX= 24.00 ZMIN= -1.000 ZMAX= 0.0000

CP= 1.486 TIME= 13.31445

OCTAL STORAGE REQUIREMENTS FOR NODE INPUT
MEMORY I= 00000000 MEMORY II= 00002654 TOTAL= 00002654 MEMORY AVAILABLE= 01245772
MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 14164

***** MATERIAL PROPERTIES *****

MATERIAL 1

```
EX   =   29000.0
EY   =   29000.0
NUXY =   0.300000
ALPX =   0.000000
ALPY =   0.000000
DENS =   0.000000
```

MATERIAL 2

```
EX   =   175.100
ALPX =   0.000000
DENS =   0.000000
```

MATERIAL 3

```
EX   =   29000.0
ALPX =   0.000000
DENS =   0.000000

NUXY =   0.300000      (DEFAULT) FOR MATERIAL   2

NUXY =   0.300000      (DEFAULT) FOR MATERIAL   3

MAXIMUM MATERIAL NUMBER=   3

OCTAL STORAGE REQUIREMENTS FOR MATERIALS, ETC. INPUT          CP=    1.521  TIME= 13.31445
MEMORY I= 00000144  MEMORY II= 00000000. TOTAL= 00000144  MEMORY AVAILABLE= 00245772
```

LOAD STEP NUMBER = 1

***** LOAD STEP OPTIONS (CARDS L AND M) *****

	VALUE	VARIABLE NAME	COLUMNS	FIELD	
LOAD STEP KEY	1	KDIS	2-3	1	
TEMPERATURE KEY	0.	KTEMP	4-6	2	
NUMBER OF ITERATIONS.	-10.	NITTER	7-9	3	
STRESS PRINTOUT FREQUENCY . .	10	NPRINT	10-12	4	
TIME AT END OF LOAD STEP. . .	0.00000.	TIME	13-24	5	
DISPL. PRINTOUT FREQUENCY . .	10	NDPRNT	70-72	13	(CARD M)
MD CARD KEY	1	IMD	80	17	(CARD M)

***** SPECIAL LOADING PARAMETERS *****

PLASTICITY CONVERGENCE CRITERION = 0.0100

CREEP OPTIMIZATION CRITERION = 0.1000

CONVERGENCE CRITERIA - LARGE DEFLECTION = 0.001000

KEY TO TERMINATE RUN IF NO CONVERGENCE = 1.

***** SPECIFIED DISPLACEMENTS *****

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	0.000000	0.000000				
2	0.000000	0.000000				
3	0.000000	0.000000				
4	0.000000	.000000				
5	0.000000	0.000000				
6	0.000000	0.000000				
7	0.000000	0.000000				
8	0.000000	0.000000				
9	0.000000	0.000000				
10	0.000000	0.000000				
11	0.000000	0.000000				
12	0.000000	0.000000				
13	0.000000	0.000000				
14	0.000000	0.00000				
15	0.000000	0.000000				
16	0.000000	0.000000				
17	0.000000	0.00000				
18	0.000000	0.00000				
19	0.000000	0.00000				
20	0.000000	0.00000				
21	0.000000	0.000000				
22	[illegible]	[illegible]				
23	[illegible]	[illegible]				
24	[illegible]	[illegible]				
25	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]				

29	0.000000	0.000000
30	0.000000	0.000000
31	0.000000	0.000000
32	0.000000	0.000000
33	0.000000	0.000000
34	0.000000	0.000000
35	0.000000	0.000000
36	0.000000	0.000000
37	0.000000	0.000000
38	0.000000	0.000000
39	0.000000	0.000000
40	0.000000	0.000000
41	0.000000	0.000000
42	0.000000	0.000000
43	0.000000	0.000000
44	0.000000	0.000000
45	0.000000	0.000000
46	0.000000	0.000000
47	0.000000	0.000000
48	0.000000	0.000000
49	0.000000	0.000000
50	0.000000	0.000000
51	0.000000	0.000000
52	0.000000	0.000000
53	0.000000	0.000000
54	0.000000	0.000000
55	0.000000	0.000000
56	0.000000	0.000000
57	0.000000	0.000000
58	0.000000	0.000000
59	0.000000	0.000000
60	0.000000	0.000000
61	0.000000	0.000000
62	0.000000	0.000000
63	0.000000	0.000000
64	0.000000	0.000000
65	0.000000	0.000000
66	0.000000	0.000000
67	0.000000	0.000000
68	0.000000	0.000000
69	0.000000	0.000000
70	0.000000	0.000000
71	0.000000	0.000000
72	0.000000	0.000000
73	0.000000	0.000000
74	0.000000	0.000000
75	0.000000	0.000000
76	0.000000	0.000000
77	0.000000	0.000000
78	0.000000	0.000000
79	0.000000	0.000000
80	0.000000	0.000000
81	0.000000	0.000000
82	0.000000	0.000000
83	0.000000	0.000000
84	0.000000	0.000000
85	0.000000	0.000000
86	0.000000	0.000000
87	0.000000	0.000000
88	0.000000	0.000000
89	0.000000	0.000000
90	[illegible]	[illegible]
91	[illegible]	[illegible]
92	[illegible]	[illegible]

95	0.000000.	0.000000.	
96	0.000000	0.000000	
97	0.000000	0.000000.	
98	0.000000.	0.000000.	
99	0.000000	0.000000.	
100	0.000000.	0.000000.	
101	0.000000.	0.000000.	
102	0.000000	0.000000.	
103	0.000000.	0.000000.	
104	0.000000.	0.000000.	
105	0.000000.	0.000000.	
106	0.000000.	0.000000.	
107	0.000000.	0.000000.	
108	0.000000	0.000000.	
109	0.000000.	0.000000.	
110	0.000000.	0.000000.	
111	0.000000	0.000000.	
112	0.000000	0.000000.	
113	0.000000.	0.000000.	
114	0.000000	0.000000.	
115	0.000000	0.000000.	
116	0.000000.	0.000000.	
117	0.000000	0.000000.	
118	0.000000.	0.000000.	
119	0.000000.	0.000000.	
120	0.000000	0.000000.	
121	0.000000.	0.000000.	
122	0.000000.	0.000000.	0.000000.
123	0.000000.	0.000000.	0.000000
124	0.000000.	0.000000.	0.000000
125	0.000000.	0.000000.	0.000000.
126	0.000000.	0.000000.	0.000000.
127	0.000000	0.000000.	0.000000.
128	0.000000.	0.000000.	0.000000.
129	0.000000.	0.000000.	0.000000
130	0.000000.	0.000000.	0.000000.
131	0.000000.	0.000000.	0.000000.
132	0.000000	0.000000.	0.000000
133	0.000000.	0.000000.	0.000000.
134	0.000000.	0.000000.	0.000000.
135	0.000000	0.000000.	0.000000
136	0.000000.	0.000000.	0.000000
137	0.000000.	0.000000.	0.000000.
138	0.000000.	0.000000.	0.000000.
139	0.000000.	0.000000.	0.000000
140	0.000000.	0.000000.	0.000000.
141	0.000000.	0.000000.	0.000000.
142	0.000000.	0.000000.	0.000000.
143	0.000000	0.000000.	0.000000
144	0.000000.	0.000000.	0.000000.
145	0.000000.	0.000000.	0.000000.
146	0.000000.	0.000000.	0.00000
147	0.000000.	0.000000.	0.000000.
148	0.000000.	0.000000.	0.000000
149	0.000000.	0.000000.	0.00000
150	0.000000.	0.000000.	0.000000.
151	0.000000	0.000000.	0.000000
152	0.000000.	0.000000.	0.000000
153	0.000000	0.000000.	0.000000
154	0.000000.	0.000000.	0.000000.
155	[illegible]	0.000000.	0.000000
156	[illegible]	0.000000.	[illegible]
157	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

151	0.000000	0.000000.	0.00000
162	0.000000.	0.000000.	0.00000
163	0.000000.	0.000000.	0.00000 .
164	0.000000	0.000000.	0.00000
165	0.000000.	0.000000.	0.000000.
166	0.000000.	0.000000.	0.000000
167	0.000000	0.000000.	0.000000.
168	0.000000.	0.000000.	0.000000.
169	0.000000.	0.000000.	0.000000.
170	0.000000.	0.000000.	0.000000.
171	0.000000.	0.000000.	0.000000
172	0.000000.	0.000000.	0.000000
173	0.000000	0.000000.	0.000000
174	0.000000.	0.000000.	0.000000.
175	0.000000.	0.000000.	0.000000
176	0.000000.	0.000000.	0.000000.
177	0.000000	0.000000.	0.000000.
178	0.000000.	0.000000.	0.000000
179	0.000000.	0.000000.	0.000000.
180	0.000000.	0.000000.	0.000000.
181	0.000000	0.000000.	0.000000.
182	0.000000.	0.000000.	0.000000.
183	0.000000.	0.000000.	0.000000.
184	0.000000	0.000000.	0.000000.
185	0.000000.	0.000000.	0.000000.
186	0.000000.	0.000000.	0.000000.
187	0.000000.	0.000000.	0.000000
188	0.000000.	0.000000.	0.000000.
189	0.000000.	0.000000.	0.000000
190	0.000000	0.000000.	0.000000
191	0.000000.	0.000000.	0.000000.
192	0.000000.	0.000000.	0.000000.
193	0.000000.	0.000000.	0.000000.
194	0.000000.	0.000000.	0.00000 .
195	0.000000.	0.000000.	0.000000
196	0.000000	0.000000.	0.000000
197	0.000000.	0.000000.	0.000000.
198	0.000000.	0.000000.	0.000000
199	0.000000.	0.000000.	0.000000.
200	0.000000.	0.000000.	0.000000.
201	0.000000.	0.000000.	0.000000.
202	0.000000.	0.000000.	0.000000.
203	0.000000.	0.000000.	0.00000 .
204	0.000000.	0.000000.	0.000000.
205	0.000000	0.000000.	0.000000.
206	0.000000.	0.000000.	0.000000.
207	0.000000.	0.000000.	0.000000.
208	0.000000.	0.000000.	0.000000
209	0.000000.	0.000000.	0.000000.
210	0.000000.	0.000000.	0.000000.
211	0.000000	0.000000.	0.000000.
212	0.000000.	0.000000.	0.000000
213	0.000000	0.000000.	0.000000
214	0.000000	0.000000.	0.000000
215	0.000000	0.000000.	0.000000
216	0.000000.	0.000000.	0.000000
217	0.000000	0.000000.	0.000000
218	0.000000	0.000000.	0.000000
219	0.000000.	0.000000.	0.000000
220	[illegible]	[illegible]	[illegible]
221	[illegible]	[illegible]	[illegible]
222	[illegible]	[illegible]	[illegible]
223	[illegible]	[illegible]	[illegible]
224	[illegible]	[illegible]	[illegible]

227	.[illegible]	.00000[illegible].	[illegible]
228	[illegible]	[illegible].000009.	0.000000
229	0.000000.	0.000009.	0.000000
230	0.000000.	0.000009.	0.000000
231	0.000000	0.000009.	0.000000
232	0.000000.	0.000009.	0.000000
233	0.000000.	0.000009.	0.000000.
234	0.000000	0.000009.	0.000000
235	0.000000.	0.000009.	0.000000.
236	0.000000.	0.000009.	0.000000.
237	0.000000.	0.000009.	0.000000
238	0.000000	0.000009.	0.000000
239	0.000000.	0.000009.	0.000000
240	0.000000	0.000009.	0.000000
241	0.000000	0.000009.	0.000000
242	0.000000.	0.000009.	0.000000.

***** SPECIFIED FORCES *****

NO.	NODE	DIRECTION	VALUE
1	61	FZ	22.2200

***** LOAD SUMMARY - 605 DISPLACEMENTS 1 FORCES 0 PRESSURES *****

OCTAL STORAGE REQUIREMENTS FOR LOAD DATA INPUT CP= 1.838 TIME= 13.31556
MEMORY I= 00006063 MEMORY II= 00000000. TOTAL= 00006063 MEMORY AVAILABLE= 00245772

RANGE OF ELEMENT MAXIMUM STIFFNESS IN GLOBAL COORDINATES

MAXIMUM= 0.589089E+05 AT ELEMENT 174.
MINIMUM= 0.325571E+02 AT ELEMENT 221.

OCTAL STORAGE REQUIREMENTS FOR ELEMENT FORMULATION CP= 3.317 TIME= 13.31861
MEMORY I= 00006061 MEMORY II= 00000000. TOTAL= 00006061 MEMORY AVAILABLE= 00245772

*** ELEMENT STIFFNESS FORMULATION TIMES

TYPE	NUMBER	STIF	TOTAL CP	AVE CP
1	100	43	1.356	0.014
2	121	10	0.066	0.001
3	4	10	0.002	0.001

TIME AT END OF ELEMENT STIFFNESS FORMULATION CP= 3.318

MAXIMUM IN-CORE WAVE FRONT ALLOWED FOR REQUESTED MEMORY SIZE= 402.

OCTAL STORAGE REQUIREMENTS FOR WAVE FRONT MATRIX SOLUTION CP= 3.770 TIME= 13.31889
MEMORY I= 00006061 MEMORY II= 00006200. TOTAL= 00014261 MEMORY AVAILABLE= 00245772

MAXIMUM IN-CORE WAVE FRONT= 76.

MATRIX SOLUTION TIMES
[illegible]

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NODAL COORD. TRANSFORMATION    CP=          0.00?
MATRIX TRIANGULARIZATION       CP=          0.321

TIME AT END OF MATRIX TRIANGULARIZATION  CP=         3.772

OCTAL STORAGE REQUIREMENTS FOR BACK SUBSTITUTION              CP=     3.801  TIME= 13.31917
MEMORY I= 00006061  MEMORY II= 00002663  TOTAL= 00010744  MEMORY AVAILABLE= 00245772

  *** ELEM. STRESS CALC. TIMES
 TYPE  NUMBER  STIF  TOTAL CP   AVE CP

  1      100    43    0.135   0.001
  2      121    10.   0.060.  0.000.
  3        4    10    0.002   0.000

 STATUS CHANGED FOR    57 BILINEAR ELEM THIS ITER
*** LOAD STEP    1    ITER     1  COMPLETED.  TIME=  0.000000      TIME INC=  0.000000.    NEW TRIANG MATRIX  CUM. ITER.=    1

OCTAL STORAGE REQUIREMENTS FOR STRESS AND FORCE CALCULATIONS   CP=     4.018  TIME= 13.32056
MEMORY I= 00006061  MEMORY II= 00002654  TOTAL= 00010735  MEMORY AVAILABLE= 00245772

 *** STORAGE REQUIREMENT SUMMARY
MAXIMUM CENTRAL MEMORY USED  = 00006063
MAXIMUM AUXILIARY MEMORY USED= 00006200.
MAXIMUM TOTAL MEMORY USED    = 00014261
MAXIMUM AUXILIARY AVAILABLE  = 00237710

 *** PROBLEM STATISTICS
 NO. OF ACTIVE DEGREES OF FREEDOM =      363
 R.M.S. WAVEFRONT SIZE =      52.6

 *** ANSYS BINARY FILE STATISTICS
BUFFER SIZE USED= 1022
RESTART DATA WRITTEN ON FILE 3   (   91194 WORDS)
TRIANGULARIZED MATRIX WRITTEN ON FILE11   (   22661 WORDS)

 STATUS CHANGED FOR    48 BILINEAR ELEM THIS ITER
*** LOAD STEP    1    ITER     2  COMPLETED.  TIME=  0.000000      TIME INC=  0.000000.    NEW TRIANG MATRIX  CUM. ITER.=    2

 STATUS CHANGED FOR    28 BILINEAR ELEM THIS ITER
*** LOAD STEP    1    ITER     3  COMPLETED.  TIME=  0.000000      TIME INC=  0.000000.    NEW TRIANG MATRIX  CUM. ITER.=    3

 STATUS CHANGED FOR    28 BILINEAR ELEM THIS ITER
*** LOAD STEP    1    ITER     4  COMPLETED.  TIME=  0.000000.     TIME INC=  0.000000.    NEW TRIANG MATRIX  CUM. ITER.=    4

 STATUS CHANGED FOR     0 BILINEAR ELEM THIS ITER
*** LOAD STEP    1    ITER     5  COMPLETED.  TIME=  0.000000.     TIME INC=  0.000000.    NEW TRIANG MATRIX  CUM. ITER.=    5

 *** SOLUTION CONVERGED - LOAD STEP   1  CONVERGED AFTER ITERATION     5  CUM. ITER.=     5
      NEXT ITERATION (IDENTIFIED AS ITERATION    10) SATISFIES PRINTOUT OR POST DATA REQUEST.
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***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 6

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	0.000000	0.000000	-0.155507E-01	0.564946E-02	-0.564946E-02	
2	0.000000	0.000000	-0.105896E-01	0.568388E-02	-0.571238E-02	
3	0.000000	0.000000	-0.549649E-02	0.573951E-02	-0.596668E-02	
4	0.000000	0.000000	0.149407E-01	0.598451E-02	-0.623086E-02	
5	0.000000	0.000000	0.334196E-01	0.563523E-02	-0.388175E-02	
6	0.000000	0.000000	0.408611E-01	0.546373E-02	-0.465179E-06	
7	0.000000	0.000000	0.334224E-01	0.563477E-02	0.388120E-02	
8	0.000000	0.000000	0.149436E-01	0.598380E-02	0.623161E-02	
9	0.000000	0.000000	-0.550011E-02	0.573930E-02	0.597041E-02	
10	0.000000	0.000000	-0.105683E-01	0.568439E-02	0.571777E-02	
11	0.000000	0.000000	-0.155626E-01	0.565021E-02	0.565394E-02	
12	0.000000	0.000000	-0.105896E-01	0.571238E-02	-0.568388E-02	
13	0.000000	0.000000	-0.561045E-02	0.572678E-02	-0.572678E-02	
14	0.000000	0.000000	-0.494722E-03	0.572291E-02	-0.601629E-02	
15	0.000000	0.000000	0.202207E-01	0.609708E-02	-0.623818E-02	
16	0.000000	0.000000	0.384606E-01	0.587848E-02	-0.383039E-02	
17	0.000000	0.000000	0.453747E-01	0.576047E-02	-0.411234E-06	
18	0.000000	0.000000	0.384631E-01	0.587807E-02	0.382992E-02	
19	0.000000	0.000000	0.202230E-01	0.609648E-02	0.623891E-02	
20	0.000000	0.000000	-0.498411E-03	0.572294E-02	0.601971E-02	
21	0.000000	0.000000	-0.558885E-02	0.572716E-02	0.573171E-02	
22	0.000000	0.000000	-0.106002E-01	0.571331E-02	0.568792E-02	
23	0.000000	0.000000	-0.549649E-02	0.596668E-02	-0.573951E-02	
24	0.000000	0.000000	-0.494722E-03	0.601629E-02	-0.572291E-02	
25	0.000000	0.000000	0.461922E-02	0.605856E-02	-0.605856E-02	
26	0.000000	0.000000	0.256157E-01	0.622398E-02	-0.625040E-02	
27	0.000000	0.000000	0.436932E-01	0.607535E-02	-0.378951E-02	
28	0.000000	0.000000	0.505278E-01	0.600830E-02	-0.359788E-06	
29	0.000000	0.000000	0.436953E-01	0.607498E-02	0.378912E-02	
30	0.000000	0.000000	0.256176E-01	0.622343E-02	0.625109E-02	
31	0.000000	0.000000	0.461559E-02	0.605863E-02	0.606153E-02	
32	0.000000	0.000000	-0.472701E-03	0.601706E-02	0.572720E-02	
33	0.000000	0.000000	-0.550620E-02	0.596769E-02	0.570209E-02	
34	0.000000	0.000000	0.149407E-01	0.623086E-02	-0.598451E-02	
35	0.000000	0.000000	0.202207E-01	0.623818E-02	-0.609708E-02	
36	0.000000	0.000000	0.256157E-01	0.625040E-02	-0.622398E-02	
37	0.000000	0.000000	0.459335E-01	0.603573E-02	-0.603573E-02	
38	0.000000	0.000000	0.638299E-01	0.612514E-02	-0.381768E-02	
39	0.000000	0.000000	0.707667E-01	0.628028E-02	-0.208556E-06	
40	0.000000	0.000000	0.638311E-01	0.612487E-02	0.381754E-02	
41	0.000000	0.000000	0.459338E-01	0.603535E-02	0.603642E-02	
42	0.000000	0.000000	0.256121E-01	0.625044E-02	0.622567E-02	
43	0.000000	0.000000	0.202461E-01	0.623867E-02	0.609963E-02	
44	0.000000	0.000000	0.149340E-01	0.623157E-02	0.598638E-02	
45	0.000000	0.000000	0.334196E-01	0.388175E-02	-0.563523E-02	
46	0.000000	0.000000	0.384606E-01	0.383039E-02	-0.587848E-02	
47	0.000000	0.000000	0.436932E-01	0.378951E-02	-0.607535E-02	
48	0.000000	0.000000	0.638299E-01	0.381769E-02	-0.612514E-02	
49	0.000000	0.000000	0.829011E-01	0.434122E-02	-0.434122E-02	
50	0.000000	0.000000	0.911590E-01	0.511031E-02	-0.918273E-07	
51	0.000000	0.000000	0.829015E-01	0.434109E-02	0.434125E-02	

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 6

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	0.000000	0.000000	0.638293E-01	0.381751E-02	0.612572E-02	
53	0.000000	0.000000	0.436899E-01	0.378957E-02	0.607635E-02	
54	0.000000	0.000000	0.384858E-01	0.383028E-02	0.588077E-02	
55	0.000000	0.000000	0.334145E-01	0.388204E-02	0.563628E-02	
56	0.000000	0.000000	0.404611E-01	0.465179E-06	-0.546373E-02	
57	0.000000	0.000000	0.453747E-01	0.411234E-06	-0.576047E-02	
58	0.000000	0.000000	0.505278E-01	0.359788E-06	-0.600830E-02	
59	0.000000	0.000000	0.707667E-01	0.204556E-06	-0.628028E-02	
60	0.000000	0.000000	0.911590E-01	0.918276E-07	-0.511031E-02	
61	0.000000	0.000000	0.102184	0.513581E-07	-0.513577E-07	
62	0.000000	0.000000	0.911591E-01	0.917575E-07	0.511040E-02	
63	0.000000	0.000000	0.707658E-01	0.204425E-06	0.628080E-02	
64	0.000000	0.000000	0.505246E-01	0.359602E-06	0.600914E-02	
65	0.000000	0.000000	0.453995E-01	0.410729E-06	0.576290E-02	
66	0.000000	0.000000	0.404564E-01	0.464966E-06	0.546461E-02	
67	0.000000	0.000000	0.334224E-01	-0.388120E-02	-0.563477E-02	
68	0.000000	0.000000	0.384631E-01	-0.382992E-02	-0.587807E-02	
69	0.000000	0.000000	0.436953E-01	-0.378912E-02	-0.607498E-02	
70	0.000000	0.000000	0.638311E-01	-0.381754E-02	-0.612487E-02	
71	0.000000	0.000000	0.829015E-01	-0.434125E-02	-0.434108E-02	
72	0.000000	0.000000	0.911591E-01	-0.511040E-02	-0.917573E-07	
73	0.000000	0.000000	0.829018E-01	-0.434111E-02	0.434111E-02	
74	0.000000	0.000000	0.638304E-01	-0.381737E-02	0.612545E-02	
75	0.000000	0.000000	0.436920E-01	-0.378918E-02	0.607599E-02	
76	0.000000	0.000000	0.384883E-01	-0.382981E-02	0.588036E-02	
77	0.000000	0.000000	0.334173E-01	-0.388149E-02	0.563582E-02	
78	0.000000	0.000000	0.149436E-01	-0.623161E-02	-0.598380E-02	
79	0.000000	0.000000	0.202230E-01	-0.623891E-02	-0.609648E-02	
80	0.000000	0.000000	0.256176E-01	-0.625109E-02	-0.622343E-02	
81	0.000000	0.000000	0.459338E-01	-0.603642E-02	-0.603535E-02	
82	0.000000	0.000000	0.638293E-01	-0.612572E-02	-0.381751E-02	
83	0.000000	0.000000	0.707658E-01	-0.628080E-02	-0.204425E-06	
84	0.000000	0.000000	0.638304E-01	-0.612545E-02	0.381737E-02	
85	0.000000	0.000000	0.459342E-01	-0.603604E-02	0.603604E-02	
86	0.000000	0.000000	0.256139E-01	-0.625114E-02	0.622512E-02	
87	0.000000	0.000000	0.202484E-01	-0.623939E-02	0.609903E-02	
88	0.000000	0.000000	0.149369E-01	-0.623232E-02	0.598567E-02	
89	0.000000	0.000000	-0.550011E-02	-0.597041E-02	-0.573930E-02	
90	0.000000	0.000000	-0.498411E-03	-0.601971E-02	-0.572294E-02	
91	0.000000	0.000000	0.461559E-02	-0.606153E-02	-0.605863E-02	
92	0.000000	0.000000	0.256121E-01	-0.622567E-02	-0.625044E-02	
93	0.000000	0.000000	0.436899E-01	-0.607635E-02	-0.378957E-02	
94	0.000000	0.000000	0.505246E-01	-0.600914E-02	-0.359602E-06	
95	0.000000	0.000000	0.436920E-01	-0.607599E-02	0.378918E-02	
96	0.000000	0.000000	0.256139E-01	-0.622512E-02	0.625114E-02	
97	0.000000	0.000000	0.461196E-02	-0.606159E-02	0.606159E-02	
98	0.000000	0.000000	-0.476389E-03	-0.602048E-02	0.572723E-02	
99	0.000000	0.000000	-0.550983E-02	-0.597142E-02	0.574267E-02	
100	0.000000	0.000000	-0.105683E-01	-0.571777E-02	-0.568439E-02	
101	0.000000	0.000000	-0.558885E-02	-0.573171E-02	-0.572716E-02	
102	0.000000	0.000000	-0.472701E-03	-0.572720E-02	-0.601706E-02	

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 6

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
103	0.000000	0.000000	0.202461E-01	-0.609963E-02	-0.623867E-02	
104	0.000000	0.000000	0.384858E-01	-0.588077E-02	-0.383028E-02	
105	0.000000	0.000000	0.453995E-01	-0.576290E-02	-0.410729E-06	
106	0.000000	0.000000	0.384883E-01	-0.588036E-02	0.382981E-02	
107	0.000000	0.000000	0.202484E-01	-0.609903E-02	0.623939E-02	
108	0.000000	0.000000	-0.476389E-03	-0.572723E-02	0.602048E-02	
109	0.000000	0.000000	-0.556725E-02	-0.573208E-02	0.573208E-02	
110	0.000000	0.000000	-0.105789E-01	-0.571870E-02	0.568843E-02	
111	0.000000	0.000000	-0.155620E-01	-0.565394E-02	-0.565021E-02	
112	0.000000	0.000000	-0.106002E-01	-0.568792E-02	-0.571331E-02	
113	0.000000	0.000000	-0.556620E-02	-0.574289E-02	-0.596769E-02	
114	0.000000	0.000000	0.149340E-01	-0.598638E-02	-0.623157E-02	
115	0.000000	0.000000	0.334145E-01	-0.563628E-02	-0.388204E-02	
116	0.000000	0.000000	0.408564E-01	-0.546461E-02	-0.464966E-06	
117	0.000000	0.000000	0.334173E-01	-0.563582E-02	0.388149E-02	
118	0.000000	0.000000	0.149369E-01	-0.598567E-02	0.623232E-02	
119	0.000000	0.000000	-0.550983E-02	-0.574267E-02	0.597142E-02	
120	0.000000	0.000000	-0.105789E-01	-0.568843E-02	0.571870E-02	
121	0.000000	0.000000	-0.155733E-01	-0.565469E-02	0.565468E-02	
122	0.000000	0.000000	0.000000			
123	0.000000	0.000000	0.000000			
124	0.000000	0.000000	0.000000			
125	0.000000	0.000000	0.000000			
126	0.000000	0.000000	0.000000			
127	0.000000	0.000000	0.000000			
128	0.000000	0.000000	0.000000			
129	0.000000	0.000000	0.000000			
130	0.000000	0.000000	0.000000			
131	0.000000	0.000000	0.000000			
132	0.000000	0.000000	0.000000			
133	0.000000	0.000000	0.000000			
134	0.000000	0.000000	0.000000			
135	0.000000	0.000000	0.000000			
136	0.000000	0.000000	0.000000			
137	0.000000	0.000000	0.000000			
138	0.000000	0.000000	0.000000			
139	0.000000	0.000000	0.000000			
140	0.000000	0.000000	0.000000			
141	0.000000	0.000000	0.000000			
142	0.000000	0.000000	0.000000			
143	0.000000	0.000000	0.000000			
144	0.000000	0.000000	0.000000			
145	0.000000	0.000000	0.000000			
146	0.000000	0.000000	0.000000			
147	0.000000	0.000000	0.000000			
148	0.000000	0.000000	0.000000			
149	0.000000	0.000000	0.000000			
150	0.000000	0.000000	0.000000			
151	0.000000	0.000000	0.000000			
152	0.000000	0.000000	0.000000			
153	0.000000	0.000000	0.000000			

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 6

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
154	0.000000	0.000000	0.000000			
155	0.000000	0.000000	0.000000			
156	0.000000	0.000000	0.000000			
157	0.000000	0.000000	0.000000			
158	0.000000	0.000000	0.000000			
159	0.000000	0.000000	0.000000			
160	0.000000	0.000000	0.000000			
161	0.000000	0.000000	0.000000			
162	0.000000	0.000000	0.000000			
163	0.000000	0.000000	0.000000			
164	0.000000	0.000000	0.000000			
165	0.000000	0.000000	0.000000			
166	0.000000	0.000000	0.000000			
167	0.000000	0.000000	0.000000			
168	0.000000	0.000000	0.000000			
169	0.000000	0.000000	0.000000			
170	0.000000	0.000000	0.000000			
171	0.000000	0.000000	0.000000			
172	0.000000	0.000000	0.000000			
173	0.000000	0.000000	0.000000			
174	0.000000	0.000000	0.000000			
175	0.000000	0.000000	0.000000			
176	0.000000	0.000000	0.000000			
177	0.000000	0.000000	0.000000			
178	0.000000	0.000000	0.000000			
179	0.000000	0.000000	0.000000			
180	0.000000	0.000000	0.000000			
181	0.000000	0.000000	0.000000			
182	0.000000	0.000000	0.000000			
183	0.000000	0.000000	0.000000			
184	0.000000	0.000000	0.000000			
185	0.000000	0.000000	0.000000			
186	0.000000	0.000000	0.000000			
187	0.000000	0.000000	0.000000			
188	0.000000	0.000000	0.000000			
189	0.000000	0.000000	0.000000			
190	0.000000	0.000000	0.000000			
191	0.000000	0.000000	0.000000			
192	0.000000	0.000000	0.000000			
193	0.000000	0.000000	0.000000			
194	0.000000	0.000000	0.000000			
195	0.000000	0.000000	0.000000			
196	0.000000	0.000000	0.000000			
197	0.000000	0.000000	0.000000			
198	0.000000	0.000000	0.000000			
199	0.000000	0.000000	0.000000			
200	0.000000	0.000000	0.000000			
201	0.000000	0.000000	0.000000			
202	0.000000	0.000000	0.000000			
203	0.000000	0.000000	0.000000			
204	0.000000	0.000000	0.000000			

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 6

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
205	0.000000	0.000000	0.000000			
206	0.000000	0.000000	0.000000			
207	0.000000	0.000000	0.000000			
208	0.000000	0.000000	0.000000			
209	0.000000	0.000000	0.000000			
210	0.000000	0.000000	0.000000			
211	0.000000	0.000000	0.000000			
212	0.000000	0.000000	0.000000			
213	0.000000	0.000000	0.000000			
214	0.000000	0.000000	0.000000			
215	0.000000	0.000000	0.000000			
216	0.000000	0.000000	0.000000			
217	0.000000	0.000000	0.000000			
218	0.000000	0.000000	0.000000			
219	0.000000	0.000000	0.000000			
220	0.000000	0.000000	0.000000			
221	0.000000	0.000000	0.000000			
222	0.000000	0.000000	0.000000			
223	0.000000	0.000000	0.000000			
224	0.000000	0.000000	0.000000			
225	0.000000	0.000000	0.000000			
226	0.000000	0.000000	0.000000			
227	0.000000	0.000000	0.000000			
228	0.000000	0.000000	0.000000			
229	0.000000	0.000000	0.000000			
230	0.000000	0.000000	0.000000			
231	0.000000	0.000000	0.000000			
232	0.000000	0.000000	0.000000			
233	0.000000	0.000000	0.000000			
234	0.000000	0.000000	0.000000			
235	0.000000	0.000000	0.000000			
236	0.000000	0.000000	0.000000			
237	0.000000	0.000000	0.000000			
238	0.000000	0.000000	0.000000			
239	0.000000	0.000000	0.000000			
240	0.000000	0.000000	0.000000			
241	0.000000	0.000000	0.000000			
242	0.000000	0.000000	0.000000			
MAXIMUMS						
NODE	0	0	61	83	63	0
VALUE	0.000000	0.000000	0.102184	-0.628080E-02	0.628080E-02	0.000000

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TUGC-CPSES2,BASE PL.1X24X24,PRYING ACTION FACTORS, BOLT K1-2?                                    13.5444    8/ 1983 ...

 ***** ELEMENT STRESSES *****  TIME =  0.000000        LOAD STEP=    1   ITERATION=    10   CUM. ITER.=    6
                                                                                                           RECT SHELL  43
EL=    1  NODES=       1    2   13   12       MAT=  1  AREA= 0.766          TTOP,TBOT=     0.0.    0.0
XC,YC,ZC= 0.437       0.437       0.000       PRS= 0.0000       0.0000       0.0000.    0.0000.    0.0000      0.0000
TX,TY= 0.00000        0.00000       MX,MY,MXY= -0.20876      -0.20876      -0.35655E-01  NX,NY= -0.47177      -0.47177
TOP SX,SY,SXY,SZ= -1.2526       -1.2526      -0.21393       0.00000        SIG1,SIG2,SIG3=-0.44500E-14 -1.0366      -1.4665
  S.I.=  1.4665       SIGE=  1.3062
MID SX,SY,SXY,SZ= 0.00000        0.00000.     0.00000.      0.00000        SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000.
  S.I.= 0.00000       SIGE= 0.00003.
BOT SX,SY,SXY,SZ=  1.2526        1.2526       0.21393       0.00000        SIG1,SIG2,SIG3=  1.4665        1.0386     -0.16687E-11
  S.I.=  1.4665       SIGE=  1.3062
                                                                            TTOP,TBOT=     0.0.    0.0.                RECT SHELL  43
EL=    2  NODES=       2    3   14   13       MAT=  1  AREA= 0.766          0.0000.    0.0000.    0.0000       0.0000.
XC,YC,ZC=  1.31       0.437       0.000.      PRS= 0.0000.      0.0000.      -0.48486E-01  NX,NY= -0.70655      -0.74272
TX,TY= 0.00000        0.00000       MX,MY,MXY= -0.83723      -0.28748       SIG1,SIG2,SIG3= 0.00000.     -1.6994       -5.0488
TOP SX,SY,SXY,SZ= -5.0234       -1.7249      -0.29091       0.00000.
  S.I.=  5.0488       SIGE=  4.4496
MID SX,SY,SXY,SZ= 0.00000        0.00000.     0.00000.      0.00000.       SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000.
  S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  5.0234        1.7249       0.29091       0.00000.       SIG1,SIG2,SIG3=  5.0488        1.6994     -0.13117E-10.
  S.I.=  5.0488       SIGE=  4.4496
                                                                            TTOP,TBOT=     0.0.    0.0                 RECT SHELL  43
EL=    3  NODES=       3    4   15   14       MAT=  1  AREA=  2.84          0.0000.    0.0000.    0.0000       0.0000.
XC,YC,ZC=  3.37       0.437       0.100.      PRS= 0.0000       0.0000       -0.24496     NX,NY=  0.53759      -0.40672
TX,TY= 0.00000        0.00000.      MX,MY,MXY= -0.24228      -0.20521       SIG1,SIG2,SIG3= 0.13154      0.23164E-10 -2.8164
TOP SX,SY,SXY,SZ= -1.4537       -1.2312      -1.4698        0.00000.
  S.I.=  2.9480       SIGE=  2.8845
MID SX,SY,SXY,SZ= 0.00000        0.00000      0.00000.      0.00000.       SIG1,SIG2,SIG3= 0.00000.     0.00000       0.00000
  S.I.= 0.00000       SIGE= 0.00001.
BOT SX,SY,SXY,SZ=  1.4537        1.2312       1.4698        0.00000.       SIG1,SIG2,SIG3=  2.8164       0.23023E-10-0.13154
  S.I.=  2.9480.      SIGE=  2.8845
                                                                            TTOP,TBOT=     0.0.    0.0                 RECT SHELL  43
EL=    4  NODES=       4    5   16   15       MAT=  1  AREA=  3.06          0.0000.    0.0000.    0.0000       0.0000
XC,YC,ZC=  5.75       0.437       0.000.      PRS= 0.0000.      0.0000       0.14447E-02  0.19152    NX,NY=  0.40762       0.45198E-02
TX,TY= 0.00000        0.00000       MX,MY,MXY=   1.6427                       SIG1,SIG2,SIG3=  9.9882       0.78331E-10-0.12338
TOP SX,SY,SXY,SZ=  9.8562        0.36681E-02  1.1479        0.00000
  S.I.=  10.112       SIGE=  10.050.
MID SX,SY,SXY,SZ= 0.00000.       0.00000.     0.00000.      0.00000        SIG1,SIG2,SIG3= 0.00000.     0.00000.      0.00000.
  S.I.= 0.00000       SIGE= 0.00003.
BOT SX,SY,SXY,SZ= -9.8562       -0.36681E-02 -1.1479        0.00000        SIG1,SIG2,SIG3= 0.12338      0.79959E-10 -9.9882
  S.I.=  10.112       SIGE=  10.050.
                                                                            TTOP,TBOT=     0.0.    0.0
EL=    5  NODES=       5    6   17   16       MAT=  1  AREA=  3.06          0.0000.    0.0000.    0.0000.      0.0000
XC,YC,ZC=  10.2       0.437       0.000.      PRS= 0.0000.      0.0000.      0.58203E-01  0.89020E-01  NX,NY=  0.12376       0.11493
TX,TY= 0.00000        0.00000       MX,MY,MXY=   2.6797                       SIG1,SIG2,SIG3=  16.096       0.33110      -0.61491E-10
TOP SX,SY,SXY,SZ=  16.078        0.34922      0.53412       0.00000.
  S.I.=  16.096       SIGE=  15.933
MID SX,SY,SXY,SZ= 0.00000        0.00000.     0.00000.      0.00000.       SIG1,SIG2,SIG3= 0.00000.     0.00000.      0.00000.
  S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -16.078       -0.34922     -0.53412       0.00000.       SIG1,SIG2,SIG3=-0.19992E-12-0.33110      -16.096
  S.I.=  16.096       SIGE=  15.933
                                                                            TTOP,TBOT=     0.0.    0.0                 RECT SHELL  43
EL=    6  NODES=       6    7   18   17       MAT=  1  AREA=  3.06          0.0000.    0.0000.    0.0000       0.0000.
XC,YC,ZC=  13.7       0.437       0.000       PRS= 0.0000.      0.0000       0.58209E-01 -0.88776E-01  NX,NY= -0.12363       0.11492
TX,TY= 0.00000        0.00000       MX,MY,MXY=   2.6799                       SIG1,SIG2,SIG3=  16.098       0.33124      -0.61211E-10
TOP SX,SY,SXY,SZ=  16.080        0.34326     -0.53266       0.00000.
  S.I.=  16.098       SIGE=  15.935
MID SX,SY,SXY,SZ= 0.00000        0.00000      0.00000.      0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000       0.00000
  S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -16.080       -0.34926      0.53266       0.00000        SIG1,SIG2,SIG3=-0.48557E-12-0.33124      -16.098
  S.I.=  16.098       SIGE=  15.935
                                                                                                                   RECT SHELL  43
EL=    7  NODES=       7              MAT=  1  AREA=  3.06         TTOP,TBOT=     0.0.    0.0
```

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TX,TY= 0.0000      0.00000      MX,MY,MXY=                                      SIG1,SIG2,SIG3=  9.9932      0.78741E-10-0.12281
TOP SX,SY,SXY,SZ=  9.8615      0.39700E-02 -1.1471      0.00000
 S.I.= 10.116       SIGE=  10.055                                                SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000.
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.     0.00000
 S.I.= 0.00000      SIGE= 0.00000.                                               SIG1,SIG2,SIG3= 0.12281      0.79617E-10 -9.9932
BOT SX,SY,SXY,SZ= -9.8615     -0.39700E-02  1.1471      0.00000
 S.I.= 10.116       SIGE=  10.055

EL=    8  NODES=     8    9   20   19      MAT=  1  AREA=  2.84          TTOP,TBOT=    0.0    0.0                                    RECT SHELL 43
XC,YC,ZC=  20.6      0.437       0.000       PRS= 0.0000       0.0000      0.0000.    0.0000.    0.0000     0.0000.
TX,TY= 0.00000      0.00000      MX,MY,MXY= -0.24012      -0.29505          0.24465     NX,NY= -0.53705     -0.40650.
TOP SX,SY,SXY,SZ= -1.4407      -1.2303      1.4679      0.00000      SIG1,SIG2,SIG3= 0.13614      0.23097E-10 -2.8072
 S.I.= 2.9433       SIGE=  2.8777                                            SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000.
MID SX,SY,SXY,SZ= 0.00000.     0.00000.     0.00000      0.00000.
 S.I.= 0.00000      SIGE= 0.00000.                                           SIG1,SIG2,SIG3=  2.8072      0.23024E-10-0.13614
BOT SX,SY,SXY,SZ=  1.4407       1.2303      -1.4679      0.00000.
 S.I.= 2.9433       SIGE=  2.8777

EL=    9  NODES=     9   10   21   20      MAT=  1  AREA= 0.761          TTOP,TBOT=    0.0    0.0                                    RECT SHELL 43
XC,YC,ZC=  22.7      0.437       0.000       PRS= 0.0000       0.0000      0.0000.    0.0000.    0.0000     0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY= -0.83719      -0.28763          0.47802E-01  NX,NY=  0.70258     -0.74392
TOP SX,SY,SXY,SZ= -5.0231      -1.7258      0.28681      0.00000.     SIG1,SIG2,SIG3= 0.89229E-14 -1.7010      -5.0479
 S.I.= 5.0479       SIGE=  4.4484                                            SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000      0.00000.
 S.I.= 0.00000      SIGE= 0.00000.                                           SIG1,SIG2,SIG3=  5.0479       1.7010      -0.13090E-10.
BOT SX,SY,SXY,SZ=  5.0231       1.7258      -0.28681      0.00000.
 S.I.= 5.0479       SIGE=  4.4484

EL=   10  NODES=    10   11   22   21      MAT=  1  AREA= 0.770.         TTOP,TBOT=    0.0.   0.0.                                   RECT SHELL 43
XC,YC,ZC=  23.6      0.437       0.000       PRS= 0.0000       0.0000      0.0000.    0.0000.    0.0000     0.0000
TX,TY= 0.00000      0.00000.     MX,MY,MXY= -0.21058      -0.20937          0.34611E-01  NX,NY=  0.47273     -0.47319
TOP SX,SY,SXY,SZ= -1.2635      -1.2562      0.20767      0.00000.     SIG1,SIG2,SIG3= 0.00000.     -1.0521      -1.4675
 S.I.= 1.4675       SIGE=  1.3102                                            SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000.
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.     0.00000.
 S.I.= 0.00000      SIGE= 0.00000.                                           SIG1,SIG2,SIG3=  1.4675       1.0521      -0.16294E-11
BOT SX,SY,SXY,SZ=  1.2635       1.2562      -0.20767      0.00000.
 S.I.= 1.4675       SIGE=  1.3102

EL=  11  NODES=   1  122  MAT=  2  TEMPS=    0.0.   0.0. FORC=-0.50629     SIG= -2.6452     EP=-0.015951  STAT=  1   GAP  10.
EL=  12  NODES=   2  123  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.68953     SIG= -1.8013     EP=-0.010590. STAT=  1   GAP  10.
EL=  13  NODES=   3  124  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.84361  .  SIG=-0.93495     EP=-0.005496  STAT=  1   GAP  10.
EL=  14  NODES=   4  125  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000.    SIG= 0.00000.    EP= 0.000000  STAT=  2   GAP  10.
EL=  15  NODES=   5  126  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000     SIG= 0.00000.    EP= 0.000000. STAT=  2   GAP  10.
EL=  16  NODES=   6  127  MAT=  2  TEMPS=    0.0.   0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2   GAP  10.
EL=  17  NODES=   7  128  MAT=  2  TEMPS=    0.0    0.0. FORC= 0.00000     SIG= 0.00000.    EP= 0.000000  STAT=  2   GAP  10.
EL=  18  NODES=   8  129  MAT=  2  TEMPS=    0.0    0.0. FORC= 0.00000.    SIG= 0.00000.    EP= 0.000000  STAT=  2   GAP  10.
EL=  19  NODES=   9  130  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.84416     SIG=-0.93557     EP=-0.005500  STAT=  1   GAP  10.
EL=  20  NODES=  10  131  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.68815     SIG= -1.7977     EP=-0.010568  STAT=  1   GAP  10.
EL=  21  NODES=  11  132  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.50665     SIG= -2.6471     EP=-0.015562  STAT=  1   GAP  10

EL=   22  NODES=    12   13   24   23      MAT=  1  AREA= 0.766          TTOP,TBOT=    0.0    0.0                                    RECT SHELL 43
XC,YC,ZC= 0.437      1.31        0.000       PRS= 0.0000       0.0000      0.0000.    0.0000.    0.0000     0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY= -0.28749      -0.83723         -0.48486E-01  NX,NY= -0.74272     -0.70655
TOP SX,SY,SXY,SZ= -1.7247      -5.0233                                 SIG1,SIG2,SIG3=-0.89233E-14 -1.6974      -5.0488
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 S.I.= 5.0488        SIGE= 4.5690.
BOT SX,SY,SXY,SZ=  1.7249      5.0234      0.29391      0.00000.      SIG1,SIG2,SIG3=  5.0488      1.6994      -0.13138E-10
 S.I.=  5.0488       SIGE=  4.4496

EL=   23  NODES=   13   14   25   24     MAT=  1  AREA= 0.766       TTOP,TBOT=     0.0.    0.0                      RECT SHELL  43
XC,YC,ZC=  1.31      1.31      0.000      PRS= 0.0000      0.0000      0.0000.    0.0000.    0.0000     0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=  -1.2333      -1.2333      0.49461E-01  NX,NY=  -1.6424      -1.6424
TOP SX,SY,SXY,SZ= -7.3999      -7.3999      0.29677      0.00000.      SIG1,SIG2,SIG3= 0.00000      -7.1032      -7.6967
 S.I.=  7.6967       SIGE=  7.4178
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  7.3999       7.3999      -0.29677      0.00000      SIG1,SIG2,SIG3=  7.6967      7.1032      -0.23135E-11
 S.I.=  7.6967       SIGE=  7.4173

EL=   24  NODES=   14   15   26   25     MAT=  1  AREA=  2.84       TTOP,TBOT=     0.0.    0.0                      RECT SHELL  43
XC,YC,ZC=  3.37      1.31      0.000.     PRS= 0.0000.     0.0000.     0.0000.    0.0000.    0.0000     0.0000.
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.37961      -0.75264      -0.26142      NX,NY=   1.0287      -0.82529
TOP SX,SY,SXY,SZ= -2.2777      -4.5158      -1.5685      0.00000      SIG1,SIG2,SIG3=-0.16044E-13 -1.4700      -5.3236
 S.I.=  5.3236       SIGE=  4.7619
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.     0.00000.     SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  2.2777       4.5158       1.5685      0.00000      SIG1,SIG2,SIG3=  5.3236      1.4700      -0.15065E-10
 S.I.=  5.3236       SIGE=  4.7619

EL=   25  NODES=   15   16   27   26     MAT=  1  AREA=  3.06       TTOP,TBOT=     0.0.    0.0                      RECT SHELL  43
XC,YC,ZC=  6.75      1.31      0.000.     PRS= 0.0000.     0.0000     0.0000.    0.0000.    0.0000     0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY=   1.6997      0.62798E-01  0.13320      NX,NY=  0.35837      0.22181
TOP SX,SY,SXY,SZ=  10.198      0.37579      0.79920      0.00000.      SIG1,SIG2,SIG3=  10.263      0.31218      -0.38785E-10
 S.I.=  10.263       SIGE=  10.110.
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.     0.00000.     SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -10.198      -0.37679     -0.79920.     0.00000.     SIG1,SIG2,SIG3=-0.16308E-12-0.31218      -10.263
 S.I.=  10.263       SIGE=  10.110.

EL=   26  NODES=   16   17   28   27     MAT=  1  AREA=  3.06       TTOP,TBOT=     0.0.    0.0                      RECT SHELL  43
XC,YC,ZC=  10.2      1.31      0.000.     PRS= 0.0000.     0.0000     0.0000.    0.0000     0.0000     0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY=   2.6881      0.18233     0.50178E-01  NX,NY=  0.10911      0.13364
TOP SX,SY,SXY,SZ=  16.129       1.1540.     0.30107      0.00000.      SIG1,SIG2,SIG3=  16.135      1.1479      -0.58590E-10
 S.I.=  16.135       SIGE=  15.592
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.     0.00000.     SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -16.129      -1.1540      -0.30107      0.00000.     SIG1,SIG2,SIG3=-0.14325E-12 -1.1479      -16.135
 S.I.=  16.135       SIGE=  15.592

EL=   27  NODES=   17   18   29   28     MAT=  1  AREA=  3.06       TTOP,TBOT=     0.0.    0.0                      RECT SHELL  43
XC,YC,ZC=  13.7      1.31      0.000.     PRS= 0.0000.     0.0000     0.0000.    0.0000.    0.0000.    0.0000.
TX,TY= 0.00000.     0.00000      MX,MY,MXY=   2.6884      0.19235     -0.49968E-01  NX,NY= -0.10908.    0.13365
TOP SX,SY,SXY,SZ=  16.130       1.1541      -0.29981      0.00000.      SIG1,SIG2,SIG3=  16.136      1.1481      -0.58538E-10
 S.I.=  16.136       SIGE=  15.594
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.     0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -16.130      -1.1541       0.29981      0.00000.     SIG1,SIG2,SIG3=-0.14326E-12 -1.1481      -16.136
 S.I.=  16.136       SIGE=  15.594

EL=   28  NODES=   18   19   30   29     MAT=  1  AREA=  3.06       TTOP,TBOT=     0.0.    0.0                      RECT SHELL  43
XC,YC,ZC=  17.2      1.31      0.000.     PRS= 0.0000      0.0000     0.0000.    0.0000.    0.0000     0.0000
TX,TY= 0.00000      0.00000      MX,MY,MXY=   1.7005      0.62906E-01 -0.13308      NX,NY= -0.35819      0.22176
TOP SX,SY,SXY,SZ=  10.203      0.37744      -0.79849      0.00000.      SIG1,SIG2,SIG3=  10.268      0.31297      -0.38913E-10
 S.I.=  10.268       SIGE=  10.115
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -10.203      -0.37744      0.79849      0.00000      SIG1,SIG2,SIG3=-0.36243E-13-0.31297      -10.268
 S.I.=  10.268       SIGE=  10.115

                                                                        TTOP,TBOT=                                     RECT SHELL  43
```

```
TX,TY= 0.0000      0.0000      MX,MY,MXY= - .37753                          SIG1,SIG2,SIG3=-0.98101E-13 -1.4614      -5.3174
TOP SX,SY,SXY,SZ= -2.2658     -4.5139      1.5667      0.00000              SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000.
 S.I.=  5.3174     SIGE=  4.7581
MID SX,SY,SXY,SZ= 0.00000     0.00000.     0.00000     0.00000.             SIG1,SIG2,SIG3=  5.3174      1.4614      -0.15072E-10.
 S.I.= 0.00000     SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  2.2658      4.5139     -1.5667      0.00000
 S.I.=  5.3174     SIGE=  4.7581

EL=   30  NODES=   20   21   32   31    MAT=  1  AREA= 0.761            TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  22.7      1.31      0.000.     PRS= 0.0000       0.0000       0.0000.   0.0000.    0.0000     0.0000.
TX,TY= 0.00000     0.00000      MX+MY,MXY=  -1.2346      -1.2343        -0.50255E-01  NX+NY=  1.6413     -1.6454
TOP SX,SY,SXY,SZ= -7.4079     -7.4059     -0.30153      0.00000.          SIG1,SIG2,SIG3= 0.00000.     -7.1053      -7.7084
 S.I.=  7.7084     SIGE=  7.4252                                           SIG1,SIG2,SIG3= 0.00000      0.00000.     0.00000.
MID SX,SY,SXY,SZ= 0.00000.    0.00000.     0.00000      0.00000.
 S.I.= 0.00000     SIGE= 0.00000.                                          SIG1,SIG2,SIG3=  7.7084      7.1053      -0.23686E-11
BOT SX,SY,SXY,SZ=  7.4079      7.4058      0.30153      0.00000.
 S.I.=  7.7084     SIGE=  7.4252
                                                                                                                  RECT SHELL  43
EL=   31  NODES=   21   22   33   32    MAT=  1  AREA= 0.779            TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  23.6      1.31      0.100.     PRS= 0.0000       0.0000       0.0000.   0.0000.    0.0000     0.0000
TX,TY= 0.00000     0.00000      MX+MY,MXY= -0.29018      -0.83869          0.46871E-01  NX+NY=  0.74545     -0.70840.
TOP SX,SY,SXY,SZ= -1.7411     -5.0321      0.28122      0.00000.          SIG1,SIG2,SIG3=-0.17878E-13 -1.7172      -5.0560.
 S.I.=  5.0560     SIGE=  4.4530.                                          SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000
MID SX,SY,SXY,SZ= 0.00000     0.00000      0.00000      0.00000
 S.I.= 0.00000     SIGE= 0.00000.                                          SIG1,SIG2,SIG3=  5.0560.     1.7172       -0.13051E-10
BOT SX,SY,SXY,SZ=  1.7411      5.0321     -0.28122      0.00000
 S.I.=  5.0560     SIGE=  4.4530.

EL=   32  NODES=   12  133  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.68953     SIG= -1.8013       EP=-0.010590  STAT=  1    GAP  10.
EL=   33  NODES=   13  134  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.73064     SIG=-0.95434       EP=-0.005610  STAT=  1    GAP  10
EL=   34  NODES=   14  135  MAT=  2  TEMPS=    0.0.   0.0. FORC=-0.15189     SIG=-0.84152E-01   EP=-0.000499  STAT=  1    GAP  10.
EL=   35  NODES=   15  136  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000     SIG= 0.00000.      EP= 0.000000. STAT=  2    GAP  10.
EL=   36  NODES=   16  137  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000     SIG= 0.00000.      EP= 0.000000  STAT=  2    GAP  10.
EL=   37  NODES=   17  138  MAT=  2  TEMPS=    0.0.   0.0. FORC= 0.00000.    SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10.
EL=   38  NODES=   18  139  MAT=  2  TEMPS=    0.0.   0.0. FORC= 0.00000.    SIG= 0.00000.      EP= 0.000000  STAT=  2    GAP  10.
EL=   39  NODES=   19  140  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000     SIG= 0.00000.      EP= 0.000000  STAT=  2    GAP  10.
EL=   40. NODES=   20  141  MAT=  2  TEMPS=    0.0.   0.0  FORC=-0.15303     SIG=-0.84780E-01   EP=-0.000498  STAT=  1    GAP  10
EL=   41  NODES=   21  142  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.72783     SIG=-0.95066       EP=-0.005589  STAT=  1    GAP  10
EL=   42  NODES=   22  143  MAT=  2  TEMPS=    0.0    0.0. FORC=-0.69022     SIG= -1.8031       EP=-0.010600  STAT=  1    GAP  10

EL=   43  NODES=   23   24   35   34    MAT=  1  AREA=  2.84            TTOP,TBOT=    0.0    0.0
XC,YC,ZC= 0.437      3.37      0.000.     PRS= 0.0000.      0.0000       0.0000.   0.0000.    0.0000     0.0000
TX,TY= 0.00000     0.00000      MX+MY,MXY= -0.20521      -0.24228         -0.24496      NX+NY= -0.40672      0.53759
TOP SX,SY,SXY,SZ= -1.2312     -1.4537     -1.4698      0.00000.          SIG1,SIG2,SIG3= 0.13154      0.23148E-10 -2.8164
 S.I.=  2.9480     SIGE=  2.8845                                           SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000
MID SX,SY,SXY,SZ= 0.00000     0.00000.     0.00000.     0.00000.
 S.I.= 0.00000     SIGE= 0.00000                                           SIG1,SIG2,SIG3=  2.8164      0.23038E-10-0.13154
BOT SX,SY,SXY,SZ=  1.2312      1.4537      1.4698      0.00000
 S.I.=  2.9480     SIGE=  2.8845
                                                                                                                  RECT SHELL  43
EL=   44  NODES=   24   25   36   35    MAT=  1  AREA=  2.84            TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  1.31      3.37      0.100      PRS= 0.0000       0.0000       0.0000    0.0000.    0.0000     0.0000
TX,TY= 0.00000     0.00000      MX,MY,MXY= -0.75   4      - .37761        -0.26140      NX,NY= -0.82529      1.0287
TOP SX,SY,SXY,SZ= -4.5150     -2.777                                       SIG1,SIG2,SIG3= 0.0000       -1.47        -5.3236
```

```
 S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  4.5159     2.2777      1.5685      0.00000        SIG1,SIG2,SIG3=  5.3236      1.4790     -0.15081E-10
 S.I.=  5.3236      SIGE=  4.7613

EL=   45  NODES=    25   26   37   36      MAT=  1  AREA=  10.6         TTOP,TBOT=     0.0,   0.0                              RECT SHELL  43
XC,YC,ZC=  3.37        3.37      0.000.      PRS= 0.0000.      0.0000     0.0000.    0.0000.     0.0000       0.0000
TX,TY= 0.00000       0.00000      MX,MY,MXY= -0.19037E-02 -0.19037E-02  0.22482        NX,NY=  0.74086       0.74086
TOP SX,SY,SXY,SZ=-0.11422E-01-0.11422E-01  1.3489      0.00000.       SIG1,SIG2,SIG3=  1.3375       0.21132E-10 -1.3603
 S.I.=  2.6979      SIGE=  2.3364
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.     0.00000        SIG1,SIG2,SIG3= 0.00000.      0.00000      0.00000.
 S.I.= 0.00000      SIGE= 0.00000.
BOT SX,SY,SXY,SZ= 0.11422E-01 0.11422E-01 -1.3489      0.00000.       SIG1,SIG2,SIG3=  1.3603       0.21140E-10 -1.3375
 S.I.=  2.6979      SIGE=  2.3364

EL=   46  NODES=    26   27   38   37      MAT=  1  AREA=  11.4         TTOP,TBOT=     0.0,   0.0                              RECT SHELL  43
XC,YC,ZC=  6.75        3.37      0.000.      PRS= 0.0000.      0.0000     0.0000.    0.0000.     0.0000       0.0000.
TX,TY= 0.00000       0.00000      MX,MY,MXY=   1.7921       0.58910      0.24643E-01   NX,NY=  0.37577       0.27134
TOP SX,SY,SXY,SZ=  10.752      3.5346      0.14786      0.00000.       SIG1,SIG2,SIG3=  10.756       3.5316     -0.28287E-10
 S.I.=  10.756      SIGE=  9.4957
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.     0.00000.       SIG1,SIG2,SIG3= 0.00000.      0.00000.     0.00000.
 S.I.= 0.00000      SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -10.752     -3.5346     -0.14786      0.00000.       SIG1,SIG2,SIG3= 0.38200E-13 -3.5316      -10.756
 S.I.=  10.756      SIGE=  9.4957

EL=   47  NODES=    27   28   39   38      MAT=  1  AREA=  11.4         TTOP,TBOT=     0.0    0.0                              RECT SHELL  43
XC,YC,ZC=  10.2        3.37      0.000.      PRS= 0.0000.      0.0000     0.0000.    0.0000.     0.0000       0.0000
TX,TY= 0.00000.      0.00000.     MX,MY,MXY=   2.8464       0.73428     -0.17707E-01   NX,NY=  0.11827       0.27628
TOP SX,SY,SXY,SZ=  17.078      4.4057     -0.10624      0.00000.       SIG1,SIG2,SIG3=  17.079       4.4048     -0.49510E-10.
 S.I.=  17.079      SIGE=  15.353
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000.     0.00000.       SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -17.078     -4.4057      0.10624      0.00000.       SIG1,SIG2,SIG3=-0.30337E-13 -4.4048      -17.079
 S.I.=  17.079      SIGE=  15.358

EL=   48  NODES=    28   29   40.  39      MAT=  1  AREA=  11.4         TTOP,TBOT=     0.0.   0.0                              RECT SHELL  43
XC,YC,ZC=  13.7        3.37      0.000.      PRS= 0.0000.      0.0000     0.0000,    0.0000.     0.0000       0.0000
TX,TY= 0.00000       0.00000      MX,MY,MXY=   2.8466       0.73431      0.17875E-01   NX,NY= -0.11817       0.27627
TOP SX,SY,SXY,SZ=  17.080      4.4058      0.10725      0.00000.       SIG1,SIG2,SIG3=  17.080.      4.4049     -0.49666E-10
 S.I.=  17.080      SIGE=  15.359
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.     0.00000.       SIG1,SIG2,SIG3= 0.00000.      0.00000      0.00000.
 S.I.= 0.00000      SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -17.080.    -4.4059     -0.10725      0.00000.       SIG1,SIG2,SIG3= 0.30339E-13 -4.4049      -17.080.
 S.I.=  17.080      SIGE=  15.359

EL=   49  NODES=    29   30.  41   40.     MAT=  1  AREA=  11.4         TTOP,TBOT=     0.0,   0.0.
XC,YC,ZC=  17.2        3.37      0.000.      PRS= 0.0000.      0.0000.    0.0000.    0.0000,     0.0000.      0.0000.
TX,TY= 0.00000       0.00000      MX,MY,MXY=   1.7928       0.58921     -0.24556E-01   NX,NY= -0.37563       0.27128
TOP SX,SY,SXY,SZ=  10.757      3.5353     -0.14734      0.00000.       SIG1,SIG2,SIG3=  10.760.      3.5323     -0.28260E-10
 S.I.=  10.760      SIGE=  9.4995
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.     0.00000.       SIG1,SIG2,SIG3= 0.00000.      0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -10.757     -3.5353      0.14734      0.00000.       SIG1,SIG2,SIG3= 0.00000.     -3.5323      -10.760.
 S.I.=  10.760      SIGE=  9.4995

EL=   50  NODES=    30   31   42   41      MAT=  1  AREA=  10.6         TTOP,TBOT=     0.0.   0.0.                             RECT SHELL  43
XC,YC,ZC=  20.6        3.37      0.000.      PRS= 0.0000.      0.0000     0.0000.    0.0000.     0.0000       0.0000.
TX,TY= 0.00000       0.00000      MX,MY,MXY= -0.58556E-03 -0.15619E-02 -0.22503        NX,NY= -0.74062       0.74046
TOP SX,SY,SXY,SZ=-0.35134E-02-0.93715E-02 -1.3502      0.00000        SIG1,SIG2,SIG3=  1.3437       0.21133E-10 -1.3566
 S.I.=  2.7003      SIGE=  2.3385
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000        SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000      SIGE= 0.00000.
BOT SX,SY,SXY,SZ= 0.35134E-02 0.93715E-02  1.3502      0.00000        SIG1,SIG2,SIG3=  1.3566       0.21133E-10 -1.3437
 S.I.=  2.7003      SIGE=  2.3385

                                                                       TTOP,TBOT=                                                RECT SHELL  43
```

```
TX,TY= 0.00000      0.00000      MX,MY,MXY= -0.75531                                    NX,NY=
TOP SX,SY,SXY,SZ= -4.5199      -2.2782       1.5600.       0.00000.      SIG1,SIG2,SIG3=-0.16058E-13 -1.4781      -5.3200
 S.I.= 5.3200        SIGE= 4.7564
MID SX,SY,SXY,SZ= 0.00000      0.00000.      0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= 4.5199       2.2782       -1.5600.       0.00000.      SIG1,SIG2,SIG3= 5.3200       1.4781      -0.15030E-10
 S.I.= 5.3200        SIGE= 4.7564

EL= 52  NODES=   32   33   44   43     MAT= 1  AREA= 2.86         TTOP,TBOT=    0.0.    0.0                          RECT SHELL 43
XC,YC,ZC= 23.6       3.37      0.000.       PRS= 0.0000      0.0000       0.0000.    0.0000.    0.0000.    0.0000.
TX,TY= 0.00000       0.00000       MX,MY,MXY= -0.20671      -0.24251       0.24423       NX,NY= 0.40764      0.53921
TOP SX,SY,SXY,SZ= -1.2402      -1.4551       1.4654       0.00000.      SIG1,SIG2,SIG3= 0.12163      0.22964E-10 -2.8169
 S.I.= 2.9386        SIGE= 2.8797
MID SX,SY,SXY,SZ= 0.00000      0.00000.      0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000.     0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= 1.2402       1.4551       -1.4654       0.00000.      SIG1,SIG2,SIG3= 2.8169       0.23078E-10-0.12163
 S.I.= 2.9386        SIGE= 2.8797

EL= 53  NODES=  23  144  MAT= 2  TEMPS=   0.0    0.0  FORC=-0.84361     SIG=-0.93495       EP=-0.005496  STAT= 1   GAP 10.
EL= 54  NODES=  24  145  MAT= 2  TEMPS=   0.0    0.0  FORC=-0.15189     SIG=-0.84152E-01   EP=-0.000495  STAT= 1   GAP 10.
EL= 55  NODES=  25  146  MAT= 2  TEMPS=   0.0    0.0  FORC= 0.00000.    SIG= 0.00000.      EP= 0.000000  STAT= 2   GAP 10.
EL= 56  NODES=  26  147  MAT= 2  TEMPS=   0.0    0.0  FORC= 0.00000     SIG= 0.00000       EP= 0.000000  STAT= 2   GAP 10.
EL= 57  NODES=  27  148  MAT= 2  TEMPS=   0.0    0.0  FORC= 0.00000     SIG= 0.00000.      EP= 0.000000  STAT= 2   GAP 10.
EL= 58  NODES=  28  149  MAT= 2  TEMPS=   0.0    0.0  FORC= 0.00000     SIG= 0.00000.      EP= 0.000000  STAT= 2   GAP 10
EL= 59  NODES=  29  150  MAT= 2  TEMPS=   0.0    0.0  FORC= 0.00000     SIG= 0.00000.      EP= 0.000000  STAT= 2   GAP 10
EL= 60  NODES=  30  151  MAT= 2  TEMPS=   0.0.   0.0. FORC= 0.00000     SIG= 0.00000.      EP= 0.000000  STAT= 2   GAP 10.
EL= 61  NODES=  31  152  MAT= 2  TEMPS=   0.0.   0.0  FORC= 0.00000     SIG= 0.00000.      EP= 0.000000  STAT= 2   GAP 10.
EL= 62  NODES=  32  153  MAT= 2  TEMPS=   0.0    0.0  FORC=-0.14513     SIG=-0.80406E-01   EP=-0.000473  STAT= 1   GAP 10.
EL= 63  NODES=  33  154  MAT= 2  TEMPS=   0.0.   0.0  FORC=-0.84510     SIG=-0.93661       EP=-0.005506  STAT= 1   GAP 10.
                                                                                                          RECT SHELL 43
EL= 64  NODES=   34   35   46   45     MAT= 1  AREA= 3.06         TTOP,TBOT=    0.0.    0.0
XC,YC,ZC= 0.437      6.75      0.000.       PRS= 0.0000      0.0000       0.0000.    0.0000.    0.0000     0.0000
TX,TY= 0.00000       0.00000       MX,MY,MXY= 0.14447E-02   1.6427       0.19132       NX,NY= 0.45198E-02  0.40762
TOP SX,SY,SXY,SZ= 0.86681E-02  9.8562       1.1479       0.00000.      SIG1,SIG2,SIG3= 9.9882       0.79242E-10-0.12338
 S.I.= 10.112        SIGE= 10.050.
MID SX,SY,SXY,SZ= 0.00000      0.00000.      0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000.     0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=-0.86681E-02 -9.8562       -1.1479       0.00000.      SIG1,SIG2,SIG3= 0.12338      0.79207E-10 -9.9882
 S.I.= 10.112        SIGE= 10.050.

EL= 65  NODES=   35   36   47   46     MAT= 1  AREA= 3.06         TTOP,TBOT=    0.0.    0.0
XC,YC,ZC= 1.31       6.75      0.000.       PRS= 0.0000.     0.0000       0.0000.    0.0000.    0.0000     0.0000
TX,TY= 0.00000       0.00000       MX,MY,MXY= 0.62798E-01   1.6997       0.13320       NX,NY= 0.22181      0.35837
TOP SX,SY,SXY,SZ= 0.37679      10.198       0.79920      0.00000       SIG1,SIG2,SIG3= 10.263       0.31218     -0.38930E-10
 S.I.= 10.263        SIGE= 10.110.
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=-0.37679     -10.198       -0.79920      0.00000       SIG1,SIG2,SIG3=-0.54347E-13-0.31218      -10.263
 S.I.= 10.263        SIGE= 10.110.

                                                                                                          RECT SHELL 43
EL= 66  NODES=   36   37   48   47     MAT= 1  AREA= 11.4         TTOP,TBOT=    0.0     0.0
XC,YC,ZC= 3.27       6.75      0.000        PRS= 0.0000      0.0000       0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000       0.00000       MX,MY,MXY= 0.58013       1.7021       0.24643E-01   NX,NY= 0.27134      0.37577
TOP SX,SY,SXY,SZ= 3.5305       10.757       0.14784                    SIG1,SIG2,SIG3= 10.759       3.5315      -0.38268E-10
 S.I.=
```

```
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -3.5346      -10.752      -0.14786      0.00000        SIG1,SIG2,SIG3= 0.19100E-13 -3.5316      -10.756
 S.I.= 10.756        SIGE=  9.4957
                                                                                                                         RECT SHELL 43
EL=   67  NODES=     37   38    49   48        MAT=  1  AREA=  12.2           TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  6.75       6.75       0.000          PRS= 0.0000        0.0000      0.0000     0.0000     0.0000      0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=   1.9738        1.9738          -0.19374       NX,NY=  0.42915       0.42915
TOP SX,SY,SXY,SZ=  11.843       11.843      -1.1624       0.00000.       SIG1,SIG2,SIG3=  13.005       10.680     -0.90457E-11
 S.I.=  13.005       SIGE=  12.012
MID SX,SY,SXY,SZ= 0.00000      0.00000.      0.00000      0.00000.       SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -11.843      -11.843       1.1624       0.00000.       SIG1,SIG2,SIG3=-0.42073E-13 -10.680      -13.005
 S.I.=  13.005       SIGE=  12.012

EL=   68  NODES=     38   39    50   49        MAT=  1  AREA=  12.2           TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  10.2       6.75       0.000          PRS= 0.0000.       0.0000      0.0000     0.0000.     0.0000      0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=   3.4314        2.0492          -0.20874       NX,NY=  0.20737       0.56458
TOP SX,SY,SXY,SZ=  20.589       12.295      -1.2524       0.00000.       SIG1,SIG2,SIG3=  20.774       12.110     -0.34013E-10
 S.I.=  20.774       SIGE=  18.073
MID SX,SY,SXY,SZ= 0.00000      0.00000.      0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -20.589      -12.295       1.2524       0.00000.       SIG1,SIG2,SIG3= 0.73145E-13 -12.110      -20.774
 S.I.=  20.774       SIGE=  18.073
                                                                                                                         RECT SHELL 43
EL=   69  NODES=     39   40    51   50.       MAT=  1  AREA=  12.3           TTOP,TBOT=     0.0     0.0
XC,YC,ZC=  13.7       6.75       0.000.         PRS= 0.0000.       0.0000      0.0000.    0.0000.     0.0000      0.0000
TX,TY= 0.00000       0.00000.       MX,MY,MXY=   3.4316        2.0492           0.20885       NX,NY= -0.20729       0.56456
TOP SX,SY,SXY,SZ=  20.590       12.295       1.2531       0.00000.       SIG1,SIG2,SIG3=  20.775       12.110.    -0.33722E-10.
 S.I.=  20.775       SIGE=  18.074
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000       0.00000.       SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -20.590.     -12.295      -1.2531       0.00000.       SIG1,SIG2,SIG3=-0.14630E-12 -12.110      -20.775
 S.I.=  20.775       SIGE=  18.074
                                                                                                                         RECT SHELL 43
EL=   70  NODES=     40   41    52   51        MAT=  1  AREA=  12.2           TTOP,TBOT=     0.0.    0.0
XC,YC,ZC=  17.2       6.75       0.000.         PRS= 0.0000        0.0000      0.0000.    0.0000.     0.0000      0.0000.
TX,TY= 0.00000       0.00000        MX,MY,MXY=   1.9742        1.9738           0.19378       NX,NY= -0.42908       0.42908
TOP SX,SY,SXY,SZ=  11.845       11.843       1.1627       0.00000.       SIG1,SIG2,SIG3=  13.007       10.681     -0.90900E-11
 S.I.=  13.007       SIGE=  12.014
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000       0.00000.       SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -11.845      -11.843      -1.1627       0.00000        SIG1,SIG2,SIG3=-0.42084E-13 -10.681      -13.007
 S.I.=  13.007       SIGE=  12.014

EL=   71  NODES=     41   42    53   52        MAT=  1  AREA=  11.4           TTOP,TBOT=
XC,YC,ZC=  20.6       6.75       0.000.         PRS= 0.0000.       0.0000.     0.0000.    0.0000.     0.0000      0.0000.
TX,TY= 0.00000       0.00000        MX,MY,MXY=   0.58966       1.7922          -0.24895E-01   NX,NY= -0.27138       0.37567
TOP SX,SY,SXY,SZ=  3.5386       10.753      -0.14913      0.00000.       SIG1,SIG2,SIG3=  10.756       3.5349     -0.28232E-10
 S.I.=  10.756       SIGE=  9.4956
MID SX,SY,SXY,SZ= 0.00000      0.00000.      0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -3.5380      -10.753       0.14913      0.00000.       SIG1,SIG2,SIG3=-0.57300E-13 -3.5349      -10.756
 S.I.=  10.756       SIGE=  9.4956
                                                                                                                         RECT SHELL 43
EL=   72  NODES=     42   43    54   53        MAT=  1  AREA=  3.04           TTOP,TBOT=     0.0.    0.0
XC,YC,ZC=  22.7       6.75       0.000          PRS= 0.0000        0.0000      0.0000.    0.0000.     0.0000      0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  0.63316E-01    1.7000.         -0.13338       NX,NY= -0.22257       0.35812
TOP SX,SY,SXY,SZ= 0.3799       10.209      -0.86026       0.00000.       SIG1,SIG2,SIG3=  10.265       0.31511    -0.38830E-10
 S.I.=  10.265       SIGE=  10.111
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000       0.00000        SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -0.3799      -10.209       0.86026      0.00000        SIG1,SIG2,SIG3=-0.72477E-13-0.31511     -10.265
 S.I.=  10.265       SIGE=  10.111
                                                                                                                         RECT SHELL 43
                                                                              TTOP,TBOT=
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TX,TY= 0.00000      0.00000      MX,MY,MXY=  -.17251E-02  1.6431      -.12146      NX,NY= -0.32236E-02 ......
TOP SX,SY,SXY,SZ= 0.10351E-01  9.8588      -1.1488       0.00000      SIG1,SIG2,SIG3=  9.9910.    0.78755E-10-0.12188
 S.I.=  10.113        SIGE=  10.052
MID SX,SY,SXY,SZ= 0.00000     0.00000.     0.00000       0.00000      SIG1,SIG2,SIG3= 0.00000.    0.00000.    0.00000.
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ=-0.10351E-01 -9.8588       1.1488       0.00000.     SIG1,SIG2,SIG3= 0.12188     0.79718E-10 -9.9910
 S.I.=  10.113        SIGE=  10.052

EL=   74  NODES=   34  155  MAT=  2  TEMPS=    0.0    0.0  FORC= .00000.   SIG= 0.00000.   EP= 0.000000  STAT=  2   GAP  10.
EL=   75  NODES=   35  156  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000.  SIG= 0.00000.   EP= 0.000000. STAT=  2   GAP  10.
EL=   76  NODES=   36  157  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000   SIG= 0.00000    EP= 0.000000  STAT=  2   GAP  10.
EL=   77  NODES=   37  158  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000.  SIG= 0.00000.   EP= 0.000000  STAT=  2   GAP  10.
EL=   78  NODES=   38  159  MAT=  2  TEMPS=    0.0    0. . FORC= 0.00000.  SIG= 0.00000.   EP= 0.000000  STAT=  2   GAP  10.
EL=   79  NODES=   39  160  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000   SIG= 0.00000.   EP= 0.000000  STAT=  2   GAP  10
EL=   80  NODES=   40  161  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000   SIG= 0.00000.   EP= 0.000000  STAT=  2   GAP  10.
EL=   81  NODES=   41  162  MAT=  2  TEMPS=    0.0    0.0. FORC= 0.00000   SIG= 0.00000.   EP= 0.000000. STAT=  2   GAP  10.
EL=   82  NODES=   42  163  MAT=  2  TEMPS=    0.0    0.0  FORC= .00000    SIG= 0.00000.   EP= 0.000000  STAT=  2   GAP  10.
EL=   83  NODES=   43  164  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000   SIG= 0.00000.   EP= 0.000000  STAT=  2   GAP  10.
EL=   84  NODES=   44  165  MAT=  2  TEMPS=    0.0    0.0. FORC= 0.00000   SIG= 0.00000.   EP= 0.000000. STAT=  2   GAP  10.

EL=   85  NODES=   45   46   57   56   MAT=  1  AREA=  3.06     TTOP,TBOT=    0.0.   0.0                                RECT SHELL  43
XC,YC,ZC= 0.437       10.2        0.000.      PRS= 0.0000     0.0000       0.0000.   0.0000.    0.0000      0.0000
TX,TY= 0.00000.     0.00000       MX,MY,MXY=  0.58203E-01   2.6797        0.89020E-01  NX,NY=  0.11493     0.12376
TOP SX,SY,SXY,SZ= 0.34922       16.078       0.53412      0.00000.     SIG1,SIG2,SIG3=  16.096     0.33110.   -0.61576E-10.
 S.I.=  16.096      SIGE=  15.933
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000.     0.00000.     SIG1,SIG2,SIG3= 0.00000.    0.00000     0.00000.
 S.I.= 0.00000      SIGE= 0.00000.
BOT SX,SY,SXY,SZ=-0.34922      -16.078      -0.53412      0.00000.     SIG1,SIG2,SIG3=-0.85681E-13-0.33110     -16.096
 S.I.=  16.096      SIGE=  15.933

EL=   86  NODES=   46   47   58   57   MAT=  1  AREA=  3.06     TTOP,TBOT=    0.0.   0.0.                               RECT SHELL  43
XC,YC,ZC=  1.31       10.2        0.000.      PRS= 0.0000     0.0000       0.0000.   0.0000.    0.0000      0.0000.
TX,TY= 0.00000.     0.00000.      MX,MY,MXY=  0.19233       2.6881        0.50178E-01  NX,NY=  0.13364     0.10911
TOP SX,SY,SXY,SZ=  1.1540.     16.129       0.30107      0.00000      SIG1,SIG2,SIG3=  16.135      1.1479    -0.58504E-10.
 S.I.=  16.135      SIGE=  15.592
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.     0.00000.     SIG1,SIG2,SIG3= 0.00000.    0.00000.    0.00000.
 S.I.= 0.00000      SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -1.1540.    -16.129      -0.30107      0.00000.     SIG1,SIG2,SIG3=-0.20055E-12 -1.1479     -16.135
 S.I.=  16.135      SIGE=  15.592

EL=   87  NODES=   47   48   59   58   MAT=  1  AREA=  11.4     TTOP,TBOT=    0.0.   0.0                                RECT SHELL  43
XC,YC,ZC=  3.37       10.2        0.000.      PRS= 0.0000.    0.0000       0.0000.   0.0000.    0.0000      0.0000.
TX,TY= 0.00000      0.00000       MX,MY,MXY=  0.73428       2.8464       -0.17707E-01  NX,NY=  0.27628     0.11827
TOP SX,SY,SXY,SZ=  4.4057      17.078      -0.10624      0.00000.     SIG1,SIG2,SIG3=  17.079      4.4048     -0.49571E-10
 S.I.=  17.079      SIGE=  15.358
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.0000       0.00000      SIG1,SIG2,SIG3= 0.00000.    0.00000     0.00000
 S.I.= 0.00000      SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -4.4057     -17.078       0.10624      0.00000      SIG1,SIG2,SIG3= 0.00000     -4.4048     -17.079
 S.I.=  17.079      SIGE=  15.358

EL=   88  NODES=   48   49   60   59   MAT=  1  AREA=  12.0     TTOP,TBOT=    0.0.   0.0                                RECT SHELL  43
XC,YC,ZC=  6.75       10.2        0.000       PRS= 0.0000     0.0000       0.0000.   0.0000.    0.0000      0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY=  [illegible]   3.4314       -0.20874     NX,NY=  0.56459     0.20737
TOP SX,SY,SXY,SZ= [illegible]  [illegible]  [illegible]                SIG1,SIG2,SIG3=  [illegible].774   13.110   -0.33793E-10
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```
 S.I.= 0.00000        SIGE= 0.00000.                                         SIG1,SIG2,SIG3=-0.73145E-13 -12.110      -20.774
BOT SX,SY,SXY,SZ= -12.295      -20.589       1.2524        0.00000.
 S.I.= 20.774         SIGE=  18.073

                                                                              TTOP,TBOT=     0.0.     0.0                        RECT SHELL  43
EL=   89  NODES=    49   50   61   60.      MAT=  1  AREA=  12.2
XC,YC,ZC=  10.2          10.2          0.000.         PRS= 0.0000          0.0000      0.0000.   0.0000.     0.0000       0.0000
TX,TY= 0.00000        0.00000          MX,MY,MXY=    4.6614          4.6614          -0.63549       NX,NY=   1.1858          1.1858
TOP SX,SY,SXY,SZ=  27.968         27.968       -3.8129       0.00000.           SIG1,SIG2,SIG3=  31.781          24.155      -0.29610E-10
 S.I.=  31.781        SIGE=  28.738
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000       0.00000             SIG1,SIG2,SIG3= 0.00000.        0.00000       0.00000.
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -27.968      -27.968        3.8129       0.00000             SIG1,SIG2,SIG3=-0.19873E-12 -24.155      -31.781
 S.I.=  31.781        SIGE=  28.738

                                                                              TTOP,TBOT=     0.0.     0.0                        RECT SHELL  43
EL=   90  NODES=    50   51   62   61       MAT=  1  AREA=  12.3
XC,YC,ZC=  13.7          10.2          0.000.         PRS= 0.0000.         0.0000.     0.0000.   0.0000.     0.0000       0.0000.
TX,TY= 0.00000        0.00000          MX,MY,MXY=    4.6615          4.6614           0.63553       NX,NY=  -1.1858          1.1858
TOP SX,SY,SXY,SZ=  27.969         27.968        3.8132       0.00000.           SIG1,SIG2,SIG3=  31.782          24.156      -0.29711E-10
 S.I.=  31.782        SIGE=  28.738
MID SX,SY,SXY,SZ= 0.00000.     0.00000.      0.00000.      0.00000.            SIG1,SIG2,SIG3= 0.0000          0.00000       0.00000.
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -27.969      -27.968       -3.8132       0.00000.            SIG1,SIG2,SIG3=-0.99367E-13 -24.156      -31.782
 S.I.=  31.782        SIGE=  28.738

                                                                              TTOP,TBOT=     0.0.     0.0                        RECT SHELL  43
EL=   91  NODES=    51   52   63   62       MAT=  1  AREA=  12.2
XC,YC,ZC=  17.2          10.2          0.000.         PRS= 0.0000          0.0000      0.0000.   0.0000.     0.0000       0.0000.
TX,TY= 0.00000        0.00000          MX,MY,MXY=    2.0496          3.4314           0.20874       NX,NY=  -0.58455         0.20735
TOP SX,SY,SXY,SZ=  12.297         20.589        1.2524       0.00000.           SIG1,SIG2,SIG3=  20.774          12.112      -0.33793E-10
 S.I.=  20.774        SIGE=  18.073
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000       0.00000             SIG1,SIG2,SIG3= 0.00000         0.00000       0.00000.
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -12.297      -20.589       -1.2524       0.00000.            SIG1,SIG2,SIG3=-0.73145E-13 -12.112      -20.774
 S.I.=  20.774        SIGE=  18.073

                                                                              TTOP,TBOT=     0.0.     0.0                        RECT SHELL  43
EL=   92  NODES=    52   53   64   63       MAT=  1  AREA=  11.4
XC,YC,ZC=  20.6          10.2          0.000.         PRS= 0.0000          0.0000      0.0000.   0.0000.     0.0000       0.0000.
TX,TY= 0.00000        0.00000          MX,MY,MXY=  0.73457          2.8464           0.17641E-01   NX,NY=  -0.27630         0.11825
TOP SX,SY,SXY,SZ=  4.4074         17.079        0.10585      0.00000.           SIG1,SIG2,SIG3=  17.079          4.4066      -0.49541E-10
 S.I.=  17.079        SIGE=  15.358
MID SX,SY,SXY,SZ= 0.00000      0.00000.      0.00000.      0.00000.            SIG1,SIG2,SIG3= 0.00000.        0.00000       0.00000.
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -4.4074      -17.079      -0.10585       0.00000.            SIG1,SIG2,SIG3= 0.00000.       -4.4066      -17.079
 S.I.=  17.079        SIGE=  15.358

                                                                              TTOP,TBOT=     0.0.     0.0                        RECT SHELL  43
EL=   93  NODES=    53   54   65   64       MAT=  1  AREA=  3.04
XC,YC,ZC=  22.7          10.2          0.000.         PRS= 0.0000          0.0000      0.0000.   0.0000.     0.0000       0.0000.
TX,TY= 0.00000        0.00000.         MX,MY,MXY=  0.19282          2.6882          -0.50166E-01   NX,NY=  -0.13370         0.10900
TOP SX,SY,SXY,SZ=  1.1569         16.129       -0.30099      0.00000.           SIG1,SIG2,SIG3=  16.136          1.1509      -0.58478E-10
 S.I.=  16.136        SIGE=  15.592
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000       0.00000.            SIG1,SIG2,SIG3= 0.00000.        0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -1.1569      -16.129        0.30099      0.00000.            SIG1,SIG2,SIG3=-0.14326E-12 -1.1509      -16.136
 S.I.=  16.136        SIGE=  15.592

                                                                              TTOP,TBOT=     0.0.     0.0                        RECT SHELL  43
EL=   94  NODES=    54   55   66   65       MAT=  1  AREA=  3.08
XC,YC,ZC=  23.6          10.2          0.000.         PRS= 0.0000          0.0000      0.0000.   0.0000.     0.0000       0.0000
TX,TY= 0.00000        0.00000          MX,MY,MXY=  0.58668E-01      2.6799          -0.88986E-01   NX,NY=  -0.11591         0.12368
TOP SX,SY,SXY,SZ= 0.35201         16.079       -0.53392      0.00000.           SIG1,SIG2,SIG3=  16.097          0.33390     -0.61467E-10
 S.I.=  16.097        SIGE=  15.933
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000       0.00000             SIG1,SIG2,SIG3= 0.00000         0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ=-0.35201      -16.079        0.53392      0.00000             SIG1,SIG2,SIG3=-0.22851E-12-0.33390     -16.097
 S.I.=  16.097        SIGE=  15.933

                                                                              STAT=   2     GAP  1
```

```
EL=  96  NODES=  46 167  MAT= 2  TEMPS=   0.     0.  FORC= 0.00000        SIG= 0.00000.      EP= 0.000000  STAT=  2
EL=  97  NODES=  47 168  MAT= 2  TEMPS=   0.0.   0.0. FORC= 0.00000        SIG= 0.00000.      EP= 0.000000  STAT=  2    GAP  10.
EL=  98  NODES=  48 169  MAT= 2  TEMPS=   0.0    0.0  FORC= 0.00000        SIG= 0.00000.      EP= 0.000030  STAT=  2    GAP  10.
EL=  99  NODES=  49 170  MAT= 2  TEMPS=   0.0    0.0  FORC= 0.00000        SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10.
EL= 100  NODES=  50 171  MAT= 2  TEMPS=   0.0    0.0  FORC= 0.00000        SIG= 0.00000.      EP= 0.000000  STAT=  2    GAP  10.
EL= 101  NODES=  51 172  MAT= 2  TEMPS=   0.0    0.0. FORC= 0.00000.       SIG= 0.00000.      EP= 0.000000  STAT=  2    GAP  10.
EL= 102  NODES=  52 173  MAT= 2  TEMPS=   0.0    0.0  FORC= 0.00000        SIG= 0.00000       EP= 0.000000. STAT=  2    GAP  10.
EL= 103  NODES=  53 174  MAT= 2  TEMPS=   0.0    0.0  FORC= 0.00000        SIG= 0.00000.      EP= 0.000000. STAT=  2    GAP  10.
EL= 104  NODES=  54 175  MAT= 2  TEMPS=   0.0    0.0. FORC= 0.00000        SIG= 0.00000.      EP= 0.000000. STAT=  2    GAP  10.
EL= 105  NODES=  55 176  MAT= 2  TEMPS=   0.0.   0.0. FORC= 0.00000        SIG= 0.00000.      EP= 0.000000. STAT=  2    GAP  10
EL= 106  NODES=   56   57   68   67     MAT=  1  AREA=  3.06          TTOP,TBOT=   0.0.    0.0                        RECT SHELL  43
XC,YC,ZC= 0.437       13.7      0.000.        PRS= 0.0000        0.0000        0.0000.    0.0000.     0.0000      0.0000.
TX,TY= 0.00000        0.00000       MX,MY,MXY=  0.58209E-01   2.6799        -0.88776E-01  NX,NY=  0.11492     -0.12363
TOP SX,SY,SXY,SZ= 0.34926      15.180    -0.53266       0.00000       SIG1,SIG2,SIG3=  16.098       0.33124      -0.61496E-10
 S.I.=  16.098       SIGE=  15.935
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000.     0. 0000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ=-0.34926      -16.080.     0.53266      0.00000       SIG1,SIG2,SIG3=-0.17138E-12-0.33124      -16.098
 S.I.=  16.098        SIGE=  15.935
EL= 107  NODES=   57   58   69   68     MAT=  1  AREA=  3.06          TTOP,TBOT=    0.0.    0.0.                      RECT SHELL  43
XC,YC,ZC=  1.31       13.7      0.000.        PRS= 0.0000.       0.0000.       0.0000.    0.0000.     0.0000      0.0000
TX,TY= 0.00000        0.00000       MX,MY,MXY=  0.19235         2.6884        -0.49968E-01  NX,NY=  0.13365     -0.10900
TOP SX,SY,SXY,SZ=  1.1541      16.130     -0.29981      0.00000.      SIG1,SIG2,SIG3=  16.136        1.1481      -0.58681E-10.
 S.I.=  16.136        SIGE=  15.594
MID SX,SY,SXY,SZ= 0.00000      0.00000.      0.00000.    0.00000.      SIG1,SIG2,SIG3= 0.00000       0. 0000      0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -1.1541      -16.130.      0.29981      0.00000.      SIG1,SIG2,SIG3= 0.28653E-13 -1.1481      -16.136
 S.I.=  16.136        SIGE=  15.594
EL= 108  NODES=   58   59   70.  69     MAT=  1  AREA=  11.4          TTOP,TBOT=    0.0.    0.0                       RECT SHELL  43
XC,YC,ZC=  3.37       13.7      0.000.        PRS= 0.0000        0.0000.       0.0000.    0.0000.     0.0000      0.0000.
TX,TY= 0.00000        0.00000       MX,MY,MXY=  0.73431         2.8466        0.17875E-01  NX,NY=  0.27627     -0.11817
TOP SX,SY,SXY,SZ=  4.4058      17.080.     0.10725      0.00000.      SIG1,SIG2,SIG3=  17.080.      4.4049      -0.49605E-10
 S.I.=  17.080        SIGE=  15.359
MID SX,SY,SXY,SZ= 0.00000.     0.00000.     0.00000.     0.00000.      SIG1,SIG2,SIG3= 0.00000.      0.00000.     0.00000.
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -4.4058      -17.080     -0.10725      0.00000.      SIG1,SIG2,SIG3=-0.30339E-13 -4.4049      -17.080
 S.I.=  17.080        SIGE=  15.359
EL= 109  NODES=   59   60.  71   70.    MAT=  1  AREA=  12.2          TTOP,TBOT=    0.0.    0.0                       RECT SHELL  43
XC,YC,ZC=  6.75       13.7      0.000.        PRS= 0.0000        0.0000        0.0000.    0.0000.     0.0000      0.0000.
TX,TY= 0.00000        0.00000.      MX,MY,MXY=   2.0492          3.4316         0.20885     NX,NY=  0.56456     -0.20729
TOP SX,SY,SXY,SZ=  12.295      20.590.      1.2531       0.00000.      SIG1,SIG2,SIG3=  20.775       12.110      -0.33795E-10
 S.I.=  20.775        SIGE=  18.074
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.0 000.     0.00000.      SIG1,SIG2,SIG3= 0.00000.      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -12.295      -20.590.     -1.2531      0.00000.      SIG1,SIG2,SIG3=-0.73149E-13 -12.110      -20.775
 S.I.=  20.775        SIGE=  18.074
EL= 110  NODES=   60   61   72   71     MAT=  1  AREA=  12.2          TTOP,TBOT=    0.0.    0.0                       RECT SHELL  43
XC,YC,ZC=  1[illegible].2     13.7      [illegible]        PRS= 0.0000        0.0000        0.0000.    0.0000      0.0000      0.0000
TX,TY= [illegible]    [illegible]   MX,MY,MXY=  4.5[illegible]   4.6515        0.63553     NX,NY=  1.1954      -1.1858
TOP SX,SY,SXY,SZ=  27.9[illegible]   27.2[illegible]   [illegible]   [illegible]   SIG1,SIG2,SIG3=  31.742   20.155   -0.29711E-10
```

```
 S.I.= 0.00000        SIGE= 0.00000
BOT SX,SY,SXY,SZ= -27.968     -27.969     -3.8132     0.00000        SIG1,SIG2,SIG3=-0.99357E-13 -24.156     -31.782
 S.I.=  31.782        SIGE=  28.738
                                                                                                         RECT SHELL  43
EL=  111  NODES=    61   62    73   72        MAT=  1  AREA=  12.3           TTOP,TBOT=     0.0    0.0
XC,YC,ZC=  13.7          13.7       0.000        PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= 0.00000        0.00000        MX,MY,MXY=   4.6615       4.6615          -0.63557     NX,NY=  -1.1858      -1.1858
TOP SX,SY,SXY,SZ=  27.969        27.969      -3.8134      0.00000.           SIG1,SIG2,SIG3=  31.783        24.156     -0.29909E-10
 S.I.=  31.783        SIGE=  28.739
MID SX,SY,SXY,SZ= 0.00000        0.00000.     0.00000.     0.00000.           SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000.
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -27.969       -27.969       3.8134       0.00000.          SIG1,SIG2,SIG3= 0.00000       -24.156      -31.783
 S.I.=  31.783        SIGE=  28.739
                                                MAT=  1  AREA=  12.2           TTOP,TBOT=     0.0    0.0                       RECT SHELL  43
EL=  112  NODES=    62   63    74   73         PRS= 0.0000.       0.0000.      0.0000.     0.0000.     0.0000.     0.0000.
XC,YC,ZC=  17.2          13.7       0.000.       MX,MY,MXY=    2.0496       3.4316          -0.20886     NX,NY= -0.56454     -0.20727
TX,TY= 0.00000        0.00000                                                    SIG1,SIG2,SIG3=  20.775        12.112     -0.33941E-10
TOP SX,SY,SXY,SZ=  12.297        20.590.      -1.2531      0.00000.
 S.I.=  20.775        SIGE=  18.074
MID SX,SY,SXY,SZ= 0.00000        0.00000      0.00000.     0.00000.           SIG1,SIG2,SIG3= 0.00000.      0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -12.297       -20.590       1.2531       0.00000.          SIG1,SIG2,SIG3= 0.00000.      -12.112      -20.775
 S.I.=  20.775        SIGE=  18.074
                                                MAT=  1  AREA=  11.4           TTOP,TBOT=     0.0    0.0                       RECT SHELL  43
EL=  113  NODES=    63   64    75   74         PRS= 0.0000.       0.0000       0.0000.     0.0000.     0.0000      0.0000
XC,YC,ZC=  20.6          13.7       0.000.       MX,MY,MXY=  0.73460.      2.8466         -0.17809E-01  NX,NY= -0.27631.    -0.11515
TX,TY= 0.00000        0.00000                                                    SIG1,SIG2,SIG3=  17.081        4.4067     -0.49636E-10.
TOP SX,SY,SXY,SZ=  4.4076        17.080.     -0.10685      0.00000
 S.I.=  17.081        SIGE=  15.359
MID SX,SY,SXY,SZ= 0.00000        0.00000.     0.00000.     0.00000            SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -4.4076       -17.080.      0.10685      0.00000.          SIG1,SIG2,SIG3= 0.60680E-13 -4.4067      -17.081
 S.I.=  17.081        SIGE=  15.359
                                                MAT=  1  AREA=  3.04           TTOP,TBOT=     0.0.   0.0.                      RECT SHELL  43
EL=  114  NODES=    64   65    76   75         PRS= 0.0000.       0.0000       0.0000.     0.0000.     0.0000      0.0000.
XC,YC,ZC=  22.7          13.7       0.000.       MX,MY,MXY=  0.19284       2.6885          0.49956E-01  NX,NY= -0.13371     -0.10895
TX,TY= 0.00000.       0.00000                                                    SIG1,SIG2,SIG3=  16.137        1.1510     -0.58541E-10
TOP SX,SY,SXY,SZ=  1.1570        16.131       0.29973      0.00000.
 S.I.=  16.137        SIGE=  15.593
MID SX,SY,SXY,SZ= 0.00000        0.00000      0.00000.     0.00000.           SIG1,SIG2,SIG3= 0.00000.      0.00000.      0.00000.
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -1.1570       -16.131      -0.29973      0.00000           SIG1,SIG2,SIG3=-0.14327E-12 -1.1510      -16.137
 S.I.=  16.137        SIGE=  15.593
                                                MAT=  1  AREA=  3.08           TTOP,TBOT=     0.0    0.0
EL=  115  NODES=    65   66    77   76         PRS= 0.0000.       0.0000.      0.0000.     0.0000.     0.0000.     0.0000.
XC,YC,ZC=  23.6          13.7       0.000.       MX,MY,MXY=  0.58674E-01   2.6801          0.88743E-01  NX,NY= -0.11501     -0.12396
TX,TY= 0.00000        0.00000                                                    SIG1,SIG2,SIG3=  16.099        0.33404    -0.62272E-10
TOP SX,SY,SXY,SZ= 0.35204        16.081       0.53246      0.00000.
 S.I.=  16.099        SIGE=  15.934
MID SX,SY,SXY,SZ= 0.00000        0.00000.     0.00000      0.00000            SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000.
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ=-0.35204       -16.081      -0.53246      0.00000.          SIG1,SIG2,SIG3= 0.57131E-12-0.33404      -16.099
 S.I.=  16.099        SIGE=  15.934
EL=  116  NODES=    56  177  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2    GAP  10
EL=  117  NODES=    57  178  MAT=  2  TEMPS=    0.0.    0.0. FORC= 0.00000     SIG= 0.00000.    EP= 0.000000  STAT=  2    GAP  10
EL=  118  NODES=    58  179  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000     SIG= 0.00000.    EP= 0.000000  STAT=  2    GAP  10.
EL=  119  NODES=    59  180  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2    GAP  10
EL=  120  NODES=    60  181  MAT=  2  TEMPS=    0.      0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2    GAP  10
                                                                                                               STAT=  2    GAP  10
```

```
EL= 122  NODES=  62  183  MAT=  2  TEMPS=  0.    0.  FORC= 0.00000       SIG= 0.00000    EP= 0.000000  STAT=  2    GAP  10
EL= 123  NODES=  63  184  MAT=  2  TEMPS=  0.0   0.0  FORC= 0.00000       SIG= 0.00000.   EP= 0.000000  STAT=  2.   GAP  10.
EL= 124  NODES=  64  185  MAT=  2  TEMPS=  0.0   0.0  FORC= 0.00000       SIG= 0.00000    EP= 0.000000. STAT=  2    GAP  10.
EL= 125  NODES=  65  186  MAT=  2  TEMPS=  0.0   0.0  FORC= 0.00000       SIG= 0.00000    EP= 0.000000  STAT=  2    GAP  10
EL= 126  NODES=  66  187  MAT=  2  TEMPS=  0.0   0.0. FORC= 0.00000       SIG= 0.00000.   EP= 0.000000. STAT=  2    GAP  10.
                                                                                                              RECT SHELL  43
EL= 127  NODES=  67   68   79   78     MAT=  1  AREA=  3.06            TTOP,TBOT=   0.0.   0.0
XC,YC,ZC= 0.437     17.2     0.000.    PRS= 0.0000       0.0000        0.0000.   0.0000.    0.0000     0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY=  0.14950E-02   1.6436          -0.19118      NX,NY=  0.45495E-02 -0.40740
TOP SX,SY,SXY,SZ= 0.89709E-02  9.8615    -1.1471     0.00000.          SIG1,SIG2,SIG3=  9.9932      0.78969E-10-0.12281
 S.I.=  10.116       SIGE=  10.055
MID SX,SY,SXY,SZ= 0.00000      0.00000.    0.00000.    0.00000.        SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000.
 S.I.= 0.00000       SIGE= 0.00001.
BOT SX,SY,SXY,SZ=-0.89709E-02 -9.8615     1.1471     0.00000           SIG1,SIG2,SIG3= 0.12281      0.79564E-10 -9.9932
 S.I.=  10.116       SIGE=  10.055
                                                                                                              RECT SHELL  43
EL= 128  NODES=  68   69   80   79     MAT=  1  AREA=  3.06            TTOP,TBOT=   0.0.   0.0
XC,YC,ZC=  1.31     17.2     0.000.    PRS= 0.0000.      0.0000         0.0000.   0.0000.    0.0000     0.0000.
TX,TY= 0.00000     0.00000     MX,MY,MXY=  0.62906E-01   1.7005          -0.13308      NX,NY=  0.22176     -0.35819
TOP SX,SY,SXY,SZ= 0.37744     10.203     -0.79849     0.00000.         SIG1,SIG2,SIG3=  10.268      0.31297     -0.38750E-10
 S.I.=  10.268       SIGE=  10.115
MID SX,SY,SXY,SZ= 0.00000.     0.00000.    0.00000.    0.00000.        SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=-0.37744     -10.203      0.79849     0.00000.        SIG1,SIG2,SIG3=-0.25374E-12-0.31297     -10.268
 S.I.=  10.268       SIGE=  10.115
                                                                                                              RECT SHELL  43
EL= 129  NODES=  69   70   81   80     MAT=  1  AREA=  11.4            TTOP,TBOT=   0.0.   0.0
XC,YC,ZC=  3.37     17.2     0.000     PRS= 0.0000.      0.0000         0.0000.   0.0000.    0.0000     0.0000
TX,TY= 0.00000     0.00000     MX,MY,MXY=  0.58921       1.7928          -0.24556E-01  NX,NY=  0.27128     -0.37563
TOP SX,SY,SXY,SZ=  3.5353     10.757     -0.14734     0.00000.         SIG1,SIG2,SIG3=  10.760.     3.5323      -0.28317E-10
 S.I.=  10.760.      SIGE=  9.4995
MID SX,SY,SXY,SZ= 0.00000      0.00000     0.00000     0.00000.        SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000
 S.I.= 0.00000.      SIGE= 0.00003.
BOT SX,SY,SXY,SZ= -3.5353     -10.757      0.14734     0.00000.        SIG1,SIG2,SIG3= 0.19108E-13 -3.5323      -10.760.
 S.I.=  10.760       SIGE=  9.4995
                                                                                                              RECT SHELL  43
EL= 130  NODES=  70   71   82   81     MAT=  1  AREA=  12.2            TTOP,TBOT=   0.0.   0.0
XC,YC,ZC=  6.75     17.2     0.000.    PRS= 0.0000       0.0000         0.0000.   0.0000.    0.0000     0.0000
TX,TY= 0.00000.    0.00000.    MX,MY,MXY=  1.9738        1.9742           0.19378      NX,NY=  0.42908     -0.42908
TOP SX,SY,SXY,SZ=  11.843     11.845      1.1627     0.00000.          SIG1,SIG2,SIG3=  13.007      10.681      -0.90480E-11
 S.I.=  13.007       SIGE=  12.014
MID SX,SY,SXY,SZ= 0.00000      0.00000     0.00000.    0.00000.        SIG1,SIG2,SIG3= 0.00000.     0.00000.     0.00000.
 S.I.= 0.00000       SIGE= 0.00003.
BOT SX,SY,SXY,SZ= -11.843     -11.845     -1.1627     0.00000.         SIG1,SIG2,SIG3=-0.42084E-13 -10.681      -13.007
 S.I.=  13.007       SIGE=  12.014
                                                                                                              RECT SHELL  43
EL= 131  NODES=  71   72   83   82     MAT=  1  AREA=  12.3            TTOP,TBOT=   0.0.   0.0
XC,YC,ZC=  10.2     17.2     0.000.    PRS= 0.0000.      0.0000         0.0000.   0.0000.    0.0000     0.0000.
TX,TY= 0.00000     0.00000     MX,MY,MXY=  3.4314        2.0496           0.20874      NX,NY=  0.20735     -0.56455
TOP SX,SY,SXY,SZ=  20.589     12.297      1.2524     0.00000           SIG1,SIG2,SIG3=  20.774      12.112      -0.33793E-10
 S.I.=  20.774       SIGE=  18.073
MID SX,SY,SXY,SZ= 0.00000      0.00000.    0.0000      0.00000         SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000.
 S.I.= 0.00000       SIGE= 0.00001.
BOT SX,SY,SXY,SZ= -20.589     -12.297     -1.2524     0.00000          SIG1,SIG2,SIG3=-0.73145E-13 -12.112      -20.774
 S.I.=  20.774       SIGE=  18.073
                                                                                                              RECT SHELL  43
EL= 132  NODES=  72   73   84   83     MAT=  1  AREA=  12.2            TTOP,TBOT=   0.0    0.0
XC,YC,ZC=  13.7     17.2     0.000     PRS= 0.0000       0.0000         0.0000    0.0000.    0.0000     0.0000
TX,TY=  .           0.0000      MX,MY,MXY=  3.4316        2.0496          -0.20886      NX,NY= -0.20727     -0.56454
TOP SX,SY,SXY,SZ=  20.5        12.297     -1.2           0.000         SIG1,SIG2,SIG3=  20.775      12.112      -0.33868E-10
```

```
 S.I.= 0.0000        SIGE= 0.0000.
HOT SX,SY,SXY,SZ= -20.59.      -12.297      1.2531      0.00000          SIG1,SIG2,SIG3=-0.73143E-13 -12.112      -20.775
 S.I.= 20.775        SIGE= 18.074

EL= 133  NODES=    73   74   85   84      MAT=  1  AREA=  12.2          TTOP,TBOT=    0.0.   0.0                          RECT SHELL  43
XC,YC,ZC=  17.2       17.2       0.000.      PRS= 0.0000       0.0000          0.0000.     0.0000.      0.0000      0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=   1.9743        1.9743        -0.19383       NX,NY= -0.42901      -0.42901
TOP SX,SY,SXY,SZ=  11.846       11.846      -1.1630       0.00000         SIG1,SIG2,SIG3=  13.009       10.683     -0.90481E-11
 S.I.=  13.009       SIGE=  12.016
MID SX,SY,SXY,SZ= 0.00000.      0.00000.      0.00000.      0.00000          SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -11.846       -11.846       1.1630       0.00000          SIG1,SIG2,SIG3=-0.42084E-13 -10.683      -13.009
 S.I.=  13.009       SIGE=  12.016

EL= 134  NODES=    74   75   86   85      MAT=  1  AREA=  11.4          TTOP,TBOT=    0.0.   0.0                          RECT SHELL  43
XC,YC,ZC=  20.6       17.2       0.000.      PRS= 0.0000.      0.0000.         0.0000.     0.0000.      0.0000      0.0000.
TX,TY= 0.00000       0.00000        MX,MY,MXY=  0.58977        1.7929          0.24769E-01  NX,NY= -0.27132      -0.37554
TOP SX,SY,SXY,SZ=  3.5386       10.757       0.14861       0.00000.        SIG1,SIG2,SIG3=  10.760.      3.5355     -0.28223E-10
 S.I.=  10.760       SIGE=  9.4994
MID SX,SY,SXY,SZ= 0.00000       0.00000.      0.00000.      0.00000.        SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -3.5386       -10.757      -0.14861       0.00000.        SIG1,SIG2,SIG3=-0.57326E-13 -3.5355      -10.760.
 S.I.=  10.760       SIGE=  9.4994

EL= 135  NODES=    75   76   87   86      MAT=  1  AREA=  3.04          TTOP,TBOT=    0.0.   0.0                          RECT SHELL  43
XC,YC,ZC=  22.7       17.2       0.000.      PRS= 0.0000.      0.0000.         0.0000.     0.0000.      0.0000      0.0000.
TX,TY= 0.00000.      0.00000        MX,MY,MXY=  0.63424E-01   1.7009          0.13326      NX,NY= -0.22252      -0.35794
TOP SX,SY,SXY,SZ= 0.38055       10.205       0.79955       0.00000.        SIG1,SIG2,SIG3=  10.270.      0.31590     -0.38722E-10.
 S.I.=  10.270       SIGE=  10.116
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000.        SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=-0.38055       -10.205      -0.79955       0.00000.        SIG1,SIG2,SIG3=-0.23567E-12-0.31590      -10.270
 S.I.=  10.270       SIGE=  10.116

EL= 136  NODES=    76   77   88   87      MAT=  1  AREA=  3.09          TTOP,TBOT=    0.0.   0.0                          RECT SHELL  43
XC,YC,ZC=  23.6       17.2       0.000.      PRS= 0.0000       0.0000          0.0000.     0.0000.      0.0000      0.0000
TX,TY= 0.00000       0.00000        MX,MY,MXY=  0.17756E-02   1.6440.         0.19132      NX,NY= -0.52559E-02 -0.40717
TOP SX,SY,SXY,SZ= 0.10653E-01  9.8641       1.1479        0.00000         SIG1,SIG2,SIG3=  9.9960.      0.78762E-10-0.12131
 S.I.=  10.117       SIGE=  10.057
MID SX,SY,SXY,SZ= 0.00000.      0.00000.      0.00000       0.00000.        SIG1,SIG2,SIG3= 0.00000.     0.00000.     0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=-0.10653E-01 -9.8641       -1.1479       0.00000.        SIG1,SIG2,SIG3= 0.12131      0.79620E-10 -9.9960
 S.I.=  10.117       SIGE=  10.057

EL= 137  NODES=   67  188  MAT=  2  TEMPS=    0.0.   0.0.  FORC= 0.00000    SIG= 0.00000.    EP= 0.000000  STAT=  2   GAP  10.
EL= 138  NODES=   68  189  MAT=  2  TEMPS=    0.0.   0.0   FORC= 0.00000    SIG= 0.00000.    EP= 0.000000. STAT=  2   GAP  10.
EL= 139  NODES=   69  190  MAT=  2  TEMPS=    0.0.   0.0.  FORC= 0.00000    SIG= 0.00000.    EP= 0.000000. STAT=  2   GAP  10
EL= 140  NODES=   70  191  MAT=  2  TEMPS=    0.0    0.0.  FORC= 0.00000    SIG= 0.00000.    EP= 0.000000  STAT=  2   GAP  10
EL= 141  NODES=   71  192  MAT=  2  TEMPS=    .0.    0.0   FORC= 0.00000    SIG= 0.00000.    EP= 0.000000  STAT=  2   GAP  10.
EL= 142  NODES=   72  193  MAT=  2  TEMPS=    0.0.   0.0.  FORC= 0.00000    SIG= 0.00000     EP= 0.000000  STAT=  2   GAP  10
EL= 143  NODES=   73  194  MAT=  2  TEMPS=    0.0    0.0   FORC= 0.00000    SIG= 0.00000     EP= 0.000000  STAT=  2   GAP  10.
EL= 144  NODES=   74  195  MAT=  2  TEMPS=    0.0    0.0   FORC= 0.00000    SIG= 0.00000     EP= 0.000000  STAT=  2   GAP  10.
EL= 145  NODES=   75  196  MAT=  2  TEMPS=    0.0    0.0   FORC= 0.00000    SIG= 0.00000     EP= 0.000000  STAT=  2   GAP  10
EL= 146  NODES=   76  197  MAT=  2  TEMPS=    0.0    0.0   FORC= 0.00000    SIG= 0.00000     EP= 0.000000  STAT=  2   GAP  10
                                                                                                         STAT=  2   GAP  1
```

```
EL= 148  NODES=   78   79   90   89      MAT=  1  AREA=  1.00          TTOP,TBOT=    0.0   0.0
XC,YC,ZC= 0.437        20.6     0.000.      PRS= 0.0000.      0.0000     0.0000.    0.0000.    0.0000    0.0000.
TX,TY= 0.00000        0.00000       MX,MY,MXY= -0.20505      -0.24012        0.24465      NX,NY= -0.40650      -0.53705
TOP SX,SY,SXY,SZ= -1.2303      -1.4407       1.4679      0.00000.      SIG1,SIG2,SIG3= 0.13614      0.23040E-10 -2.8072
 S.I.=  2.9433        SIGE=  2.8777
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000.      0.00000       SIG1,SIG2,SIG3= 0.00000.      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  1.2303       1.4407      -1.4679       0.00000.      SIG1,SIG2,SIG3=  2.8072       0.23076E-10-0.13614
 S.I.=  2.9433        SIGE=  2.8777
                                                                                                           RECT SHELL  43
EL=  149  NODES=   79   80.   91   90.      MAT=  1  AREA=  2.84          TTOP,TBOT=    0.0.   0.0.
XC,YC,ZC=  1.31        20.6      0.000.      PRS= 0.0000       0.0000       0.0000.   0.0000     0.0000     0.0000
TX,TY= 0.00000        0.00000       MX,MY,MXY= -0.75217      -0.37763        0.26111      NX,NY= -0.82524      -1.0282
TOP SX,SY,SXY,SZ= -4.5130.     -2.2658       1.5667       0.00000.      SIG1,SIG2,SIG3= 0.16034E-13 -1.4614      -5.3174
 S.I.=  5.3174        SIGE=  4.7581
MID SX,SY,SXY,SZ= 0.00000.      0.00000.      0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.      0.00000      0.00000.
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  4.5130.      2.2658      -1.5667       0.00000       SIG1,SIG2,SIG3=  5.3174        1.4614      -0.15104E-10
 S.I.=  5.3174        SIGE=  4.7581
                                                                            TTOP,TBOT=    0.0.   0.0.                 RECT SHELL  43
EL=  150  NODES=   80   81   92   91      MAT=  1  AREA=  10.6          0.0000.    0.0000.    0.0000.    0.0000.
XC,YC,ZC=  3.37        20.6      0.000.      PRS= 0.0000.      0.0000.        -0.22503      NX,NY=  0.74046      -0.74062
TX,TY= 0.00000        0.00000       MX,MY,MXY= -0.15619E-02 -0.58556E-03
TOP SX,SY,SXY,SZ=-0.93715E-02-0.35134E-02 -1.3502      0.00000.      SIG1,SIG2,SIG3=  1.3437       0.21130E-10 -1.3566
 S.I.=  2.7003        SIGE=  2.3385
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= 0.93715E-02 0.35134E-02  1.3502       0.00000.      SIG1,SIG2,SIG3=  1.3566       0.21136E-10 -1.3437
 S.I.=  2.7003        SIGE=  2.3385
                                                                                                           RECT SHELL  43
EL=  151  NODES=   81   82   93   92      MAT=  1  AREA=  11.4          TTOP,TBOT=    0.0.   0.0
XC,YC,ZC=  6.75        20.6      0.000.      PRS= 0.0000       0.0000       0.0000.    0.0000.    0.0000     0.0000.
TX,TY= 0.00000.       0.00000.      MX,MY,MXY=   1.7922        0.58966       -0.24855E-01  NX,NY=  0.37567      -0.27138
TOP SX,SY,SXY,SZ=  10.753       3.5380.      -0.14913       0.00000.      SIG1,SIG2,SIG3=  10.756        3.5349      -0.28232E-10.
 S.I.=  10.756        SIGE=  9.4956
MID SX,SY,SXY,SZ= 0.00000      0.00000.      0.00000.      0.0000.       SIG1,SIG2,SIG3= 0.00000.      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -10.753      -3.5380       0.14913       0.00000.      SIG1,SIG2,SIG3=-0.19101E-13 -3.5349      -10.756
 S.I.=  10.756        SIGE=  9.4956
                                                                                                           RECT SHELL  43
EL=  152  NODES=   82   83   94   93      MAT=  1  AREA=  11.4          TTOP,TBOT=    0.0.   0.0
XC,YC,ZC=  10.2        20.6      0.000.      PRS= 0.0000       0.0000       0.0000.    0.0000.    0.0000     0.0000
TX,TY= 0.00000        0.00000       MX,MY,MXY=   2.8464        0.73457        0.17641E-01  NX,NY=  0.11825      -0.27630.
TOP SX,SY,SXY,SZ=  17.079       4.4074       0.10585       0.00000.      SIG1,SIG2,SIG3=  17.079        4.4066      -0.49572E-10
 S.I.=  17.079        SIGE=  15.358
MID SX,SY,SXY,SZ= 0.00000.      0.00000.      0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.      0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -17.079      -4.4074      -0.10585       0.00000.      SIG1,SIG2,SIG3= 0.30338E-13 -4.4066      -17.079
 S.I.=  17.079        SIGE=  15.358
                                                                                                           RECT SHELL  43
EL=  153  NODES=   83   84   95   94      MAT=  1  AREA=  11.4          TTOP,TBOT=    0.0.   0.0.
XC,YC,ZC=  13.7        20.6      0.000.      PRS= 0.0000.      0.0000     0.0000.    0.0000.    0.0000     0.0000
TX,TY= 0.00000.       0.00000.      MX,MY,MXY=   2.8466        0.73460.       -0.17809E-01  NX,NY= -0.11815      -0.27630
TOP SX,SY,SXY,SZ=  17.080       4.4075      -0.10685       0.00000.      SIG1,SIG2,SIG3=  17.081        4.4067      -0.49606E-10.
 S.I.=  17.081        SIGE=  15.359
MID SX,SY,SXY,SZ= 0.00000      0.00000       0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -17.080      -4.4076       0.10685       0.00000.      SIG1,SIG2,SIG3= 0.00000.     -4.4067      -17.081
 S.I.=  17.081        SIGE=  15.359
                                                                                                           RECT SHELL  43
EL=  154  NODES=   84   85   96   95      MAT=  1  AREA=  11.4          TTOP,TBOT=    0.0   0.0
XC,YC,ZC=  17.2        20.6      0.000       PRS= 0.0000       0.0000       0.0000     0.0000     0.0000     0.0000
TX,TY= 0.00000        0.00000       MX,MY,MXY=   1.7922        0.58977       0.24769E-01  NX,NY= -0.37554      -0.27132
TOP SX,SY,SXY,SZ=  10.757       3.5385       0.14913                      SIG1,SIG2,SIG3=  10.758        3.5355      -0.28204E-10
```

```
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -10.757      -3.5386      -0.14861       0.00000       SIG1,SIG2,SIG3=-0.38217E-13 -3.5355      -10.760
 S.I.= 10.760        SIGE=  9.4994

EL= 155  NODES=   85   86   97   96       MAT=  1  AREA=  10.6         TTOP,TBOT=    0.0.    0.0                              RECT SHELL  43
XC,YC,ZC=  20.6         20.6       0.000.      PRS= 0.0000        0.0000        0.0000.    0.0000.     0.0000       0.0000
TX,TY= 0.00000       0.00000       MX,MY,MXY= -0.24397E-03 -0.24397E-03  0.22523        NX,NY= -0.74022       -0.74022
TOP SX,SY,SXY,SZ=-0.14638E-02-0.14638E-02  1.3514        0.00000       SIG1,SIG2,SIG3=  1.3499       0.21172E-10 -1.3528
 S.I.=  2.7027       SIGE=  2.3406
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000.     0.00000       0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= 0.14638E-02 0.14638E-02 -1.3514        0.00000       SIG1,SIG2,SIG3=  1.3529       0.21177E-10 -1.3499
 S.I.=  2.7027       SIGE=  2.3406

EL= 156  NODES=   86   87   98   97       MAT=  1  AREA=  2.83         TTOP,TBOT=    0.0.    0.0.                             RECT SHELL  43
XC,YC,ZC=  22.7         20.6       0.100.      PRS= 0.0000.       0.0000        0.0000.    0.0000.     0.0000       0.0000.
TX,TY= 0.00000       0.00000       MX,MY,MXY= -0.75284       -0.37772       -0.25970.      NX,NY=  0.82516       -1.0294
TOP SX,SY,SXY,SZ= -4.5171       -2.2663       -1.5582       0.0000 .      SIG1,SIG2,SIG3= 0.00000.     -1.4696       -5.3138
 S.I.=  5.3138       SIGE=  4.7526
MID SX,SY,SXY,SZ= 0.00000       0.00000.      0.00000       0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000       0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  4.5171        2.2663        1.5582        0.00000.      SIG1,SIG2,SIG3=  5.3138        1.4696      -0.15053E-10
 S.I.=  5.3138       SIGE=  4.7526

EL= 157  NODES=   87   88   99   98       MAT=  1  AREA=  2.86         TTOP,TBOT=    0.0.    0.0                              RECT SHELL  43
XC,YC,ZC=  23.6         20.6       0.100.      PRS= 0.0000        0.0000        0.0000.    0.0000.     0.0000       0.0000
TX,TY= 0.00000       0.00000       MX,MY,MXY= -0.20655       -0.24036       -0.24391       NX,NY=  0.40742       -0.53867
TOP SX,SY,SXY,SZ= -1.2393       -1.4422       -1.4635       0.00000.      SIG1,SIG2,SIG3= 0.12625       0.23017E-10 -2.8077
 S.I.=  2.9340       SIGE=  2.8729
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000.      SIG1,SIG2,SIG3= 0.00000       0.00000       0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  1.2393        1.4422        1.4635        0.00000.      SIG1,SIG2,SIG3=  2.8077       0.22955E-10-0.12625
 S.I.=  2.9340       SIGE=  2.8729

EL=  158  NODES=   78  199  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000       SIG= 0.00000.      EP= 0.000000  STAT=  2    GAP  10.
EL=  159  NODES=   79  200  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000       SIG= 0.00000.      EP= 0.000000. STAT=  2    GAP  10.
EL=  160  NODES=   80  201  MAT=  2  TEMPS=    0.0     0.0. FORC= 0.00000.      SIG= 0.00000.      EP= 0.000000  STAT=  2    GAP  10.
EL=  161  NODES=   81  202  MAT=  2  TEMPS=    0.0.    0.0. FORC= 0.00000.      SIG= 0.00000.      EP= 0.000000. STAT=  2    GAP  10
EL=  162  NODES=   82  203  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000   ,   SIG= 0.0000 .      EP= 0.000000  STAT=  2    GAP  10.
EL=  163  NODES=   83  204  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000.      SIG= 0.00000.      EP= 0.000000  STAT=  2    GAP  10.
EL=  164  NODES=   84  205  MAT=  2  TEMPS=    0.0.    0.0. FORC= 0.00000       SIG= 0.00000.      EP= 0.000000. STAT=  2    GAP  10.
EL=  165  NODES=   85  206  MAT=  2  TEMPS=    0.0     0.0. FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10
EL=  166  NODES=   86  207  MAT=  2  TEMPS=    0.0     0.0. FORC= 0.00000       SIG= 0.00000.      EP= 0.000000  STAT=  2    GAP  10.
EL=  167  NODES=   87  208  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000.      SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10.
EL=  168  NODES=   88  209  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2    GAP  10

EL= 169  NODES=   89   90  101  100.      MAT=  1  AREA= 0.761         TTOP,TBOT=    0.0.    0.0                              RECT SHELL  43
XC,YC,ZC= 0.437         22.7       0.100       PRS= 0.0000        0.0000        0.0000.    0.0000.     0.0000       0.0000
TX,TY= 0.00000       0.00000       MX,MY,MXY= -0.28763       -0.83719       0.47802E-01   NX,NY= -0.74392       0.70258
TOP SX,SY,SXY,SZ= -1.7259       -5.0231       0.29681       0.00000       SIG1,SIG2,SIG3=-0.89223E-14 -1.7010      -5.0479
 S.I.=  5.0479       SIGE=  4.4481
MID SX,SY,SXY,SZ= 0.00000       0.00000       0.00000       0.00000       SIG1,SIG2,SIG3= 0.00000       0.0000        0.00000
 S.I.= [illegible]   SIGE= 0.0000
BOT SX,SY,SXY,SZ=  1.7259        5.0231       -0.29681      [illegible]   SIG1,SIG2,SIG3=  5.0479       1.7010      -0.13093E-10
```

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EL= 17   NODES=   9                                  PRS= 0.0000      0.0000        0.0000    0.0000.    0.0000    0.0000.
XC,YC,ZC=  1.31          22.7      0.000      MX,MY,MXY=  -1.2343      -1.2346       -0.50255E-01  NX,NY=  -1.6454        1.6413
TX,TY= 0.00000           0.00000                                                                 
TOP SX,SY,SXY,SZ= -7.4058      -7.4079      -0.30153      0.00000.      SIG1,SIG2,SIG3=-0.26318E-13 -7.1053       -7.7084
 S.I.=  7.7084        SIGE=  7.4252
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.      0.00000       SIG1,SIG2,SIG3= 0.00000.     0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  7.4058       7.4079       0.30153      0.00000.      SIG1,SIG2,SIG3=  7.7084       7.1053       -0.23423E-11
 S.I.=  7.7084        SIGE=  7.4252
                                                                                                                    RECT SHELL  43
EL= 171   NODES=   91   92  103  102     MAT=  1  AREA=  2.83           TTOP,TBOT=    0.0.   0.0
XC,YC,ZC=  3.37          22.7      0.000      PRS= 0.0000      0.0000        0.0000.    0.0000.    0.0000    0.0000
TX,TY= 0.00000           0.00000      MX,MY,MXY= -0.37970      -0.75331        0.26001       NX,NY=  1.0300.      0.82521
TOP SX,SY,SXY,SZ= -2.2782      -4.5199       1.5600.      0.00000       SIG1,SIG2,SIG3=-0.16058E-13 -1.4781       -5.3200
 S.I.=  5.3200        SIGE=  4.7564
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000.      0.00000.
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  2.2782       4.5199      -1.5600.      0.00000       SIG1,SIG2,SIG3=  5.3200       1.4781       -0.15030E-10
 S.I.=  5.3200        SIGE=  4.7564
                                                                                                                    RECT SHELL  43
EL= 172   NODES=   92   93  104  103     MAT=  1  AREA=  3.04           TTOP,TBOT=    0.0.   0.0
XC,YC,ZC=  6.75          22.7      0.000.     PRS= 0.0000.     0.0000        0.0000.    0.0000.    0.0000    0.0000.
TX,TY= 0.00000           0.00000      MX,MY,MXY=   1.7000.      0.63316E-01 -0.13338      NX,NY=  0.35812      -0.22257
TOP SX,SY,SXY,SZ=  10.200       0.37990     -0.80026      0.00000.      SIG1,SIG2,SIG3=  10.265       0.31511      -0.38993E-10
 S.I.=  10.265        SIGE=  10.111
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -10.200      -0.37990.     0.80026      0.00000.      SIG1,SIG2,SIG3= 0.54358E-13-0.31511       -10.265
 S.I.=  10.265        SIGE=  10.111
                                                                                                                    RECT SHELL  43
EL= 173   NODES=   93   94  105  104     MAT=  1  AREA=  3.04           TTOP,TBOT=    0.0.   0.0
XC,YC,ZC=  10.2          22.7      0.000      PRS= 0.0000.     0.0000        0.0000.    0.0000.    0.0000    0.0000.
TX,TY= 0.00000           0.00000      MX,MY,MXY=   2.6882       0.19282       -0.50266E-01  NX,NY=  0.10906      -0.13370
TOP SX,SY,SXY,SZ=  16.129       1.1569      -0.30099      0.00000.      SIG1,SIG2,SIG3=  16.136       1.1509       -0.58478E-10
 S.I.=  16.136        SIGE=  15.592
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000       0.00000.
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -16.129      -1.1569       0.30099      0.00000.      SIG1,SIG2,SIG3=-0.14326E-12 -1.1509       -16.136
 S.I.=  16.136        SIGE=  15.592
                                                                                                                    RECT SHELL  43
EL= 174   NODES=   94   95  106  105     MAT=  1  AREA=  3.04           TTOP,TBOT=    0.0.   0.0.
XC,YC,ZC=  13.7          22.7      0.000.     PRS= 0.0000      0.0000        0.0000.    0.0000.    0.0000    0.0000.
TX,TY= 0.00000           0.00000      MX,MY,MXY=   2.6885       0.19284        0.49956E-01  NX,NY= -0.10895      -0.13371
TOP SX,SY,SXY,SZ=  16.131       1.1570       0.29973      0.00000.      SIG1,SIG2,SIG3=  16.137       1.1510       -0.58541E-10
 S.I.=  16.137        SIGE=  15.593
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -16.131      -1.1570.     -0.29973      0.00000.      SIG1,SIG2,SIG3=-0.14327E-12 -1.1510       -16.137
 S.I.=  16.137        SIGE=  15.593
                                                                                                                    RECT SHELL  43
EL= 175   NODES=   95   96  107  106     MAT=  1  AREA=  3.04           TTOP,TBOT=    0.0.   0.0
XC,YC,ZC=  17.2          22.7      0.000.     PRS= 0.0000      0.0000        0.0000.    0.0000.    0.0000    0.0000.
TX,TY= 0.00000           0.00000      MX,MY,MXY=   1.7009       0.63424E-01  0.13326      NX,NY= -0.35794      -0.22252
TOP SX,SY,SXY,SZ=  10.205       0.38055      0.79955      0.00000       SIG1,SIG2,SIG3=  10.270       0.31590      -0.38903E-10
 S.I.=  10.270        SIGE=  10.116
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000       0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000       0.00000
 S.I.= 0.00000        SIGE= 0.0000 .
BOT SX,SY,SXY,SZ= -10.205      -0.38055     -0.79955      0.00000       SIG1,SIG2,SIG3=-0.36256E-13-0.31590       -10.270
 S.I.=  10.270        SIGE=  10.116
                                                                                                                    RECT SHELL  43
EL= 176   NODES=   96   97  108  107     MAT=  1  AREA=  2.83           TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  20.6          22.7      0.000      PRS= 0.0000      0.0000        0.0000    0.0000     0.0000    0.0000
TX,TY= [illegible]       [illegible]  MX,MY,MXY= - .37772      - .75234       -0.25970      NX,NY=  -1.0234       0.82516
TOP SX,SY,SXY,SZ= -2.264       -4.5171      [illegible]   [illegible]   SIG1,SIG2,SIG3=-0.16043E-13 -1.4675       -5.3136
```

```
  S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  2.2663      4.5171      1.5582      0.00000.      SIG1,SIG2,SIG3=  5.3138      1.4696      -0.15021E-10
  S.I.=  5.3138      SIGE=  4.7526

                                                                                                              RECT SHELL  43
EL=  177  NODES=    97   98   109  108      MAT=  1  AREA= 0.757        TTOP,TBOT=    0.0.   0.0
XC,YC,ZC=  22.7        22.7       0.000.       PRS= 0.0000      0.0000.   0.0000    0.0000.   0.0000     0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY=  -1.2356       -1.2356      0.51048E-01  NX,NY=   1.6444      1.6444
TOP SX,SY,SXY,SZ= -7.4138      -7.4138     0.39629      0.00000.      SIG1,SIG2,SIG3= 0.26339E-13 -7.1075      -7.7201
  S.I.=  7.7201      SIGE=  7.4327
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000.     0.00000.
  S.I.= 0.00000      SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  7.4138      7.4138     -0.39629      0.00000.      SIG1,SIG2,SIG3=  7.7201      7.1075      -0.24232E-11
  S.I.=  7.7201      SIGE=  7.4327

EL=  178  NODES=    98   99   110  109      MAT=  1  AREA= 0.766        TTOP,TBOT=    0.0,   0.0.
XC,YC,ZC=  23.6        22.7       0.000.       PRS= 0.0000.     0.0000.   0.0000.   0.0000.   0.0000.    0.0000.
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.29032      -0.83865     -0.46191E-01  NX,NY=  0.74666     0.70444
TOP SX,SY,SXY,SZ= -1.7419      -5.0319     -0.27714      0.00000.      SIG1,SIG2,SIG3=-0.89385E-14 -1.7188      -5.0551
  S.I.=  5.0551      SIGE=  4.4519
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000.      0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000
  S.I.= 0.00000      SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  1.7419      5.0319      0.27714      0.00000.      SIG1,SIG2,SIG3=  5.0551      1.7188      -0.13059E-10.
  S.I.=  5.0551      SIGE=  4.4519

EL=  179  NODES=    89  210   MAT=  2  TEMPS=    0.0.    0.0.  FORC=-0.84416      SIG=-0.93557      EP=-0.005500  STAT=  1    GAP  10

EL=  180  NODES=    90  211   MAT=  2  TEMPS=    0.0.    0.0.  FORC=-0.15303      SIG=-0.84780E-01  EP=-0.000498  STAT=  1    GAP  10.

EL=  181  NODES=    91  212   MAT=  2  TEMPS=    0.0     0.0   FORC= 0.00000      SIG= 0.00000.     EP= 0.000000  STAT=  2    GAP  10.

EL=  182  NODES=    92  213   MAT=  2  TEMPS=    0.0     0.0   FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2    GAP  10.

EL=  183  NODES=    93  214   MAT=  2  TEMPS=    0.0.    0.0.  FORC= 0.00000.     SIG= 0.00000.     EP= 0.000000. STAT=  2    GAP  10.

EL=  184  NODES=    94  215   MAT=  2  TEMPS=    0.0.    0.0   FORC= 0.00000      SIG= 0.00000.     EP= 0.000000  STAT=  2    GAP  10.

EL=  185  NODES=    95  216   MAT=  2  TEMPS=    0.0     0.0   FORC= 0.00000      SIG= 0.00000.     EP= 0.000000  STAT=  2    GAP  10

EL=  186  NODES=    96  217   MAT=  2  TEMPS=    0.0.    0.0.  FORC= 0.00000      SIG= 0.00000.     EP= 0.000000  STAT=  2    GAP  10

EL=  187  NODES=    97  218   MAT=  2  TEMPS=    0.0.    0.0.  FORC= 0.00000.     SIG= 0.00000.     EP= 0.000000. STAT=  2    GAP  10.

EL=  188  NODES=    98  219   MAT=  2  TEMPS=    0.0     0.0   FORC=-0.14627      SIG=-0.81034E-01  EP=-0.000476  STAT=  1    GAP  10.

EL=  189  NODES=    99  220   MAT=  2  TEMPS=    0.0     0.0.  FORC=-0.84566      SIG=-0.93722      EP=-0.005509  STAT=  1    GAP  10

                                                                                                              RECT SHELL  43
EL=  190  NODES=   100  101   112  111      MAT=  1  AREA= 0.770.       TTOP,TBOT=    0.0.   0.0.
XC,YC,ZC= 0.437        23.6       0.000.       PRS= 0.0000      0.0000    0.0000.   0.0000.   0.0000     0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.20937      -0.21058      0.34611E-01  NX,NY= -0.47319     0.47273
TOP SX,SY,SXY,SZ= -1.2562      -1.2635      0.20767      0.00000.      SIG1,SIG2,SIG3= 0.00000      -1.0521      -1.4675
  S.I.=  1.4675      SIGE=  1.3102
MID SX,SY,SXY,SZ= 0.00000      0.00000.     0.00000      0.00000.      SIG1,SIG2,SIG3= 0.00000.     0.00000      0.00000.
  S.I.= 0.00000      SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  1.2562      1.2635     -0.20767      0.00000       SIG1,SIG2,SIG3=  1.4675      1.0521      -0.16204E-11
  S.I.=  1.4675      SIGE=  1.3102

                                                                                                              RECT SHELL  43
EL=  191  NODES=   101  102   113  112      MAT=  1  AREA= 0.770.       TTOP,TBOT=    0.0.   0.0
XC,YC,ZC=  1.31        23.6       0.000.       PRS= 0.0000      0.0000    0.0000.   0.0000.   0.0000     0.0000
TX,TY= 0.00000      0.00000       MX,MY,MXY= -0.83869      -0.29018      0.46871E-01  NX,NY= -0.70843.    0.74545
TOP SX,SY,SXY,SZ= -5.0321      -1.7411      0.28122      0.00000.      SIG1,SIG2,SIG3=-0.17878E-13 -1.7172      -5.0560
  S.I.=  5.0560      SIGE=  4.4531.
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000      0.00000       SIG1,SIG2,SIG3= 0.00000      0.00000      0.00000
  S.I.= 0.00000      SIGE= 0.00000
BOT SX,SY,SXY,SZ=  5.0321      1.7411      -0.28122      0.00000       SIG1,SIG2,SIG3=  5.0560      1.7172      -0.13342E-10
  S.I.=  5.0560      SIGE=  4.4531
```

```
EL= 192  NODES=  102  103  114  113      MAT=  1  AREA=  2.86        TTOP,TBOT=    0.0    0.0
XC,YC,ZC=  3.37      23.6       0.000.      PRS= 0.0000       0.0000       0.0000.    0.0000.     0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.24251       -0.20671        0.24423     NX,NY=  0.53921       0.40764
TOP SX,SY,SXY,SZ= -1.4551     -1.2402       1.4654       0.00000.       SIG1,SIG2,SIG3= 0.12163       0.23089E-10 -2.8169
 S.I.=  2.9386       SIGE=  2.8797
MID SX,SY,SXY,SZ= 0.00000      0.00000.      0.00000.      0.00000       SIG1,SIG2,SIG3= 0.00000.      0.00000      0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  1.4551      1.2402       -1.4654       0.00000.       SIG1,SIG2,SIG3=  2.8169       0.22958E-10-0.12163
 S.I.=  2.9386       SIGE=  2.8797
                                                                                                                RECT SHELL  43
EL=  193  NODES=  103  104  115  114      MAT=  1  AREA=  3.08        TTOP,TBOT=    0.0.   0.0
XC,YC,ZC=  6.75      23.6       0.000.      PRS= 0.0000       0.0000       0.0000.    0.0000.     0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=   1.6431      0.17251E-02 -0.19146      NX,NY=  0.40739      -0.52262E-02
TOP SX,SY,SXY,SZ=  9.8588      0.10351E-01 -1.1488       0.00000.       SIG1,SIG2,SIG3=  9.9910.      0.79210E-10-0.12188
 S.I.=  10.113       SIGE=  10.052
MID SX,SY,SXY,SZ= 0.00000      0.00000      0.00000.      0.00000        SIG1,SIG2,SIG3= 0.00000.      0.00000.      0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -9.8588     -0.10351E-01  1.1488       0.00000        SIG1,SIG2,SIG3= 0.12188       0.79262E-10 -9.9910
 S.I.=  10.113       SIGE=  10.052
                                                                                                                RECT SHELL  43
EL=  194  NODES=  104  105  116  115      MAT=  1  AREA=  3.08        TTOP,TBOT=    0.0.   0.0
XC,YC,ZC=  10.2      23.6       0.000.      PRS= 0.0000.      0.0000.      0.0000.    0.0000.     0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=   2.6799      0.58668E-01 -0.88986E-01  NX,NY=  0.12368      -0.11501
TOP SX,SY,SXY,SZ=  16.079      0.35201      -0.53392       0.00000.       SIG1,SIG2,SIG3=  16.097       0.33390      -0.61381E-10
 S.I.=  16.097       SIGE=  15.933
MID SX,SY,SXY,SZ= 0.00000.     0.00000.      0.00000.      0.00000.       SIG1,SIG2,SIG3= 0.00000       0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000
BOT SX,SY,SXY,SZ= -16.079     -0.35201       0.53392       0.00000.       SIG1,SIG2,SIG3=-0.28563E-12-0.33390       -16.097
 S.I.=  16.097       SIGE=  15.933
                                                                                                                RECT SHELL  43
EL=  195  NODES=  105  106  117  116      MAT=  1  AREA=  3.08        TTOP,TBOT=    0.0.   0.0
XC,YC,ZC=  13.7      23.6       0.000.      PRS= 0.0000       0.0000       0.0000.    0.0000.     0.0000      0.0000.
TX,TY= 0.00000      0.00000        MX,MY,MXY=   2.6801      0.58674E-01  0.88743E-01  NX,NY= -0.12356      -0.11501
TOP SX,SY,SXY,SZ=  16.081      0.35204       0.53246       0.00000.       SIG1,SIG2,SIG3=  16.099       0.33404      -0.61758E-10
 S.I.=  16.099       SIGE=  15.934
MID SX,SY,SXY,SZ= 0.00000.     0.00000       0.00000       0.00000.       SIG1,SIG2,SIG3= 0.00000.      0.00000      0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -16.081     -0.35204      -0.53246       0.00000        SIG1,SIG2,SIG3=-0.28565E-13-0.33404       -16.099
 S.I.=  16.099       SIGE=  15.934
                                                                                                                RECT SHELL  43
EL=  196  NODES=  106  107  118  117      MAT=  1  AREA=  3.08        TTOP,TBOT=    0.0.   0.0.
XC,YC,ZC=  17.2      23.6       0.000.      PRS= 0.0000       0.0000       0.0000.    0.0000.     0.0000      0.0000
TX,TY= 0.00000      0.00000        MX,MY,MXY=   1.6440      0.17756E-02  0.19132      NX,NY= -0.40717      -0.52559E-02
TOP SX,SY,SXY,SZ=  9.8641      0.10653E-01  1.1479       0.00000.       SIG1,SIG2,SIG3=  9.9960.      0.78569E-10-0.12131
 S.I.=  10.117       SIGE=  10.057
MID SX,SY,SXY,SZ= 0.00000      0.00000.      0.00000.      0.00000.       SIG1,SIG2,SIG3= 0.00000.      0.00000.      0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ= -9.8641     -0.10653E-01 -1.1479       0.00000        SIG1,SIG2,SIG3= 0.12131       0.79813E-10 -9.9960
 S.I.=  10.117       SIGE=  10.057
                                                                                                                RECT SHELL  43
EL=  197  NODES=  107  108  119  118      MAT=  1  AREA=  2.86        TTOP,TBOT=    0.0.   0.0.
XC,YC,ZC=  20.6      23.6       0.000.      PRS= 0.0000.      0.0000.      0.0000.    0.0000.     0.0000      0.0000.
TX,TY= 0.00000      0.00000        MX,MY,MXY= -0.24036       -0.20655       -0.24391     NX,NY= -0.53867       0.40742
TOP SX,SY,SXY,SZ= -1.4422     -1.2393       -1.4635       0.00000.       SIG1,SIG2,SIG3= 0.12625       0.22970E-10 -2.8077
 S.I.=  2.9340       SIGE=  2.8729
MID SX,SY,SXY,SZ= 0.00000      0.00000.      0.00000.      0.00000.       SIG1,SIG2,SIG3= 0.00000.      0.00000      0.00000.
 S.I.= 0.00000       SIGE= 0.00000 .
BOT SX,SY,SXY,SZ=  1.4422      1.2393        1.4635       0.00000        SIG1,SIG2,SIG3=  2.8077       0.23002E-10-0.12625
 S.I.=  2.9340       SIGE=  2.8729
                                                                                                                RECT SHELL  43
EL=  198  NODES=  108  109  120  119      MAT=  1  AREA= 0.766        TTOP,TBOT=    0.0.   0.0
XC,YC,ZC=  22.7      23.6       [illegible]  PRS= 0.0000       0.0000       0.0000     0.0000      0.0000      0.0000
TX,TY= [illegible]  0.00000        MX,MY,MXY= -[illegible]   -0.29[illegible]   -0.45191E-01  NX,NY=  0.79444   [illegible].74666
TOP SX,SY,SXY,SZ= -[illegible]  -1.741[illegible]  -[illegible]  [illegible]  SIG1,SIG2,SIG3= [illegible]  -1.7188   -5.0551
 S.I.= [illegible]   SIGE= [illegible]
```

```
EL=  198  NODES=  108  109  120  119      MAT=  1  AREA= 0.766        TTOP,TBOT=     0.0.    0.0                          RECT SHELL  43
XC,YC,ZC=  22.7      23.6      0.000.      PRS= 0.0000       0.0000      0.0000.     0.0000.      0.0000       0.0000
TX,TY= 0.0000       0.00000        MX,MY,MXY= -0.83865      -0.29032       -0.46191E-01  NX,NY=  0.70444       0.74666
TOP SX,SY,SXY,SZ= -5.0319       -1.7419      -0.27714       0.00000.      SIG1,SIG2,SIG3= 0.00000.      -1.7188       -5.0551
 S.I.=  5.0551       SIGE=  4.4519
MID SX,SY,SXY,SZ= 0.00000        0.00000       0.00000        0.00000       SIG1,SIG2,SIG3= 0.00000.      0.00000       0.00000
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  5.0319        1.7419       0.27714        0.00000       SIG1,SIG2,SIG3=  5.0551        1.7188       -0.13059E-10
 S.I.=  5.0551       SIGE=  4.4519

EL=  199  NODES=  109  110  121  120      MAT=  1  AREA= 0.774        TTOP,TBOT=     0.0.    0.0.                         RECT SHELL  43
XC,YC,ZC=  23.6      23.6      0.000.      PRS= 0.0000       0.0000       0.0000.     0.0000.      0.0000       0.0000
TX,TY= 0.0000       0.00000        MX,MY,MXY= -0.21119       -0.21119       -0.33567E-01  NX,NY=  0.47415       0.47415
TOP SX,SY,SXY,SZ= -1.2671       -1.2671      -0.20140.      0.00000.      SIG1,SIG2,SIG3=-0.45017E-14 -1.0657       -1.4685
 S.I.=  1.4685       SIGE=  1.3143
MID SX,SY,SXY,SZ= 0.00000       0.00000.      0.00000.       0.00000.      SIG1,SIG2,SIG3= 0.00000.      0.00000       0.00000.
 S.I.= 0.00000       SIGE= 0.00000.
BOT SX,SY,SXY,SZ=  1.2671        1.2671       0.20140        0.00000.      SIG1,SIG2,SIG3=  1.4685        1.0657       -0.15756E-11
 S.I.=  1.4685       SIGE=  1.3143

EL=  200.  NODES=  100  221  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.68815      SIG= -1.7977        EP=-0.010568  STAT=  1     GAP  10.
EL=  201   NODES=  101  222  MAT=  2  TEMPS=    0.0.    0.0. FORC=-0.72783      SIG=-0.95066        EP=-0.005589  STAT=  1     GAP  10.
EL=  202   NODES=  102  223  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.14513      SIG=-0.80406E-01    EP=-0.000473  STAT=  1     GAP  10.
EL=  203   NODES=  103  224  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000      SIG= 0.00000.       EP= 0.000000  STAT=  2     GAP  10.
EL=  204   NODES=  104  225  MAT=  2  TEMPS=    0.0.    0.0. FORC= 0.00000      SIG= 0.00000.       EP= 0.000000. STAT=  2     GAP  10
EL=  205   NODES=  105  226  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000.     SIG= 0.00000.       EP= 0.000000  STAT=  2     GAP  10.
EL=  206   NODES=  106  227  MAT=  2  TEMPS=    0.0.    0.0. FORC= 0.00000      SIG= 0.00000.       EP= 0.000000  STAT=  2     GAP  10.
EL=  207   NODES=  107  228  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000.     SIG= 0.00000.       EP= 0.000000. STAT=  2     GAP  10.
EL=  208   NODES=  108  229  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.14627      SIG=-0.81034E-01    EP=-0.000476  STAT=  1     GAP  10.
EL=  209   NODES=  109  230  MAT=  2  TEMPS=    0.0.    0.0. FORC=-0.72501      SIG=-0.94699        EP=-0.005587  STAT=  1     GAP  10.
EL=  210   NODES=  110  231  MAT=  2  TEMPS=    0.0.    0.0. FORC=-0.68884      SIG= -1.7995        EP=-0.010579  STAT=  1     GAP  10.
EL=  211   NODES=  111  232  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.50665      SIG= -2.6471        EP=-0.015562  STAT=  1     GAP  10.
EL=  212   NODES=  112  233  MAT=  2  TEMPS=    0.0.    0.0  FORC=-0.69022      SIG= -1.8031        EP=[illegible]  STAT=  1     GAP  10.
EL=  213   NODES=  113  234  MAT=  2  TEMPS=    0.0.    0.0. FORC=-0.84510.     SIG=-0.93661        EP=-0.005506  STAT=  1     GAP  10.
EL=  214   NODES=  114  235  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000      SIG= 0.00000.       EP= 0.000000  STAT=  2     GAP  10.
EL=  215   NODES=  115  236  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000      SIG= 0.00000.       EP= 0.000000  STAT=  2     GAP  10.
EL=  216   NODES=  116  237  MAT=  2  TEMPS=    0.0.    0.0  FORC= 0.00000      SIG= 0.00000.       EP= 0.000000. STAT=  2     GAP  10.
EL=  217   NODES=  117  238  MAT=  2  TEMPS=    0.0     0.0. FORC= 0.00000      SIG= 0.00000        EP= 0.000000  STAT=  2     GAP  10
EL=  218   NODES=  118  239  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000      SIG= 0.00000        EP= 0.000000  STAT=  2     GAP  10.
EL=  219   NODES=  119  240  MAT=  2  TEMPS=    0.0     0.0  FORC=- .84566      SIG=-0.93722        EP=-0.005510  STAT=  1     GAP  10
EL=  220   NODES=  120  241  MAT=  2  TEMPS=    0.0     0.0  FORC=- .68884      SIG= -1.7995        EP=-0.010579  STAT=  1     GAP  10
EL=  221   NODES=  121  242  MAT=  2  TEMPS=     .0     0.0  FORC=- .50665      SIG= -2.647         EP=- .015573  STAT=  1     GAP  10
```

```
EL= 223  NODES=  31 152  MAT= 3  TEMPS=   0.0   0.0  FORC= 10.154   SIG= 133.85   EP= 0.004616  STAT= 1  CABLE 10
EL= 224  NODES=  91 212  MAT= 3  TEMPS=   0.0   0.0  FORC= 10.154   SIG= 133.85   EP= 0.004616  STAT= 1  CABLE 10
EL= 225  NODES=  97 218  MAT= 3  TEMPS=   0.0   0.0  FORC= 10.146   SIG= 133.75   EP= 0.004612  STAT= 1  CABLE 10.

 STATUS CHANGED FOR    0 BILINEAR ELEM THIS ITER
*** LOAD STEP   1   ITER   10  COMPLETED.  TIME=  0.000000     TIME INC=  0.000000,    NEW TRIANG MATRIX  CUM. ITER.=   6
```

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 4.1 8 UIS CRAY JAN 1,1983
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412)746-3304 TWX 510-690-8655

TUGC-CPSES2,BASE PL.1X24X24,PRYING ACTION FACTORS, BOLT KT=2200 13.3464 6/ 7/85 CP= 8.181

***** ANSYS RUN TIME ESTIMATOR *****

***** ANSYS RUN TIME ESTIMATOR *****

COMPUTER = CRAY
ANALYSIS TYPE = 0
NUMBER OF NODES = 61
MAX. DOF PER NODE = 6
NUMBER OF MATRICES = 1
NUMBER OF STRESS SOLUTIONS= 1

NUMBER OF MASTER DOF = 0
RMS WAVE FRONT = 53
TOTAL NO. OF ITERATIONS = 1
STIFF. MATRIX SAVE KEY = 0
ELEM. MATRIX SAVE KEY = 0
ROTATED NODE FRACTION= 0.000

STIF	NUMBER	FORM. TIME	STRESS TIME	NAME
10	125	0.026	0.044	CABLE
43	100	1.823	0.445	RECT. FLAT SHELL, 3-D

ANALYSIS PHASE	FIRST ITERATION	SUBSEQUENT ITERATIONS	TOTAL
ELEMENT FORMULATION	2.42	2.42	2.42
WAVE FRONT SOLUTION	0.20	0.20	0.20
BACK SUBSTITUTION	0.03	0.03	0.03
ELEMENT STRESSES	0.65	0.65	0.65
TOTAL TIME (SEC)	3.30	3.30	3.30

***** ROUTINE COMPLETED ***** CP = 8.184

END OF INPUT ENCOUNTERED ON FILE18

***** RUN COMPLETED ***** CP= 8.1849 TIME= 13.3464

```
13:17:14   0.0009     CSP    UIS COMPANY   KANSAS CITY, MISSOURI  06/07/85
13:17:14   0.0009     CSP                  APEX/CRAY SERVICE
13:17:14   0.0009     CSP    CRAY-1 S/2000   COS LEVEL:  C14 1.12-06/04/85
13:17:14   0.0009     CSP
13:17:14   0.0009     CSP    LIU,T200,L15.
13:17:14   0.0009     CSP    ACCOUNT,E142430 TUG3317002
13:17:14   0.0013     CSP    CAPTION.   JTLIU
13:17:15   0.0089     CSP    MEMORY,FL=249856,USER.
13:17:15   0.0093     CSP    GET,EMBPROC/1148021/CI=TTY.
13:17:14   0.0094     SCP     13.18.43.GET,SCR1=EMBPROC/1148021.
13:17:14   0.0094     SCP     13.18.43.READY -    EMBPROC
13:17:15   0.0094     SCP    DATASET RECEIVED FROM FRONT END.
13:17:16   0.0094     CSP    CALL,DN=EMBPROC.
13:17:16   0.0101 1   CSP    GET,EMBEDP4/1148019.
13:17:21   0.0102 1   SCP     13.18.51.GET,SCR1=EMBEDP4/1148019.
13:17:21   0.0102 1   SCP     13.18.51.READY -    EMBEDP4
13:17:26   0.0102 1   SCP    DATASET RECEIVED FROM FRONT END.
13:17:27   0.0103 1   CSP    ASSIGN,DN=ANSIN,A=FT20.
13:17:27   0.0105 1   CSP    ASSIGN,DN=$IN,A=FT05.
13:17:27   0.0110 1   CSP    EMBEDP4.
13:17:30   0.1356 1   USER   FT063 -    STOP                 IN EMBEDP
13:17:30   0.1357 1   CSP    REWIND,ANSIN.
13:17:30   0.1358 1   CSP    ASSIGN,DN=ANSIN,A=FT05.
13:17:30   0.1361 1   CSP    ASSIGN,DN=FT25,RDM.
13:17:30   0.1367 1   CSP    WRITEDS,DN=FT25,RL=602,NR=99.
13:17:31   0.1397 1   CSP    ASSIGN,DN=FT30,RDM.
13:17:31   0.1403 1   CSP    WRITEDS,DN=FT30,RL=2044,NR=256.
13:17:33   0.1613 1   CSP    GET,ANSYS=ANSY41B(CRY)
13:18:35   0.1614 1   SCP     13.19.11.GET,SCR1=ANSY41B(CRY.
13:18:35   0.1614 1   SCP     13.19.12.DAF READY -          ANSY41B
13:18:37   0.1614 1   SCP    DATASET RECEIVED FROM FRONT END.
13:18:38   0.1627 1   CSP    ANSYS.
13:18:38   0.1633 1   USER   FT059 -  ***** ANSYS ANALYSIS *****
13:20:47   8.1858 1   USER   FT054 - EXIT CALLED BY  DFILE
13:20:47   8.1858 1   USER   FT063 -    STOP                 IN VPSUB
13:20:47   8.1859 1   CSP    COST.
13:20:48   8.1869 1   USER         JOBNAME = D0L3DFB   USER NUMBER = E14243 .
13:20:48   8.1869 1   USER         CP SECONDS          =     8.186
13:20:48   8.1869 1   USER         AVERAGE MEMORY      =    0.2516
13:20:48   8.1869 1   USER         IO BLOCKS MOVED     =     8705.
13:20:48   8.1869 1   USER         IO REQUESTS         =     2055.
13:20:48   8.1869 1   USER         PF OPERATIONS       =        3.
13:20:48   8.1869 1   USER
13:20:48   8.1869 1   USER         ASU-2               =     67.19
13:20:48   8.1869 1   USER         PRIORITY            =        15
13:20:48   8.1869 1   USER         COST                =     23.52
13:20:48   8.1870 1   CSP    EXIT.
13:20:48   8.1871 1   CSP    END OF JOB
13:20:48   8.1871 1   CSP
13:20:48   8.1871 1   CSP
13:20:50   8.1882 1   USER          JOBNAME = D0L3DFB   USER NUMBER = E142430
13:20:50   8.1882 1   USER          CP SECONDS          =     8.188
13:20:50   8.1882 1   USER          AVERAGE MEMORY      =    0.2516
13:20:50   8.1882 1   USER          IO BLOCKS MOVED     =     8740.
13:20:50   8.1882 1   USER          IO REQUESTS         =     2057.
13:20:50   8.1882 1   USER          PF OPERATIONS       =        3.
13:20:50   8.1882 1   USER          I/O/D BLOCKS        =      186.
13:20:50   8.1882 1   USER
13:20:50   8.1882 1   USER          ASU-2               =     66.99
13:20:50   8.1882 1   USER          PRIORITY            =        15
13:20:50   8.1882 1   USER          COST                =     23.45
```

LAST PAGE

A P E X   R E M O T E   B A T C H

D2DLFWF

UNITED INFORMATION SERVICES, INC. 66. APEX/SL D.4.7.5

10.09.19.   05/09/85.

```
DDDDDDDDDD      2222222222    DDDDDDDDDD     LL              FFFFFFFFFFFF  WW          WW  FFFFFFFFFFFF
DDDDDDDDDDD    222222222222   DDDDDDDDDDD    LL              FFFFFFFFFFFF  WW          WW  FFFFFFFFFFFF
DD        DD   2          22  DD        DD   LL              FF            WW          WW  FF
DD        DD              22  DD        DD   LL              FF            WW          WW  FF
DD        DD              22  DD        DD   LL              FF            WW          WW  FF
DD        DD              22  DD        DD   LL              FF            WW          WW  FF
DD        DD              22  DD        DD   LL              FF            WW    WW    WW  FF
DD        DD        2222222   DD        DD   LL              FFFFFFFF      WW    WW    WW  FFFFFFFF
DD        DD      2222222     DD        DD   LL              FFFFFFFF      WW   WWWW   WW  FFFFFFFF
DD        DD     22           DD        DD   LL              FF            WW  W    W  WW  FF
DD        DD    22            DD        DD   LL              FF            WW WW    WW WW  FF
DD        DD   22             DD        DD   LL              FF            WWWW      WWWW  FF
DD        DD   22             DD        DD   LL              FF            WWWW      WWWW  FF
DD        DD   22             DD        DD   LL          LL  FF            WWW        WWW  FF
DDDDDDDDDDD    222222222222   DDDDDDDDDDD    LLLLLLLLLLLL    FF            WWW        WWW  FF
DDDDDDDDDD     222222222222   DDDDDDDDDD     LLLLLLLLLLLL    FF            WW          WW  FF
```

```
TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS
J. STEPIEN
XSEG      1.0          3  2.25         1  2.5         7  2.25        1+A1
+A1       1.0          3
YSEG      0.5          2  1.0          4  0.5         2
PLTK     0.50
EBC      3605.
ESB      29000.
ESP      29000.
NUS      0.3
NUC      0.17
BOLT      461.         4               13
+A1                    5               5
AHSEG    .3125         6        3      6      7            3.5
AHSEG    .3125        11        3     11      7            3.5
MX       8.0          70
MX       8.0          75
OPT                                               1
END
```

CLIENT .... PROJECT ....

SUBJECT ...INPUT...

COMPUTER PROGRAM USED ...[illegible]...

PREPARED BY: ...J. STEPIEN... DATE ...5/9/85...

CHECKED BY: ...J T Lin... DATE ...5/9/85...

REF. CALC. BOOK NO. .... PRINTOUT BOOK NO. ....

LAST PAGE

APEX/CRAY

```
 JJJJJ          SSSSS  TTTTTTT EEEEEEE PPPPPP   IIIII EEEEEEE NN    NN
 JJJJJ         SSSSSSS TTTTTTT EEEEEEE PPPPPPP  IIIII EEEEEEE NN    NN
    JJ         SS   SS   TT    EE      PP   PP   II   EE      NNN   NN
    JJ         SS        TT    EE      PPPPPPP   II   EE      NNN   NN
    JJ         SSSS      TT    EEEEE   PPPPPP    II   EEEEE   NN N  NN
    JJ           SSSS    TT    EEEEE   PP        II   EEEEE   NN N  NN
    JJ              SS   TT    EE      PP        II   EE      NN   NNN
 JJ JJ         SS   SS   TT    EE      PP        II   EE      NN   NNN
 JJJJJ    ::   SSSSSSS   TT    EEEEEEE PP       IIIII EEEEEEE NN    NN
  JJJ     ::    SSSSS    TT    EEEEEEE PP       IIIII EEEEEEE NN    NN
```

CLIENT TUGC PROJECT CPSES-2
SUBJECT BASEPLATE ANALYSIS [illegible] W/ 2 BOLTS
COMPUTER PROGRAM USED ANSYS
PREPARED BY: J. STEPIEN DATE 5/9/85
CHECKED BY: J.T.L. DATE 5/9/85
REF. CALC. BOOK NO. ...... PRINTOUT BOOK NO. ......

PL 1/2 x 6 x 2'-4 w/2 BOLTS

$K_T = 461.0$ K/IN

$M_x = 16.0$ K-"

$T_h = 16/2\times3 = 2.67$ K

$T = 3.05$ K

$\alpha = T/T_h = 1.14$

COPY #1

```
TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS


    ****BASE PLATE MESH INFORMATION****

NO. OF GRID IN X  NO. OF GRID IN Y   X-DIMENSION  Y-DIMENSION

          16                9          28.000           6.000

X-COORD.=    0.000    1.000    2.000    3.000    5.250    7.750   10.250   12.750   15.250   17.750

20.250   22.750   25.000   26.000   27.000   28.000

Y-COORD.=    0.000    0.500    1.000    2.000    3.000    4.000    5.000    5.500    6.000


    **** MATERIAL PROPERTIES ****

  PLATE THK    E OF PLATE   E OF BOLT    E OF CONCRET   MU STEEL     MU OF CONCRETE

0.50000E+00 0.29000E+05 0.29000E+05 0.36059E+04 0.30000E+00 0.17000E+00


    ****PC SPRING CONSTANT AT EACH NODE****

.3938E+020.7876E+020.7876E+020.1280E+030.1871E+030.1969E+030.1969E+03[illegible]

.7876E+020.7876E+020.3938E+02

.7876E+020.1575E+030.1575E+030.2560E+030.3741E+030.3938E+030.3938E+030.3938E+030.3938E+030.3938E+030.3938E+030.3741E+030.2560E+03

.1575E+030.1575E+030.7876E+02

.1181E+030.2363E+030.2363E+030.3840E+030.5612E+030.5907E+030.5907E+030.5907E+030.5907E+030.5907E+030.5907E+030.5612E+030.3840E+03

.2363E+030.2363E+030.1181E+03

.1575E+030.3150E+030.3150E+030.5120E+030.7482E+030.7876E+030.7876E[illegible]

.3150E+030.3150E+030.1575E+03

.1575E+030.3150E+030.3150E+030.5120E+030.7482E+030.7876E+030.7876E+030.7876E+030.7876E+030.7876E+030.7876E+030.7482E+030.5120E+03

.3150E+030.3150E+030.1575E+03

.1575E+030.3150E+030.3150E+030.5120E+030.7482E+030.7876E+030.7876E+030.7876E+030.7876E+030.7876E+030.7876E+030.7482E+030.5120E+03

.3150E+030.3150E+030.1575E+03

.1181E+030.2363E+030.2363E+030.3840E+030.5612E+030.5907E+030.5907E+030.5907E+030.5907E+030.5907E+030.5907E+030.5612E+030.3840E+03

.2363E+030.2363E+030.1181E+03

.7876E+020.1575E+030.1575E+030.2560E+030.3741E+030.3938E+030.3938E+030.3938E+030.3938E+030.3938E+030.3938E+030.3741E+030.2560E+03

.1575E+030.1575E+030.7876E+02

[illegible].1969E+030.1969E+030.1969E+030.1969E+030.1969E+030.1371E+030.1250E+03
```

.7876E+02 .7876E+020.3938E+02

**** SPRING CONSTANTS****

SUM OF RC SPRING   BOLT SPRING

.5293E+05   0.4610E+030.4610E+03

****BOLT LOCATION****

X-COORD.=   3.000   25.000

Y-COORD.=   3.000   3.000

****PROPERTY OF ATTACHMENT AND STIFFENER****

THICKNESS	HEIGHT OF STIFFENER
0.312	3.500
0.312	3.500

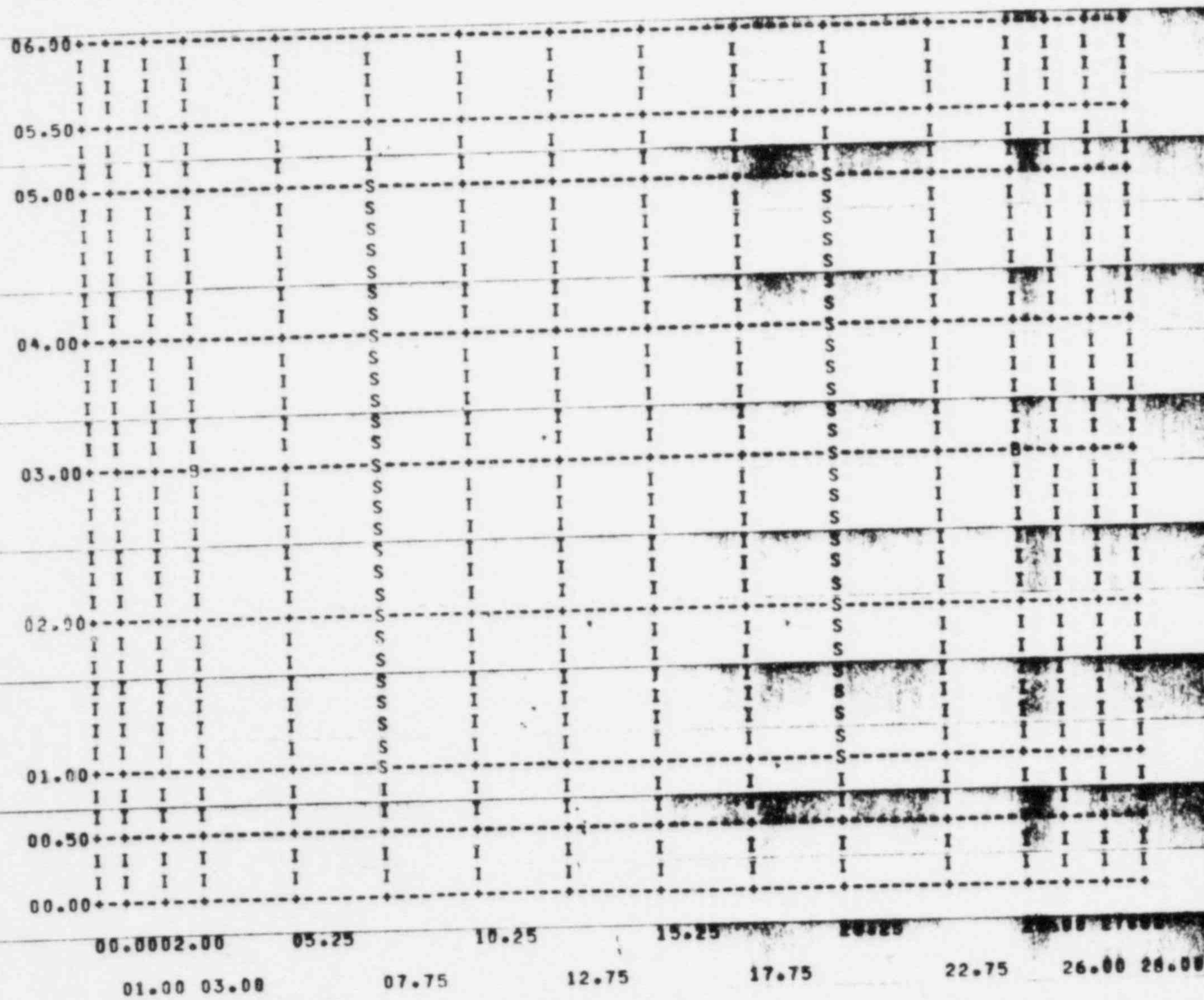
****AREA CENTER OF ATTACHMENT****

XC=   0.00YC=   0.00ZC=   0.00

****APPLIED FORCE AND MOMENT****

FORCE COMP.	NODE NO.	FORCE MAGNITUDE
MX	70	8.00000
MX	75	8.00000

TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS



```
********** ANSYS INPUT DATA LISTING (TAPE18) **********

      6     12    18    24    30    36    42    48    54    60    66    72    78
      V     V     V     V     V     V     V     V     V     V     V     V     V
 TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS
 J. STEPIEN
           1                 99                1                 0                0

    1 46 00   0
    2 10 11   0
    3 10 10   0
    4 63 00   0
    5. 4 00   0
   -1
 0.5000E+00
 0.1250E+00
 0.2500E+00
 0.2500E+00
 0.4062E+00
 0.5937E+00
 0.6250E+00
 0.6250E+00
 0.6250E+00
 0.6250E+00
 0.6250E+00
 0.6250E+00
 0.5937E+00
 0.4062E+00
 0.2500E+00
 0.2500E+00
 0.1250E+00
 0.2500E+00
 0.5000E+00
 0.5000E+00
 0.8125E+00
 0.1187E+01
 0.1250E+01
 0.1250E+01
 0.1250E+01
 0.1250E+01
 0.1250E+01
 0.1250E+01
 0.1187E+01
 0.8125E+00
 0.5000E+00
 0.5000E+00
 0.2500E+00
 0.3750E+00
 0.7500E+00
 0.7500E+00
 0.1219E+01
 0.1781E+01
 0.1875E+01
 0.1875E+01
      A     A     A     A     A     A     A     A     A     A     A     A     A
```

********** ANSYS INPUT DATA LISTING (TAPE18) **********

6 12 18 24 30 36 42 48 54 60 66 72 78

51	0.1875E+01
52	0.1875E+01
53	0.1875E+01
54	0.1875E+01
55	0.1781E+01
56	0.1219E+01
57	0.7500E+00
58	0.7500E+00
59	0.3750E+00
60	0.5000E+00
61	0.1000E+01
62	0.1000E+01
63	0.1625E+01
64	0.2375E+01
65	0.2500E+01
66	0.2500E+01
67	0.2500E+01
68	0.2500E+01
69	0.2500E+01
70	0.2500E+01
71	0.2375E+01
72	0.1625E+01
73	0.1000E+01
74	0.1000E+01
75	0.5000E+00
76	0.5000E+00
77	0.1000E+01
78	0.1000E+01
79	0.1625E+01
80	0.2375E+01
81	0.2500E+01
82	0.2500E+01
83	0.2500E+01
84	0.2500E+01
85	0.2500E+01
86	0.2500E+01
87	0.2375E+01
88	0.1625E+01
89	0.1000E+01
90	0.1000E+01
91	0.5000E+00
92	0.5000E+00
93	0.1000E+01
94	0.1000E+01
95	0.1625E+01
96	0.2375E+01
97	0.2500E+01
98	0.2500E+01
99	0.2500E+01
100	0.2500E+01

********** ANSYS INPUT DATA LISTING (TAPE18) **********

```
     6     12     18     24     30     36     42     48     54     60     66     72     78
     V      V      V      V      V      V      V      V      V      V      V      V      V
0.2500E+01
0.2500E+01
0.2375E+01
0.1625E+01
0.1000E+01
0.1000E+01
0.5000E+00
0.3750E+00
0.7500E+00
0.7500E+00
0.1219E+01
0.1781E+01
0.1875E+01
0.1875E+01
0.1875E+01
0.1875E+01
0.1875E+01
0.1675E+01
0.1781E+01
0.1219E+01
0.7500E+00
0.7500E+00
0.3750E+00
0.2500E+00
0.5000E+00
0.5000E+00
0.8125E+00
0.1187E+01
0.1250E+01
0.1250E+01
0.1250E+01
0.1250E+01
0.1250E+01
0.1250E+01
0.1187E+01
0.8125E+00
0.5000E+00
0.5000E+00
0.2500E+00
0.1250E+00
0.2500E+00
0.2500E+00
0.4362E+00
0.5937E+00
0.6250E+00
0.6250E+00
0.6250E+00
0.6250E+00
0.6250E+10
0.6250E+00
     A      A      A      A      A      A      A      A      A      A      A      A      A
```

```
**********  ANSYS INPUT DATA LISTING (TAPE18)  **********

     6     12    18    24    30    36    42    48    54    60    66    72    78
     V     V     V     V     V     V     V     V     V     V     V     V     V
0.5937E+00
0.4062E+00
0.2500E+00
0.2500E+00
0.1250E+00
0.1590E-01
0.1590E-01
0.3125E+00
0.3125E+00
0.1000E+030.1000E+060.1000E+060.1000E+010.1000E+01
          -1
     1     2    18    17                             1     1     1
     2     3    19    18                             1     1     1
     3     4    20    19                             1     1     1
     4     5    21    20                             1     1     1
     5     6    22    21                             1     1     1
     6     7    23    22                             1     1     1
     7     8    24    23                             1     1     1
     8     9    25    24                             1     1     1
     9    10    26    25                             1     1     1
    10    11    27    26                             1     1     1
    11    12    28    27                             1     1     1
    12    13    29    28                             1     1     1
    13    14    30    29                             1     1     1
    14    15    31    30                             1     1     1
    15    16    32    31                             1     1     1
     1   145                                         2     2     2
     2   146                                         2     2     3
     3   147                                         2     2     4
     4   148                                         2     2     5
     5   149                                         2     2     6
     6   150                                         2     2     7
     7   151                                         2     2     8
     8   152                                         2     2     9
     9   153                                         2     2    10
    10   154                                         2     2    11
    11   155                                         2     2    12
    12   156                                         2     2    13
    13   157                                         2     2    14
    14   158                                         2     2    15
    15   159                                         2     2    16
    16   160                                         2     2    17
    17    18    34    33                             1     1     1
    18    19    35    34                             1     1     1
    19    20    36    35                             1     1     1
    20    21    37    36                             1     1     1
    21    22    38    37                             1     1     1
    22    23    39    38                             1     1     1
    23    24    40    39                             1     1     1
    24    25    41    40                             1     1     1
     A     A     A     A     A     A     A     A     A     A     A     A     A
```

********** ANSYS INPUT DATA LISTING (TAPE18) **********

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
201	25	26	42	41					1	1	1		
202	26	27	43	42					1	1	1		
203	27	28	44	43					1	1	1		
204	28	29	45	44					1	1	1		
205	29	30	46	45					1	1	1		
206	30	31	47	46					1	1	1		
207	31	32	48	47					1	1	1		
208	17	161							2	2	18		
209	18	162							2	2	19		
210	19	163							2	2	20		
211	20	164							2	2	21		
212	21	165							2	2	22		
213	22	166							2	2	23		
214	23	167							2	2	24		
215	24	168							2	2	25		
216	25	169							2	2	26		
217	26	170							2	2	27		
218	27	171							2	2	28		
219	28	172							2	2	29		
220	29	173							2	2	30		
221	30	174							2	2	31		
222	31	175							2	2	32		
223	32	176							2	2	33		
224	33	34	50	49					1	1	1		
225	34	35	51	50					1	1	1		
226	35	36	52	51					1	1	1		
227	36	37	53	52					1	1	1		
228	37	38	54	53					1	1	1		
229	38	39	55	54					1	1	1		
230	39	40	56	55					1	1	1		
231	40	41	57	56					1	1	1		
232	41	42	58	57					1	1	1		
233	42	43	59	58					1	1	1		
234	43	44	60	59					1	1	1		
235	44	45	61	60					1	1	1		
236	45	46	62	61					1	1	1		
237	46	47	63	62					1	1	1		
238	47	48	64	63					1	1	1		
239	33	177							2	2	34		
240	34	178							2	2	35		
241	35	179							2	2	36		
242	36	180							2	2	37		
243	37	181							2	2	38		
244	38	182							2	2	39		
245	39	183							2	2	40		
246	40	184							2	2	41		
247	41	185							2	2	42		
248	42	186							2	2	43		
249	43	187							2	2	44		
250	44	188							2	2	45		
	A	A	A	A	A	A	A	A	A	A	A	A	A

********** ANSYS INPUT DATA LISTING (TAPE18) **********

	6 V	12 V	18 V	24 V	30 V	36 V	42 V	48 V	54 V	60 V	66 V	72 V	78 V
251	45	189							2	2	46		
252	46	190							2	2	47		
253	47	191							2	2	48		
254	48	192							2	2	49		
255	49	50	66	65					1	1	1		
256	50	51	67	66					1	1	1		
257	51	52	68	67					1	1	1		
258	52	53	69	68					1	1	1		
259	53	54	70	69					1	1	1		
260	54	55	71	70					1	1	1		
261	55	56	72	71					1	1	1		
262	56	57	73	72					1	1	1		
263	57	58	74	73					1	1	1		
264	58	59	75	74					1	1	1		
265	59	60	76	75					1	1	1		
266	60	61	77	76					1	1	1		
267	61	62	78	77					1	1	1		
268	62	63	79	78					1	1	1		
269	63	64	80	79					1	1	1		
270	49	193							2	2	50		
271	50	194							2	2	51		
272	51	195							2	2	52		
273	52	196							2	2	53		
274	53	197							2	2	54		
275	54	198							2	2	55		
276	55	199							2	2	56		
277	56	200							2	2	57		
278	57	201							2	2	58		
279	58	202							2	2	59		
280	59	203							2	2	60		
281	60	204							2	2	61		
282	61	205							2	2	62		
283	62	206							2	2	63		
284	63	207							2	2	64		
285	64	208							2	2	65		
286	65	66	82	81					1	1	1		
287	66	67	83	82					1	1	1		
288	67	68	84	83					1	1	1		
289	68	69	85	84					1	1	1		
290	69	70	86	85					1	1	1		
291	70	71	87	86					1	1	1		
292	71	72	88	87					1	1	1		
293	72	73	89	88					1	1	1		
294	73	74	90	89					1	1	1		
295	74	75	91	90					1	1	1		
296	75	76	92	91					1	1	1		
297	76	77	93	92					1	1	1		
298	77	78	94	93					1	1	1		
299	78	79	95	94					1	1	1		
300	79	80	96	95					1	1	1		
	A	A	A	A	A	A	A	A	A	A	A	A	A

********** ANSYS INPUT DATA LISTING (TAPE18) **********

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
301	65	209							2	2	66		
302	66	210							2	2	67		
303	67	211							2	2	68		
304	68	212							2	2	69		
305	69	213							2	2	70		
306	70	214							2	2	71		
307	71	215							2	2	72		
308	72	216							2	2	73		
309	73	217							2	2	74		
310	74	218							2	2	75		
311	75	219							2	2	76		
312	76	220							2	2	77		
313	77	221							2	2	78		
314	78	222							2	2	79		
315	79	223							2	2	80		
316	80	224							2	2	81		
317	81	82	98	97					1	1	1		
318	82	83	99	98					1	1	1		
319	83	84	100	99					1	1	1		
320	84	85	101	100					1	1	1		
321	85	86	102	101					1	1	1		
322	86	87	103	102					1	1	1		
323	87	88	104	103					1	1	1		
324	88	89	105	104					1	1	1		
325	89	90	106	105					1	1	1		
326	90	91	107	106					1	1	1		
327	91	92	108	107					1	1	1		
328	92	93	109	108					1	1	1		
329	93	94	110	109					1	1	1		
330	94	95	111	110					1	1	1		
331	95	96	112	111					1	1	1		
332	81	225							2	2	82		
333	82	226							2	2	83		
334	83	227							2	2	84		
335	84	228							2	2	85		
336	85	229							2	2	86		
337	86	230							2	2	87		
338	87	231							2	2	88		
339	88	232							2	2	89		
340	89	233							2	2	90		
341	90	234							2	2	91		
342	91	235							2	2	92		
343	92	236							2	2	93		
344	93	237							2	2	94		
345	94	238							2	2	95		
346	95	239							2	2	96		
347	96	240							2	2	97		
348	97	98	114	113					1	1	1		
349	98	99	115	114					1	1	1		
350	99	100	116	115					1	1	1		
	A	A	A	A	A	A	A	A	A	A	A	A	A

********** ANSYS INPUT DATA LISTING (TAPE18) **********

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
351	100	101	117	116					1	1	1		
352	101	102	118	117					1	1	1		
353	102	103	119	118					1	1	1		
354	103	104	120	119					1	1	1		
355	104	105	121	120					1	1	1		
356	105	106	122	121					1	1	1		
357	106	107	123	122					1	1	1		
358	107	108	124	123					1	1	1		
359	108	109	125	124					1	1	1		
360	109	110	126	125					1	1	1		
361	110	111	127	126					1	1	1		
362	111	112	128	127					2	2	98		
363	97	241							2	2	99		
364	98	242							2	2	100		
365	99	243							2	2	101		
366	100	244							2	2	102		
367	101	245							2	2	103		
368	102	246							2	2	104		
369	103	247							2	2	105		
370	104	248							2	2	106		
371	105	249							2	2	107		
372	106	250							2	2	108		
373	107	251							2	2	109		
374	108	252							2	2	110		
375	109	253							2	2	111		
376	110	254							2	2	112		
377	111	255							2	2	113		
378	112	256							1	1	1		
379	113	114	130	129					1	1	1		
380	114	115	131	130					1	1	1		
381	115	116	132	131					1	1	1		
382	116	117	133	132					1	1	1		
383	117	118	134	133					1	1	1		
384	118	119	135	134					1	1	1		
385	119	120	136	135					1	1	1		
386	120	121	137	136					1	1	1		
387	121	122	138	137					1	1	1		
388	122	123	139	138					1	1	1		
389	123	124	140	139					1	1	1		
390	124	125	141	140					1	1	1		
391	125	126	142	141					1	1	1		
392	126	127	143	142					1	1	1		
393	127	128	144	143					2	2	114		
394	113	257							2	2	115		
395	114	258							2	2	116		
396	115	259							2	2	117		
397	116	260							2	2	118		
398	117	261							2	2	119		
399	118	262							2	2	120		
400	119	263											
	A	A	A	A	A	A	A	A	A	A	A	A	A

********** ANSYS INPUT DATA LISTING (TAPE18) **********

	6	12	18	24	30	36	42	48	54	60	66	72	78
	V	V	V	V	V	V	V	V	V	V	V	V	V
401	120	254							2	2	121		
402	121	265							2	2	122		
403	122	266							2	2	123		
404	123	267							2	2	124		
405	124	268							2	2	125		
406	125	269							2	2	126		
407	126	270							2	2	127		
408	127	271							2	2	128		
409	128	272							2	2	129		
410	129	273							2	2	130		
411	130	274							2	2	131		
412	131	275							2	2	132		
413	132	276							2	2	133		
414	133	277							2	2	134		
415	134	278							2	2	135		
416	135	279							2	2	136		
417	136	280							2	2	137		
418	137	281							2	2	138		
419	138	282							2	2	139		
420	139	283							2	2	140		
421	140	284							2	2	141		
422	141	285							2	2	142		
423	142	286							2	2	143		
424	143	287							2	2	144		
425	144	288							2	2	145		
426	68	212							3	3	146		
427	77	221							3	3	147		
428	38	54	342	326					4	4	148		
429	54	70	358	342					4	4	148		
430	70	86	374	358					4	4	148		
431	86	102	390	374					4	4	148		
432	43	59	347	331					4	4	149		
433	59	75	363	347					4	4	149		
434	75	91	379	363					4	4	149		
435	91	107	395	379					4	4	149		
436	-1												
437	1			0.0000E+00		0.0000E+00		0.0000E+00					
438	2			0.1000E+01		0.0000E+00		0.0000E+00					
439	3			0.2000E+01		0.0000E+00		0.0000E+00					
440	4			0.3000E+01		0.0000E+00		0.0000E+00					
441	5			0.5250E+01		0.0000E+00		0.0000E+00					
442	6			0.7750E+01		0.0000E+00		0.0000E+00					
443	7			0.1025E+02		0.0000E+00		0.0000E+00					
444	8			0.1275E+02		0.0000E+00		0.0000E+00					
445	9			0.1525E+02		0.0000E+00		0.0000E+00					
446	10			0.1775E+02		0.0000E+00		0.0000E+00					
447	11			0.2025E+02		0.0000E+00		0.0000E+00					
448	12			0.2275E+02		0.0000E+00		0.0000E+00					
449	13			0.2500E+02		0.0000E+00		0.0000E+00					
450	14			0.2600E+02		0.0000E+00		0.0000E+00					
	A	A	A	A	A	A	A	A	A	A	A	A	A

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          **********  ANSYS INPUT DATA LISTING (TAPE18)  **********

          6     12    18    24    30    36    42    48    54    60    66    72    78
          V     V     V     V     V     V     V     V     V     V     V     V     V
  451    15         0.2700E+02  0.0000E+00  0.0000E+00
  452    16         0.2800E+02  0.0000E+00  0.0000E+00
  453    17         0.0000E+00  0.5000E+00  0.0000E+00
  454    18         0.1000E+01  0.5000E+00  0.0000E+00
  455    19         0.2000E+01  0.5000E+00  0.0000E+00
  456    20         0.3000E+01  0.5000E+00  0.0000E+00
  457    21         0.5250E+01  0.5000E+00  0.0000E+00
  458    22         0.7750E+01  0.5000E+00  0.0000E+00
  459    23         0.1025E+02  0.5000E+00  0.0000E+00
  460    24         0.1275E+02  0.5000E+00  0.0000E+00
  461    25         0.1525E+02  0.5000E+00  0.0000E+00
  462    26         0.1775E+02  0.5000E+00  0.0000E+00
  463    27         0.2025E+02  0.5000E+00  0.0000E+00
  464    28         0.2275E+02  0.5000E+00  0.0000E+00
  465    29         0.2500E+02  0.5000E+00  0.0000E+00
  466    30         0.2600E+02  0.5000E+00  0.0000E+00
  467    31         0.2700E+02  0.5000E+00  0.0000E+00
  468    32         0.2800E+02  0.5000E+00  0.0000E+00
  469    33         0.0000E+00  0.1000E+01  0.0000E+00
  470    34         0.1000E+01  0.1000E+01  0.0000E+00
  471    35         0.2000E+01  0.1000E+01  0.0000E+00
  472    36         0.3000E+01  0.1000E+01  0.0000E+00
  473    37         0.5250E+01  0.1000E+01  0.0000E+00
  474    38         0.7750E+01  0.1000E+01  0.0000E+00
  475    39         0.1025E+02  0.1000E+01  0.0000E+00
  476    40         0.1275E+02  0.1000E+01  0.0000E+00
  477    41         0.1525E+02  0.1000E+01  0.0000E+00
  478    42         0.1775E+02  0.1000E+01  0.0000E+00
  479    43         0.2025E+02  0.1000E+01  0.0000E+00
  480    44         0.2275E+02  0.1000E+01  0.0000E+00
  481    45         0.2500E+02  0.1000E+01  0.0000E+00
  482    46         0.2600E+02  0.1000E+01  0.0000E+00
  483    47         0.2700E+02  0.1000E+01  0.0000E+00
  484    48         0.2800E+02  0.1000E+01  0.0000E+00
  485    49         0.0000E+00  0.2000E+01  0.0000E+00
  486    50         0.1000E+01  0.2000E+01  0.0000E+00
  487    51         0.2000E+01  0.2000E+01  0.0000E+00
  488    52         0.3000E+01  0.2000E+01  0.0000E+00
  489    53         0.5250E+01  0.2000E+01  0.0000E+00
  490    54         0.7750E+01  0.2000E+01  0.0000E+00
  491    55         0.1025E+02  0.2000E+01  0.0000E+00
  492    56         0.1275E+02  0.2000E+01  0.0000E+00
  493    57         0.1525E+02  0.2000E+01  0.0000E+00
  494    58         0.1775E+02  0.2000E+01  0.0000E+00
  495    59         0.2025E+02  0.2000E+01  0.0000E+00
  496    60         0.2275E+02  0.2000E+01  0.0000E+00
  497    61         0.2500E+02  0.2000E+01  0.0000E+00
  498    62         0.2600E+02  0.2000E+01  0.0000E+00
  499    63         0.2700E+02  0.2000E+01  0.0000E+00
  500    64         0.2800E+02  0.2000E+01  0.0000E+00
          A     A     A     A     A     A     A     A     A     A     A     A     A
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********** ANSYS INPUT DATA LISTING (TAPE18) **********

	6	18	30	42
501	65	0.0000E+00	0.3000E+01	0.0000E+00
502	66	0.1000E+01	0.3000E+01	0.0000E+00
503	67	0.2000E+01	0.3000E+01	0.0000E+00
504	68	0.3000E+01	0.3000E+01	0.0000E+00
505	69	0.5250E+01	0.3000E+01	0.0000E+00
506	70	0.7750E+01	0.3000E+01	0.0000E+00
507	71	0.1025E+02	0.3000E+01	0.0000E+00
508	72	0.1275E+02	0.3000E+01	0.0000E+00
509	73	0.1525E+02	0.3000E+01	0.0000E+00
510	74	0.1775E+02	0.3000E+01	0.0000E+00
511	75	0.2025E+02	0.3000E+01	0.0000E+00
512	76	0.2275E+02	0.3000E+01	0.0000E+00
513	77	0.2500E+02	0.3000E+01	0.0000E+00
514	78	0.2600E+02	0.3000E+01	0.0000E+00
515	79	0.2700E+02	0.3000E+01	0.0000E+00
516	80	0.2800E+02	0.3000E+01	0.0000E+00
517	81	0.0000E+00	0.4000E+01	0.0000E+00
518	82	0.1000E+01	0.4000E+01	0.0000E+00
519	83	0.2000E+01	0.4000E+01	0.0000E+00
520	84	0.3000E+01	0.4000E+01	0.0000E+00
521	85	0.5250E+01	0.4000E+01	0.0000E+00
522	86	0.7750E+01	0.4000E+01	0.0000E+00
523	87	0.1025E+02	0.4000E+01	0.0000E+00
524	88	0.1275E+02	0.4000E+01	0.0000E+00
525	89	0.1525E+02	0.4000E+01	0.0000E+00
526	90	0.1775E+02	0.4000E+01	0.0000E+00
527	91	0.2025E+02	0.4000E+01	0.0000E+00
528	92	0.2275E+02	0.4000E+01	0.0000E+00
529	93	0.2500E+02	0.4000E+01	0.0000E+00
530	94	0.2600E+02	0.4000E+01	0.0000E+00
531	95	0.2700E+02	0.4000E+01	0.0000E+00
532	96	0.2800E+02	0.4000E+01	0.0000E+00
533	97	0.0000E+00	0.5000E+01	0.0000E+00
534	98	0.1000E+01	0.5000E+01	0.0000E+00
535	99	0.2000E+01	0.5000E+01	0.0000E+00
536	100	0.3000E+01	0.5000E+01	0.0000E+00
537	101	0.5250E+01	0.5000E+01	0.0000E+00
538	102	0.7750E+01	0.5000E+01	0.0000E+00
539	103	0.1025E+02	0.5000E+01	0.0000E+00
540	104	0.1275E+02	0.5000E+01	0.0000E+00
541	105	0.1525E+02	0.5000E+01	0.0000E+00
542	106	0.1775E+02	0.5000E+01	0.0000E+00
543	107	0.2025E+02	0.5000E+01	0.0000E+00
544	108	0.2275E+02	0.5000E+01	0.0000E+00
545	109	0.2500E+02	0.5000E+01	0.0000E+00
546	110	0.2600E+02	0.5000E+01	0.0000E+00
547	111	0.2700E+02	0.5000E+01	0.0000E+00
548	112	0.2800E+02	0.5000E+01	0.0000E+00
549	113	0.0000E+00	0.5500E+01	0.0000E+00
550	114	0.1000E+01	0.5500E+01	0.0000E+00

*********** ANSYS INPUT DATA LISTING (TAPE18) ***********

```
      6     12    18    24    30    36    42    48    54    60    66    72    78
      V     V     V     V     V     V     V     V     V     V     V     V     V
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551	115	0.2000E+01	0.5500E+01	0.0000E+00
552	116	0.3000E+01	0.5500E+01	0.0000E+00
553	117	0.5250E+01	0.5500E+01	0.0000E+00
554	118	0.7750E+01	0.5500E+01	0.0000E+00
555	119	0.1025E+02	0.5500E+01	0.0000E+00
556	120	0.1275E+02	0.5500E+01	0.0000E+00
557	121	0.1525E+02	0.5500E+01	0.0000E+00
558	122	0.1775E+02	0.5500E+01	0.0000E+00
559	123	0.2025E+02	0.5500E+01	0.0000E+00
560	124	0.2275E+02	0.5500E+01	0.0000E+00
561	125	0.2500E+02	0.5500E+01	0.0000E+00
562	126	0.2600E+02	0.5500E+01	0.0000E+00
563	127	0.2700E+02	0.5500E+01	0.0000E+00
564	128	0.2800E+02	0.5500E+01	0.0000E+00
565	129	0.0000E+00	0.6000E+01	0.0000E+00
566	130	0.1000E+01	0.6000E+01	0.0000E+00
567	131	0.2000E+01	0.6000E+01	0.0000E+00
568	132	0.3000E+01	0.6000E+01	0.0000E+00
569	133	0.5250E+01	0.6000E+01	0.0000E+00
570	134	0.7750E+01	0.6000E+01	0.0000E+00
571	135	0.1025E+02	0.6000E+01	0.0000E+00
572	136	0.1275E+02	0.6000E+01	0.0000E+00
573	137	0.1525E+02	0.6000E+01	0.0000E+00
574	138	0.1775E+02	0.6000E+01	0.0000E+00
575	139	0.2025E+02	0.6000E+01	0.0000E+00
576	140	0.2275E+02	0.6000E+01	0.0000E+00
577	141	0.2500E+02	0.6000E+01	0.0000E+00
578	142	0.2600E+02	0.6000E+01	0.0000E+00
579	143	0.2700E+02	0.6000E+01	0.0000E+00
580	144	0.2800E+02	0.6000E+01	0.0000E+00
581	145	0.0000E+00	0.0000E+00	-0.1000E+01
582	146	0.1000E+01	0.0000E+00	-0.1000E+01
583	147	0.2000E+01	0.0000E+00	-0.1000E+01
584	148	0.3000E+01	0.0000E+00	-0.1000E+01
585	149	0.5250E+01	0.0000E+00	-0.1000E+01
586	150	0.7750E+01	0.0000E+00	-0.1000E+01
587	151	0.1025E+02	0.0000E+00	-0.1000E+01
588	152	0.1275E+02	0.0000E+00	-0.1000E+01
589	153	0.1525E+02	0.0000E+00	-0.1000E+01
590	154	0.1775E+02	0.0000E+00	-0.1000E+01
591	155	0.2025E+02	0.0000E+00	-0.1000E+01
592	156	0.2275E+02	0.0000E+00	-0.1000E+01
593	157	0.2500E+02	0.0000E+00	-0.1000E+01
594	158	0.2600E+02	0.0000E+00	-0.1000E+01
595	159	0.2700E+02	0.0000E+00	-0.1000E+01
596	160	0.2800E+02	0.0000E+00	-0.1000E+01
597	161	0.0000E+00	0.5000E+00	-0.1000E+01
598	162	0.1000E+01	0.5000E+00	-0.1000E+01
599	163	0.2000E+01	0.5000E+00	-0.1000E+01
600	164	0.3000E+01	0.5000E+00	-0.1000E+01

```
      A     A     A     A     A     A     A     A     A     A     A     A     A
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********** ANSYS INPUT DATA LISTING (TAPE18) **********

	6 V	12 V	18 V	24 V	30 V	36 V	42 V	48 V	54 V	60 V	66 V	72 V	78 V
601	165		0.5250E+01		0.5000E+00		-0.1000E+01						
602	166		0.7750E+01		0.5000E+00		-0.1000E+01						
603	167		0.1025E+02		0.5000E+00		-0.1000E+01						
604	168		0.1275E+02		0.5000E+00		-0.1000E+01						
605	169		0.1525E+02		0.5000E+00		-0.1000E+01						
606	170		0.1775E+02		0.5000E+00		-0.1000E+01						
607	171		0.2025E+02		0.5000E+00		-0.1000E+01						
608	172		0.2275E+02		0.5000E+00		-0.1000E+01						
609	173		0.2500E+02		0.5000E+00		-0.1000E+01						
610	174		0.2600E+02		0.5000E+00		-0.1000E+01						
611	175		0.2700E+02		0.5000E+00		-0.1000E+01						
612	176		0.2800E+02		0.5000E+00		-0.1000E+01						
613	177		0.0000E+00		0.1000E+01		-0.1000E+01						
614	178		0.1000E+01		0.1000E+01		-0.1000E+01						
615	179		0.2000E+01		0.1000E+01		-0.1000E+01						
616	180		0.3000E+01		0.1000E+01		-0.1000E+01						
617	181		0.5250E+01		0.1000E+01		-0.1000E+01						
618	182		0.7750E+01		0.1000E+01		-0.1000E+01						
619	183		0.1025E+02		0.1000E+01		-0.1000E+01						
620	184		0.1275E+02		0.1000E+01		-0.1000E+01						
621	185		0.1525E+02		0.1000E+01		-0.1000E+01						
622	186		0.1775E+02		0.1000E+01		-0.1000E+01						
623	187		0.2025E+02		0.1000E+01		-0.1000E+01						
624	188		0.2275E+02		0.1000E+01		-0.1000E+01						
625	189		0.2500E+02		0.1000E+01		-0.1000E+01						
626	190		0.2600E+02		0.1000E+01		-0.1000E+01						
627	191		0.2700E+02		0.1000E+01		-0.1000E+01						
628	192		0.2800E+02		0.1000E+01		-0.1000E+01						
629	193		0.0000E+00		0.2000E+01		-0.1000E+01						
630	194		0.1000E+01		0.2000E+01		-0.1000E+01						
631	195		0.2000E+01		0.2000E+01		-0.1000E+01						
632	196		0.3000E+01		0.2000E+01		-0.1000E+01						
633	197		0.5250E+01		0.2000E+01		-0.1000E+01						
634	198		0.7750E+01		0.2000E+01		-0.1000E+01						
635	199		0.1025E+02		0.2000E+01		-0.1000E+01						
636	200		0.1275E+02		0.2000E+01		-0.1000E+01						
637	201		0.1525E+02		0.2000E+01		-0.1000E+01						
638	202		0.1775E+02		0.2000E+01		-0.1000E+01						
639	203		0.2025E+02		0.2000E+01		-0.1000E+01						
640	204		0.2275E+02		0.2000E+01		-0.1000E+01						
641	205		0.2500E+02		0.2000E+01		-0.1000E+01						
642	206		0.2600E+02		0.2000E+01		-0.1000E+01						
643	207		0.2700E+02		0.2000E+01		-0.1000E+01						
644	208		0.2800E+02		0.2000E+01		-0.1000E+01						
645	209		0.0000E+00		0.3000E+01		-0.1000E+01						
646	210		0.1000E+01		0.3000E+01		-0.1000E+01						
647	211		0.2000E+01		0.3000E+01		-0.1000E+01						
648	212		0.3000E+01		0.3000E+01		-0.1000E+01						
649	213		0.5250E+01		0.3000E+01		-0.1000E+01						
650	214		0.7750E+01		0.3000E+01		-0.1000E+01						

A A A A A A A A A A A A A

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**********  ANSYS INPUT DATA LISTING (TAPE18)  **********

         6     12     18     24     30     36     42     48     54     60     66     72     78
         V      V      V      V      V      V      V      V      V      V      V      V      V
651    215           0.1025E+02  0.3000E+01 -0.1000E+01
652    216           0.1275E+02  0.3000E+01 -0.1000E+01
653    217           0.1525E+02  0.3000E+01 -0.1000E+01
654    218           0.1775E+02  0.3000E+01 -0.1000E+01
655    219           0.2025E+02  0.3000E+01 -0.1000E+01
656    220           0.2275E+02  0.3000E+01 -0.1000E+01
657    221           0.2500E+02  0.3000E+01 -0.1000E+01
658    222           0.2600E+02  0.3000E+01 -0.1000E+01
659    223           0.2700E+02  0.3000E+01 -0.1000E+01
660    224           0.2800E+02  0.3000E+01 -0.1000E+01
661    225           0.0000E+00  0.4000E+01 -0.1000E+01
662    226           0.1000E+01  0.4000E+01 -0.1000E+01
663    227           0.2000E+01  0.4000E+01 -0.1000E+01
664    228           0.3000E+01  0.4000E+01 -0.1000E+01
665    229           0.5250E+01  0.4000E+01 -0.1000E+01
666    230           0.7750E+01  0.4000E+01 -0.1000E+01
667    231           0.1025E+02  0.4000E+01 -0.1000E+01
668    232           0.1275E+02  0.4000E+01 -0.1000E+01
669    233           0.1525E+02  0.4000E+01 -0.1000E+01
670    234           0.1775E+02  0.4000E+01 -0.1000E+01
671    235           0.2025E+02  0.4000E+01 -0.1000E+01
672    236           0.2275E+02  0.4000E+01 -0.1000E+01
673    237           0.2500E+02  0.4000E+01 -0.1000E+01
674    238           0.2600E+02  0.4000E+01 -0.1000E+01
675    239           0.2700E+02  0.4000E+01 -0.1000E+01
676    240           0.2800E+02  0.4000E+01 -0.1000E+01
677    241           0.0000E+00  0.5000E+01 -0.1000E+01
678    242           0.1000E+01  0.5000E+01 -0.1000E+01
679    243           0.2000E+01  0.5000E+01 -0.1000E+01
680    244           0.3000E+01  0.5000E+01 -0.1000E+01
681    245           0.5250E+01  0.5000E+01 -0.1000E+01
682    246           0.7750E+01  0.5000E+01 -0.1000E+01
683    247           0.1025E+02  0.5000E+01 -0.1000E+01
684    248           0.1275E+02  0.5000E+01 -0.1000E+01
685    249           0.1525E+02  0.5000E+01 -0.1000E+01
686    250           0.1775E+02  0.5000E+01 -0.1000E+01
687    251           0.2025E+02  0.5000E+01 -0.1000E+01
688    252           0.2275E+02  0.5000E+01 -0.1000E+01
689    253           0.2500E+02  0.5000E+01 -0.1000E+01
690    254           0.2600E+02  0.5000E+01 -0.1000E+01
691    255           0.2700E+02  0.5000E+01 -0.1000E+01
692    256           0.2800E+02  0.5000E+01 -0.1000E+01
693    257           0.0000E+00  0.5500E+01 -0.1000E+01
694    258           0.1000E+01  0.5500E+01 -0.1000E+01
695    259           0.2000E+01  0.5500E+01 -0.1000E+01
696    260           0.3000E+01  0.5500E+01 -0.1000E+01
697    261           0.5250E+01  0.5500E+01 -0.1000E+01
698    262           0.7750E+01  0.5500E+01 -0.1000E+01
699    263           0.1025E+02  0.5500E+01 -0.1000E+01
700    264           0.1275E+02  0.5500E+01 -0.1000E+01
         A      A      A      A      A      A      A      A      A      A      A      A      A
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**********  ANSYS INPUT DATA LISTING (TAPE18)  **********

          6     12    18    24    30    36    42    48    54    60    66    72    78
          V     V     V     V     V     V     V     V     V     V     V     V     V
701      265         0.1525E+02  0.5500E+01 -0.1000E+01
702      266         0.1775E+02  0.5500E+01 -0.1000E+01
703      267         0.2025E+02  0.5500E+01 -0.1000E+01
704      268         0.2275E+02  0.5500E+01 -0.1000E+01
705      269         0.2500E+02  0.5500E+01 -0.1000E+01
706      270         0.2600E+02  0.5500E+01 -0.1000E+01
707      271         0.2700E+02  0.5500E+01 -0.1000E+01
708      272         0.2800E+02  0.5500E+01 -0.1000E+01
709      273         0.0000E+00  0.6000E+01 -0.1000E+01
710      274         0.1000E+01  0.6000E+01 -0.1000E+01
711      275         0.2000E+01  0.6000E+01 -0.1000E+01
712      276         0.3000E+01  0.6000E+01 -0.1000E+01
713      277         0.5250E+01  0.6000E+01 -0.1000E+01
714      278         0.7750E+01  0.6000E+01 -0.1000E+01
715      279         0.1025E+02  0.6000E+01 -0.1000E+01
716      280         0.1275E+02  0.6000E+01 -0.1000E+01
717      281         0.1525E+02  0.6000E+01 -0.1000E+01
718      282         0.1775E+02  0.6000E+01 -0.1000E+01
719      283         0.2025E+02  0.6000E+01 -0.1000E+01
720      284         0.2275E+02  0.6000E+01 -0.1000E+01
721      285         0.2500E+02  0.6000E+01 -0.1000E+01
722      286         0.2600E+02  0.6000E+01 -0.1000E+01
723      287         0.2700E+02  0.6000E+01 -0.1000E+01
724      288         0.2800E+02  0.6000E+01 -0.1000E+01
725      326         0.7750E+01  0.1000E+01  0.3500E+01
726      342         0.7750E+01  0.2000E+01  0.3500E+01
727      358         0.7750E+01  0.3000E+01  0.3500E+01
728      374         0.7750E+01  0.4000E+01  0.3500E+01
729      390         0.7750E+01  0.5000E+01  0.3500E+01
730      331         0.2025E+02  0.1000E+01  0.3500E+01
731      347         0.2025E+02  0.2000E+01  0.3500E+01
732      363         0.2025E+02  0.3000E+01  0.3500E+01
733      379         0.2025E+02  0.4000E+01  0.3500E+01
734      395         0.2025E+02  0.5000E+01  0.3500E+01
735       -1
736    EX      1     0.2900E+05
737    EY      1     0.2900E+05
738    NUXY    1     0.3000E+00
739    ALPX    1     0.0000E+00
740    ALPY    1     0.0000E+00
741    DENS    1     0.0000E+00
742    EX      2     0.3150E+03
743    ALPX    2     0.0000E+00
744    DENS    2     0.0000E+00
745    EX      3     0.2900E+05
746    ALPX    3     0.0000E+00
747    DENS    3     0.0000E+00
748    EX      4     0.2900E+05
749    EY      4     0.2900E+05
750    NUXY    4     0.3000E+00
          A     A     A     A     A     A     A     A     A     A     A     A     A
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          ***********  ANSYS INPUT DATA LISTING (TAPE18)  **********

               6     12    18    24    30    36    42    48    54    60    66    72    78
               V     V     V     V     V     V     V     V     V     V     V     V     V
  751     ALPX   4      0.0000E+00
  752     ALPY   4      0.0000E+00
  753     DENS   4      0.0000E+00
  754     EX     5      0.2900E+05
  755     ALPX   5      0.0000E+00
  756     NUXY   5      0.3000E+00
  757     DENS   5      0.0000E+00
  758     END
  759       1    -10 10                                                                      1
  760                                                      1
  761
  762          1 UX      0.0000E+00                144         UY
  763        145 UX      0.0000E+00                288         UY      UZ
  764            END
  765         70 MX      0.8000E+01
  766         75 MX      0.8000E+01
  767               -1
  768         -1
  769     FINISH
```

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 3 UPDATE 67L UCS-CRAY JUNE 1,1979
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412) 746-3304

TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS 14.1711 5/ 8/85 CP= 0.573

***** ANALYST = J. STEPIEN

***** ANALYSIS OPTIONS (CARDS C1 AND C2) *****

	VALUE	VARIABLE NAME	COLUMNS
ANALYSIS TYPE	0	KAN	5-7
ELEMENT CONSTANT TABLE . . .	1	KTB	11-12
POST-RUN PROCESS KEY	99	KYPOST	27-28
KAY(8)	1	KAY(8)	43-44
REFERENCE TEMPERATURE	0.00	TREF	1-12
UNIFORM TEMPERATURE	0.00	TUNIF	13-24
CORE SIZE REQUESTED (OCTAL) .	00326306		

BLOCKED BINARY FILE NAMES . .	TAPE3	TAPE2	TAPE11	TAPE4	TAPE10,	TAPE12
BLOCK SIZES	580	580	1160	580	580	580

***** ELEMENT TYPES (CARD D) *****

TYPE	STIF	DESCRIPTION	KEYSUB OPTIONS 1B	1A	1	2B	2A	2	NJ	INOTPR
1	46	RECT. FLAT PLATE	0	0	0	0	0	0	0	0
2	10	CABLE	0	1	1	0	0	0	0	0
3	10	CABLE	0	1	0	0	0	0	0	0
4	63	QUAD. FLAT SHELL	0	0	0	0	0	0	0	0
5	4	ELASTIC BEAM, 3-D	0	0	0	0	0	0	0	0

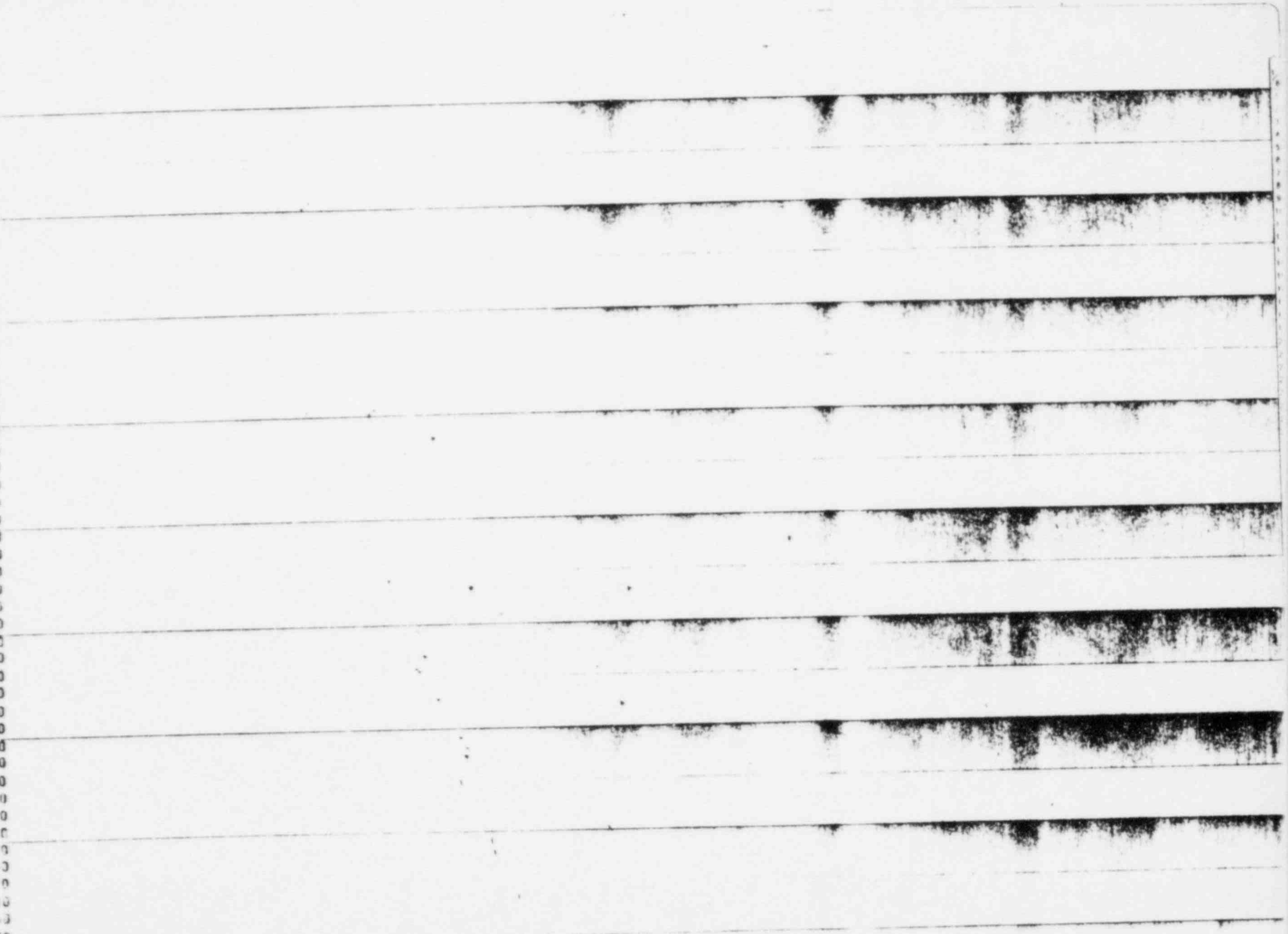
***** TABLE OF ELEMENT REAL CONSTANTS (CARD D2) *****

NO.

1 0.[illegible]

4	0.25000
5	0.40620
6	0.59370
7	0.62500
8	0.62500
9	0.62500
10	0.62500
11	0.62500
12	0.62500
13	0.59370
14	0.40620
15	0.25000
16	0.25000
17	0.12500
18	0.25000
19	0.50000
20	0.50000
21	0.81250
22	1.1870
23	1.2500
24	1.2500
25	1.2500
26	1.2500
27	1.2500
28	1.2500
29	1.1870
30	0.81250
31	0.50000
32	0.50000
33	0.25000
34	0.37500
35	0.75000
36	0.75000
37	1.2190
38	1.7810
39	1.8750
40	1.8750
41	1.8750
42	1.8750
43	1.8750
44	1.8750
45	1.7810
46	1.2190
47	0.75000
48	0.75000
49	0.37500
50	0.50000
51	1.0000
52	1.0000
53	1.6250
54	2.3750
55	2.5000
56	2.5000
57	2.5000
58	2.5000
59	2.5000
60	2.5000
61	2.3750
62	1.6250
63	1.0000
64	1.0000
65	0.50000
66	[illegible]
67	[illegible]

70	2.3750
71	2.5000
72	2.5000
73	2.5000
74	2.5000
75	2.5000
76	2.5000
77	2.3750
78	1.6250
79	1.0000
80	1.0000
81	0.50000
82	0.50000
83	1.0000
84	1.0000
85	1.6250
86	2.3750
87	2.5000
88	2.5000
89	2.5000
90	2.5000
91	2.5000
92	2.5000
93	2.3750
94	1.6250
95	1.0000
96	1.0000
97	0.50000
98	0.37500
99	0.75000
100	0.75000
101	1.2190
102	1.7810
103	1.8750
104	1.8750
105	1.8750
106	1.8750
107	1.8750
108	1.8750
109	1.7810
110	1.2190
111	0.75000
112	0.75000
113	0.37500
114	0.25000
115	0.50000
116	0.50000
117	0.81250
118	1.1870
119	1.2500
120	1.2500
121	1.2500
122	1.2500
123	1.2500
124	1.2500
125	1.1870
126	0.81250
127	0.50000
128	0.50000
129	0.25000
130	0.12500
131	0.25000
132	[illegible]
133	[illegible]
[illegible]	[illegible]



136	0.62500				
137	0.62500				
138	0.62500				
139	0.62500				
140	0.62500				
141	0.59370				
142	0.40620				
143	0.25000				
144	0.25000				
145	0.12500				
146	0.15900E-01				
147	0.15900E-01				
148	0.31250				
149	0.31250				
150	100.00	0.10000E+06	0.10000E+06	1.0000	1.0000

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 3 UPDATE 67L UCS-CRAY JUNE 1,1979
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412) 746-3304

TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS 14.1714 5/ 8/85 CP= 1.037

***** ELEMENT DEFINITIONS (CARD E) *****

ELEMENT	NODES				MAT	TYPE	CLASS	ELEMENT REAL CONSTANTS				
								THK1	THK2	THK3	THK4	STIF
1	1	2	18	17	1	1	0	0.500	0.500	0.500	0.500	[illegible]
2	2	3	19	18	1	1	0	0.500	0.500	0.500	0.500	0.000
3	3	4	20	19	1	1	0	0.500	0.500	0.500	0.500	0.000
4	4	5	21	20	1	1	0	0.500	0.500	0.500	0.500	0.000
5	5	6	22	21	1	1	0	0.500	0.500	0.500	0.500	0.000
6	6	7	23	22	1	1	0	0.500	0.500	0.500	0.500	0.000
7	7	8	24	23	1	1	0	0.500	[illegible]	0.500	0.500	[illegible]
8	8	9	25	24	1	1	0	0.500	0.500	0.500	0.500	0.000
9	9	10	26	25	1	1	0	0.500	0.500	0.500	0.500	0.000
10	10	11	27	26	1	1	0	0.500	0.500	0.500	0.500	0.000
11	11	12	28	27	1	1	0	0.500	0.500	0.500	0.500	0.000
12	12	13	29	28	1	1	0	0.500	0.500	0.500	0.500	0.000
13	13	14	30	29	1	1	0	0.500	[illegible]	0.500	0.500	[illegible]
14	14	15	31	30	1	1	0	0.500	0.500	0.500	0.500	0.000
15	15	16	32	31	1	1	0	0.500	0.500	0.500	0.500	0.000
								AREA	ISTR			
16	1	145			2	2	0	0.125	0.000			
17	2	146			2	2	0	0.250	0.000			
18	3	147			2	2	0	0.250	0.000			
19	4	148			2	2	0	0.406	0.000			
20	5	149			2	2	0	0.594	0.000			
21	6	150			2	2	0	0.625	0.000			
22	7	151			2	2	0	0.625	0.000			
23	8	152			2	2	0	0.625	0.000			
24	9	153			2	2	0	0.625	[illegible]			
25	10	154			2	2	0	0.625	0.000			
26	11	155			2	2	0	0.625	0.000			
27	12	156			2	2	0	0.594	0.000			
28	13	157			2	2	0	0.406	0.000			
29	14	158			2	2	0	0.250	0.000			
30	15	159			2	2	0	0.250	[illegible]			
31	16	160			2	2	0	0.125	0.000			
								THK1	THK2	THK3	THK4	STIF
32	17	18	34	33	1	1	0	0.500	0.500	0.500	0.500	0.000
33	18	19	35	34	1	1	0	0.500	0.500	0.500	0.500	0.000
34	19	20	36	35	1	1	0	0.500	0.500	0.500	0.500	0.000
35	20	21	37	36	1	1	0	0.500	0.500	0.500	0.500	[illegible]
36	21	22	38	37	1	1	0	0.500	0.500	0.500	0.500	0.000
37	22	23	39	38	1	1	0	0.500	0.500	0.500	0.500	0.000
38	23	24	40	39	1	1	0	0.500	0.500	0.500	0.500	0.000
39	24	25	41	40	1	1	0	0.500	0.500	0.500	0.500	0.000
40	25	26	42	41	1	1	0	0.500	0.500	0.500	0.500	0.000
41	26	27	43	42	1	1	0	0.500	0.500	0.500	0.500	0.000
42	27	28	44	43	1	1	0	0.500	0.500	0.500	0.500	0.000
43	28	29	45	44	1	1	0	0.500	0.500	0.500	0.500	0.000
44	29	30	46	45	1	1	0	0.500	0.500	0.500	0.500	0.000
45	30	31	47	46	1	1	0	0.500	0.500	0.500	0.500	0.000
46	31	32	48	47	1	1	0	0.500	0.500	0.500	0.500	0.000
								AREA	ISTR			
47	17	161			2	2	0	0.250	0.000			
[illegible]	[illegible]	162						[illegible]	0.000			

5[illegible]	[illegible]	164			2	[illegible]	[illegible]	[illegible]	[illegible]			
[illegible]	21	165			2	2	0	1.19	0.000			
52	22	166			2	2	0	1.25	0.000			
53	23	167			2	2	0	1.25	0.000			
54	24	168			2	2	0	1.25	0.000			
55	25	169			2	2	0	1.25	0.000			
56	26	170			2	2	0	1.25	0.000			
57	27	171			2	2	0	1.25	0.000			
58	28	172			2	2	0	1.19	0.000			
59	29	173			2	2	0	0.812	0.000			
6[illegible]	30	174			2	2	0	0.500	0.000			
61	31	175			2	2	0	0.500	0.000			
62	32	176			2	2	0	0.250	0.000			
								THK1	THK2	THK3	THK4	STIF
63	33	34	50	49	1	1	0	0.500	0.500	0.500	0.500	0.000
64	34	35	51	50	1	1	0	0.500	0.500	0.500	0.500	0.000
65	35	36	52	51	1	1	0	0.500	0.500	0.500	0.500	0.000
66	36	37	53	52	1	1	0	0.500	0.500	0.500	0.500	0.000
67	37	38	54	53	1	1	0	0.500	0.500	0.500	0.500	0.000
68	38	39	55	54	1	1	0	0.500	0.500	0.500	0.500	0.000
69	39	40	56	55	1	1	0	0.500	0.500	0.500	0.500	0.000
70	40	41	57	56	1	1	0	0.500	0.500	0.500	0.500	0.000
71	41	42	58	57	1	1	0	0.500	0.500	0.500	0.500	0.000
72	42	43	59	58	1	1	0	0.500	0.500	0.500	0.500	0.000
73	43	44	60	59	1	1	0	0.500	0.500	0.500	0.500	0.000
74	44	45	61	60	1	1	0	0.500	0.500	0.500	0.500	0.000
75	45	46	62	61	1	1	0	0.500	0.500	0.500	0.500	0.000
76	46	47	63	62	1	1	0	0.500	0.500	0.500	0.500	0.000
77	47	48	64	63				AREA	ISTR			
78	33	177			2	2	0	0.375	0.000			
79	34	178			2	2	0	0.750	0.000			
80	35	179			2	2	0	0.750	0.000			
81	36	180			2	2	0	1.22	0.000			
82	37	181			2	2	0	1.78	0.000			
83	38	182			2	2	0	1.87	0.000			
84	39	183			2	2	0	1.87	0.000			
85	40	184			2	2	0	1.87	0.000			
86	41	185			2	2	0	1.87	0.000			
87	42	186			2	2	0	1.87	0.000			
88	43	187			2	2	0	1.87	0.000			
89	44	188			2	2	0	1.78	0.000			
90	45	189			2	2	0	1.22	0.000			
91	46	190			2	2	0	0.750	0.000			
92	47	191			2	2	0	0.750	0.000			
93	48	192			2	2	0	0.375	0.000			
								THK1	THK2	THK3	THK4	STIF
94	49	50	65	65	1	1	0	0.500	0.500	0.500	0.500	0.000
95	50	51	67	66	1	1	0	0.500	0.500	0.500	0.500	0.000
96	51	52	69	67	1	1	0	0.500	0.500	0.500	0.500	0.000
97	52	53	69	68	1	1	0	0.500	0.500	0.500	0.500	0.000
98	53	54	70	69	1	1	0	0.500	0.500	0.500	0.500	0.000
99	54	55	71	70	1	1	0	0.500	0.500	0.500	0.500	0.000
100	55	56	72	71	1	1	0	0.500	0.500	0.500	0.500	0.000
101	56	57	73	72	1	1	0	0.500	0.500	0.500	0.500	0.000
102	57	58	74	73	1	1	0	0.500	0.500	0.500	0.500	0.000
103	58	59	75	74	1	1	0	0.500	0.500	0.500	0.500	0.000
104	59	60	76	75	1	1	0	0.500	0.500	0.500	0.500	0.000
105	60	61	77	76	1	1	0	0.500	0.500	0.500	0.500	0.000
106	61	62	78	77	1	1	0	0.500	0.500	0.500	0.500	0.000
107	62	63	79	78	1	1	0	0.500	0.500	0.500	0.500	0.000
108	63	64	80	79	1	1	0	0.500	0.500			
								AREA	ISTR			
1[illegible]	4[illegible]	1[illegible]3			2	2	0	0.500	0.000			
								1.[illegible]	[illegible]			

					2	2	0	1.62	0.000			
112	52	196			2	2	0	2.37	0.000			
113	53	197			2	2	0	2.50	0.000			
114	54	198			2	2	0	2.50	0.000			
115	55	199			2	2	0	2.50	0.000			
116	56	200			2	2	0	2.50	0.000			
117	57	201			2	2	0	2.50	0.000			
118	58	202			2	2	0	2.50	0.000			
119	59	203			2	2	0	2.37	0.000			
120	60	204			2	2	0	1.62	0.000			
121	61	205			2	2	0	1.00	0.000			
122	62	206			2	2	0	1.00	0.000			
123	63	207			2	2	0	0.500	0.000			
124	64	208						THK1	THK2	THK3	THK4	STIF
125	65	66	82	81	1	1	0	0.500	0.500	0.500	0.500	0.000
126	66	67	83	82	1	1	0	0.500	0.500	0.500	0.500	0.000
127	67	68	84	83	1	1	0	0.500	0.500	0.500	0.500	0.000
128	68	69	85	84	1	1	0	0.500	0.500	0.500	0.500	0.000
129	69	70	86	85	1	1	0	0.500	0.500	0.500	0.500	0.000
130	70	71	87	86	1	1	0	0.500	0.500	0.500	0.500	0.000
131	71	72	88	87	1	1	0	0.500	0.500	0.500	0.500	0.000
132	72	73	89	88	1	1	0	0.500	0.500	0.500	0.500	0.000
133	73	74	90	89	1	1	0	0.500	0.500	0.500	0.500	0.000
134	74	75	91	90	1	1	0	0.500	0.500	0.500	0.500	0.000
135	75	76	92	91	1	1	0	0.500	0.500	0.500	0.500	0.000
136	76	77	93	92	1	1	0	0.500	0.500	0.500	0.500	0.000
137	77	78	94	93	1	1	0	0.500	0.500	0.500	0.500	0.000
138	78	79	95	94	1	1	0	0.500	0.500	0.500	0.500	0.000
139	79	80	96	95				AREA	ISTR			
140	65	209			2	2	0	0.500	0.000			
141	66	210			2	2	0	1.00	0.000			
142	67	211			2	2	0	1.00	0.000			
143	68	212			2	2	0	1.62	0.000			
144	69	213			2	2	0	2.37	0.000			
145	70	214			2	2	0	2.50	0.000			
146	71	215			2	2	0	2.50	0.000			
147	72	216			2	2	0	2.50	0.000			
148	73	217			2	2	0	2.50	0.000			
149	74	218			2	2	0	2.50	0.000			
150	75	219			2	2	0	2.50	0.000			
151	76	220			2	2	0	2.37	0.000			
152	77	221			2	2	0	1.62	0.000			
153	78	222			2	2	0	1.00	0.000			
154	79	223			2	2	0	1.00	0.000			
155	80	224			2	2	0	0.500	0.000			
								THK1	THK2	THK3	THK4	STIF
156	81	82	98	97	1	1	0	0.500	0.500	0.500	0.500	0.000
157	82	83	99	98	1	1	0	0.500	0.500	0.500	0.500	0.000
158	83	84	100	99	1	1	0	0.500	0.500	0.500	0.500	0.000
159	84	85	101	100	1	1	0	0.500	0.500	0.500	0.500	0.000
160	85	86	102	101	1	1	0	0.500	0.500	0.500	0.500	0.000
161	86	87	103	102	1	1	0	0.500	0.500	0.500	0.500	0.000
162	87	88	104	103	1	1	0	0.500	0.500	0.500	0.500	0.000
163	88	89	105	104	1	1	0	0.500	0.500	0.500	0.500	0.000
164	89	90	106	105	1	1	0	0.500	0.500	0.500	0.500	0.000
165	90	91	107	106	1	1	0	0.500	0.500	0.500	0.500	0.000
166	91	92	108	107	1	1	0	0.500	0.500	0.500	0.500	0.000
167	92	93	109	108	1	1	0	0.500	0.500	0.500	0.500	0.000
168	93	94	110	109	1	1	0	0.500	0.500	0.500	0.500	0.000
169	94	95	111	110	1	1	0	0.500	0.500	0.500	0.500	0.000
170	95	96	112	111				AREA	ISTR			
171	[illegible]	[illegible]			2	[illegible]	0	0.500	0.000			
[illegible]	[illegible]	[illegible]						1.00	0.000			

174	84	228			2	2	0	1.62	0.000
175	85	229			2	2	0	2.37	0.000
176	86	230			2	2	0	2.50	0.000
177	87	231			2	2	0	2.50	0.000
178	88	232			2	2	0	2.50	0.000
179	89	233			2	2	0	2.50	0.000
180	90	234			2	2	0	2.50	0.000
181	91	235			2	2	0	2.50	0.000
182	92	236			2	2	0	2.37	0.000
183	93	237			2	2	0	1.62	0.000
184	94	238			2	2	0	1.00	0.000
185	95	239			2	2	0	1.00	0.000
186	96	240			2	2	0	0.500	0.000

								THK1	THK2	THK3	THK4	STIF
187	97	98	114	113	1	1	0	0.500	0.500	0.500	0.500	0.000
188	98	99	115	114	1	1	0	0.500	0.500	0.500	0.500	0.000
189	99	100	116	115	1	1	0	0.500	0.500	0.500	0.500	0.000
190	100	101	117	116	1	1	0	0.500	0.500	0.500	0.500	0.000
191	101	102	118	117	1	1	0	0.500	0.500	0.500	0.500	0.000
192	102	103	119	118	1	1	0	0.500	0.500	0.500	0.500	0.000
193	103	104	120	119	1	1	0	0.500	0.500	0.500	0.500	0.000
194	104	105	121	120	1	1	0	0.500	0.500	0.500	0.500	0.000
195	105	106	122	121	1	1	0	0.500	0.500	0.500	0.500	0.000
196	106	107	123	122	1	1	0	0.500	0.500	0.500	0.500	0.000
197	107	108	124	123	1	1	0	0.500	0.500	0.500	0.500	0.000
198	108	109	125	124	1	1	0	0.500	0.500	0.500	0.500	0.000
199	109	110	126	125	1	1	0	0.500	0.500	0.500	0.500	0.000
200	110	111	127	126	1	1	0	0.500	0.500	0.500	0.500	0.000
201	111	112	128	127	1	1	0	0.500	0.500	0.500	0.500	0.000

						AREA	ISTR
202	97	241	2	2	0	0.375	0.000
203	98	242	2	2	0	0.750	0.000
204	99	243	2	2	0	0.750	0.000
205	100	244	2	2	0	1.22	0.000
206	101	245	2	2	0	1.78	0.000
207	102	246	2	2	0	1.87	0.000
208	103	247	2	2	0	1.87	0.000
209	104	248	2	2	0	1.87	0.000
210	105	249	2	2	0	1.87	0.000
211	106	250	2	2	0	1.87	0.000
212	107	251	2	2	0	1.87	0.000
213	108	252	2	2	0	1.78	0.000
214	109	253	2	2	0	1.22	0.000
215	110	254	2	2	0	0.750	0.000
216	111	255	2	2	0	0.750	0.000
217	112	256	2	2	0	0.375	0.000

								THK1	THK2	THK3	THK4	STIF
218	113	114	130	129	1	1	0	0.500	0.500	0.500	0.500	0.000
219	114	115	131	130	1	1	0	0.500	0.500	0.500	0.500	0.000
220	115	116	132	131	1	1	0	0.500	0.500	0.500	0.500	0.000
221	116	117	133	132	1	1	0	0.500	0.500	0.500	0.500	0.000
222	117	118	134	133	1	1	0	0.500	0.500	0.500	0.500	0.000
223	118	119	135	134	1	1	0	0.500	0.500	0.500	0.500	0.000
224	119	120	136	135	1	1	0	0.500	0.500	0.500	0.500	0.000
225	120	121	137	136	1	1	0	0.500	0.500	0.500	0.500	0.000
226	121	122	138	137	1	1	0	0.500	0.500	0.500	0.500	0.000
227	122	123	139	138	1	1	0	0.500	0.500	0.500	0.500	0.000
228	123	124	140	139	1	1	0	0.500	0.500	0.500	0.500	0.000
229	124	125	141	140	1	1	0	0.500	0.500	0.500	0.500	0.000
230	125	126	142	141	1	1	0	0.500	0.500	0.500	0.500	0.000
231	126	127	143	142	1	1	0	0.500	0.500	0.500	0.500	0.000
232	127	128	144	143	1	1	0	0.500	0.500	0.500	0.500	0.000

						AREA	ISTR
233	113	257	2	2	0	0.250	0.000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

236	116	260			2	2	[illegible]	0.[illegible]12	0.00[illegible]			
237	117	261			2	2	0	1.19	0.000			
238	118	262			2	2	0	1.25	0.000			
239	119	263			2	2	0	1.25	0.000			
240	120	264			2	2	0	1.25	0.000			
241	121	265			2	2	0	1.25	0.000			
242	122	266			2	2	0	1.25	0.000			
243	123	267			2	2	0	1.25	0.000			
244	124	268			2	2	0	1.19	0.000			
245	125	269			2	2	0	0.812	0.000			
246	126	270			2	2	0	0.500	0.000			
247	127	271			2	2	0	0.500	0.000			
248	128	272			2	2	0	0.250	0.000			
249	129	273			2	2	0	0.125	0.000			
250	130	274			2	2	0	0.250	0.000			
251	131	275			2	2	0	0.250	0.000			
252	132	276			2	2	0	0.406	0.000			
253	133	277			2	2	0	0.594	0.000			
254	134	278			2	2	0	0.625	0.000			
255	135	279			2	2	0	0.625	0.000			
256	136	280			2	2	0	0.625	0.000			
257	137	281			2	2	0	0.625	0.000			
258	138	282			2	2	0	0.625	0.000			
259	139	283			2	2	0	0.625	0.000			
260	140	284			2	2	0	0.594	0.000			
261	141	285			2	2	0	0.406	0.000			
262	142	286			2	2	0	0.250	0.000			
263	143	287			2	2	0	0.250	0.000			
264	144	288			2	2	0	0.125	0.000			
								AREA	ISTR			
265	68	212			3	3	0	0.159E-01	0.000			
266	77	221			3	3	0	0.159E-01	0.000			
								THK1	THK2	THK3	THK[illegible]	[illegible]
267	38	54	342	326	4	4	0	0.312	0.312	0.312	0.312	0.000
268	54	70	358	342	4	4	0	0.312	0.312	0.312	0.312	0.000
269	70	86	374	358	4	4	0	0.312	0.312	0.312	0.312	0.000
270	86	102	390	374	4	4	0	0.312	0.312	0.312	0.312	0.000
271	43	59	347	331	4	4	0	0.312	0.312	0.312	0.312	0.000
272	59	75	363	347	4	4	0	0.312	0.312	0.312	0.312	0.000
273	75	91	379	363	4	4	0	0.312	0.312	0.312	0.312	0.000
274	91	107	395	379	4	4	0	0.312	0.312	0.312	0.312	0.000

OCTAL STORAGE REQUIREMENTS FOR ELEMENT INPUT CP= . 1.964
CORE= 00112464 MEMORY= 00001426 TOTAL= 00114112 MEMORY AVAILABLE= 00213121
MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 35624

NUMBER OF ELEMENTS = 274 MAXIMUM NODE NUMBER USED = 395

*** ELEMENT STIFFNESS FORMULATION TIME ESTIMATE (CRAY-1) ***

TYPE	STIF	NUMBER	TIME(EACH)	TIME(ALL)
1	46	120	0.0144	1.728
2	1[illegible]	144	0.0036	0.518
3	10	2	0.0036	0.007
4	63	8	0.0576	0.461

TOTAL TIME = 2.714 SECONDS.

TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS 14.1719 5/ 8/85 CP= 1.978

***** NODE DEFINITIONS (CARD F) *****

NODE	LOCATION X (OR R)	Y (OR THETA)	Z (OR PHI)	ROTATION (DEGREES) THXY (OR RT)	THYZ (YZ OR TP)	THXZ (RZ OR RP)
1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
2	1.0000	0.00000	0.00000	0.00000	0.00000	0.00000
3	2.0000	0.00000	0.00000	0.00000	0.00000	0.00000
4	3.0000	0.00000	0.00000	0.00000	0.00000	0.00000
5	5.2500	0.00000	0.00000	0.00000	0.00000	0.00000
6	7.7500	0.00000	0.00000	0.00000	0.00000	0.00000
7	10.250	0.00000	0.00000	0.00000	0.00000	0.00000
8	12.750	0.00000	0.00000	0.00000	0.00000	0.00000
9	15.250	0.00000	0.00000	0.00000	0.00000	0.00000
10	17.750	0.00000	0.00000	0.00000	0.00000	0.00000
11	20.250	0.00000	0.00000	0.00000	0.00000	0.00000
12	22.750	0.00000	0.00000	0.00000	0.00000	0.00000
13	25.000	0.00000	0.00000	0.00000	0.00000	0.00000
14	26.000	0.00000	0.00000	0.00000	0.00000	0.00000
15	27.000	0.00000	0.00000	0.00000	0.00000	0.00000
16	28.000	0.00000	0.00000	0.00000	0.00000	0.00000
17	0.00000	0.50000	0.00000	0.00000	0.00000	0.00000
18	1.0000	0.50000	0.00000	0.00000	0.00000	0.00000
19	2.0000	0.50000	0.00000	0.00000	0.00000	0.00000
20	3.0000	0.50000	0.00000	0.00000	0.00000	0.00000
21	5.2500	0.50000	0.00000	0.00000	0.00000	0.00000
22	7.7500	0.50000	0.00000	0.00000	0.00000	0.00000
23	10.250	0.50000	0.00000	0.00000	0.00000	0.00000
24	12.750	0.50000	0.00000	0.00000	0.00000	0.00000
25	15.250	0.50000	0.00000	0.00000	0.00000	0.00000
26	17.750	0.50000	0.00000	0.00000	0.00000	0.00000
27	20.250	0.50000	0.00000	0.00000	0.00000	0.00000
28	22.750	0.50000	0.00000	0.00000	0.00000	0.00000
29	25.000	0.50000	0.00000	0.00000	0.00000	0.00000
30	26.000	0.50000	0.00000	0.00000	0.00000	0.00000
31	27.000	0.50000	0.00000	0.00000	0.00000	0.00000
32	28.000	0.50000	0.00000	0.00000	0.00000	0.00000
33	0.00000	1.0000	0.00000	0.00000	0.00000	0.00000
34	1.0000	1.0000	0.00000	0.00000	0.00000	0.00000
35	2.0000	1.0000	0.00000	0.00000	0.00000	0.00000
36	3.0000	1.0000	0.00000	0.00000	0.00000	0.00000
37	5.2500	1.0000	0.00000	0.00000	0.00000	0.00000
38	7.7500	1.0000	0.00000	0.00000	0.00000	0.00000
39	10.250	1.0000	0.00000	0.00000	0.00000	0.00000
40	12.750	1.0000	0.00000	0.00000	0.00000	0.00000
41	15.250	1.0000	0.00000	0.00000	0.00000	0.00000
42	17.750	1.0000	0.00000	0.00000	0.00000	0.00000
43	20.250	1.0000	0.00000	0.00000	0.00000	0.00000
44	22.750	1.0000	[illegible]	0.00000	0.00000	0.00000
45	[illegible]	[illegible]	[illegible]	0.00000	0.00000	0.00000
46	26.[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]
47	27.[illegible]	1.0000	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

51	2.0000	2.0000	[illegible]	[illegible]	0.00000	0.00000
52	3.0000	2.0000	0.00000	0.00000	0.00000	0.00000
53	5.2500	2.0000	0.00000	0.00000	0.00000	0.00000
54	7.7500	2.0000	0.00000	0.00000	0.00000	0.00000
55	10.250	2.0000	0.00000	0.00000	0.00000	0.00000
56	12.750	2.0000	0.00000	0.00000	0.00000	0.00000
57	15.250	2.0000	0.00000	0.00000	0.00000	0.00000
58	17.750	2.0000	0.00000	0.00000	0.00000	0.00000
59	20.250	2.0000	0.00000	0.00000	0.00000	0.00000
60	22.750	2.0000	0.00000	0.00000	0.00000	0.00000
61	25.000	2.0000	0.00000	0.00000	0.00000	0.00000
62	26.000	2.0000	0.00000	0.00000	0.00000	0.00000
63	27.000	2.0000	0.00000	0.00000	0.00000	0.00000
64	28.000	2.0000	0.00000	0.00000	0.00000	0.00000
65	0.00000	3.0000	0.00000	0.00000	0.00000	0.00000
66	1.0000	3.0000	0.00000	0.00000	0.00000	0.00000
67	2.0000	3.0000	0.00000	0.00000	0.00000	0.00000
68	3.0000	3.0000	0.00000	0.00000	0.00000	0.00000
69	5.2500	3.0000	0.00000	0.00000	0.00000	0.00000
70	7.7500	3.0000	0.00000	0.00000	0.00000	0.00000
71	10.250	3.0000	0.00000	0.00000	0.00000	0.00000
72	12.750	3.0000	0.00000	0.00000	0.00000	0.00000
73	15.250	3.0000	0.00000	0.00000	0.00000	0.00000
74	17.750	3.0000	0.00000	0.00000	0.00000	0.00000
75	20.250	3.0000	0.00000	0.00000	0.00000	0.00000
76	22.750	3.0000	0.00000	0.00000	0.00000	0.00000
77	25.000	3.0000	0.00000	0.00000	0.00000	0.00000
78	26.000	3.0000	0.00000	0.00000	0.00000	0.00000
79	27.000	3.0000	0.00000	0.00000	0.00000	0.00000
80	28.000	3.0000	0.00000	0.00000	0.00000	0.00000
81	0.00000	4.0000	0.00000	0.00000	0.00000	0.00000
82	1.0000	4.0000	0.00000	0.00000	0.00000	0.00000
83	2.0000	4.0000	0.00000	0.00000	0.00000	0.00000
84	3.0000	4.0000	0.00000	0.00000	0.00000	0.00000
85	5.2500	4.0000	0.00000	0.00000	0.00000	0.00000
86	7.7500	4.0000	0.00000	0.00000	0.00000	0.00000
87	10.250	4.0000	0.00000	0.00000	0.00000	0.00000
88	12.750	4.0000	0.00000	0.00000	0.00000	0.00000
89	15.250	4.0000	0.00000	0.00000	0.00000	0.00000
90	17.750	4.0000	0.00000	0.00000	0.00000	0.00000
91	20.250	4.0000	0.00000	0.00000	0.00000	0.00000
92	22.750	4.0000	0.00000	0.00000	0.00000	0.00000
93	25.000	4.0000	0.00000	0.00000	0.00000	0.00000
94	26.000	4.0000	0.00000	0.00000	0.00000	0.00000
95	27.000	4.0000	0.00000	0.00000	0.00000	0.00000
96	28.000	4.0000	0.00000	0.00000	0.00000	0.00000
97	0.00000	5.0000	0.00000	0.00000	0.00000	0.00000
98	1.0000	5.0000	0.00000	0.00000	0.00000	0.00000
99	2.0000	5.0000	0.00000	0.00000	0.00000	0.00000
100	3.0000	5.0000	0.00000	0.00000	0.00000	0.00000
101	5.2500	5.0000	0.00000	0.00000	0.00000	0.00000
102	7.7500	5.0000	0.00000	0.00000	0.00000	0.00000
103	10.250	5.0000	0.00000	0.00000	0.00000	0.00000
104	12.750	5.0000	0.00000	0.00000	0.00000	0.00000
105	15.250	5.0000	0.00000	0.00000	0.00000	0.00000
106	17.750	5.0000	0.00000	0.00000	0.00000	0.00000
107	20.250	5.0000	0.00000	0.00000	0.00000	0.00000
108	22.750	5.0000	0.00000	0.00000	0.00000	0.00000
109	25.000	5.0000	0.00000	0.00000	0.00000	0.00000
110	26.000	5.0000	0.00000	0.00000	0.00000	0.00000
111	27.000	5.0000	0.00000	0.00000	0.00000	0.00000
112	28.000	5.0000	0.00000	0.00000	0.00000	0.00000
113	0.00000	[illegible]	0.00000	0.00000	0.00000	0.00000
114	1.0000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

117	5.2500	5.5000	0.00000	0.00000	0.00000	0.00000
118	7.7500	5.5000	0.00000	0.00000	0.00000	0.00000
119	10.250	5.5000	0.00000	0.00000	0.00000	0.00000
120	12.750	5.5000	0.00000	0.00000	0.00000	0.00000
121	15.250	5.5000	0.00000	0.00000	0.00000	0.00000
122	17.750	5.5000	0.00000	0.00000	0.00000	0.00000
123	20.250	5.5000	0.00000	0.00000	0.00000	0.00000
124	22.750	5.5000	0.00000	0.00000	0.00000	0.00000
125	25.000	5.5000	0.00000	0.00000	0.00000	0.00000
126	26.000	5.5000	0.00000	0.00000	0.00000	0.00000
127	27.000	5.5000	0.00000	0.00000	0.00000	0.00000
128	28.000	5.5000	0.00000	0.00000	0.00000	0.00000
129	0.00000	6.0000	0.00000	0.00000	0.00000	0.00000
130	1.0000	6.0000	0.00000	0.00000	0.00000	0.00000
131	2.0000	6.0000	0.00000	0.00000	0.00000	0.00000
132	3.0000	6.0000	0.00000	0.00000	0.00000	0.00000
133	5.2500	6.0000	0.00000	0.00000	0.00000	0.00000
134	7.7500	6.0000	0.00000	0.00000	0.00000	0.00000
135	10.250	6.0000	0.00000	0.00000	0.00000	0.00000
136	12.750	6.0000	0.00000	0.00000	0.00000	0.00000
137	15.250	6.0000	0.00000	0.00000	0.00000	0.00000
138	17.750	6.0000	0.00000	0.00000	0.00000	0.00000
139	20.250	6.0000	0.00000	0.00000	0.00000	0.00000
140	22.750	6.0000	0.00000	0.00000	0.00000	0.00000
141	25.000	6.0000	0.00000	0.00000	0.00000	0.00000
142	26.000	6.0000	0.00000	0.00000	0.00000	0.00000
143	27.000	6.0000	0.00000	0.00000	0.00000	0.00000
144	28.000	6.0000	0.00000	0.00000	0.00000	0.00000
145	0.00000	0.00000	-1.0000	0.00000	0.00000	0.00000
146	1.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
147	2.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
148	3.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
149	5.2500	0.00000	-1.0000	0.00000	0.00000	0.00000
150	7.7500	0.00000	-1.0000	0.00000	0.00000	0.00000
151	10.250	0.00000	-1.0000	0.00000	0.00000	0.00000
152	12.750	0.00000	-1.0000	0.00000	0.00000	0.00000
153	15.250	0.00000	-1.0000	0.00000	0.00000	0.00000
154	17.750	0.00000	-1.0000	0.00000	0.00000	0.00000
155	20.250	0.00000	-1.0000	0.00000	0.00000	0.00000
156	22.750	0.00000	-1.0000	0.00000	0.00000	0.00000
157	25.000	0.00000	-1.0000	0.00000	0.00000	0.00000
158	26.000	0.00000	-1.0000	0.00000	0.00000	0.00000
159	27.000	0.00000	-1.0000	0.00000	0.00000	0.00000
160	28.000	0.00000	-1.0000	0.00000	0.00000	0.00000
161	0.00000	0.50000	-1.0000	0.00000	0.00000	0.00000
162	1.0000	0.50000	-1.0000	0.00000	0.00000	0.00000
163	2.0000	0.50000	-1.0000	0.00000	0.00000	0.00000
164	3.0000	0.50000	-1.0000	0.00000	0.00000	0.00000
165	5.2500	0.50000	-1.0000	0.00000	0.00000	0.00000
166	7.7500	0.50000	-1.0000	0.00000	0.00000	0.00000
167	10.250	0.50000	-1.0000	0.00000	0.00000	0.00000
168	12.750	0.50000	-1.0000	0.00000	0.00000	0.00000
169	15.250	0.50000	-1.0000	0.00000	0.00000	0.00000
170	17.750	0.50000	-1.0000	0.00000	0.00000	0.00000
171	20.250	0.50000	-1.0000	0.00000	0.00000	0.00000
172	22.750	0.50000	-1.0000	0.00000	0.00000	0.00000
173	25.000	0.50000	-1.0000	0.00000	0.00000	0.00000
174	26.000	0.50000	-1.0000	0.00000	0.00000	0.00000
175	27.000	0.50000	-1.0000	0.00000	0.00000	0.00000
176	28.000	0.50000	-1.0000	0.00000	0.00000	0.00000
177	0.00000	1.0000	-1.0000	0.00000	0.00000	0.00000
178	1.0000	1.0000	-1.0000	0.00000	0.00000	0.00000
179	2.0000	1.0000	-1.0000	0.00000	0.00000	0.00000
180	[illegible]	[illegible]	-1.0000	[illegible]	[illegible]	[illegible]

183	10.250	1.0000	-1.0000	0.00000	0.00000	0.00000
184	12.750	1.0000	-1.0000	0.00000	0.00000	0.00000
185	15.250	1.0000	-1.0000	0.00000	0.00000	0.00000
186	17.750	1.0000	-1.0000	0.00000	0.00000	0.00000
187	20.250	1.0000	-1.0000	0.00000	0.00000	0.00000
188	22.750	1.0000	-1.0000	0.00000	0.00000	0.00000
189	25.000	1.0000	-1.0000	0.00000	0.00000	0.00000
190	26.000	1.0000	-1.0000	0.00000	0.00000	0.00000
191	27.000	1.0000	-1.0000	0.00000	0.00000	0.00000
192	28.000	1.0000	-1.0000	0.00000	0.00000	0.00000
193	0.00000	2.0000	-1.0000	0.00000	0.00000	0.00000
194	1.0000	2.0000	-1.0000	0.00000	0.00000	0.00000
195	2.0000	2.0000	-1.0000	0.00000	0.00000	0.00000
196	3.0000	2.0000	-1.0000	0.00000	0.00000	0.00000
197	5.2500	2.0000	-1.0000	0.00000	0.00000	0.00000
198	7.7500	2.0000	-1.0000	0.00000	0.00000	0.00000
199	10.250	2.0000	-1.0000	0.00000	0.00000	0.00000
200	12.750	2.0000	-1.0000	0.00000	0.00000	0.00000
201	15.250	2.0000	-1.0000	0.00000	0.00000	0.00000
202	17.750	2.0000	-1.0000	0.00000	0.00000	0.00000
203	20.250	2.0000	-1.0000	0.00000	0.00000	0.00000
204	22.750	2.0000	-1.0000	0.00000	0.00000	0.00000
205	25.000	2.0000	-1.0000	0.00000	0.00000	0.00000
206	26.000	2.0000	-1.0000	0.00000	0.00000	0.00000
207	27.000	2.0000	-1.0000	0.00000	0.00000	0.00000
208	28.000	2.0000	-1.0000	0.00000	0.00000	0.00000
209	0.00000	3.0000	-1.0000	0.00000	0.00000	0.00000
210	1.0000	3.0000	-1.0000	0.00000	0.00000	0.00000
211	2.0000	3.0000	-1.0000	0.00000	0.00000	0.00000
212	3.0000	3.0000	-1.0000	0.00000	0.00000	0.00000
213	5.2500	3.0000	-1.0000	0.00000	0.00000	0.00000
214	7.7500	3.0000	-1.0000	0.00000	0.00000	0.00000
215	10.250	3.0000	-1.0000	0.00000	0.00000	0.00000
216	12.750	3.0000	-1.0000	0.00000	0.00000	0.00000
217	15.250	3.0000	-1.0000	0.00000	0.00000	0.00000
218	17.750	3.0000	-1.0000	0.00000	0.00000	0.00000
219	20.250	3.0000	-1.0000	0.00000	0.00000	0.00000
220	22.750	3.0000	-1.0000	0.00000	0.00000	0.00000
221	25.000	3.0000	-1.0000	0.00000	0.00000	0.00000
222	26.000	3.0000	-1.0000	0.00000	0.00000	0.00000
223	27.000	3.0000	-1.0000	0.00000	0.00000	0.00000
224	28.000	3.0000	-1.0000	0.00000	0.00000	0.00000
225	0.00000	4.0000	-1.0000	0.00000	0.00000	0.00000
226	1.0000	4.0000	-1.0000	0.00000	0.00000	0.00000
227	2.0000	4.0000	-1.0000	0.00000	0.00000	0.00000
228	3.0000	4.0000	-1.0000	0.00000	0.00000	0.00000
229	5.2500	4.0000	-1.0000	0.00000	0.00000	0.00000
230	7.7500	4.0000	-1.0000	0.00000	0.00000	0.00000
231	10.250	4.0000	-1.0000	0.00000	0.00000	0.00000
232	12.750	4.0000	-1.0000	0.00000	0.00000	0.00000
233	15.250	4.0000	-1.0000	0.00000	0.00000	0.00000
234	17.750	4.0000	-1.0000	0.00000	0.00000	0.00000
235	20.250	4.0000	-1.0000	0.00000	0.00000	0.00000
236	22.750	4.0000	-1.0000	0.00000	0.00000	0.00000
237	25.000	4.0000	-1.0000	0.00000	0.00000	0.00000
238	26.000	4.0000	-1.0000	0.00000	0.00000	0.00000
239	27.000	4.0000	-1.0000	0.00000	0.00000	0.00000
240	28.000	4.0000	-1.0000	0.00000	0.00000	0.00000
241	0.00000	5.0000	-1.0000	0.00000	0.00000	0.00000
242	1.0000	5.0000	-1.0000	0.00000	0.00000	0.00000
243	2.0000	5.0000	-1.0000	0.00000	0.00000	0.00000
244	3.0000	5.0000	-1.0000	0.00000	0.00000	0.00000
245	5.2500	5.0000	-1.0000	0.00000	0.00000	0.00000
246	7.7[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

249	15.250	5.0000	-1.0000	0.00000	0.00000	0.00000
250	17.750	5.0000	-1.0000	0.00000	0.00000	0.00000
251	20.250	5.0000	-1.0000	0.00000	0.00000	0.00000
252	22.750	5.0000	-1.0000	0.00000	0.00000	0.00000
253	25.000	5.0000	-1.0000	0.00000	0.00000	0.00000
254	26.000	5.0000	-1.0000	0.00000	0.00000	0.00000
255	27.000	5.0000	-1.0000	0.00000	0.00000	0.00000
256	28.000	5.0000	-1.0000	0.00000	0.00000	0.00000
257	0.00000	5.5000	-1.0000	0.00000	0.00000	0.00000
258	1.0000	5.5000	-1.0000	0.00000	0.00000	0.00000
259	2.0000	5.5000	-1.0000	0.00000	0.00000	0.00000
260	3.0000	5.5000	-1.0000	0.00000	0.00000	0.00000
261	5.2500	5.5000	-1.0000	0.00000	0.00000	0.00000
262	7.7500	5.5000	-1.0000	0.00000	0.00000	0.00000
263	10.250	5.5000	-1.0000	0.00000	0.00000	0.00000
264	12.750	5.5000	-1.0000	0.00000	0.00000	0.00000
265	15.250	5.5000	-1.0000	0.00000	0.00000	0.00000
266	17.750	5.5000	-1.0000	0.00000	0.00000	0.00000
267	20.250	5.5000	-1.0000	0.00000	0.00000	0.00000
268	22.750	5.5000	-1.0000	0.00000	0.00000	0.00000
269	25.000	5.5000	-1.0000	0.00000	0.00000	0.00000
270	26.000	5.5000	-1.0000	0.00000	0.00000	0.00000
271	27.000	5.5000	-1.0000	0.00000	0.00000	0.00000
272	28.000	5.5000	-1.0000	0.00000	0.00000	0.00000
273	0.00000	6.0000	-1.0000	0.00000	0.00000	0.00000
274	1.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
275	2.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
276	3.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
277	5.2500	6.0000	-1.0000	0.00000	0.00000	0.00000
278	7.7500	6.0000	-1.0000	0.00000	0.00000	0.00000
279	10.250	6.0000	-1.0000	0.00000	0.00000	0.00000
280	12.750	6.0000	-1.0000	0.00000	0.00000	0.00000
281	15.250	6.0000	-1.0000	0.00000	0.00000	0.00000
282	17.750	6.0000	-1.0000	0.00000	0.00000	0.00000
283	20.250	6.0000	-1.0000	0.00000	0.00000	0.00000
284	22.750	6.0000	-1.0000	0.00000	0.00000	0.00000
285	25.000	6.0000	-1.0000	0.00000	0.00000	0.00000
286	26.000	6.0000	-1.0000	0.00000	0.00000	0.00000
287	27.000	6.0000	-1.0000	0.00000	0.00000	0.00000
288	28.000	6.0000	-1.0000	0.00000	0.00000	0.00000
326	7.7500	1.0000	3.5000	0.00000	0.00000	0.00000
342	7.7500	2.0000	3.5000	0.00000	0.00000	0.00000
358	7.7500	3.0000	3.5000	0.00000	0.00000	0.00000
374	7.7500	4.0000	3.5000	0.00000	0.00000	0.00000
390	7.7500	5.0000	3.5000	0.00000	0.00000	0.00000
331	20.250	1.0000	3.5000	0.00000	0.00000	0.00000
347	20.250	2.0000	3.5000	0.00000	0.00000	0.00000
363	20.250	3.0000	3.5000	0.00000	0.00000	0.00000
379	20.250	4.0000	3.5000	0.00000	0.00000	0.00000
395	20.250	5.0000	3.5000	0.00000	0.00000	0.00000

***** THE FOLLOWING TABLE CONTAINS THE NODES IN ASCENDING ORDER *****

(TO SUPPRESS ONLY THIS TABLE PUT /NOPR CARD IMMED. BEFORE F CARD TERMINATOR)

	LOCATION			ROTATION (DEGREES)		
NODE	X	Y	Z	THXY	THYZ	THXZ
1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
2	1.0000	0.00000	0.00000	0.00000	0.00000	0.00000
[illegible]	2.0000	[illegible]	[illegible]	[illegible]	0.00000	0.00000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.00000	0.00000

6	7.7500	0.00000	0.00000	0.00000	0.00000	0.00000
7	10.250	0.00000	0.00000	0.00000	0.00000	0.00000
8	12.750	0.00000	0.00000	0.00000	0.00000	0.00000
9	15.250	0.00000	0.00000	0.00000	0.00000	0.00000
10	17.750	0.00000	0.00000	0.00000	0.00000	0.00000
11	20.250	0.00000	0.00000	0.00000	0.00000	0.00000
12	22.750	0.00000	0.00000	0.00000	0.00000	0.00000
13	25.000	0.00000	0.00000	0.00000	0.00000	0.00000
14	26.000	0.00000	0.00000	0.00000	0.00000	0.00000
15	27.000	0.00000	0.00000	0.00000	0.00000	0.00000
16	28.000	0.00000	0.00000	0.00000	0.00000	0.00000
17	0.00000	0.50000	0.00000	0.00000	0.00000	0.00000
18	1.0000	0.50000	0.00000	0.00000	0.00000	0.00000
19	2.0000	0.50000	0.00000	0.00000	0.00000	0.00000
20	3.0000	0.50000	0.00000	0.00000	0.00000	0.00000
21	5.2500	0.50000	0.00000	0.00000	0.00000	0.00000
22	7.7500	0.50000	0.00000	0.00000	0.00000	0.00000
23	10.250	0.50000	0.00000	0.00000	0.00000	0.00000
24	12.750	0.50000	0.00000	0.00000	0.00000	0.00000
25	15.250	0.50000	0.00000	0.00000	0.00000	0.00000
26	17.750	0.50000	0.00000	0.00000	0.00000	0.00000
27	20.250	0.50000	0.00000	0.00000	0.00000	0.00000
28	22.750	0.50000	0.00000	0.00000	0.00000	0.00000
29	25.000	0.50000	0.00000	0.00000	0.00000	0.00000
30	26.000	0.50000	0.00000	0.00000	0.00000	0.00000
31	27.000	0.50000	0.00000	0.00000	0.00000	0.00000
32	28.000	0.50000	0.00000	0.00000	0.00000	0.00000
33	0.00000	1.0000	0.00000	-0.00000	0.00000	0.00000
34	1.0000	1.0000	0.00000	0.00000	0.00000	0.00000
35	2.0000	1.0000	0.00000	0.00000	0.00000	0.00000
36	3.0000	1.0000	0.00000	0.00000	0.00000	0.00000
37	5.2500	1.0000	0.00000	0.00000	0.00000	0.00000
38	7.7500	1.0000	0.00000	0.00000	0.00000	0.00000
39	10.250	1.0000	0.00000	0.00000	0.00000	0.00000
40	12.750	1.0000	0.00000	0.00000	0.00000	0.00000
41	15.250	1.0000	0.00000	0.00000	0.00000	0.00000
42	17.750	1.0000	0.00000	0.00000	0.00000	0.00000
43	20.250	1.0000	0.00000	0.00000	0.00000	0.00000
44	22.750	1.0000	0.00000	0.00000	0.00000	0.00000
45	25.000	1.0000	0.00000	0.00000	0.00000	0.00000
46	26.000	1.0000	0.00000	0.00000	0.00000	0.00000
47	27.000	1.0000	0.00000	0.00000	0.00000	0.00000
48	28.000	1.0000	0.00000	0.00000	0.00000	0.00000
49	0.00000	2.0000	0.00000	0.00000	0.00000	0.00000
50	1.0000	2.0000	0.00000	0.00000	0.00000	0.00000
51	2.0000	2.0000	0.00000	0.00000	0.00000	0.00000
52	3.0000	2.0000	0.00000	0.00000	0.00000	0.00000
53	5.2500	2.0000	0.00000	0.00000	0.00000	0.00000
54	7.7500	2.0000	0.00000	0.00000	0.00000	0.00000
55	10.250	2.0000	0.00000	0.00000	0.00000	0.00000
56	12.750	2.0000	0.00000	0.00000	0.00000	0.00000
57	15.250	2.0000	0.00000	0.00000	0.00000	0.00000
58	17.750	2.0000	0.00000	0.00000	0.00000	0.00000
59	20.250	2.0000	0.00000	0.00000	0.00000	0.00000
60	22.750	2.0000	0.00000	0.00000	0.00000	0.00000
61	25.000	2.0000	0.00000	0.00000	0.00000	0.00000
62	26.000	2.0000	0.00000	0.00000	0.00000	0.00000
63	27.000	2.0000	0.00000	0.00000	0.00000	0.00000
64	28.000	2.0000	0.00000	0.00000	0.00000	0.00000
65	0.00000	3.0000	0.00000	0.00000	0.00000	0.00000
66	1.0000	3.0000	0.00000	0.00000	0.00000	0.00000
67	2.0000	3.0000	0.00000	0.00000	0.00000	0.00000
68	3.0000	3.0000	[illegible]	0.00000	0.00000	0.00000
69	5.2500	3.0000	[illegible]	0.00000	0.00000	0.00000
70	7.7500	[illegible]	[illegible]	[illegible]	0.00000	0.00000

72	12.750	3.0000	0.00000	0.00000	0.00000	0.00000
73	15.250	3.0000	0.00000	0.00000	0.00000	0.00000
74	17.750	3.0000	0.00000	0.00000	0.00000	0.00000
75	20.250	3.0000	0.00000	0.00000	0.00000	0.00000
76	22.750	3.0000	0.00000	0.00000	0.00000	0.00000
77	25.000	3.0000	0.00000	0.00000	0.00000	0.00000
78	26.000	3.0000	0.00000	0.00000	0.00000	0.00000
79	27.000	3.0000	0.00000	0.00000	0.00000	0.00000
80	28.000	3.0000	0.00000	0.00000	0.00000	0.00000
81	0.00000	4.0000	0.00000	0.00000	0.00000	0.00000
82	1.0000	4.0000	0.00000	0.00000	0.00000	0.00000
83	2.0000	4.0000	0.00000	0.00000	0.00000	0.00000
84	3.0000	4.0000	0.00000	0.00000	0.00000	0.00000
85	5.2500	4.0000	0.00000	0.00000	0.00000	0.00000
86	7.7500	4.0000	0.00000	0.00000	0.00000	0.00000
87	10.250	4.0000	0.00000	0.00000	0.00000	0.00000
88	12.750	4.0000	0.00000	0.00000	0.00000	0.00000
89	15.250	4.0000	0.00000	0.00000	0.00000	0.00000
90	17.750	4.0000	0.00000	0.00000	0.00000	0.00000
91	20.250	4.0000	0.00000	0.00000	0.00000	0.00000
92	22.750	4.0000	0.00000	0.00000	0.00000	0.00000
93	25.000	4.0000	0.00000	0.00000	0.00000	0.00000
94	26.000	4.0000	0.00000	0.00000	0.00000	0.00000
95	27.000	4.0000	0.00000	0.00000	0.00000	0.00000
96	28.000	4.0000	0.00000	0.00000	0.00000	0.00000
97	0.00000	5.0000	0.00000	0.00000	0.00000	0.00000
98	1.0000	5.0000	0.00000	0.00000	0.00000	0.00000
99	2.0000	5.0000	0.00000	0.00000	0.00000	0.00000
100	3.0000	5.0000	0.00000	0.00000	0.00000	0.00000
101	5.2500	5.0000	0.00000	0.00000	0.00000	0.00000
102	7.7500	5.0000	0.00000	0.00000	0.00000	0.00000
103	10.250	5.0000	0.00000	0.00000	0.00000	0.00000
104	12.750	5.0000	0.00000	0.00000	0.00000	0.00000
105	15.250	5.0000	0.00000	0.00000	0.00000	0.00000
106	17.750	5.0000	0.00000	0.00000	0.00000	0.00000
107	20.250	5.0000	0.00000	0.00000	0.00000	0.00000
108	22.750	5.0000	0.00000	0.00000	0.00000	0.00000
109	25.000	5.0000	0.00000	0.00000	0.00000	0.00000
110	26.000	5.0000	0.00000	0.00000	0.00000	0.00000
111	27.000	5.0000	0.00000	0.00000	0.00000	0.00000
112	28.000	5.0000	0.00000	0.00000	0.00000	0.00000
113	0.00000	5.5000	0.00000	0.00000	0.00000	0.00000
114	1.0000	5.5000	0.00000	0.00000	0.00000	0.00000
115	2.0000	5.5000	0.00000	0.00000	0.00000	0.00000
116	3.0000	5.5000	0.00000	0.00000	0.00000	0.00000
117	5.2500	5.5000	0.00000	0.00000	0.00000	0.00000
118	7.7500	5.5000	0.00000	0.00000	0.00000	0.00000
119	10.250	5.5000	0.00000	0.00000	0.00000	0.00000
120	12.750	5.5000	0.00000	0.00000	0.00000	0.00000
121	15.250	5.5000	0.00000	0.00000	0.00000	0.00000
122	17.750	5.5000	0.00000	0.00000	0.00000	0.00000
123	20.250	5.5000	0.00000	0.00000	0.00000	0.00000
124	22.750	5.5000	0.00000	0.00000	0.00000	0.00000
125	25.000	5.5000	0.00000	0.00000	0.00000	0.00000
126	26.000	5.5000	0.00000	0.00000	0.00000	0.00000
127	27.000	5.5000	0.00000	0.00000	0.00000	0.00000
128	28.000	5.5000	0.00000	0.00000	0.00000	0.00000
129	0.00000	6.0000	0.00000	0.00000	0.00000	0.00000
130	1.0000	6.0000	0.00000	0.00000	0.00000	0.00000
131	2.0000	6.0000	0.00000	0.00000	0.00000	0.00000
132	3.0000	6.0000	0.00000	0.00000	0.00000	0.00000
133	5.2500	6.0000	0.00000	0.00000	0.00000	0.00000
134	7.7500	6.0000	0.00000	0.00000	0.00000	0.00000
[illegible]	10.250	6.0000	[illegible]	0.00000	0.00000	0.00000

138	17.750	6.0000	0.00000	0.00000	0.00000	0.00000
139	20.250	6.0000	0.00000	0.00000	0.00000	0.00000
140	22.750	6.0000	0.00000	0.00000	0.00000	0.00000
141	25.000	6.0000	0.00000	0.00000	0.00000	0.00000
142	26.000	6.0000	0.00000	0.00000	0.00000	0.00000
143	27.000	6.0000	0.00000	0.00000	0.00000	0.00000
144	28.000	6.0000	-1.0000	0.00000	0.00000	0.00000
145	0.00000	0.00000	-1.0000	0.00000	0.00000	0.00000
146	1.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
147	2.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
148	3.0000	0.00000	-1.0000	0.00000	0.00000	0.00000
149	5.2500	0.00000	-1.0000	0.00000	0.00000	0.00000
150	7.7500	0.00000	-1.0000	0.00000	0.00000	0.00000
151	10.250	0.00000	-1.0000	0.00000	0.00000	0.00000
152	12.750	0.00000	-1.0000	0.00000	0.00000	0.00000
153	15.250	0.00000	-1.0000	0.00000	0.00000	0.00000
154	17.750	0.00000	-1.0000	0.00000	0.00000	0.00000
155	20.250	0.00000	-1.0000	0.00000	0.00000	0.00000
156	22.750	0.00000	-1.0000	0.00000	0.00000	0.00000
157	25.000	0.00000	-1.0000	0.00000	0.00000	0.00000
158	26.000	0.00000	-1.0000	0.00000	0.00000	0.00000
159	27.000	0.00000	-1.0000	0.00000	0.00000	0.00000
160	28.000	0.00000	-1.0000	0.00000	0.00000	0.00000
161	0.00000	0.50000	-1.0000	0.00000	0.00000	0.00000
162	1.0000	0.50000	-1.0000	0.00000	0.00000	0.00000
163	2.0000	0.50000	-1.0000	0.00000	0.00000	0.00000
164	3.0000	0.50000	-1.0000	0.00000	0.00000	0.00000
165	5.2500	0.50000	-1.0000	0.00000	0.00000	0.00000
166	7.7500	0.50000	-1.0000	0.00000	0.00000	0.00000
167	10.250	0.50000	-1.0000	0.00000	0.00000	0.00000
168	12.750	0.50000	-1.0000	0.00000	0.00000	0.00000
169	15.250	0.50000	-1.0000	0.00000	0.00000	0.00000
170	17.750	0.50000	-1.0000	0.00000	0.00000	0.00000
171	20.250	0.50000	-1.0000	0.00000	0.00000	0.00000
172	22.750	0.50000	-1.0000	0.00000	0.00000	0.00000
173	25.000	0.50000	-1.0000	0.00000	0.00000	0.00000
174	26.000	0.50000	-1.0000	0.00000	0.00000	0.00000
175	27.000	0.50000	-1.0000	0.00000	0.00000	0.00000
176	28.000	0.50000	-1.0000	0.00000	0.00000	0.00000
177	0.00000	1.0000	-1.0000	0.00000	0.00000	0.00000
178	1.0000	1.0000	-1.0000	0.00000	0.00000	0.00000
179	2.0000	1.0000	-1.0000	0.00000	0.00000	0.00000
180	3.0000	1.0000	-1.0000	0.00000	0.00000	0.00000
181	5.2500	1.0000	-1.0000	0.00000	0.00000	0.00000
182	7.7500	1.0000	-1.0000	0.00000	0.00000	0.00000
183	10.250	1.0000	-1.0000	0.00000	0.00000	0.00000
184	12.750	1.0000	-1.0000	0.00000	0.00000	0.00000
185	15.250	1.0000	-1.0000	0.00000	0.00000	0.00000
186	17.750	1.0000	-1.0000	0.00000	0.00000	0.00000
187	20.250	1.0000	-1.0000	0.00000	0.00000	0.00000
188	22.750	1.0000	-1.0000	0.00000	0.00000	0.00000
189	25.000	1.0000	-1.0000	0.00000	0.00000	0.00000
190	26.000	1.0000	-1.0000	0.00000	0.00000	0.00000
191	27.000	1.0000	-1.0000	0.00000	0.00000	0.00000
192	28.000	1.0000	-1.0000	0.00000	0.00000	0.00000
193	0.00000	2.0000	-1.0000	0.00000	0.00000	0.00000
194	1.0000	2.0000	-1.0000	0.00000	0.00000	0.00000
195	2.0000	2.0000	-1.0000	0.00000	0.00000	0.00000
196	3.0000	2.0000	-1.0000	0.00000	0.00000	0.00000
197	5.2500	2.0000	-1.0000	0.00000	0.00000	0.00000
198	7.7500	2.0000	-1.0000	0.00000	0.00000	0.00000
199	10.250	2.0000	-1.0000	0.00000	0.00000	0.00000
200	12.750	2.0000	-1.0000	0.00000	0.00000	0.00000
201	15.250	[illegible]	[illegible]	[illegible]	0.00000	0.00000

204	22.750	2.0000	-1.0000	0.00000	0.00000	0.00000
205	25.000	2.0000	-1.0000	0.00000	0.00000	0.00000
206	26.000	2.0000	-1.0000	0.00000	0.00000	0.00000
207	27.000	2.0000	-1.0000	0.00000	0.00000	0.00000
208	28.000	2.0000	-1.0000	0.00000	0.00000	0.00000
209	0.00000	3.0000	-1.0000	0.00000	0.00000	0.00000
210	1.0000	3.0000	-1.0000	0.00000	0.00000	0.00000
211	2.0000	3.0000	-1.0000	0.00000	0.00000	0.00000
212	3.0000	3.0000	-1.0000	0.00000	0.00000	0.00000
213	5.2500	3.0000	-1.0000	0.00000	0.00000	0.00000
214	7.7500	3.0000	-1.0000	0.00000	0.00000	0.00000
215	10.250	3.0000	-1.0000	0.00000	0.00000	0.00000
216	12.750	3.0000	-1.0000	0.00000	0.00000	0.00000
217	15.250	3.0000	-1.0000	0.00000	0.00000	0.00000
218	17.750	3.0000	-1.0000	0.00000	0.00000	0.00000
219	20.250	3.0000	-1.0000	0.00000	0.00000	0.00000
220	22.750	3.0000	-1.0000	0.00000	0.00000	0.00000
221	25.000	3.0000	-1.0000	0.00000	0.00000	0.00000
222	26.000	3.0000	-1.0000	0.00000	0.00000	0.00000
223	27.000	3.0000	-1.0000	0.00000	0.00000	0.00000
224	28.000	3.0000	-1.0000	0.00000	0.00000	0.00000
225	0.00000	4.0000	-1.0000	0.00000	0.00000	0.00000
226	1.0000	4.0000	-1.0000	0.00000	0.00000	0.00000
227	2.0000	4.0000	-1.0000	0.00000	0.00000	0.00000
228	3.0000	4.0000	-1.0000	0.00000	0.00000	0.00000
229	5.2500	4.0000	-1.0000	0.00000	0.00000	0.00000
230	7.7500	4.0000	-1.0000	0.00000	0.00000	0.00000
231	10.250	4.0000	-1.0000	0.00000	0.00000	0.00000
232	12.750	4.0000	-1.0000	0.00000	0.00000	0.00000
233	15.250	4.0000	-1.0000	0.00000	0.00000	0.00000
234	17.750	4.0000	-1.0000	0.00000	0.00000	0.00000
235	20.250	4.0000	-1.0000	0.00000	0.00000	0.00000
236	22.750	4.0000	-1.0000	0.00000	0.00000	0.00000
237	25.000	4.0000	-1.0000	0.00000	0.00000	0.00000
238	26.000	4.0000	-1.0000	0.00000	0.00000	0.00000
239	27.000	4.0000	-1.0000	0.00000	0.00000	0.00000
240	28.000	4.0000	-1.0000	0.00000	0.00000	0.00000
241	0.00000	5.0000	-1.0000	0.00000	0.00000	0.00000
242	1.0000	5.0000	-1.0000	0.00000	0.00000	0.00000
243	2.0000	5.0000	-1.0000	0.00000	0.00000	0.00000
244	3.0000	5.0000	-1.0000	0.00000	0.00000	0.00000
245	5.2500	5.0000	-1.0000	0.00000	0.00000	0.00000
246	7.7500	5.0000	-1.0000	0.00000	0.00000	0.00000
247	10.250	5.0000	-1.0000	0.00000	0.00000	0.00000
248	12.750	5.0000	-1.0000	0.00000	0.00000	0.00000
249	15.250	5.0000	-1.0000	0.00000	0.00000	0.00000
250	17.750	5.0000	-1.0000	0.00000	0.00000	0.00000
251	20.250	5.0000	-1.0000	0.00000	0.00000	0.00000
252	22.750	5.0000	-1.0000	0.00000	0.00000	0.00000
253	25.000	5.0000	-1.0000	0.00000	0.00000	0.00000
254	26.000	5.0000	-1.0000	0.00000	0.00000	0.00000
255	27.000	5.0000	-1.0000	0.00000	0.00000	0.00000
256	28.000	5.0000	-1.0000	0.00000	0.00000	0.00000
257	0.00000	5.5000	-1.0000	0.00000	0.00000	0.00000
258	1.0000	5.5000	-1.0000	0.00000	0.00000	0.00000
259	2.0000	5.5000	-1.0000	0.00000	0.00000	0.00000
260	3.0000	5.5000	-1.0000	0.00000	0.00000	0.00000
261	5.2500	5.5000	-1.0000	0.00000	0.00000	0.00000
262	7.7500	5.5000	-1.0000	0.00000	0.00000	0.00000
263	10.250	5.5000	-1.0000	0.00000	0.00000	0.00000
264	12.750	5.5000	-1.0000	0.00000	0.00000	0.00000
265	15.250	5.5000	-1.0000	0.00000	0.00000	0.00000
266	17.750	5.5000	-1.0000	0.00000	0.00000	0.00000
267	20.250	[illegible]	[illegible]	[illegible]	0.00000	0.00000

		5.5000	-1.0000	0.00000	0.00000	0.00000
270	26.000	5.5000	-1.0000	0.00000	0.00000	0.00000
271	27.000	5.5000	-1.0000	0.00000	0.00000	0.00000
272	28.000	6.0000	-1.0000	0.00000	0.00000	0.00000
273	0.00000	6.0000	-1.0000	0.00000	0.00000	0.00000
274	1.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
275	2.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
276	3.0000	6.0000	-1.0000	0.00000	0.00000	0.00000
277	5.2500	6.0000	-1.0000	0.00000	0.00000	0.00000
278	7.7500	6.0000	-1.0000	0.00000	0.00000	0.00000
279	10.250	6.0000	-1.0000	0.00000	0.00000	0.00000
280	12.750	6.0000	-1.0000	0.00000	0.00000	0.00000
281	15.250	6.0000	-1.0000	0.00000	0.00000	0.00000
282	17.750	6.0000	-1.0000	0.00000	0.00000	0.00000
283	20.250	6.0000	-1.0000	0.00000	0.00000	0.00000
284	22.750	6.0000	-1.0000	0.00000	0.00000	0.00000
285	25.000	6.0000	-1.0000	0.00000	0.00000	0.00000
286	26.000	6.0000	-1.0000	0.00000	0.00000	0.00000
287	27.000	6.0000	-1.0000	0.00000	0.00000	0.00000
288	28.000	6.0000	-1.0000	0.00000	0.00000	0.00000
326	7.7500	1.0000	3.5000	0.00000	0.00000	0.00000
331	20.250	1.0000	3.5000	0.00000	0.00000	0.00000
342	7.7500	2.0000	3.5000	0.00000	0.00000	0.00000
347	20.250	2.0000	3.5000	0.00000	0.00000	0.00000
358	7.7500	3.0000	3.5000	0.00000	0.00000	0.00000
363	20.250	3.0000	3.5000	0.00000	0.00000	0.00000
374	7.7500	4.0000	3.5000	0.00000	0.00000	0.00000
379	20.250	4.0000	3.5000	0.00000	0.00000	0.00000
390	7.7500	5.0000	3.5000	0.00000	0.00000	0.00000
395	20.250	5.0000	3.5000	0.00000	0.00000	0.00000

XMIN= 0.0000 XMAX= 28.00 YMIN= 0.0000 YMAX= 6.000 ZMIN= -1.000 ZMAX= 3.500

CPS 3.016

OCTAL STORAGE REQUIREMENTS FOR NODE INPUT
CORE= 00106234 MEMORY= 00004502 TOTAL= 00112736 MEMORY AVAILABLE= 00221621
MAXIMUM NODE NUMBER FOR AVAILABLE AUXILIARY MEMORY SIZE= 12440

MODEL GEOMETRY WRITTEN ON FILE TAPE 3

PROBLEM DATA WRITTEN ON FILE TAPE7

TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS   14.1725   5/ 8/85 CP=   3.031

***** MATERIAL PROPERTIES (CARD H) *****

```
MATERIAL   1

 EX   =     29000.0
 EY   =     29000.0
 NUXY =    0.300000
 ALPX =    0.000000
 ALPY =    0.000000
 DENS =    0.000000

MATERIAL   2

 EX   =     315.000
 ALPX =    0.000000
 DENS =    0.000000

MATERIAL   3

 EX   =     29000.0
 ALPX =    0.000000
 DENS =    0.000000

MATERIAL   4

 EX   =     29000.0
 EY   =     29000.0
 NUXY =    0.300000
 ALPX =    0.000000
 ALPY =    0.000000
 DENS =    0.000000

MATERIAL   5

 EX   =     29000.0
 ALPX =    0.000000
 NUXY =    0.300000
 DENS =    0.000000
```

OCTAL STORAGE REQUIREMENTS FOR H THROUGH K CARD DATA INPUT   CP=   3.101
CORE= 00104313   MEMORY= 00000000   TOTAL= 00104313   MEMORY AVAILABLE= 00221772

ANSYS - ENGINEERING ANALYSIS SYSTEM   REVISION 3   UPDATE 67L   UCS-CRAY JUNE 1,1979
SWANSON ANALYSIS SYSTEMS, INC.   HOUSTON, PENNSYLVANIA 15342   PHONE (412) 746-3304

TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS   14.1725   5/ 8/85 CP=   3.111

LOAD STEP NUMBER =   1

***** LOAD STEP OPTIONS (CARDS L AND M) *****

	VALUE	VARIABLE NAME	COLUMNS	
LOAD STEP KEY	1	KDIS	2-3	
TEMPERATURE KEY	0	KTEMP	4-6	
NUMBER OF ITERATIONS.	-10	NITTER	7-9	
STRESS PRINTOUT FREQUENCY . .	10	NPRINT	10-12	
TIME AT END OF LOAD STEP. . .	0.00000	TIME	13-24	
DISPL. PRINTOUT FREQUENCY . .	10	NDPRNT	70-72	(CARD M)
MD CARD KEY	1	IMD	80	(CARD M)

***** SPECIAL LOADING PARAMETERS (CARD MD) *****

HARMONIC LOAD PARAMETERS   MODE =   0   ISYM =   1

KEY TO TERMINATE RUN IF NO CONVERGENCE =   1.

***** SPECIFIED DISPLACEMENTS (CARD N) *****

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	0.000000	0.000000				
2	0.000000	0.000000				
3	0.000000	0.000000				
4	0.000000	0.000000				
5	0.000000	0.000000				
6	0.000000	0.000000				
7	0.000000	0.000000				
8	0.000000	0.000000				
9	0.000000	0.000000				
10	0.000000	0.000000				
11	0.000000	0.000000				
12	0.000000	0.000000				
13	0.000000	0.000000				
14	0.000000	0.000000				
15	0.000000	0.000000				
16	0.000000	0.000000				
17	0.000000	0.000000				
18	0.000000	0.000000				
19	0.000000	0.000000				
20	0.000000	0.000000				
21	0.000000	0.000000				
22	0.000000	0.000000				
23	0.000000	0.000000				
24	0.000000	0.000000				
25	0.000000	0.000000				
26	0.000000	0.000000				
27	0.000000	0.000000				
[illegible]	[illegible]	[illegible]				

30	0.000000	0.000000
31	0.000000	0.000000
32	0.000000	0.000000
33	0.000000	0.000000
34	0.000000	0.000000
35	0.000000	0.000000
36	0.000000	0.000000
37	0.000000	0.000000
38	0.000000	0.000000
39	0.000000	0.000000
40	0.000000	0.000000
41	0.000000	0.000000
42	0.000000	0.000000
43	0.000000	0.000000
44	0.000000	0.000000
45	0.000000	0.000000
46	0.000000	0.000000
47	0.000000	0.000000
48	0.000000	0.000000
49	0.000000	0.000000
50	0.000000	0.000000
51	0.000000	0.000000
52	0.000000	0.000000
53	0.000000	0.000000
54	0.000000	0.000000
55	0.000000	0.000000
56	0.000000	0.000000
57	0.000000	0.000000
58	0.000000	0.000000
59	0.000000	0.000000
60	0.000000	0.000000
61	0.000000	0.000000
62	0.000000	0.000000
63	0.000000	0.000000
64	0.000000	0.000000
65	0.000000	0.000000
66	0.000000	0.000000
67	0.000000	0.000000
68	0.000000	0.000000
69	0.000000	0.000000
70	0.000000	0.000000
71	0.000000	0.000000
72	0.000000	0.000000
73	0.000000	0.000000
74	0.000000	0.000000
75	0.000000	0.000000
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77	0.000000	0.000000
78	0.000000	0.000000
79	0.000000	0.000000
80	0.000000	0.000000
81	0.000000	0.000000
82	0.000000	0.000000
83	0.000000	0.000000
84	0.000000	0.000000
85	0.000000	0.000000
86	0.000000	0.000000
87	0.000000	0.000000
88	0.000000	0.000000
89	0.000000	0.000000
90	0.000000	0.000000
91	0.000000	0.000000
92	0.000000	0.000000
93	0.000000	0.000000

96	0.000000	0.000000	
97	0.000000	0.000000	
98	0.000000	0.000000	
99	0.000000	0.000000	
100	0.000000	0.000000	
101	0.000000	0.000000	
102	0.000000	0.000000	
103	0.000000	0.000000	
104	0.000000	0.000000	
105	0.000000	0.000000	
106	0.000000	0.000000	
107	0.000000	0.000000	
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109	0.000000	0.000000	
110	0.000000	0.000000	
111	0.000000	0.000000	
112	0.000000	0.000000	
113	0.000000	0.000000	
114	0.000000	0.000000	
115	0.000000	0.000000	
116	0.000000	0.000000	
117	0.000000	0.000000	
118	0.000000	0.000000	
119	0.000000	0.000000	
120	0.000000	0.000000	
121	0.000000	0.000000	
122	0.000000	0.000000	
123	0.000000	0.000000	
124	0.000000	0.000000	
125	0.000000	0.000000	
126	0.000000	0.000000	
127	0.000000	0.000000	
128	0.000000	0.000000	
129	0.000000	0.000000	
130	0.000000	0.000000	
131	0.000000	0.000000	
132	0.000000	0.000000	
133	0.000000	0.000000	
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141	0.000000	0.000000	
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143	0.000000	0.000000	
144	0.000000	0.000000	
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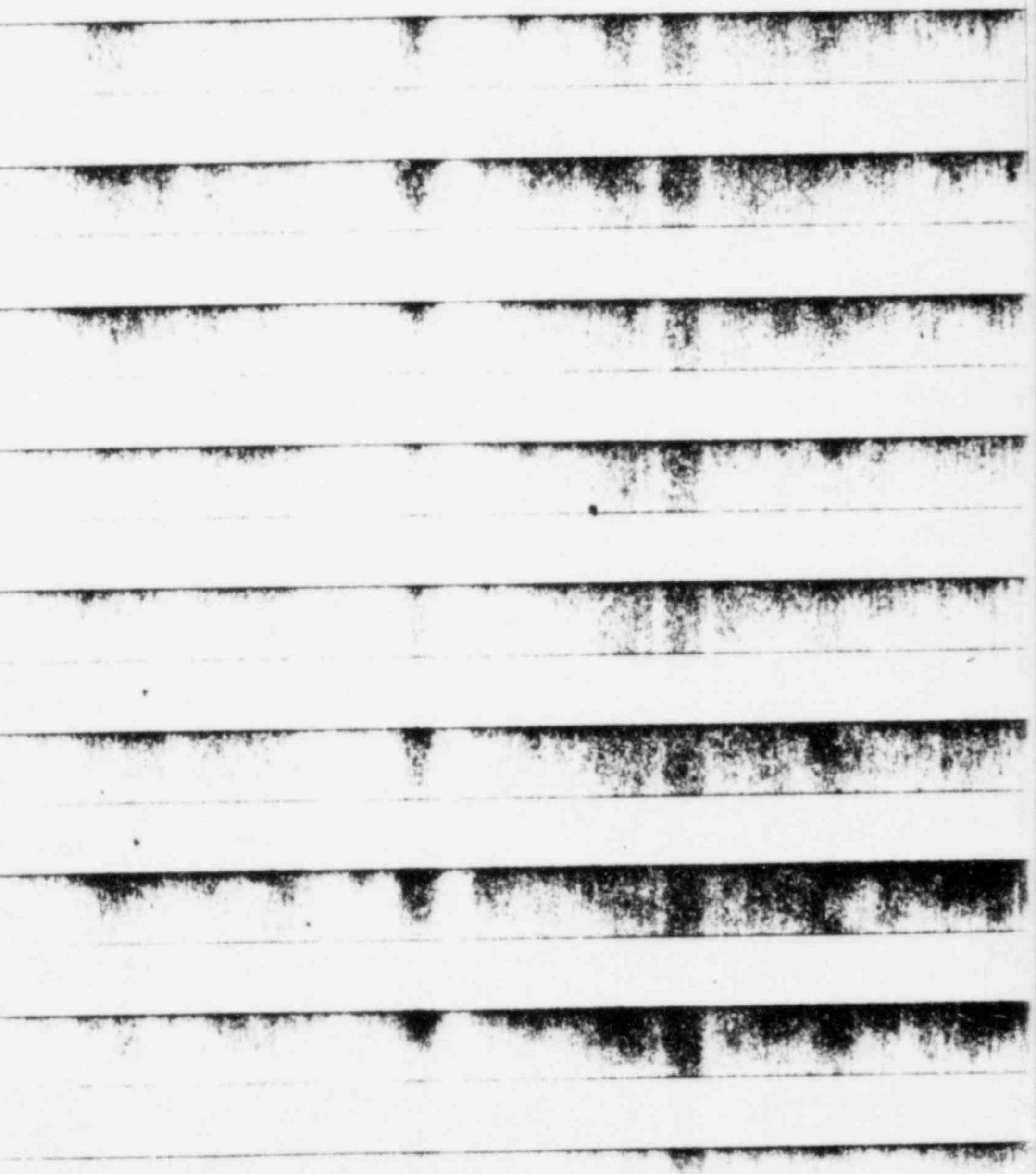
146	0.000000	0.000000	0.000000
147	0.000000	0.000000	0.000000
148	0.000000	0.000000	0.000000
149	0.000000	0.000000	0.000000
150	0.000000	0.000000	0.000000
151	0.000000	0.000000	0.000000
152	0.000000	0.000000	0.000000
153	0.000000	0.000000	0.000000
154	0.000000	0.000000	0.000000
155	0.000000	0.000000	0.000000
156	0.000000	0.000000	0.000000
157	0.000000	0.000000	0.000000
158	0.000000	0.000000	0.000000
159	0.000000	0.000000	0.000000
[illegible]	[illegible]	[illegible]	[illegible]



162	0.000000	0.000000	0.000000
163	0.000000	0.000000	0.000000
164	0.000000	0.000000	0.000000
165	0.000000	0.000000	0.000000
166	0.000000	0.000000	0.000000
167	0.000000	0.000000	0.000000
168	0.000000	0.000000	0.000000
169	0.000000	0.000000	0.000000
170	0.000000	0.000000	0.000000
171	0.000000	0.000000	0.000000
172	0.000000	0.000000	0.000000
173	0.000000	0.000000	0.000000
174	0.000000	0.000000	0.000000
175	0.000000	0.000000	0.000000
176	0.000000	0.000000	0.000000
177	0.000000	0.000000	0.000000
178	0.000000	0.000000	0.000000
179	0.000000	0.000000	0.000000
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190	0.000000	0.000000	0.000000
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194	0.000000	0.000000	0.000000
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210	0.000000	0.000000	0.000000
211	0.000000	0.000000	0.000000
212	0.000000	0.000000	0.000000
213	0.000000	0.000000	0.000000
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218	0.000000	0.000000	0.000000
219	0.000000	0.000000	0.000000
220	0.000000	0.000000	0.000000
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225	0.000000	0.000000	0.000000

228	0.000000	0.000000	0.000000
229	0.000000	0.000000	0.000000
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232	0.000000	0.000000	0.000000
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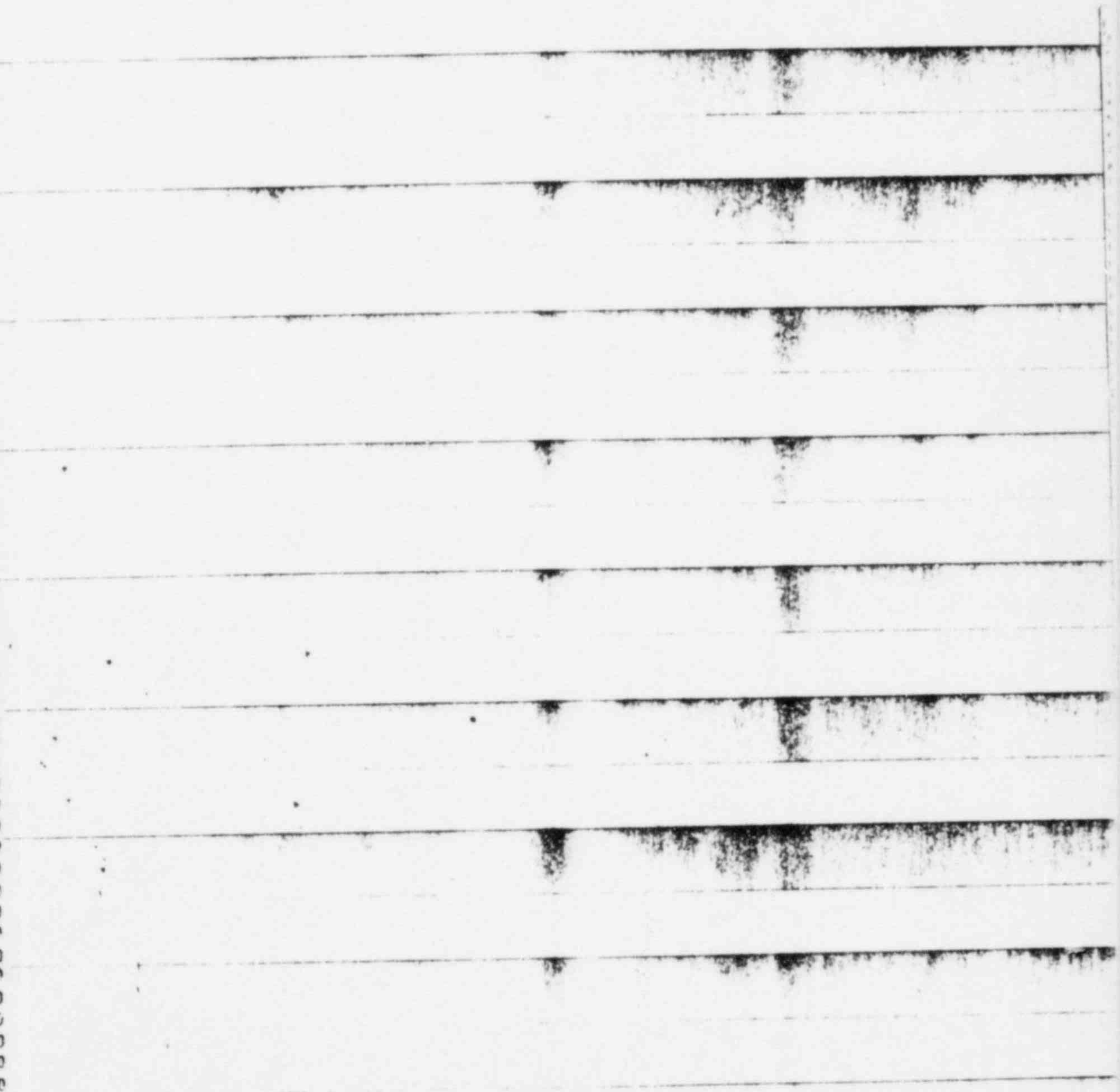
237	0.000000	0.000000	0.000000
238	0.000000	0.000000	0.000000
239	0.000000	0.000000	0.000000
240	0.000000	0.000000	0.000000
241	0.000000	0.000000	0.000000
242	0.000000	0.000000	0.000000
243	0.000000	0.000000	0.000000
244	0.000000	0.000000	0.000000
245	0.000000	0.000000	0.000000
246	0.000000	0.000000	0.000000
247	0.000000	0.000000	0.000000
248	0.000000	0.000000	0.000000
249	0.000000	0.000000	0.000000
250	0.000000	0.000000	0.000000
251	0.000000	0.000000	0.000000
252	0.000000	0.000000	0.000000
253	0.000000	0.000000	0.000000
254	0.000000	0.000000	0.000000
255	0.000000	0.000000	0.000000
256	0.000000	0.000000	0.000000
257	0.000000	0.000000	0.000000
258	0.000000	0.000000	0.000000
259	0.000000	0.000000	0.000000
260	0.000000	0.000000	0.000000
261	0.000000	0.000000	0.000000
262	0.000000	0.000000	0.000000
263	0.000000	0.000000	0.000000
264	0.000000	0.000000	0.000000
265	0.000000	0.000000	0.000000
266	0.000000	0.000000	0.000000
267	0.000000	0.000000	0.000000
268	0.000000	0.000000	0.000000
269	0.000000	0.000000	0.000000
270	0.000000	0.000000	0.000000
271	0.000000	0.000000	0.000000
272	0.000000	0.000000	0.000000
273	0.000000	0.000000	0.000000
274	0.000000	0.000000	0.000000
275	0.000000	0.000000	0.000000
276	0.000000	0.000000	0.000000
277	0.000000	0.000000	0.000000
278	0.000000	0.000000	0.000000
279	0.000000	0.000000	0.000000
280	0.000000	0.000000	0.000000
281	0.000000	0.000000	0.000000
282	0.000000	0.000000	0.000000
283	0.000000	0.000000	0.000000
284	0.000000	0.000000	0.000000
285	0.000000	0.000000	0.000000
286	0.000000	0.000000	0.000000
287	0.000000	0.000000	0.000000
288	0.000000	0.000000	0.000000



NO.	NODE	DIRECTION	VALUE
1	70	MX	8.00000
2	75	MX	8.00000

***** LOAD SUMMARY - 720 DISPLACEMENTS 2 FORCES 0 PRESSURES *****

OCTAL STORAGE REQUIREMENTS FOR L THROUGH P CARD DATA INPUT CP= 3.527
CORE= 00212534 MEMORY= 00000000 TOTAL= 00212534 MEMORY AVAILABLE= 00151571

MAXIMUM STIFFNESS = 0.272791E+05 AT ELEMENT 225
MINIMUM STIFFNESS = 0.393750E+02 AT ELEMENT 264

OCTAL STORAGE REQUIREMENTS FOR ELEMENT FORMULATION CP= 5.164
CORE= 00205516 MEMORY= 00000000 TOTAL= 00205516 MEMORY AVAILABLE= 00151307

*** ELEMENT STIFFNESS FORMULATION TIMES

TYPE	NUMBER	STIF	TOTAL CP	AVE CP
1	120	46	1.310	0.011
2	144	10	0.062	0.000
3	2	10	0.001	0.000
4	8	63	0.260	0.033

TIME AT END OF ELEMENT STIFFNESS FORMULATION CP = 5.165

MAXIMUM IN-CORE WAVE FRONT ALLOWED FOR REQUESTED MEMORY SIZE= 286

OCTAL STORAGE REQUIREMENTS FOR WAVE FRONT MATRIX SOLUTION CP= 7.464
CORE= 00244474 MEMORY= 00021422 TOTAL= 00266116 MEMORY AVAILABLE= 00121115

MAXIMUM IN-CORE WAVE FRONT (EQUATIONS) USED= 132

*** MATRIX SOLUTION TIMES
READ IN ELEMENT STIFFNESSES CP= 0.070
NODAL COORD. TRANSFORMATION CP= 0.001
MATRIX TRIANGULARIZATION CP= 2.223

TIME AT END OF MATRIX TRIANGULARIZATION CP = 7.464

TIME AT START OF BACK SUBSTITUTION CP= 7.466 STEP= 1 ITERATION= 1

OCTAL STORAGE REQUIREMENTS FOR BACK SUBSTITUTION CP= 7.493
CORE= 00112456 MEMORY= 00004511 TOTAL= 00117167 MEMORY AVAILABLE= 00213625

*** ELEM. STRESS CALC. TIMES

TYPE	NUMBER	STIF	TOTAL CP	AVE CP
1	120	46	0.096	0.001
2	144	10	0.059	0.000
3	2	10	0.001	0.000
4	8	63	0.120	0.003

74 NON-CONVERGED GAPS LARGE DISP. INC.= 0.00000 PLASTIC RATIO= 0.0000 CREEP RATIO= 0.0000
STEP= 1 ITER= 1 CUM. ITER.= 1 TIME= 0.000000

*** STEP 1 ITER 1 COMPLETE. TIME= [illegible] KDIS= 1 KTEMP= 0 CUM. ITER.= 1

[illegible] 7.573

```
MAXIMUM CENTRAL MEMORY USED  = 0244474
MAXIMUM AUXILIARY MEMORY USED= 0021422
MAXIMUM TOTAL MEMORY USED    = 0266116
MAXIMUM AUXILIARY AVAILABLE  = 0137351

   71892 WORDS WRITTEN ON BLOCKS 1 AND 2
   41215 WORDS WRITTEN ON BLOCK 3
     5?2 ACTIVE DEGREES OF FREEDOM
    77.5 R.M.S. WAVEFRONT

MATRIX SOLUTION TIME ESTIMATE(CRAY-1) =    2.76 SECONDS.

RESTART DATA WRITTEN ON FILE TAPE 3

TRIANGULARIZED MATRIX WRITTEN ON FILE TAPE11

TIME AT START OF BACK SUBSTITUTION   CP=    10.437     STEP=  1   ITERATION=  2

  72 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000       PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
STEP=  1  ITER=  2  CUM. ITER.=    2  TIME=  0.000000

*** STEP   1   ITER   2 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMP=    0  CUM. ITER.=    2

TIME AT START OF BACK SUBSTITUTION   CP=    13.379     STEP=  1   ITERATION=  3

  27 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000       PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
STEP=  1  ITER=  3  CUM. ITER.=    3  TIME=  0.000000

*** STEP   1   ITER   3 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMP=    0  CUM. ITER.=    3

TIME AT START OF BACK SUBSTITUTION   CP=    16.357     STEP=  1   ITERATION=  4

  21 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000       PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
STEP=  1  ITER=  4  CUM. ITER.=    4  TIME=  0.000000

*** STEP   1   ITER   4 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMR=    0  CUM. ITER.=    4

TIME AT START OF BACK SUBSTITUTION   CP=    19.364     STEP=  1   ITERATION=  5

   8 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000       PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
STEP=  1  ITER=  5  CUM. ITER.=    5  TIME=  0.000000

*** STEP   1   ITER   5 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMP=    0  CUM. ITER.=    5

TIME AT START OF BACK SUBSTITUTION   CP=    22.384     STEP=  1   ITERATION=  6

   2 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000       PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
STEP=  1  ITER=  6  CUM. ITER.=    6  TIME=  0.000000

*** STEP   1   ITER   6 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMP=    0  CUM. ITER.=    6

TIME AT START OF BACK SUBSTITUTION   CP=    25.405     STEP=  1   ITERATION=  7

   2 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000       PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
STEP=  1  ITER=  7  CUM. ITER.=    7  TIME=  0.000000

*** STEP   1   ITER   7 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMP=    0  CUM. ITER.=    7
```

```
   2 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000        PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
STEP=   1  ITER=   8  CUM. ITER.=    8  TIME=  0.000000

*** STEP   1   ITER   9 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMP=    0  CUM. ITER.=    8

TIME AT START OF BACK SUBSTITUTION   CP=     31.456     STEP=   1   ITERATION=  9

   0 NON-CONVERGED GAPS   LARGE DISP. INC.= 0.00000        PLASTIC RATIO=  0.0000   CREEP RATIO=  0.0000
STEP=   1  ITER=   9  CUM. ITER.=    9  TIME=  0.000000

*** SOLUTION CONVERGED - STEP   1 ITERATIONS TERMINATED AFTER ITERATION   9  CUM. ITER.=    9
      NEXT ITERATION (IDENTIFIED AS ITERATION  10) SATISFIES PRINT REQUEST.  POST DATA ALSO WRITTEN IF REQUESTED.

TIME AT START OF BACK SUBSTITUTION   CP=     31.675     STEP=   1   ITERATION= 10
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ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 3 UPDATE 67L UCS-CRAY JUNE 1,1979
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412) 746-3304

TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS 14.3000 5/ 8/85 CP= 31.678

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM ITER.= 10

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
1	0.000000	0.000000	-0.166304E-02	0.457920E-03	-0.125608E-03	
2	0.000000	0.000000	-0.157994E-02	0.796707E-03	0.525251E-04	
3	0.000000	0.000000	-0.179180E-02	0.148896E-02	0.341067E-03	
4	0.000000	0.000000	-0.219980E-02	0.257915E-02	0.458841E-03	
5	0.000000	0.000000	-0.302965E-02	0.593089E-02	0.270000E-03	
6	0.000000	0.000000	-0.292357E-02	0.948257E-02	-0.922540E-03	
7	0.000000	0.000000	0.864139E-03	0.117656E-01	-0.166859E-02	
8	0.000000	0.000000	0.414663E-02	0.122051E-01	[illegible]	
9	0.000000	0.000000	0.414663E-02	0.122051E-01	0.690968E-03	
10	0.000000	0.000000	0.864139E-03	0.117656E-01	0.166859E-02	
11	0.000000	0.000000	-0.292357E-02	0.948257E-02	0.922540E-03	
12	0.000000	0.000000	-0.302965E-02	0.593089E-02	-0.270000E-03	
13	0.000000	0.000000	-0.219980E-02	0.257915E-02	-0.458841E-03	
14	0.000000	0.000000	-0.179180E-02	0.148896E-02	-0.341067E-03	
15	0.000000	0.00000	-0.157994E-02	0.796707E-03	-0.525251E-04	
16	0.000000	0.000000	-0.166304E-02	0.457920E-03	0.125608E-03	
17	0.000000	0.000000	-0.144543E-02	0.390300E-03	-0.294804E-03	
18	0.000000	0.000000	-0.117371E-02	0.816732E-03	-0.204261E-03	
19	0.000000	0.000000	-0.104391E-02	0.149353E-02	-0.929874E-04	
20	0.000000	0.000000	-0.915202E-03	0.255304E-02	-0.192011E-03	
21	0.000000	0.000000	-0.480956E-04	0.602862E-02	-0.467214E-03	
22	0.000000	0.000000	0.181127E-02	0.951311E-02	-0.152839E-02	
23	0.000000	0.000000	0.676337E-02	0.118490E-01	-0.194001E-02	
24	0.000000	0.000000	0.102717E-01	0.122960E-01	-0.736805E-03	
25	0.000000	0.000000	0.102717E-01	0.122960E-01	0.736805E-03	
26	0.000000	0.000000	0.676337E-02	0.118490E-01	0.194001E-02	
27	0.000000	0.000000	0.181127E-02	0.951311E-02	0.152839E-02	
28	0.000000	0.000000	-0.480956E-04	0.602862E-02	0.467214E-03	
29	0.000000	0.000000	-0.915202E-03	0.255304E-02	0.192011E-03	
30	0.000000	0.000000	-0.104391E-02	0.149353E-02	0.929874E-04	
31	0.000000	0.000000	-0.117371E-02	0.816732E-03	0.204261E-03	
32	0.000000	0.000000	-0.144543E-02	0.390300E-03	0.294804E-03	
33	0.000000	0.000000	-0.128073E-02	0.272895E-03	-0.529158E-03	
34	0.000000	0.000000	-0.764510E-03	0.829734E-03	-0.478133E-03	
35	0.000000	0.000000	-0.295564E-03	0.151419E-02	-0.511220E-03	
36	0.000000	0.000000	0.359525E-03	0.256456E-02	-0.838153E-03	
37	0.000000	0.000000	0.302628E-02	0.628944E-02	-0.129038E-02	
38	0.000000	0.000000	0.665491E-02	0.993790E-02	-0.222867E-02	[illegible]
39	0.000000	0.000000	0.127257E-01	0.120067E-01	-0.218617E-02	
40	0.000000	0.000000	0.164437E-01	0.123935E-01	-0.764413E-03	
41	0.000000	0.000000	0.164437E-01	0.123935E-01	0.764413E-03	
42	0.000000	0.000000	0.127257E-01	0.120067E-01	0.218617E-02	
43	0.000000	0.000000	0.665491E-02	0.993790E-02	0.222867E-02	-0.350357E-04
44	0.000000	0.000000	0.302628E-02	0.628944E-02	0.129038E-02	
45	0.000000	0.000000	0.359525E-03	0.256456E-02	0.838153E-03	
46	0.000000	0.000000	-0.295564E-03	0.151419E-02	0.511220E-03	
47	0.000000	0.000000	-0.764510E-03	0.329734E-03	0.478133E-03	
48	0.000000	0.000000	-0.128073E-02	0.272895E-03	0.529158E-03	
49	0.000000	0.000000	-0.972152E-03	0.448953E-03	-0.124557E-02	
50	0.000000	0.000000	0.212702E-03	0.124377E-02	-0.113934E-02	
51	[illegible]	[illegible]	0.13[illegible]	[illegible]	-0.132056E-02	

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 3 UPDATE 67L UCS-CRAY JUNE 1,1979
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412) 746-3304

TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS 14.3000 5/ 8/85 CP= 31.695

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 10

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
52	0.000000	0.000000	0.307323E-02	0.292171E-02	-0.214576E-02	
53	0.000000	0.000000	0.975721E-02	0.730280E-02	-0.316320E-02	
54	0.000000	0.000000	0.171567E-01	0.109799E-01	-0.321057E-02	0.[illegible]36581E-04
55	0.000000	0.000000	0.249823E-01	0.125783E-01	-0.247706E-02	
56	0.000000	0.000000	0.289274E-01	0.125591E-01	-0.788332E-03	
57	0.000000	0.000000	0.289274E-01	0.125591E-01	0.788332E-03	
58	0.000000	0.000000	0.249823E-01	0.125783E-01	0.247706E-02	
59	0.000000	0.000000	0.171567E-01	0.109799E-01	0.321057E-02	-0.[illegible]6581E-04
60	0.000000	0.000000	0.975721E-02	0.730280E-02	0.316320E-02	
61	0.000000	0.000000	0.307323E-02	0.292171E-02	0.214576E-02	
62	0.000000	0.000000	0.139825E-02	0.200491E-02	0.132056E-02	
63	0.000000	0.000000	0.212702E-03	0.124377E-02	0.113934E-02	
64	0.000000	0.000000	-0.972152E-03	0.448953E-03	0.124557E-02	
65	0.000000	0.000000	-0.172531E-03	0.126772E-02	-0.220698E-02	
66	0.000000	0.000000	0.191729E-02	0.223311E-02	-0.201406E-02	
67	0.000000	0.000000	0.397964E-02	0.324022E-02	-0.217827E-02	
68	0.000000	0.000000	0.661751E-02	0.464081E-02	-0.342608E-02	
69	0.000000	0.000000	0.174030E-01	0.749095E-02	-0.530542E-02	
70	0.000000	0.000000	0.296118E-01	0.151599E-01	-0.413110E-02	0.387869E-04
71	0.000000	0.000000	0.376100E-01	0.122340E-01	-0.237441E-02	
72	0.000000	0.000000	0.415999E-01	0.128674E-01	-0.799339E-03	
73	0.000000	0.000000	0.415999E-01	0.128674E-01	0.799339E-03	
74	0.000000	0.000000	0.376100E-01	0.122340E-01	0.237441E-02	
75	0.000000	0.000000	0.296118E-01	0.151599E-01	0.413110E-02	-0.387869E-04
76	0.000000	0.000000	0.174030E-01	0.749095E-02	0.530542E-02	
77	0.000000	0.000000	0.661751E-02	0.464081E-02	0.342608E-02	
78	0.000000	0.000000	0.397964E-02	0.324022E-02	0.217827E-02	
79	0.000000	0.000000	0.191729E-02	0.223311E-02	0.201406E-02	
80	0.000000	0.000000	-0.172531E-03	0.126772E-02	0.220698E-02	
81	0.000000	0.000000	0.167007E-02	0.243291E-02	-0.314280E-02	
82	0.000000	0.000000	0.472045E-02	0.335259E-02	-0.303586E-02	
83	0.000000	0.000000	0.793169E-02	0.453389E-02	-0.351057E-02	
84	0.000000	0.000000	0.120097E-01	0.594915E-02	-0.477948E-02	
85	0.000000	0.000000	0.257736E-01	0.876344E-02	-0.698095E-02	
86	0.000000	0.000000	0.421395E-01	0.112146E-01	-0.499261E-02	0.647076E-04
87	0.000000	0.000000	0.504399E-01	0.129839E-01	-0.231094E-02	
88	0.000000	0.000000	0.544706E-01	0.129537E-01	-0.306450E-03	
89	0.000000	0.000000	0.544706E-01	0.129537E-01	0.306450E-03	
90	0.000000	0.000000	0.504399E-01	0.129839E-01	0.231094E-02	
91	[illegible]	0.000000	0.421395E-01	0.112146E-01	0.499261E-02	-0.647076E-04
92	0.000000	0.000000	0.257736E-01	0.876344E-02	0.698095E-02	
93	0.000000	0.000000	0.120097E-01	0.594915E-02	0.477948E-02	
94	0.000000	0.000000	0.793169E-02	0.453389E-02	0.351057E-02	
95	[illegible]	0.000000	0.472045E-02	0.335259E-02	0.303586E-02	
96	0.000000	0.000000	0.167007E-02	0.243291E-02	0.314280E-02	
97	0.000000	0.000000	0.460087E-02	0.339832E-02	-0.397490E-02	
[illegible]	[illegible]	[illegible]	[illegible]	0.409799E-02	-0.393012E-02	
[illegible]	[illegible]	0.000000	0.12[illegible]17E-01	[illegible]73915E-02	-0.474917E-02	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ANSYS - ENGINEERING ANALYSIS SYSTEM   REVISION 3   UPDATE 67L   UCS-CRAY JUNE 1,1979
SWANSON ANALYSIS SYSTEMS, INC.   HOUSTON, PENNSYLVANIA 15342   PHONE (412) 746-3304

TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS   14.3000   5/ 8/85 CP=   31.712

***** DISPLACEMENT SOLUTION *****   TIME =   0.00000   LOAD STEP=   1   ITERATION= 10   CUM. ITER.=   10

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
103	0.000000	0.000000	0.633067E-01	0.128100E-01	-0.262868E-02	
104	0.000000	0.000000	0.675408E-01	0.131714E-01	-0.824123E-03	
105	0.000000	0.000000	0.675408E-01	0.131714E-01	0.824123E-03	
106	0.000000	0.000000	0.633067E-01	0.128100E-01	0.262868E-02	
107	0.000000	0.000000	0.532499E-01	0.110583E-01	0.579704E-02	-0.392863E-04
108	0.000000	0.000000	0.345391E-01	0.875267E-02	0.808996E-02	
109	0.000000	0.000000	0.181655E-01	0.623874E-02	0.603375E-02	
110	0.000000	0.000000	0.128017E-01	0.507391E-02	0.474917E-02	
111	0.000000	0.000000	0.849334E-02	0.409790E-02	0.398012E-02	
112	0.000000	0.000000	0.462087E-02	0.339832E-02	0.387490E-02	
113	0.000000	0.000000	0.640683E-02	0.371601E-02	-0.411961E-02	
114	0.000000	0.000000	0.105837E-01	0.423553E-02	-0.435541E-02	
115	0.000000	0.000000	0.153454E-01	0.507545E-02	-0.526836E-02	
116	0.000000	0.000000	0.212650E-01	0.614238E-02	-0.661075E-02	
117	0.000000	0.000000	0.389071E-01	0.871637E-02	-0.861812E-02	
118	0.000000	0.000000	0.587946E-01	0.111519E-01	-0.630441E-02	
119	0.000000	0.000000	0.697170E-01	0.128423E-01	-0.283216E-02	
120	0.000000	0.000000	0.741494E-01	0.132633E-01	-0.849862E-03	
121	0.000000	0.000000	0.741494E-01	0.132633E-01	0.849861E-03	
122	0.000000	0.000000	0.697170E-01	0.128423E-01	0.283216E-02	
123	0.000000	0.000000	0.587946E-01	0.111519E-01	0.630441E-02	
124	0.000000	0.000000	0.389071E-01	0.871637E-02	0.861812E-02	
125	0.000000	0.000000	0.212650E-01	0.614238E-02	0.661075E-02	
126	0.000000	0.000000	0.153454E-01	0.507545E-02	0.526836E-02	
127	0.000000	0.000000	0.105837E-01	0.423553E-02	0.435541E-02	
128	0.000000	0.000000	0.640683E-02	0.371601E-02	0.411961E-02	
129	0.000000	0.000000	0.830372E-02	0.383363E-02	-0.430061E-02	
130	0.000000	0.000000	0.127003E-01	0.420204E-02	-0.465934E-02	
131	0.000000	0.000000	0.178542E-01	0.493895E-02	-0.572975E-02	
132	0.000000	0.000000	0.242923E-01	0.595279E-02	-0.717403E-02	
133	0.000000	0.000000	0.432556E-01	0.868030E-02	-0.916069E-02	
134	0.000000	0.000000	0.644270E-01	0.113978E-01	-0.674516E-02	
135	0.000000	0.000000	0.761620E-01	0.129525E-01	-0.303506E-02	
136	0.000000	0.000000	0.808053E-01	0.133617E-01	-0.890057E-03	
137	0.000000	0.000000	0.808053E-01	0.133617E-01	0.890057E-03	
138	0.000000	0.000000	0.761620E-01	0.129525E-01	0.303506E-02	
139	0.000000	0.000000	0.644270E-01	0.113978E-01	0.674516E-02	
140	0.000000	0.000000	0.432556E-01	0.868030E-02	0.916069E-02	
141	0.000000	0.000000	0.242923E-01	0.595279E-02	0.717403E-02	
142	0.000000	0.000000	0.178542E-01	0.493895E-02	0.572975E-02	
143	0.000000	0.000000	0.127003E-01	0.420204E-02	0.465934E-02	
144	0.000000	0.000000	0.830372E-02	0.383363E-02	0.430061E-02	
145	0.000000	0.000000	0.000000			
146	0.000000	0.000000	0.000000			
147	0.000000	0.000000	0.000000			
148	0.000000	0.000000	0.000000			
149	0.000000	0.000000	0.000000			
150	0.000000	0.000000	0.000000			
151	0.000000	0.000000	0.000000			
[illegible]	[illegible]	[illegible]	[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]			

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 3 UPDATE 67L UCS-CRAY JUNE 1,1979
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412) 746-3304

TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS 14.3000 5/ 8/85 CP= 31.729

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 10

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
154	0.000000	0.000000	0.000000			
155	0.000000	0.000000	0.000000			
156	0.000000	0.000000	0.000000			
157	0.000000	0.000000	0.000000			
158	0.000000	0.000000	0.000000			
159	0.000000	0.000000	0.000000			
160	0.000000	0.000000	0.000000			
161	0.000000	0.000000	0.000000			
162	0.000000	0.000000	0.000000			
163	0.000000	0.000000	0.000000			
164	0.000000	0.000000	0.000000			
165	0.000000	0.000000	0.000000			
166	0.000000	0.000000	0.000000			
167	0.000000	0.000000	0.000000			
168	0.000000	0.000000	0.000000			
169	0.000000	0.000000	0.000000			
170	0.000000	0.000000	0.000000			
171	0.000000	0.000000	0.000000			
172	0.000000	0.000000	0.000000			
173	0.000000	0.000000	0.000000			
174	0.000000	0.000000	0.000000			
175	0.000000	0.000000	0.000000			
176	0.000000	0.000000	0.000000			
177	0.000000	0.000000	0.000000			
178	0.000000	0.000000	0.000000			
179	0.000000	0.000000	0.000000			
180	0.000000	0.000000	0.000000			
181	0.000000	0.000000	0.000000			
182	0.000000	0.000000	0.000000			
183	0.000000	0.000000	0.000000			
184	0.000000	0.000000	0.000000			
185	0.000000	0.000000	0.000000			
186	0.000000	0.000000	0.000000			
187	0.000000	0.000000	0.000000			
188	0.000000	0.000000	0.000000			
189	0.000000	0.000000	0.000000			
190	0.000000	0.000000	0.000000			
191	0.000000	0.000000	0.000000			
192	0.000000	0.000000	0.000000			
193	0.000000	0.000000	0.000000			
194	0.000000	0.000000	0.000000			
195	0.000000	0.000000	0.000000			
196	0.000000	0.000000	0.000000			
197	0.000000	0.000000	0.000000			
198	0.000000	0.000000	0.000000			
[illegible]	[illegible]	[illegible]	[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]			
2?1	[illegible]	[illegible]	[illegible]			
2?2	[illegible]	[illegible]	[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]			

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 3 UPDATE 67L UCS-CRAY JUNE 1,1979
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412) 746-3304

TUGG-CH-S2- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS 14.3000 5/ 8/85 CP= 31.743

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 10

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
205	0.000000	0.000000	0.000000			
206	0.000000	0.000000	0.000000			
207	0.000000	0.000000	0.000000			
208	0.000000	0.000000	0.000000			
209	0.000000	0.000000	0.000000			
210	0.000000	0.000000	0.000000			
211	0.000000	0.000000	0.000000			
212	0.000000	0.000000	0.000000			
213	0.000000	0.000000	0.000000			
214	0.000000	0.000000	0.000000			
215	0.000000	0.000000	0.000000			
216	0.000000	0.000000	0.000000			
217	0.000000	0.000000	0.000000			
218	0.000000	0.000000	0.000000			
219	0.000000	0.000000	0.000000			
220	0.000000	0.000000	0.000000			
221	0.000000	0.000000	0.000000			
222	0.000000	0.000000	0.000000			
223	0.000000	0.000000	0.000000			
224	0.000000	0.000000	0.000000			
225	0.000000	0.000000	0.000000			
226	0.000000	0.000000	0.000000			
227	0.000000	0.000000	0.000000			
228	0.000000	0.000000	0.000000			
229	0.000000	0.000000	0.000000			
230	0.000000	0.000000	0.000000			
231	0.000000	0.000000	0.000000			
232	0.000000	0.000000	0.000000			
233	0.000000	0.000000	0.000000			
234	0.000000	0.000000	0.000000			
235	0.000000	0.000000	0.000000			
236	0.000000	0.000000	0.000000			
237	0.000000	0.000000	0.000000			
238	0.000000	0.000000	0.000000			
239	0.000000	0.000000	0.000000			
240	0.000000	0.000000	0.000000			
241	0.000000	0.000000	0.000000			
242	0.000000	0.000000	0.000000			
243	0.000000	0.000000	0.000000			
244	0.000000	0.000000	0.000000			
245	0.000000	0.000000	0.000000			
246	0.000000	0.000000	0.000000			
247	0.000000	0.000000	0.000000			
248	0.000000	0.000000	0.000000			
249	0.000000	0.000000	0.000000			
250	0.000000	0.000000	0.000000			
251	0.000000	0.000000	0.000000			
252	0.000000	0.000000	0.000000			
253	[illegible]	[illegible]	[illegible]			
254	[illegible]	[illegible]	[illegible]			

ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 3 UPDATE 67L UCS-CRAY JUNE 1,1979
SWANSON ANALYSIS SYSTEMS, INC. HOUSTON, PENNSYLVANIA 15342 PHONE (412) 746-3304

TUGC-CPSES2- BASE PLATE ANALYSIS PL 1/2X5X2FT-4IN W/2 BOLTS 14.3000 5/ 8/85 CP= 31.756

***** DISPLACEMENT SOLUTION ***** TIME = 0.00000 LOAD STEP= 1 ITERATION= 10 CUM. ITER.= 10

NODE	UX	UY	UZ	ROTX	ROTY	ROTZ
256	0.000000	0.000000	0.000000			
257	0.000000	0.000000	0.000000			
258	0.000000	0.000000	0.000000			
259	0.000000	0.000000	0.000000			
260	0.000000	0.000000	0.000000			
261	0.000000	0.000000	0.000000			
262	0.000000	0.000000	0.000000			
263	0.000000	0.000000	0.000000			
264	0.000000	0.000000	0.000000			
265	0.000000	0.000000	0.000000			
266	0.000000	0.000000	0.000000			
267	0.000000	0.000000	0.000000			
268	0.000000	0.000000	0.000000			
269	0.000000	0.000000	0.000000			
270	0.000000	0.000000	0.000000			
271	0.000000	0.000000	0.000000			
272	0.000000	0.000000	0.000000			
273	0.000000	0.000000	0.000000			
274	0.000000	0.000000	0.000000			
275	0.000000	0.000000	0.000000			
276	0.000000	0.000000	0.000000			
277	0.000000	0.000000	0.000000			
278	0.000000	0.000000	0.000000			
279	0.000000	0.000000	0.000000			
280	0.000000	0.000000	0.000000			
281	0.000000	0.000000	0.000000			
282	0.000000	0.000000	0.000000			
283	0.000000	0.000000	0.000000			
284	0.000000	0.000000	0.000000			
285	0.000000	0.000000	0.000000			
286	0.000000	0.000000	0.000000			
287	0.000000	0.000000	0.000000			
298	0.000000	0.000000	0.000000			
326	-0.101301E-01	-0.416936E-01	0.517551E-02	0.109002E-01	-0.341697E-02	0.227687E-02
331	0.101301E-01	-0.416936E-01	0.517551E-02	0.109002E-01	0.341697E-02	-0.227687E-02
342	-0.122829E-01	-0.416846E-01	0.182219E-01	0.117830E-01	-0.381761E-02	0.211172E-02
347	0.122829E-01	-0.416846E-01	0.182219E-01	0.117830E-01	0.381761E-02	-0.211172E-02
358	-0.143755E-01	-0.417967E-01	0.297497E-01	0.127401E-01	-0.408485E-02	0.210202E-02
363	0.143755E-01	-0.417967E-01	0.297497E-01	0.127401E-01	0.408485E-02	-0.210202E-02
374	-0.163944E-01	-0.417574E-01	0.413336E-01	0.121432E-01	-0.437772E-02	0.197151E-02
379	0.163944E-01	-0.417574E-01	0.413336E-01	0.121432E-01	0.437772E-02	-0.197151E-02
390	-0.163475E-01	-0.417437E-01	0.539847E-01	0.114720E-01	-0.477191E-02	0.202412E-02
395	0.163475E-01	-0.417437E-01	0.539847E-01	0.114720E-01	0.477191E-02	-0.202412E-02

MAXIMUM VALUE

	UX	UY	UZ	ROTX	ROTY	ROTZ
NODE	395	363	137	75	140	331
DISP	0.163475E-01	-0.417967E-01	[illegible]	0.151599E-01	0.316269E-02	-0.227687E-02

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        ANSYS - ENGINEERING ANALYSIS SYSTEM   REVISION 3   UPDATE 67L  UCS-CRAY JUNE 1,1979
   SWANSON ANALYSIS SYSTEMS, INC.          HOUSTON, PENNSYLVANIA 15342   PHONE (412) 746-3304

TUCC-CESSC- BASE PLATE ANALYSIS PL 1/2X6X2FT-4IN W/2 BOLTS                    14.3003   5/ 8/85 CP=   31.774

 ***** ELEMENT STRESSES *****  TIME =  0.000000       LOAD STEP=   1  ITERATION= 10   CUM. ITER.=  10                    SR

EL=    1  NODES=     1      2   18   17        MAT=  1  AREA= 0.500        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.49335E-01   0.29178E-01 -0.81367E-01  XC,YC= 0.500         0.250        A= -48.5
SX,SY,TXY=   1.1840       0.71029       -1.9528     SMX,SMN,TMX=     2.9099       -1.0256         1.9677       SIGE=  3.5360

EL=    2  NODES=     2      3   19   18        MAT=  1  AREA= 0.500        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.63912E-01   0.11745E-01 -0.15777      XC,YC=  1.50         0.250        A= -49.7
SX,SY,TXY=   1.5339       0.28188       -3.7866     SMX,SMN,TMX=     4.7458       -2.9301         3.8380       SIGE=  6.7093

EL=    3  NODES=     3      4   20   19        MAT=  1  AREA= 0.500        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.52570E-02   0.80833E-02 -0.24793      XC,YC=  2.50         0.250        A= -44.8
SX,SY,TXY=  0.12617       0.19400       -5.9504     SMX,SMN,TMX=     6.1106       -5.7904         5.9505       SIGE=  10.308

EL=    4  NODES=     4      5   21   20        MAT=  1  AREA=  1.12        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.41364E-01  -0.34045E-01 -0.36347      XC,YC=  4.12         0.250        A= -44.7
SX,SY,TXY= -0.99275      -0.81707       -8.7233     SMX,SMN,TMX=     7.8189       -9.6287         8.7238       SIGE=  15.137

EL=    5  NODES=     5      6   22   21        MAT=  1  AREA=  1.25        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.16240      -0.87465E-01 -0.33232      XC,YC=  6.50         0.250        A= -41.8
SX,SY,TXY=  -3.8976       -2.0992       -7.9756     SMX,SMN,TMX=     5.0277       -11.025         8.0261       SIGE=  14.221

EL=    6  NODES=     6      7   23   22        MAT=  1  AREA=  1.25        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.88197E-01  -0.60850E-01 -0.22366      XC,YC=  9.00         0.250        A= -43.3
SX,SY,TXY=  -2.1167       -1.4604       -5.3678     SMX,SMN,TMX=     3.5893       -7.1664         5.3778       SIGE=  9.4848

EL=    7  NODES=     7      8   24   23        MAT=  1  AREA=  1.25        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.12744      -0.14385E-01 -0.26501E-01  XC,YC=  11.5         0.250        A= -79.8
SX,SY,TXY=   3.0586       -0.34523      -0.63603    SMX,SMN,TMX=     3.1736       -0.46020        1.8169       SIGE=  3.4269

EL=    8  NODES=     8      9   25   24        MAT=  1  AREA=  1.25        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.17149      -0.34551E-02 -0.86002E-09  XC,YC=  14.0         0.250        A= -90.0
SX,SY,TXY=   4.1157       -0.82923E-01 -0.20640E-07 SMX,SMN,TMX=     4.1157       -0.82923E-01   2.0993       SIGE=  4.1577

EL=    9  NODES=     9     10   26   25        MAT=  1  AREA=  1.25        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.12744      -0.14385E-01  0.26501E-01  XC,YC=  16.5         0.250        A=  79.8
SX,SY,TXY=   3.0586       -0.34523       0.63603    SMX,SMN,TMX=     3.1736       -0.46020        1.8169       SIGE=  3.4269

EL=   10  NODES=    10     11   27   26        MAT=  1  AREA=  1.25        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.88197E-01  -0.60850E-01  0.22366      XC,YC=  19.0         0.250        A=  43.3
SX,SY,TXY=  -2.1167       -1.4604        5.3678     SMX,SMN,TMX=     3.5893       -7.1664         5.3778       SIGE=  9.4848

EL=   11  NODES=    11     12   28   27        MAT=  1  AREA=  1.25        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.16240      -0.87465E-01  0.33232      XC,YC=  21.5         0.250        A=  41.8
SX,SY,TXY=  -3.8976       -2.0992        7.9756     SMX,SMN,TMX=     5.0277       -11.025         8.0261       SIGE=  14.221

EL=   12  NODES=    12     13   29   28        MAT=  1  AREA=  1.13        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.41364E-01  -0.34045E-01  0.36347      XC,YC=  23.9         0.250        A=  44.7
SX,SY,TXY= -0.99275      -0.81707        8.7233     SMX,SMN,TMX=     7.8189       -9.6287         8.7238       SIGE=  15.137

EL=   13  NODES=    13     14   30   29        MAT=  1  AREA= 0.500        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.52570E-02   0.80833E-02  0.24793      XC,YC=  25.5         0.250        A=  44.9
SX,SY,TXY=  0.12617       0.19400        5.9504     SMX,SMN,TMX=     6.1106       -5.7904         5.9505       SIGE=  10.308

EL=   14  NODES=    14     15   31   30        MAT=  1  AREA= 0.500        TTOP,TBOT=     0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.63912E-01   0.11745E-01  0.15777      XC,YC=  26.5         0.250        A=  49.7
SX,SY,TXY=   1.[illegible]    [illegible]    [illegible]   SMX,SMN,TMX=     4.7458       -2.9301         [illegible]       SIGE=  6.7093
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MX,MY,MXY= 0.43345E-01  0.29178E-01  0.13674E-01   XC,YC= 27.5    0.250      A= 44.5
SX,SY,TXY= 1.1349       0.70028      1.9528        SMX,SMN,TMX=   2.3093     -1.0256      1.9677     SIGE= 3.5360
EL= 16 NODES=  1 145 MAT= 2 TEMPS= 0.0 0.0 FORC=-0.65482E-01 SIG=-0.52386  EP=-0.001663 STAT= 1 CABLE 10
EL= 17 NODES=  2 146 MAT= 2 TEMPS= 0.0 0.0 FORC=-0.12442     SIG=-0.49768  EP=-0.001580 STAT= 1 CABLE 10
EL= 18 NODES=  3 147 MAT= 2 TEMPS= 0.0 0.0 FORC=-0.14110     SIG=-0.56442  EP=-0.001792 STAT= 1 CABLE 10
EL= 19 NODES=  4 148 MAT= 2 TEMPS= 0.0 0.0 FORC=-0.28147     SIG=-0.69294  EP=-0.002200 STAT= 1 CABLE 10
EL= 20 NODES=  5 149 MAT= 2 TEMPS= 0.0 0.0 FORC=-0.56659     SIG=-0.95434  EP=-0.003030 STAT= 1 CABLE 10
EL= 21 NODES=  6 150 MAT= 2 TEMPS= 0.0 0.0 FORC=-0.57558     SIG=-0.92092  EP=-0.002924 STAT= 1 CABLE 10
EL= 22 NODES=  7 151 MAT= 2 TEMPS= 0.0 0.0 FORC= 0.00000     SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 23 NODES=  8 152 MAT= 2 TEMPS= 0.0 0.0 FORC= 0.00000     SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 24 NODES=  9 153 MAT= 2 TEMPS= 0.0 0.0 FORC= 0.00000     SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 25 NODES= 10 154 MAT= 2 TEMPS= 0.0 0.0 FORC= 0.00000     SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 26 NODES= 11 155 MAT= 2 TEMPS= 0.0 0.0 FORC=-0.57558     SIG=-0.92092  EP=-0.002924 STAT= 1 CABLE 10
EL= 27 NODES= 12 156 MAT= 2 TEMPS= 0.0 0.0 FORC=-0.56659     SIG=-0.95434  EP=-0.003030 STAT= 1 CABLE 10
EL= 28 NODES= 13 157 MAT= 2 TEMPS= 0.0 0.0 FORC=-0.28147     SIG=-0.69294  EP=-0.002200 STAT= 1 CABLE 10
EL= 29 NODES= 14 158 MAT= 2 TEMPS= 0.0 0.0 FORC=-0.14110     SIG=-0.56442  EP=-0.001792 STAT= 1 CABLE 10
EL= 30 NODES= 15 159 MAT= 2 TEMPS= 0.0 0.0 FORC=-0.12442     SIG=-0.49768  EP=-0.001580 STAT= 1 CABLE 10
EL= 31 NODES= 16 160 MAT= 2 TEMPS= 0.0 0.0 FORC=-0.65482E-01 SIG=-0.52386  EP=-0.001663 STAT= 1 CABLE 10
EL= 32 NODES= 17 18 34 33          MAT= 1  AREA= 0.500   TTOP,TBOT=  0.0      0.0 PRESS= 0.0000    RECT PLATE 46
MX,MY,MXY= 0.33495E-01  0.41707E-01 -0.11109    XC,YC= 0.500      0.750      A= -44.0
SX,SY,TXY= 0.81348      1.0010      -2.6662     SMX,SMN,TMX=  3.5751     -1.7606      2.6678     SIGE= 4.7090
EL= 33 NODES= 18 19 35 34          MAT= 1  AREA= 0.500   TTOP,TBOT=  0.0      0.0 PRESS= 0.0000    RECT PLATE 46
MX,MY,MXY= 0.96250E-02 -0.72808E-02 -0.15574    XC,YC= 1.50       0.750      A= -46.6
SX,SY,TXY= 0.23100     -0.17474     -3.7378     SMX,SMN,TMX=  3.7714     -3.7151      3.7433     SIGE= 6.4836
EL= 34 NODES= 19 20 36 35          MAT= 1  AREA= 0.500   TTOP,TBOT=  0.0      0.0 PRESS= 0.0000    RECT PLATE 46
MX,MY,MXY= -0.73905E-01 -0.31892E-01 -0.24303   XC,YC= 2.50       0.750      A= -42.5
SX,SY,TXY= -1.7737     -0.76542     -5.8326     SMX,SMN,TMX=  4.5848     -7.1240      5.8544     SIGE= 10.219
EL= 35 NODES= 20 21 37 36          MAT= 1  AREA= 1.12    TTOP,TBOT=  0.0      0.0 PRESS= 0.0000    RECT PLATE 46
MX,MY,MXY= -0.80783E-01 -0.10650    -0.38682    XC,YC= 4.12       0.750      A= -46.0
SX,SY,TXY= -1.9388     -2.5561      -9.2837     SMX,SMN,TMX=  7.0414     -11.536      9.2889     SIGE= 16.245
EL= 36 NODES= 21 22 38 37          MAT= 1  AREA= 1.25    TTOP,TBOT=  0.0      0.0 PRESS= 0.0000    RECT PLATE 46
MX,MY,MXY= -0.20103    -0.26742     -0.31505    XC,YC= 6.50       0.750      A= -48.0
SX,SY,TXY= -4.8247     -6.4181      -7.5612     SMX,SMN,TMX=  1.9817     -13.224      7.6031     SIGE= 14.319
EL= 37 NODES= 22 23 39 38          MAT= 1  AREA= 1.25    TTOP,TBOT=  0.0      0.0 PRESS= 0.0000    RECT PLATE 46
MX,MY,MXY= -0.82521E-01 -0.20074    -0.20361    XC,YC= 9.00       0.750      A= -53.1
SX,SY,TXY= -1.9805     -4.8177      -4.8866     SMX,SMN,TMX=  1.6893     -8.4875      5.0884     SIGE= 9.4461
EL= 38 NODES= 23 24 40 39          MAT= 1  AREA= 1.25    TTOP,TBOT=  0.0      0.0 PRESS= 0.0000    RECT PLATE 46
MX,MY,MXY= [illegible] -0.32457E-01 -0.26775E-01 XC,YC= 11.5  0.750      A= -81.8
SX,SY,TXY= [illegible] -0.77[illegible] -0.[illegible] SMX,SMN,TMX= 3.6654 -0.87186  2.2686     SIGE= 4.1702
[illegible]                                              TTOP,TBOT=  0.0      0.0 PRESS= 0.0000    RECT PLATE 46
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EL=   40  NODES=   25    26    42    41        MAT=  1   AREA=  1.25         TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY=    .14985        -0.32457E-01   0.26770E-01   XC,YC=  16.5        0.750       A=  81.8
SX,SY,TXY=    3.5725        -0.77998        0.64240       SMX,SMN,TMX=     3.6654      -0.87186          2.2686       SIGE=  4.1702

EL=   41  NODES=   26    27    43    42        MAT=  1   AREA=  1.25         TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.82521E-01 -0.26074        0.20361       XC,YC=  19.0        0.750       A=  53.1
SX,SY,TXY=  -1.9805       -4.8177         4.8866       SMX,SMN,TMX=     1.6893      -8.4875           5.0884       SIGE=  9.4461

EL=   42  NODES=   27    28    44    43        MAT=  1   AREA=  1.25         TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.20103       -0.26742        0.31505       XC,YC=  21.5        0.750       A=  48.0
SX,SY,TXY=  -4.8247       -6.4181         7.5612       SMX,SMN,TMX=     1.9817      -13.224           7.6031       SIGE=  14.319

EL=   43  NODES=   28    29    45    44        MAT=  1   AREA=  1.13         TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.80783E-01 -0.10650        0.38682       XC,YC=  23.9        0.750       A=  46.0
SX,SY,TXY=  -1.9388       -2.5561         9.2837       SMX,SMN,TMX=     7.0414      -11.536           9.2889       SIGE=  16.245

EL=   44  NODES=   29    30    46    45        MAT=  1   AREA= 0.500         TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.73905E-01 -0.31892E-01   0.24303       XC,YC=  25.5        0.750       A=  42.5
SX,SY,TXY=  -1.7737       -0.76542        5.8326       SMX,SMN,TMX=     4.5848      -7.1240           5.8544       SIGE=  10.219

EL=   45  NODES=   30    31    47    46        MAT=  1   AREA= 0.500         TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY=  0.96250E-02 -0.72808E-02   0.15574       XC,YC=  26.5        0.750       A=  46.6
SX,SY,TXY=  0.23100       -0.17474        3.7379       SMX,SMN,TMX=     3.7714      -3.7151           3.7433       SIGE=  6.4836

EL=   46  NODES=   31    32    48    47        MAT=  1   AREA= 0.500         TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY=  0.33695E-01  0.41707E-01   0.11109       XC,YC=  27.5        0.750       A=  44.0
SX,SY,TXY=  0.81348         1.0010         2.6662       SMX;SMN,TMX=     3.5751      -1.7606           2.6678       SIGE=  4.7090

EL=   47  NODES=   17  161  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.11383        SIG=-0.45531       EP=-0.001445  STAT=  1  CABLE  10
EL=   48  NODES=   18  162  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.18486        SIG=-0.36972       EP=-0.001174  STAT=  1  CABLE  10
EL=   49  NODES=   19  163  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.16442        SIG=-0.32883       EP=-0.001044  STAT=  1  CABLE  10
EL=   50  NODES=   20  164  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.23423        SIG=-0.28829       EP=-0.000915  STAT=  1  CABLE  10
EL=   51  NODES=   21  165  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.17983E-01  SIG=-0.15150E-01  EP=-0.000048  STAT=  1  CABLE  10
EL=   52  NODES=   22  166  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000       EP= 0.000000  STAT=  2  CABLE  10
EL=   53  NODES=   23  167  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000       EP= 0.000000  STAT=  2  CABLE  10
EL=   54  NODES=   24  168  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000       EP= 0.000000  STAT=  2  CABLE  10
EL=   55  NODES=   25  169  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000       EP= 0.000000  STAT=  2  CABLE  10
EL=   56  NODES=   26  170  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000       EP= 0.000000  STAT=  2  CABLE  10
EL=   57  NODES=   27  171  MAT=  2  TEMPS=    0.0     0.0  FORC= 0.00000        SIG= 0.00000       EP= 0.000000  STAT=  2  CABLE  10
EL=   58  NODES=   28  172  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.17983E-01  SIG=-0.15150E-01  EP=-0.000048  STAT=  1  CABLE  10
EL=   59  NODES=   29  173  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.23423        SIG=-0.28829       EP=-0.000915  STAT=  1  CABLE  10
EL=   60  NODES=   30  174  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.16442        SIG=-0.32883       EP=-0.001044  STAT=  1  CABLE  10
EL=   61  NODES=   31  175  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.18486        SIG=-0.36972       EP=-0.001174  STAT=  1  CABLE  10
EL=   62  NODES=   32  176  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.11383        SIG=-0.45531       EP=-0.001445  STAT=  1  CABLE  10

EL=   63  NODES=   32    [illegible]    [illegible]    [illegible]        MAT=  1   AREA=  1.[illegible]        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.[illegible]E-02 -0.[illegible]E-01 -0.[illegible]     XC,YC= 0.500        1.50        A= -57.0
SX,SY,TXY= [illegible]   [illegible]   [illegible]     SMX,SMN,TMX=     [illegible]      -4.[illegible]           3.7[illegible]       SIGE=  6.6737
```

```
MX,MY,MXY= -0.80623E-01 -0.16084      -0.16363        XC,YC=  1.50        1.50        A= -51.9
SX,SY,TXY=  -1.9349      -3.9602      -3.9271         SMX,SMN,TMX=  1.1458      -6.9409        4.0433     SIGE=  7.5790

EL=  65  NODES=   35    36   52   51       MAT=  1   AREA=  1.00        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.23345      -0.19810      -0.23673       XC,YC=  2.50        1.50        A= -42.9
SX,SY,TXY=  -5.6329      -4.7544       -5.6815        SMX,SMN,TMX=  0.51871     -10.876        5.6973     SIGE=  11.144

EL=  66  NODES=   36    37   53   52       MAT=  1   AREA=  2.25        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.17666      -0.26000      -0.43572       XC,YC=  4.12        1.50        A= -47.7
SX,SY,TXY=  -4.2398      -6.2400       -10.457        SMX,SMN,TMX=  5.2651      -15.745        10.505     SIGE=  18.935

EL=  67  NODES=   37    38   54   53       MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.16778      -0.36077      -0.36494       XC,YC=  6.50        1.50        A= -52.4
SX,SY,TXY=  -4.0268      -8.6586       -8.7585        SMX,SMN,TMX=  2.7169      -15.402        9.0595     SIGE=  16.925

EL=  68  NODES=   38    39   55   54       MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.28822E-01 -0.25235      -0.16706        XC,YC=  9.00        1.50        A= -61.9
SX,SY,TXY= -0.69174      -6.0565       -4.0094        SMX,SMN,TMX=  1.4498      -8.1980        4.8239     SIGE=  9.0109

EL=  69  NODES=   39    40   56   55       MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY=  0.16980      -0.60404E-01 -0.15389E-01    XC,YC=  11.5        1.50        A= -86.2
SX,SY,TXY=   4.0753      -1.4497       -0.36933       SMX,SMN,TMX=  4.0999      -1.4743        2.7871     SIGE=  5.0027

EL=  70  NODES=   40    41   57   56       MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY=  0.18969       0.68727E-02 -0.83881E-09    XC,YC=  14.0        1.50        A= -90.0
SX,SY,TXY=   4.5524       0.16495      -0.20131E-07   SMX,SMN,TMX=  4.5524       0.16495       2.1937     SIGE=  4.4723

EL=  71  NODES=   41    42   58   57       MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY=  0.16980      -0.60404E-01  0.15389E-01    XC,YC=  16.5        1.50        A=  86.2
SX,SY,TXY=   4.0753      -1.4497        0.36933       SMX,SMN,TMX=  4.0999      -1.4743        2.7871     SIGE=  5.0027

EL=  72  NODES=   42    43   59   58       MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.28822E-01 -0.25235       0.16706        XC,YC=  19.0        1.50        A=  61.9
SX,SY,TXY= -0.69174      -6.0565        4.0094        SMX,SMN,TMX=  1.4498      -8.1980        4.8239     SIGE=  9.0109

EL=  73  NODES=   43    44   60   59       MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.16778      -0.36077       0.36494        XC,YC=  21.5        1.50        A=  52.4
SX,SY,TXY=  -4.0268      -8.6586        8.7585        SMX,SMN,TMX=  2.7169      -15.402        9.0595     SIGE=  16.925

EL=  74  NODES=   44    45   61   60       MAT=  1   AREA=  2.25        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.17666      -0.26000       0.43572        XC,YC=  23.9        1.50        A=  47.7
SX,SY,TXY=  -4.2398      -6.2400        10.457        SMX,SMN,TMX=  5.2651      -15.745        10.505     SIGE=  18.935

EL=  75  NODES=   45    46   62   61       MAT=  1   AREA=  1.00        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.23345      -0.19810       0.23673        XC,YC=  25.5        1.50        A=  42.9
SX,SY,TXY=  -5.6328      -4.7544        5.6815        SMX,SMN,TMX=  0.51871     -10.876        5.6973     SIGE=  11.144

EL=  76  NODES=   46    47   63   62       MAT=  1   AREA=  1.00        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.80623E-01 -0.16084       0.16363        XC,YC=  26.5        1.50        A=  51.9
SX,SY,TXY=  -1.9349      -3.9602        3.9271        SMX,SMN,TMX=  1.1458      -6.9409        4.0433     SIGE=  7.5790

EL=  77  NODES=   47    48   64   63       MAT=  1   AREA=  1.00        TTOP,TBOT=    0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.32816E-02 -0.90113E-01  0.15212        XC,YC=  27.5        1.50        A=  53.0
SX,SY,TXY= -0.78759E-01  -2.1627        3.6528        SMX,SMN,TMX=  2.6776      -4.9191        3.7983     SIGE=  6.6737

EL=  78  NODES=   33  177  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.15129        SIG=-0.40343        EP=-0.001281  STAT=  1  CABLE  10

EL=  79  NODES=   34  178  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.18062        SIG=-0.24082        EP=-0.000765  STAT=  1  CABLE  10

EL=  80  NODES=   35  179  MAT=  2  TEMPS=    0.0     0.0  FORC=-0.69627E-01   SIG=-0.33103E-01   EP=-0.000296  STAT=  1  CABLE  10

EL=  81  NODES=   3[illegible]  MAT=  2  TEMPS=  [illegible]  FORC= [illegible]  SIG= 0.00000  EP= 0.000000  STAT=  2  CABLE  10

[illegible]  FORC= 0.0[illegible]  SIG= 0.[illegible]  EP= 0.000000  STAT=  [illegible]  CABLE  1[illegible]
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EL=  84  NODES=   39  183  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
EL=  85  NODES=   40  184  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
EL=  86  NODES=   41  185  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
EL=  87  NODES=   42  186  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
EL=  88  NODES=   43  187  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
EL=  89  NODES=   44  188  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
EL=  90  NODES=   45  189  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
EL=  91  NODES=   46  190  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.69827E-01  SIG=-0.93103E-01  EP=-0.000296  STAT=  1  CABLE  10
EL=  92  NODES=   47  191  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.18062      SIG=-0.24082      EP=-0.000765  STAT=  1  CABLE  10
EL=  93  NODES=   48  192  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.15129      SIG=-0.40343      EP=-0.001281  STAT=  1  CABLE  10
EL=  94  NODES=   49   50   66   65      MAT=  1  AREA=  1.00      TTOP,TBOT=    0.0    0.0  PRESS= 0.0000       RECT PLATE  46
MX,MY,MXY= -0.40380E-01 -0.28521     -0.21166      XC,YC= 0.500        2.50       A= -60.0
SX,SY,TXY= -0.96313        -6.8451      -5.0798      SMX,SMN,TMX=    1.9611     -9.7753        5.8682      SIGE=  10.889
EL=  95  NODES=   50   51   67   66      MAT=  1  AREA=  1.00      TTOP,TBOT=    0.0    0.0  PRESS= 0.0000       RECT PLATE  46
MX,MY,MXY= -0.16811      -0.38645     -0.20412      XC,YC=  1.50        2.50       A= -59.1
SX,SY,TXY=  -4.9346        -9.2748      -4.8989      SMX,SMN,TMX=   -1.0992     -12.210        5.5555      SIGE=  11.699
EL=  96  NODES=   51   52   68   67      MAT=  1  AREA=  1.00      TTOP,TBOT=    0.0    0.0  PRESS= 0.0000       RECT PLATE  46
MX,MY,MXY= -0.49119      -0.59360     -0.18867      XC,YC=  2.50        2.50       A= -52.6
SX,SY,TXY=  -11.739        -14.246      -4.5281      SMX,SMN,TMX=   -8.3255     -17.709        4.6919      SIGE=  15.346
EL=  97  NODES=   52   53   69   68      MAT=  1  AREA=  2.25      TTOP,TBOT=    0.0    0.0  PRESS= 0.0000       RECT PLATE  46
MX,MY,MXY= -0.30866      -0.38067     -0.46165      XC,YC=  4.12        2.50       A= -47.2
SX,SY,TXY=  -7.4079        -9.1361      -11.080      SMX,SMN,TMX=    2.8412     -19.385        11.113      SIGE=  20.951
EL=  98  NODES=   53   54   70   69      MAT=  1  AREA=  2.50      TTOP,TBOT=    0.0    0.0  PRESS= 0.0000       RECT PLATE  46
MX,MY,MXY= -0.14269      -0.70259     -0.45246      XC,YC=  6.50        2.50       A= -60.9
SX,SY,TXY=  -3.4246        -16.862      -10.859      SMX,SMN,TMX=    2.6262     -22.913        12.770      SIGE=  24.333
EL=  99  NODES=   54   55   71   70      MAT=  1  AREA=  2.50      TTOP,TBOT=    0.0    0.0  PRESS= 0.0000       RECT PLATE  46
MX,MY,MXY= -0.25671E-01 -0.58707     -0.15400E-01  XC,YC=  9.00        2.50       A= -88.4
SX,SY,TXY= -0.61610        -14.090      -0.36973     SMX,SMN,TMX=  -0.60595     -14.100        6.7469      SIGE=  13.807
EL= 100  NODES=   55   56   72   71      MAT=  1  AREA=  2.50      TTOP,TBOT=    0.0    0.0  PRESS= 0.0000       RECT PLATE  46
MX,MY,MXY=  0.21848       0.70975E-01  0.61270E-03  XC,YC=  11.5        2.50       A=  89.8
SX,SY,TXY=   5.2435         1.7034       0.14705E-01  SMX,SMN,TMX=    5.2436      1.7033        1.7701      SIGE=  4.6330
EL= 101  NODES=   56   57   73   72      MAT=  1  AREA=  2.50      TTOP,TBOT=    0.0    0.0  PRESS= 0.0000       RECT PLATE  46
MX,MY,MXY=  0.18011      -0.39105E-01 -0.83784E-09  XC,YC=  14.0        2.50       A= -90.0
SX,SY,TXY=   4.3227        -0.93852     -0.20108E-07  SMX,SMN,TMX=    4.3227     -0.93852       2.6306      SIGE=  4.8604
EL= 102  NODES=   57   58   74   73      MAT=  1  AREA=  2.50      TTOP,TBOT=    0.0    0.0  PRESS= 0.0000       RECT PLATE  46
MX,MY,MXY=  0.21848       0.70975E-01 -0.61275E-03  XC,YC=  16.5        2.50       A= -89.8
SX,SY,TXY=   5.2435         1.7034      -0.14705E-01  SMX,SMN,TMX=    5.2436      1.7033        1.7701      SIGE=  4.6330
EL= 103  NODES=   58   59   75   74      MAT=  1  AREA=  2.50      TTOP,TBOT=    0.0    0.0  PRESS= 0.0000       RECT PLATE  46
MX,MY,MXY= -0.25671E-01 -0.58707      0.15400E-01  XC,YC=  19.0        2.50       A=  88.4
SX,SY,TXY= -0.61610        -14.090       0.36970     SMX,SMN,TMX=  -0.60595     -14.100        6.7469      SIGE=  13.807
EL= 104  NODES=   59   60   76   75      MAT=  1  AREA=  2.50      TTOP,TBOT=    0.0    0.0  PRESS= 0.0000       RECT PLATE  46
MX,MY,MXY= -0.14269      -0.70259      0.45246      XC,YC=  21.5        2.50       A=  60.9
SX,SY,TXY= -3.4246        -16.862       10.859      SMX,SMN,TMX=    2.6262     -22.913        12.770      SIGE=  24.333
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SX,SY,MXY= -.3..66        -0.1361      11.085     SMX,SMN,TMX=   2.8412     -19.385      11.113      SIGE=  20.951
SX,SY,TXY=  -7.4 79        -9.1361      11.089

EL=  106  NODES=   61   62   78   77       MAT=  1  AREA=  1.00      TTOP,TBOT=     0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.49119       -0.59369       0.18867       XC,YC=  25.5       2.50       A=  52.6
SX,SY,TXY=  -11.789        -14.246       4.5281        SMX,SMN,TMX=  -8.3255    -17.709       4.6919      SIGE=  15.346

EL=  107  NODES=   62   63   79   78       MAT=  1  AREA=  1.00      TTOP,TBOT=     0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.16811       -0.38645       0.20412       XC,YC=  26.5       2.50       A=  59.1
SX,SY,TXY=  -4.0346        -9.2748       4.8989        SMX,SMN,TMX=  -1.0992    -12.210       5.5555      SIGE=  11.699

EL=  108  NODES=   63   64   80   79       MAT=  1  AREA=  1.00      TTOP,TBOT=     0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.40380E-01  -0.29521       0.21166       XC,YC=  27.5       2.50       A=  60.0
SX,SY,TXY= -0.96913        -6.8451       5.0798        SMX,SMN,TMX=   1.9611    -9.7753       5.8682      SIGE=  10.889

EL=  109  NODES=   49  193  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.15311    SIG=-0.30623    EP=-0.000972  STAT=  1  CABLE  10
EL=  110  NODES=   50  194  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  111  NODES=   51  195  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  112  NODES=   52  196  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  113  NODES=   53  197  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  114  NODES=   54  198  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  115  NODES=   55  199  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  116  NODES=   56  200  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  117  NODES=   57  201  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  118  NODES=   58  202  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  119  NODES=   59  203  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  120  NODES=   60  204  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  121  NODES=   61  205  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  122  NODES=   62  206  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  123  NODES=   63  207  MAT=  2  TEMPS=    0.0    0.0  FORC= 0.00000    SIG= 0.00000    EP= 0.000000  STAT=  2  CABLE  10
EL=  124  NODES=   64  208  MAT=  2  TEMPS=    0.0    0.0  FORC=-0.15311    SIG=-0.30623    EP=-0.000972  STAT=  1  CABLE  10

EL=  125  NODES=   65   66   82   81       MAT=  1  AREA=  1.00      TTOP,TBOT=     0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.63992E-01  -0.36428      -0.22319       XC,YC= 0.500       3.50       A= -62.0
SX,SY,TXY=  -1.5358        -8.7427      -5.3563        SMX,SMN,TMX=   1.3164    -11.595       6.4556      SIGE=  12.306

EL=  126  NODES=   66   67   83   82       MAT=  1  AREA=  1.00      TTOP,TBOT=     0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.22621       -0.43235      -0.27005       XC,YC=  1.50       3.50       A= -55.4
SX,SY,TXY=  -5.4290        -10.376      -6.4913        SMX,SMN,TMX= -0.96541    -14.840       6.9373      SIGE=  14.382

EL=  127  NODES=   67   68   84   83       MAT=  1  AREA=  1.00      TTOP,TBOT=     0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.54729       -0.55720      -0.34969       XC,YC=  2.50       3.50       A= -45.4
SX,SY,TXY=  -13.135        -13.377      -8.3925        SMX,SMN,TMX=  -4.8605    -21.647       8.3934      SIGE=  19.673

EL=  128  NODES=   68   69   85   84       MAT=  1  AREA=  2.25      TTOP,TBOT=     0.0    0.0  PRESS= 0.0000         RECT PLATE  46
MX,MY,MXY= -0.42955       -0.51969      -0.22390       XC,YC=  4.12       3.50       A= -49.3
SX,SY,TXY=  -10.309        -12.44        -7.0          SMX,SMN,TMX=  -4.2653    -13.492       7.1129      SIGE=  16.771

                                                                     TTOP,TBOT=     0.0    0.0  PRESS= 0.0000         RECT PLATE  46
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FL= 130 NODES=  70   71   87   86     MAT= 1  AREA= 2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.45378      0.61877   -0.36709E-01   XC,YC=  9.00        3.50      A= -12.0
SX,SY,TXY=  10.891       14.851    -0.88100       SMX,SMN,TMX=  15.038     10.704      2.1670     SIGE=  13.407

FL= 131 NODES=  71   72   88   87     MAT= 1  AREA= 2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.16282    -0.77462E-01  0.31788E-02  XC,YC=  11.5        3.50      A=  89.2
SX,SY,TXY=  3.9076      -1.8591      0.76290E-01  SMX,SMN,TMX=  3.9086    -1.8601      2.8844     SIGE=  5.0998

FL= 132 NODES=  72   73   89   88     MAT= 1  AREA= 2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.20463     0.35322E-01 -0.83828E-09  XC,YC=  14.0        3.50      A= -90.0
SX,SY,TXY=  4.9111       0.94772    -0.20119E-07  SMX,SMN,TMX=  4.9111     0.94772     2.0317     SIGE=  4.5469

FL= 133 NODES=  73   74   90   89     MAT= 1  AREA= 2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.16282    -0.77462E-01 -0.31788E-02  XC,YC=  16.5        3.50      A= -89.2
SX,SY,TXY=  3.9076      -1.8591     -0.76290E-01  SMX,SMN,TMX=  3.9086    -1.8601      2.8844     SIGE=  5.0998

FL= 134 NODES=  74   75   91   90     MAT= 1  AREA= 2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.45378      0.61877     0.36709E-01  XC,YC=  19.0        3.50      A=  12.0
SX,SY,TXY=  10.891       14.851      0.88100      SMX,SMN,TMX=  15.038     10.704      2.1670     SIGE=  13.407

FL= 135 NODES=  75   76   92   91     MAT= 1  AREA= 2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.34307      0.50663     0.39024      XC,YC=  21.5        3.50      A=  39.1
SX,SY,TXY=  8.2336       12.159      9.3657       SMX,SMN,TMX=  19.766     0.62723     9.5692     SIGE=  19.460

FL= 136 NODES=  76   77   93   92     MAT= 1  AREA= 2.25      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.42955     -0.51868     0.29300      XC,YC=  23.9        3.50      A=  49.3
SX,SY,TXY= -10.309      -12.449      7.0320       SMX,SMN,TMX= -4.2658    -18.492      7.1129     SIGE=  16.771

FL= 137 NODES=  77   78   94   93     MAT= 1  AREA= 1.00      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.54729     -0.55720     0.34969      XC,YC=  25.5        3.50      A=  45.4
SX,SY,TXY= -13.135      -13.373      8.3925       SMX,SMN,TMX= -4.8605    -21.647      8.3934     SIGE=  19.673

FL= 138 NODES=  78   79   95   94     MAT= 1  AREA= 1.00      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.22621     -0.43235     0.27005      XC,YC=  26.5        3.50      A=  55.4
SX,SY,TXY= -5.4290      -10.376      6.4813       SMX,SMN,TMX= -0.96541   -14.840      6.9373     SIGE=  14.382

FL= 139 NODES=  79   80   96   95     MAT= 1  AREA= 1.00      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.63992E-01 -0.36428     0.22318      XC,YC=  27.5        3.50      A=  62.0
SX,SY,TXY= -1.5358      -8.7427      5.3563       SMX,SMN,TMX=  1.3164    -11.595      6.4556     SIGE=  12.306

FL= 140 NODES=  65  209  MAT= 2  TEMPS=   0.0   0.0  FORC=-0.27174E-01  SIG=-0.54347E-01  EP=-0.000173  STAT= 1  CABLE  10

FL= 141 NODES=  66  210  MAT= 2  TEMPS=   0.0   0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE  10

FL= 142 NODES=  67  211  MAT= 2  TEMPS=   0.0   0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE  10

FL= 143 NODES=  68  212  MAT= 2  TEMPS=   0.0   0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE  10

FL= 144 NODES=  69  213  MAT= 2  TEMPS=   0.0   0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE  10

FL= 145 NODES=  70  214  MAT= 2  TEMPS=   0.0   0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE  10

FL= 146 NODES=  71  215  MAT= 2  TEMPS=   0.0   0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE  10

FL= 147 NODES=  72  216  MAT= 2  TEMPS=   0.0   0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE  10

FL= 148 NODES=  73  217  MAT= 2  TEMPS=   0.0   0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE  10

FL= 149 NODES=  74  218  MAT= 2  TEMPS=   0.0   0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE  10

FL= 150 NODES=  75  219  MAT= 2  TEMPS=   0.0   0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE  10

FL= [illegible] NODES= 7[illegible] [illegible] MAT= [illegible] TEMPS= [illegible] [illegible] FORC= 0.00000 SIG= 0.00000 EP= [illegible] STAT= 2 CABLE 10
```

```
FL= 153  NODES=  78  222  MAT= 2  TEMPS=     0.0     0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2  CABLE  10
FL= 154  NODES=  79  223  MAT= 2  TEMPS=     0.0     0.0  FORC= 0.00000       SIG= 0.00000       EP= 0.000000  STAT=  2  CABLE  10
FL= 155  NODES=  80  224  MAT= 2  TEMPS=     0.0     0.0  FORC=-0.27174E-01   SIG=-0.54347E-01   EP=-0.000173  STAT=  1  CABLE  10

FL= 156  NODES=  81   82   98   97       MAT= 1  AREA=  1.00      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.64898E-01 -0.28386    -0.19061      XC,YC= 0.500        4.50       A= -58.8
SX,SY,TXY=  -2.0375      -6.8126     -4.5746      SMX,SMN,TMX=  0.73506     -9.5852        5.1601      SIGE=  9.9731

FL= 157  NODES=  82   83   99   98       MAT= 1  AREA=  1.00      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.27044      -0.27527    -0.25777      XC,YC=  1.50         4.50       A= -45.3
SX,SY,TXY=  -6.4906      -6.6065     -6.1864      SMX,SMN,TMX= -0.36188     -12.735        6.1867      SIGE=  12.558

FL= 158  NODES=  83   84  100   99       MAT= 1  AREA=  1.00      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.46514      -0.26485    -0.30284      XC,YC=  2.50         4.50       A= -35.9
SX,SY,TXY=  -11.163      -6.3563     -7.2682      SMX,SMN,TMX= -1.1045      -16.415        7.6553      SIGE=  15.892

FL= 159  NODES=  84   85  101  100       MAT= 1  AREA=  2.25      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.32797      -0.14050    -0.26418      XC,YC=  4.12         4.50       A= -35.2
SX,SY,TXY=  -7.8712      -3.3721     -6.3403      SMX,SMN,TMX=  1.1059      -12.349        6.7275      SIGE=  12.938

FL= 160  NODES=  85   86  102  101       MAT= 1  AREA=  2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY=  0.29256       0.11300    -0.21422      XC,YC=  6.50         4.50       A= -56.4
SX,SY,TXY=   7.0214        2.7119     -5.1412      SMX,SMN,TMX=  10.441      -0.70785       5.5745      SIGE=  10.813

FL= 161  NODES=  86   87  103  102       MAT= 1  AREA=  2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY=  0.40484       0.17133    -0.17950      XC,YC=  9.00         4.50       A= -61.5
SX,SY,TXY=   9.7161        4.1119     -4.3081      SMX,SMN,TMX=  12.053       1.7748        5.1392      SIGE=  11.271

FL= 162  NODES=  87   88  104  103       MAT= 1  AREA=  2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY=  0.21751       0.58641E-01 -0.10641E-01 XC,YC=  11.5         4.50       A= -86.2
SX,SY,TXY=   5.2203        1.4074     -0.25538     SMX,SMN,TMX=  5.2374       1.3904        1.9235      SIGE=  4.6991

FL= 163  NODES=  88   89  105  104       MAT= 1  AREA=  2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY=  0.19483      -0.73214E-02 -0.84023E-09 XC,YC=  14.0         4.50       A= -90.0
SX,SY,TXY=   4.6759       -0.17571    -0.20165E-07 SMX,SMN,TMX=  4.6759      -0.17571        2.4258      SIGE=  4.7662

FL= 164  NODES=  89   90  106  105       MAT= 1  AREA=  2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY=  0.21751       0.58641E-01  0.10641E-01 XC,YC=  16.5         4.50       A=  86.2
SX,SY,TXY=   5.2203        1.4074      0.25538     SMX,SMN,TMX=  5.2374       1.3904        1.9235      SIGE=  4.6991

FL= 165  NODES=  90   91  107  106       MAT= 1  AREA=  2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY=  0.40484       0.17133     0.17950      XC,YC=  19.0         4.50       A=  61.5
SX,SY,TXY=   9.7161        4.1119      4.3081      SMX,SMN,TMX=  12.053       1.7748        5.1392      SIGE=  11.271

FL= 166  NODES=  91   92  108  107       MAT= 1  AREA=  2.50      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY=  0.29256       0.11300     0.21422      XC,YC=  21.5         4.50       A=  56.4
SX,SY,TXY=   7.0214        2.7119      5.1412      SMX,SMN,TMX=  10.441      -0.70785       5.5745      SIGE=  10.813

FL= 167  NODES=  92   93  109  108       MAT= 1  AREA=  2.25      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.32797      -0.14050     0.26418      XC,YC=  23.9         4.50       A=  35.2
SX,SY,TXY=  -7.8712      -3.3721      6.3403      SMX,SMN,TMX=  1.1059      -12.349        6.7275      SIGE=  12.938

FL= 168  NODES=  93   94  110  109       MAT= 1  AREA=  1.00      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.46514      -0.26485     0.30284      XC,YC=  25.5         4.50       A=  35.9
SX,SY,TXY=  -11.163      -6.3563      7.2682      SMX,SMN,TMX= -1.1045      -16.415        7.6553      SIGE=  15.892

FL= 169  NODES=  94   95  111  110       MAT= 1  AREA=  1.00      TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.27044      -0.27527     0.25777      XC,YC=  26.5         4.50       A=  45.3
SX,SY,TXY=  -6.4906      -6.6065      6.1864      SMX,SMN,TMX= -0.36188     -12.735        6.1867      SIGE=  12.558

FL= [illegible]  [illegible]        112  111       MAT= 1  AREA=  1.[illegible]     TTOP,TBOT=    0.0     0.0  PRESS= 0.0000          RECT PLATE  46
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```
EL= 152  NODES=  77  221  MAT= 2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE 10
EL= 153  NODES=  78  222  MAT= 2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE 10
EL= 154  NODES=  79  223  MAT= 2  TEMPS=  0.0  0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT= 2  CABLE 10
EL= 155  NODES=  80  224  MAT= 2  TEMPS=  0.0  0.0  FORC=-0.27174E-01  SIG=-0.54347E-01  EP=-0.000173  STAT= 1  CABLE 10

EL= 156  NODES=  81  82  98  97      MAT= 1  AREA= 1.00   TTOP,TBOT=  0.0   0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY= -0.84898E-01  -0.28386     -0.19061      XC,YC= 0.500      4.50     A= -58.8
SX,SY,TXY= -2.0375       -6.8126      -4.5746       SMX,SMN,TMX=  0.73586   -9.5852   5.1601   SIGE= 9.9731

EL= 157  NODES=  82  83  99  98      MAT= 1  AREA= 1.00   TTOP,TBOT=  0.0   0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY= -0.27044      -0.27527     -0.25777      XC,YC= 1.50       4.50     A= -45.3
SX,SY,TXY= -6.4906       -6.6065      -6.1864       SMX,SMN,TMX= -0.36188   -12.735   6.1867   SIGE= 12.558

EL= 158  NODES=  83  84  100  99     MAT= 1  AREA= 1.00   TTOP,TBOT=  0.0   0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY= -0.46514      -0.26485     -0.30284      XC,YC= 2.50       4.50     A= -35.9
SX,SY,TXY= -11.163       -6.3563      -7.2682       SMX,SMN,TMX= -1.1045    -16.415   7.6553   SIGE= 15.892

EL= 159  NODES=  84  85  101  100    MAT= 1  AREA= 2.25   TTOP,TBOT=  0.0   0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY= -0.32797      -0.14050     -0.26418      XC,YC= 4.12       [illegible]  A= -35.2
SX,SY,TXY= -7.8712       -3.3721      -6.3403       SMX,SMN,TMX=  1.1059    -12.349   6.7275   SIGE= 12.938

EL= 160  NODES=  85  86  102  101    MAT= 1  AREA= 2.50   TTOP,TBOT=  0.0   0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY=  0.29256       0.11300     -0.21422      XC,YC= 6.50       4.50     A= -56.4
SX,SY,TXY=  7.0214        2.7119      -5.1412       SMX,SMN,TMX=  10.441    -0.70785  5.5745   SIGE= 10.813

EL= 161  NODES=  86  87  103  102    MAT= 1  AREA= 2.50   TTOP,TBOT=  0.0   0.0  PRESS= [illegible]   RECT PLATE 46
MX,MY,MXY=  0.40484       0.17133     -0.17950      XC,YC= 9.00       4.50     A= -61.5
SX,SY,TXY=  9.7161        4.1119      -4.3081       SMX,SMN,TMX=  12.053     1.7748   5.1392   SIGE= 11.271

EL= 162  NODES=  87  88  104  103    MAT= 1  AREA= 2.50   TTOP,TBOT=  0.0   0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY=  0.21751       0.58641E-01 -0.10641E-01  XC,YC= 11.5       [illegible]  A= -86.2
SX,SY,TXY=  5.2203        1.4074      -0.25538      SMX,SMN,TMX=  5.2374     1.3904   1.9235   SIGE= 4.6991

EL= 163  NODES=  88  89  105  104    MAT= 1  AREA= 2.50   TTOP,TBOT=  0.0   0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY=  0.19483      -0.73214E-02 -0.84023E-09  XC,YC= 14.0       4.50     A= -90.0
SX,SY,TXY=  4.6759       -0.17571     -0.20165E-07  SMX,SMN,TMX=  4.6759    -0.17571  2.4258   SIGE= 4.7662

EL= 164  NODES=  89  90  106  105    MAT= 1  AREA= 2.50   TTOP,TBOT=  [illegible]  PRESS= [illegible]   RECT PLATE [illegible]
MX,MY,MXY=  0.21751       0.58641E-01  0.10641E-01  XC,YC= 16.5       4.50     A= 86.2
SX,SY,TXY=  5.2203        1.4074       0.25538      SMX,SMN,TMX=  5.2374     1.3904   1.9235   SIGE= 4.6991

EL= 165  NODES=  90  91  107  106    MAT= 1  AREA= 2.50   TTOP,TBOT=  0.0   0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY=  0.40484       0.17133      0.17950      XC,YC= 19.0       [illegible]  A= [illegible]
SX,SY,TXY=  9.7161        4.1119       4.3081       SMX,SMN,TMX=  12.053     1.7748   [illegible]   SIGE= [illegible]

EL= 166  NODES=  91  92  108  107    MAT= 1  AREA= 2.50   TTOP,TBOT=  0.0   0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY=  0.29256       0.11300      0.21422      XC,YC= 21.5       4.50     A= 56.4
SX,SY,TXY=  7.0214        2.7119       5.1412       SMX,SMN,TMX=  10.441    -0.70785  5.5745   SIGE= 10.813

EL= 167  NODES=  92  93  109  108    MAT= 1  AREA= 2.25   TTOP,TBOT=  0.0   0.0  PRESS= [illegible]   RECT PLATE [illegible]
MX,MY,MXY= -0.32797      -0.14050      0.26418      XC,YC= 23.9       4.50     A= 35.2
SX,SY,TXY= -7.8712       -3.3721       6.3403       SMX,SMN,TMX=  1.1059    -12.349   6.7275   SIGE= 12.938

EL= 168  NODES=  93  94  110  109    MAT= 1  AREA= 1.00   TTOP,TBOT=  0.0   0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY= -0.46514      -0.26485      0.30284      XC,YC= 25.5       4.50     A= 35.9
SX,SY,TXY= -11.163       -6.3563       7.2682       SMX,SMN,TMX= -1.1045    -16.415   7.6553   SIGE= 15.892

EL= 169  NODES=  94  95  111  110    MAT= 1  AREA= 1.00   TTOP,TBOT=  0.0   0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY= -0.27044      -0.27527      0.25777      XC,YC= 26.5       4.50     A= 45.3
SX,SY,TXY= -6.4906       -6.6065       6.1864       SMX,SMN,TMX= -0.36188   -12.735   6.1867   SIGE= 12.558

                         111           MAT= 1  AREA= 1.00   TTOP,TBOT=  0.0   0.0  PRESS= 0.0000   RECT PLATE 46
```

```
EL= 152  NODES=   77  221   MAT=  2   TEMPS=     0.0     0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2  CABLE  10
EL= 153  NODES=   78  222   MAT=  2   TEMPS=     0.0     0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2  CABLE  10
EL= 154  NODES=   79  223   MAT=  2   TEMPS=     0.0     0.0  FORC= 0.00000        SIG= 0.00000        EP= 0.000000  STAT=  2  CABLE  10
EL= 155  NODES=   80  224   MAT=  2   TEMPS=     0.0     0.0  FORC=-0.27174E-01   SIG=-0.54347E-01   EP=-0.000173  STAT=  1  CABLE  10
EL= 156  NODES=   81   82   98   97        MAT=  1   AREA=  1.00        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.84898E-01 -0.28386      -0.19061      XC,YC= 0.500         4.50       A= -58.8
SX,SY,TXY=  -2.0375      -6.8126       -4.5746      SMX,SMN,TMX=   0.73506   -9.5852        5.1601       SIGE=  9.9731
EL= 157  NODES=   82   83   99   98        MAT=  1   AREA=  1.00        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.27044      -0.27527      -0.25777      XC,YC=  1.50         4.50       A= -45.3
SX,SY,TXY=  -6.4906      -6.6965       -6.1864      SMX,SMN,TMX= -0.36188   -12.735        6.1867       SIGE=  12.558
EL= 158  NODES=   83   84  100   99        MAT=  1   AREA=  1.00        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.46514      -0.26485      -0.30284      XC,YC=  2.50         4.50       A= -35.9
SX,SY,TXY=  -11.163      -6.3563       -7.2682      SMX,SMN,TMX=  -1.1045   -16.415        7.6553       SIGE=  15.892
EL= 159  NODES=   84   85  101  100        MAT=  1   AREA=  2.25        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.32797      -0.14050      -0.26418      XC,YC=  4.12         4.50       A= -35.2
SX,SY,TXY=  -7.8712      -3.3721       -6.3403      SMX,SMN,TMX=   1.1059   -12.349        6.7275       SIGE=  12.938
EL= 160  NODES=   85   86  102  101        MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.29256       0.11300      -0.21422      XC,YC=  6.50         4.50       A= -56.4
SX,SY,TXY=   7.0214       2.7119       -5.1412      SMX,SMN,TMX=   10.441   -0.70785       5.5745       SIGE=  10.813
EL= 161  NODES=   86   87  103  102        MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.40484       0.17133      -0.17950      XC,YC=  9.00         4.50       A= -61.5
SX,SY,TXY=   9.7161       4.1119       -4.3081      SMX,SMN,TMX=   12.053    1.7748        5.1392       SIGE=  11.271
EL= 162  NODES=   87   88  104  103        MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.21751       0.58641E-01 -0.10641E-01  XC,YC=  11.5         4.50       A= -86.2
SX,SY,TXY=   5.2203       1.4074       -0.25538     SMX,SMN,TMX=   5.2374    1.3904        1.9235       SIGE=  4.6991
EL= 163  NODES=   88   89  105  104        MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.19483      -0.73214E-02 -0.84023E-09  XC,YC=  14.0         4.50       A= -90.0
SX,SY,TXY=   4.6759      -0.17571      -0.20165E-07  SMX,SMN,TMX=   4.6759   -0.17571       2.4258       SIGE=  4.7662
EL= 164  NODES=   89   90  106  105        MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.21751       0.58641E-01  0.10641E-01  XC,YC=  16.5         4.50       A=  86.2
SX,SY,TXY=   5.2203       1.4074        0.25538     SMX,SMN,TMX=   5.2374    1.3904        1.9235       SIGE=  4.6991
EL= 165  NODES=   90   91  107  106        MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.40484       0.17133       0.17950      XC,YC=  19.0         4.50       A=  61.5
SX,SY,TXY=   9.7161       4.1119        4.3081      SMX,SMN,TMX=   12.053    1.7748        5.1392       SIGE=  11.271
EL= 166  NODES=   91   92  108  107        MAT=  1   AREA=  2.50        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.29256       0.11300       0.21422      XC,YC=  21.5         4.50       A=  56.4
SX,SY,TXY=   7.0214       2.7119        5.1412      SMX,SMN,TMX=   10.441   -0.70785       5.5745       SIGE=  10.813
EL= 167  NODES=   92   93  109  108        MAT=  1   AREA=  2.25        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.32797      -0.14050       0.26418      XC,YC=  23.9         4.50       A=  35.2
SX,SY,TXY=  -7.8712      -3.3721        6.3403      SMX,SMN,TMX=   1.1059   -12.349        6.7275       SIGE=  12.938
EL= 168  NODES=   93   94  110  109        MAT=  1   AREA=  1.00        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.46514      -0.26485       0.30284      XC,YC=  25.5         4.50       A=  35.9
SX,SY,TXY=  -11.163      -6.3563        7.2682      SMX,SMN,TMX=  -1.1045   -16.415        7.6553       SIGE=  15.892
EL= 169  NODES=   94   95  111  110        MAT=  1   AREA=  1.00        TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.27044      -0.27527       0.25777      XC,YC=  26.5         4.50       A=  45.3
SX,SY,TXY=  -6.4906      -6.6965        6.1864      SMX,SMN,TMX= -0.36188   -12.735        6.1867       SIGE=  12.558
                                                                  TTOP,TBOT=    0.0     0.0  PRESS= 0.0000        RECT PLATE  46
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EL= 171 NODES=  81 225 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 172 NODES=  82 226 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 173 NODES=  83 227 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 174 NODES=  84 228 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 175 NODES=  85 229 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 176 NODES=  86 230 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 177 NODES=  87 231 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 178 NODES=  88 232 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 179 NODES=  89 233 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 180 NODES=  90 234 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 181 NODES=  91 235 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 182 NODES=  92 236 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 183 NODES=  93 237 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 184 NODES=  94 238 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 185 NODES=  95 239 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 186 NODES=  96 240 MAT= 2 TEMPS=  0.0  0.0 FORC= 0.00000  SIG= 0.00000  EP= 0.000000 STAT= 2 CABLE 10
EL= 187 NODES=  97  98 114 113   MAT= 1  AREA= 0.500   TTOP,TBOT=  0.0  0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY= -0.10195   -0.16813   -0.14011   XC,YC= 0.500   5.25   A= -51.6
SX,SY,TXY=  -2.4468   -4.0351   -3.3627   SMX,SMN,TMX= 0.21427  -6.6962   3.4552   SIGE= 6.8058
EL= 188 NODES=  98  99 115 114   MAT= 1  AREA= 0.500   TTOP,TBOT=  0.0  0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY= -0.29304   -0.12995   -0.21191   XC,YC= 1.50   5.25   A= -34.5
SX,SY,TXY=  -7.0329   -3.1188   -5.0859   SMX,SMN,TMX= 0.37361  -10.525   5.4495   SIGE= 10.717
EL= 189 NODES=  99 100 116 115   MAT= 1  AREA= 0.500   TTOP,TBOT=  0.0  0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY= -0.42658   -0.99333E-01 -0.25960   XC,YC= 2.50   5.25   A= -28.9
SX,SY,TXY=  -10.238   -2.3840   -6.2303   SMX,SMN,TMX= 1.0537  -13.676   7.3646   SIGE= 14.232
EL= 190 NODES= 100 101 117 116   MAT= 1  AREA= 1.12   TTOP,TBOT=  0.0  0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY= -0.28656   -0.45893E-01 -0.26423   XC,YC= 4.12   5.25   A= -32.8
SX,SY,TXY=  -6.8773   -1.1014   -6.3416   SMX,SMN,TMX= 2.9788  -10.958   6.9682   SIGE= 12.711
EL= 191 NODES= 101 102 118 117   MAT= 1  AREA= 1.25   TTOP,TBOT=  0.0  0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY=  0.30014   0.72751E-01 -0.20701   XC,YC= 6.50   5.25   A= -59.4
SX,SY,TXY=  7.2034   1.7460   -4.9683   SMX,SMN,TMX= 10.143  -1.1936   5.6683   SIGE= 10.789
EL= 192 NODES= 102 103 119 118   MAT= 1  AREA= 1.25   TTOP,TBOT=  0.0  0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY=  0.42835   0.90500E-01 -0.15925   XC,YC= 9.00   5.25   A= -68.3
SX,SY,TXY=  10.280   2.1720   -3.8219   SMX,SMN,TMX= 11.738  0.65451   5.5717   SIGE= 11.485
EL= 193 NODES= 103 104 120 119   MAT= 1  AREA= 1.25   TTOP,TBOT=  0.0  0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY=  0.23905   0.34209E-01 -0.28918E-01  XC,YC= 11.5   5.25   A= -82.1
SX,SY,TXY=  5.7372   0.82102   -0.69404   SMX,SMN,TMX= 5.8333  0.72492   2.5542   SIGE= 5.5068
EL= 194 NODES= 104 105 121 120   MAT= 1  AREA= 1.25   TTOP,TBOT=  0.0  0.0  PRESS= 0.0000   RECT PLATE 46
MX,MY,MXY= [illegible]   [illegible]   [illegible]   XC,YC= 14.0   5.25   A= -30.0
SX,SY,TXY= [illegible]   0.13619   [illegible]   SMX,SMN,TMX= [illegible]  0.13619   2.3796   SIGE= 4.8288
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MX,MY,MXY=  0.25905         0.54920E-01   0.78915E-01   XC,YC=             5.25          A=  82.1
SX,SY,TXY=   5.7372         0.82102       0.69404       SMX,SMN,TMX=    5.8333        0.72492          2.5542      SIGE=  5.5068

EL=  196  NODES=  106  107  123  122        MAT=  1   AREA=  1.25         TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY=  0.42835          0.96300E-01   0.15925      XC,YC=  19.0          5.25          A=  68.3
SX,SY,TXY=   10.280           2.1720        3.8219      SMX,SMN,TMX=    11.798        0.65451          5.5717      SIGE=  11.485

EL=  197  NODES=  107  108  124  123        MAT=  1   AREA=  1.25         TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY=  0.30014          0.72751E-01   0.20701      XC,YC=  21.5          5.25          A=  59.4
SX,SY,TXY=   7.2034           1.7460        4.9683      SMX,SMN,TMX=    10.143        -1.1936          [illegible]6683      SIGE=  10.789

EL=  198  NODES=  108  109  125  124        MAT=  1   AREA=  1.13         TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.28556         -0.45893E-01   0.26423      XC,YC=  23.9          5.25          A=  32.8
SX,SY,TXY=  -6.8773          -1.1014        6.3416      SMX,SMN,TMX=    2.9788        -10.958          6.9682      SIGE=  12.711

EL=  199  NODES=  109  110  126  125        MAT=  1   AREA= 0.500         TTOP,TBOT=     0.0     0.0  PRESS= [illegible]     [illegible]  46
MX,MY,MXY= -0.42658         -0.99333E-01   0.25960      XC,YC=  25.5          5.25          A=  28.9
SX,SY,TXY=  -10.238          -2.3840        6.2303      SMX,SMN,TMX=    1.0537        -13.676          7.3646      SIGE=  14.232

EL=  200  NODES=  110  111  127  126        MAT=  1   AREA= 0.500         TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.29304         -0.12995       0.21191      XC,YC=  26.5          [illegible]   A=  34.5
SX,SY,TXY=  -7.0329          -3.1188        5.0859      SMX,SMN,TMX=    0.37361       -10.525          [illegible]4495      SIGE=  10.717

EL=  201  NODES=  111  112  128  127        MAT=  1   AREA= 0.500         TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.10195         -0.16813       0.14011      XC,YC=  27.5          5.25          A=  51.6
SX,SY,TXY=  -2.4468          -4.0351        3.3627      SMX,SMN,TMX=    0.21427       -6.6962          3.4552      SIGE=  6.8058

EL=  202  NODES=   97  241  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= [illegible]   STAT=  2  CABLE  10
EL=  203  NODES=   98  242  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  204  NODES=   99  243  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  205  NODES=  100  244  MAT=  2  TEMPS=     0.0     0.0  FORC= [illegible] SIG= 0.00000     EP= [illegible]   STAT=  2  CABLE  10
EL=  206  NODES=  101  245  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  207  NODES=  102  246  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  208  NODES=  103  247  MAT=  2  TEMPS=     0.0     0.0  FORC= [illegible] SIG= [illegible] EP= [illegible]   STAT=  [illegible]  [illegible]
EL=  209  NODES=  104  248  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  210  NODES=  105  249  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  211  NODES=  106  250  MAT=  2  TEMPS=     0.0     0.0  FORC= [illegible] SIG= [illegible] [illegible]
EL=  212  NODES=  107  251  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  213  NODES=  108  252  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  214  NODES=  109  253  MAT=  2  TEMPS=     0.0     0.0  FORC= [illegible] SIG= [illegible] [illegible]
EL=  215  NODES=  110  254  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  216  NODES=  111  255  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  217  NODES=  112  256  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10

EL=  218  NODES=  113  114  130  129        MAT=  1   AREA= 0.500         TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= -0.10706         -0.57531E-01  -0.96261E-01  XC,YC= 0.500          5.75          A= -37.8
SX,SY,TXY=  -2.5694          -1.3808       -2.3103      SMX,SMN,TMX=    0.41040       -4.3606          2.3855      SIGE=  4.5796

EL=  219  NODES=  114  115  131  130        MAT=  1   AREA= 0.500         TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          RECT PLATE  46
MX,MY,MXY= [illegible]     [illegible]    [illegible]   XC,YC=  1.50          5.75          A= -26.9
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FL= 220 NODES= 115 116 132 131      MAT= 1  AREA= 0.500   TTOP,TBOT=   0.0    0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.43005      -0.30508E-01 -0.24202    XC,YC=  2.50     5.75      A= -25.2
SX,SY,TXY=  -10.321      -0.73220     -5.8084     SMX,SMN,TMX=   2.0049   -13.058       7.5316      SIGE=  14.168

FL= 221 NODES= 116 117 133 132      MAT= 1  AREA=  1.12   TTOP,TBOT=   0.0    0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.27216      -0.13480E-01 -0.28044    XC,YC=  4.12     5.75      A= -32.6
SX,SY,TXY=  -6.5319      -0.32353     -6.7305     SMX,SMN,TMX=   3.9842   -10.840       7.4119      SIGE=  13.287

FL= 222 NODES= 117 118 134 133      MAT= 1  AREA=  1.25   TTOP,TBOT=   0.0    0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.29308       0.24520E-01 -0.24337    XC,YC=  6.50     5.75      A= -59.4
SX,SY,TXY=   7.0339       0.58849     -5.8410     SMX,SMN,TMX=   10.482   -2.8598       6.6711      SIGE=  12.167

FL= 223 NODES= 118 119 135 134      MAT= 1  AREA=  1.25   TTOP,TBOT=   0.0    0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.44138       0.24811E-01 -0.15192    XC,YC=  9.00     [illegible]  A= -71.9
SX,SY,TXY=   10.593       0.59547     -3.6461     SMX,SMN,TMX=   11.78[illegible]  -0.59295   [illegible].1872   SIGE= [illegible]

FL= 224 NODES= 119 120 136 135      MAT= 1  AREA=  1.25   TTOP,TBOT=   0.0    0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.25324       0.12954E-01 -0.30848E-01  XC,YC=  11.5   5.75      A= -82.8
SX,SY,TXY=   6.0779       0.31090     -0.74034    SMX,SMN,TMX=   6.1714    0.21738      2.9770      SIGE=  6.0656

FL= 225 NODES= 120 121 137 136      MAT= 1  AREA=  1.25   [illegible]   0.0    0.0  PRESS= [illegible]        [illegible]
MX,MY,MXY=  0.21144       0.39989E-02 -0.86709E-09  XC,YC=  14.0   5.75      A= -90.0
SX,SY,TXY=   5.0746       0.95974E-01 -0.20816E-07  SMX,SMN,TMX=  5.0746    0.95974E-01  2.4893      SIGE=  5.0273

FL= 226 NODES= 121 122 138 137      MAT= 1  AREA=  1.25   TTOP,TBOT=   0.0    0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.25324       0.12954E-01  [illegible]  XC,YC=  16.5   [illegible]  [illegible]
SX,SY,TXY=   6.0779       0.31090      0.74034    SMX,SMN,TMX=   [illegible]  [illegible]  [illegible].9770   SIGE= [illegible]

FL= 227 NODES= 122 123 139 138      MAT= 1  AREA=  1.25   TTOP,TBOT=   0.0    0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY=  0.44138       0.24811E-01  0.15192    XC,YC=  19.0     5.75      A=  71.9
SX,SY,TXY=   10.593       0.59547      3.6461     SMX,SMN,TMX=   11.781   -0.59295      6.1872      SIGE=  12.089

FL= 228 NODES= 123 124 140 139      MAT= 1  AREA=  1.25   [illegible]   0.0    0.0  [illegible]        [illegible]
MX,MY,MXY=  0.29308       0.24520E-01  0.24337    XC,YC=  21.5     5.75      A=  59.4
SX,SY,TXY=   7.0339       0.58849      5.8410     SMX,SMN,TMX=   10.482   -2.8598       6.6711      SIGE=  12.167

FL= 229 NODES= 124 125 141 140      MAT= 1  AREA=  1.12   TTOP,TBOT=   0.0    0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.27216      -0.13480E-01  [illegible]  XC,YC=  23.9   [illegible]  [illegible]
SX,SY,TXY=  -6.5319      -0.32353      6.7305     SMX,SMN,TMX=   3.984[illegible]  -10.840   [illegible]   [illegible]

FL= 230 NODES= 125 126 142 141      MAT= 1  AREA= 0.500   TTOP,TBOT=   0.0    0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.43005      -0.30508E-01  0.24202    XC,YC=  25.5     5.75      A=  25.2
SX,SY,TXY=  -10.321      -0.73220      5.8084     SMX,SMN,TMX=   2.0049   -13.058       7.5316      SIGE=  14.168

FL= 231 NODES= 126 127 143 142      MAT= 1  AREA= 0.500   [illegible]   [illegible]   [illegible]
MX,MY,MXY= -0.31227      -0.42328E-01  0.18406    XC,YC=  26.5     5.75      A=  26.9
SX,SY,TXY=  -7.4944      -1.0159       4.4174     SMX,SMN,TMX=   1.2226   -9.7329       5.4778      SIGE=  10.398

FL= 232 NODES= 127 128 144 143      MAT= 1  AREA= 0.500   TTOP,TBOT=   0.0    0.0  PRESS= 0.0000        RECT PLATE  46
MX,MY,MXY= -0.10706      -0.57531E-01  0.96261E-01  XC,YC=  27.5   [illegible]  [illegible] 37.8
SX,SY,TXY=  -2.5694      -1.3808       2.3103     SMX,SMN,TMX=   [illegible]  -4.3606     2.3858      SIGE= [illegible]

FL= 233 NODES= 113 257 MAT= 2 TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
FL= 234 NODES= 114 258 MAT= 2 TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
FL= 235 NODES= 115 259 MAT= 2 TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
FL= 236 NODES= 116 260 MAT= 2 TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
FL= 237 NODES= 117 261 MAT= 2 TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
FL= 238 NODES= 118 262 MAT= 2 TEMPS=   0.0    0.0  FORC= 0.00000      SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
[illegible]                                                          SIG= 0.00000      EP= 0.000000  STAT=  2  CABLE  10
```

```
FL=  241  NODES=  121  265  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  242  NODES=  122  266  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  243  NODES=  123  267  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  244  NODES=  124  268  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  245  NODES=  125  269  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  246  NODES=  126  270  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  247  NODES=  127  271  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  248  NODES=  128  272  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  249  NODES=  129  273  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  250  NODES=  130  274  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  251  NODES=  131  275  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     FP= 0.000000  STAT=  2  CABLE  10
EL=  252  NODES=  132  276  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  253  NODES=  133  277  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  254  NODES=  134  278  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  255  NODES=  135  279  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  256  NODES=  136  280  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  257  NODES=  137  281  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  258  NODES=  138  282  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  259  NODES=  139  283  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  260  NODES=  140  284  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  261  NODES=  141  285  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  262  NODES=  142  286  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= [illegible]  STAT=  2  CABLE  10
FL=  263  NODES=  143  287  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
EL=  264  NODES=  144  288  MAT=  2  TEMPS=     0.0     0.0  FORC= 0.00000     SIG= 0.00000     EP= 0.000000  STAT=  2  CABLE  10
FL=  265  NODES=   68  212  MAT=  3  TEMPS=     0.0     0.0  FORC=  3.0513     SIG=  191.91     EP= [illegible]  STAT= [illegible]  CABLE  10
FL=  266  NODES=   77  221  MAT=  3  TEMPS=     0.0     0.0  FORC=  3.0513     SIG=  191.91     EP= 0.006618  STAT=  1  CABLE  10

FL=  267  NODES=   38   54  342  326       MAT=  4   AREA=  3.50       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY=  0.15950E-02  0.19394E-01  0.35563E-01   NX,NY=  0.46067E-01 -0.11313E-01  XC,YC,ZC=  7.75   [illegible]    [illegible]
TOP SX,SY,TXY=-0.32442     -0.65121      0.65635     SMX,SMN,TMX= 0.18857     -1.1642       0.67639      A=  52.0 SIGE=  1.2690
MID SX,SY,TXY=-0.42242     -1.8428      -1.5286      SMX,SMN,TMX= 0.55297     -2.8182       1.6856       A= -57.5 SIGE=  3.1315
BOT SX,SY,TXY=-0.52041     -3.3343      -3.7136      SMX,SMN,TMX=  2.1432     -5.6980       3.9206       A= -54.3 SIGE=  7.0194

FL=  268  NODES=   54   70  358  342       MAT=  4   AREA=  3.50       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000          QUAD SHELL  63
MX,MY,MXY= -0.34482E-03  0.58050E-02  0.33752E-01   NX,NY=  0.32925E-01  0.10631E-02  XC,YC,ZC=  7.75     2.50       1.75
TOP SX,SY,TXY=-0.16435      5.2974       2.8044      SMX,SMN,TMX=  6.4908     -1.3483       3.9146       A=  22.9 SIGE=  7.2496
MID SX,SY,TXY=-0.14377      4.9467       0.73366     SMX,SMN,TMX=  5.0437     -0.24668      2.6452       A=   8.0 SIGE=  5.1714
BOT SX,SY,TXY=-0.1232[illegible]   4.5[illegible]1      -1.3451      SMX,SMN,TMX=  4.9404     -0.47986      2.7396       A= -14.9 SIGE=  5.1964

[illegible]                                                               QUAD SHELL  63
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FL=  269  NODES=   70   86  374  358        MAT=  4   AREA=  3.50       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY= -0.65344E-02 -0.89259E-02  0.32637E-01   NX,NY=  0.30151E-01 -0.92421E-03   XC,YC,ZC=   7.75        3.50        1.75
TOP SX,SY,TXY=-0.68777      -3.4020        3.3384     SMX,SMN,TMX=  1.5588      -5.6486        3.6037       A=  56.1 SIGE=  6.5682
MID SX,SY,TXY=-0.28629      -2.8536        1.3332     SMX,SMN,TMX= 0.28075      -3.4207        1.8507       A=  67.0 SIGE=  3.5693
BOT SX,SY,TXY= 0.11518      -2.3052       -0.67203    SMX,SMN,TMX= 0.28925      -2.4793        1.3843       A= -75.5 SIGE=  2.6358

FL=  270  NODES=   86  102  390  374        MAT=  4   AREA=  3.50       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY= -0.45946E-02 -0.18657E-01  0.32028E-01   NX,NY=  0.44789E-02  0.68804E-02   XC,YC,ZC=   7.75  [illegible]  1.75
TOP SX,SY,TXY=-0.16087      -1.4045        1.4324     SMX,SMN,TMX= 0.77881      -2.3442        1.5615       A=  56.7 SIGE=  2.8156
MID SX,SY,TXY= 0.12142      -0.25823      -0.53545    SMX,SMN,TMX= 0.49970      -0.63650       0.56810      A= -54.8 SIGE= 0.98635
BOT SX,SY,TXY= 0.40372       0.88808      -2.5032     SMX,SMN,TMX=  3.1608      -1.8690        2.5149       A= -42.2 SIGE=  4.4036

FL=  271  NODES=   43   59  347  331        MAT=  4   AREA=  3.50       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY= -0.35949E-02 -0.19394E-01 -0.35563E-01   NX,NY= -0.46[illegible]   XC,YC,ZC= [illegible]
TOP SX,SY,TXY=-0.52041      -3.0343       -3.7136     SMX,SMN,TMX=  2.14[illegible]   -5.6980     3.[illegible]206       A= [illegible]4.3 SIGE= 7.[illegible]
MID SX,SY,TXY=-0.42242      -1.8428       -1.5286     SMX,SMN,TMX= 0.55297      -2.8182        1.[illegible]856      A=  67.5 SIGE= 3.[illegible]
BOT SX,SY,TXY=-0.32442      -0.65121       0.65635    SMX,SMN,TMX= 0.18857      -1.1642        0.67639      A=  52.0 SIGE=  1.2690

FL=  272  NODES=   59   75  363  347        MAT=  4   AREA=  3.50       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY=  0.34482E-03 -0.58050E-02 -0.33752E-01   NX,NY= -0.32[illegible]   XC,YC,ZC= [illegible]
TOP SX,SY,TXY=-0.12258       4.5841       -1.3431     SMX,SMN,TMX=  4.9404      -0.47886       2.7096       A= -14.9 SIGE= [illegible]
MID SX,SY,TXY=-0.14377       4.9407        0.73066    SMX,SMN,TMX=  5.0437      -0.24668       2.6452       A=   8.0 SIGE=  5.1714
BOT SX,SY,TXY=-0.16495       5.2974        2.8044     SMX,SMN,TMX=  6.4808      -1.3483        3.9146       A=  22.9 SIGE=  7.2196

FL=  273  NODES=   75   91  379  363        MAT=  4   AREA=  3.50       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY=  0.65344E-02  0.89259E-02 -0.32637E-01   NX,NY= -0.30151E-[illegible]   XC,YC,ZC= [illegible]
TOP SX,SY,TXY= 0.11518      -2.3052       -0.67203    SMX,SMN,TMX= 0.28925      -2.4793        1.3843       A= -75.5 SIGE= [illegible]
MID SX,SY,TXY=-0.28629      -2.8536        1.3332     SMX,SMN,TMX= 0.28075      -3.4207        1.8507       A=  67.0 SIGE=  3.5693
BOT SX,SY,TXY=-0.68777      -3.4020        3.3384     SMX,SMN,TMX=  1.5588      -5.6486        3.6037       A=  56.1 SIGE=  6.5682

FL=  274  NODES=   91  107  395  379        MAT=  4   AREA=  3.50       TTOP,TBOT=     0.0     0.0  PRESS= 0.0000         QUAD SHELL  63
MX,MY,MXY=  0.45946E-02  0.18657E-01 -0.32028E-01   NX,NY= -0.44789E-[illegible]   XC,YC,ZC= [illegible]
TOP SX,SY,TXY= 0.40372       0.88808      -2.5032     SMX,SMN,TMX=  3.1608      -1.8690        2.5149       [illegible]
MID SX,SY,TXY= 0.12142      -0.25823      -0.53545    SMX,SMN,TMX= 0.49970      -0.63650       0.56810      A= -54.8 SIGE= [illegible]
BOT SX,SY,TXY=-0.16087      -1.4045        1.4324     SMX,SMN,TMX= 0.77881      -2.3442        1.5615       A=  56.7 SIGE=  2.8156

   0 NON-CONVERGED GAPS    LARGE DISP. INC.= 0.00000        PLASTIC RATIO=  0.0000    CREEP RATIO=  0.0000
 STEP=   1  ITER=  10  CUM. ITER.=   10  TIME=  0.000000

 *** STEP   1   ITER  10 COMPLETE.  TIME=  0.000000      KDIS=  1  KTEMP=    0  CUM. ITER.=   10


***** PROBLEM COMPLETED *****  CP = 32.113

END OF INPUT ENCOUNTERED ON FILE TAPE18

ENTER /NOTES CARD AFTER FINISH CARD (OR AT ANY CARD-A LEVEL)
 FOR DETAILED NOTES ON FEATURES, CHANGES, HELP, ETC.


***** RUN COMPLETED *****  CP =    32.113
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