

Enclosure (1)

Compact Disk containing CCNPP Calculation No. CA04977, Revision 1,

Nutech Horizontal Module System (NUHOMS) 24P

ISFSI Dry Shielded Canister (DSC) Structural analysis for

DSC Numbers R025 and beyond.

(Hopper calc. HABGE-01/99-0745, Rev. 2)

ESP No.:	ES200100180	Supp No.:	000	Rev. No.:	0000	Page 1 of 1
----------	-------------	-----------	-----	-----------	------	-------------

FORM 19, CALCULATION COVER SHEET

INITIATION (Control Doc Type - DCALC)

Total Number of Pages (including attachments): 890

DCALC No.: CA04977

Revision No.: 0001

Vendor Calculation (Check one): ☒ Yes ☐ No

Responsible Group: MEU

Responsible Engineer: B. H. Scott

CALCULATIONENGINEERING
DISCIPLINE:☐ Civil☐ Instr & Controls☐ Nuc Engrg☐ Electrical☒ Mechanical☐ Diesel Gen Project☐ Life Cycle Mngmt☐ Reliability Engrg☐ Nuc Fuel Mngmt☐ Other:

Title:

NUTECH HORIZONTAL MODULE SYSTEM (NUHOMS) 24P ISFSI DRY SHIELDED CANISTER
(DSC) STRUCTURAL ANALYSIS FOR DSC NUMBERS R025 AND BEYOND

Unit

☐ UNIT 1☐ UNIT 2☒ ISFSI

Proprietary or Safeguards Calculation

☐ YES☒ NO

Comments:

THIS IS AN OWNER ACCEPTANCE REVIEW OF AN ORIGINAL VENDOR CALCULATION

Vendor Calc No.:

HABGE-01/99-0745

REVISION No.:

2

Vendor Name:

HOPPER AND ASSOCIATES ENGINEERS

Safety Class (Check one):

☒ SR☐ AQ☐ NSRThere are assumptions that require Verification during
walkdown:

AIT #: NONE

This calculation SUPERSEDES:

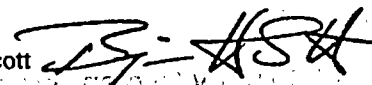
REVIEW AND APPROVAL:

Responsible Engineer: Hopper and Associates Engineers

Date: 01/19/2001

Owner Acceptance
Review:

B. H. Scott



Date: 02/27/2001

Approval:

NA

Date:

HOPPER AND ASSOCIATES
ENGINEERS

California License No.: 20498
FAX: (310) 791-7308
E-MAIL: haleng@ix.netcom.com

300 Vista Del Mar
Redondo Beach, CA 90277
(310) 373-5573

January 19, 2001
HABGE-01/99-0745, Revision 2

Mr. Robert H. Beall, Senior Engineer
Nuclear Fuel Management
Calvert Cliffs Nuclear Power Plant, Inc.
1650 Calvert Cliffs Parkway
Lusby, MD 20657

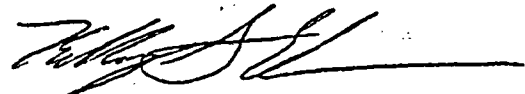
Subject: New DSC Design Structural Calculation - Revision 2 Transmittal

Dear Mr. Beall:

We have completed the subject revision and enclose one copy for your records. This revision incorporates comments and issue resolution resulting from Mr. Kaiseruddin's review.

Pursuant to our blanket Purchase Order number 400235 Sub Order Release: 1, this letter provides our Certificate of Compliance/Conformance (C of C) on the subject. The work product meets the requirements of the procurement documents.

Very truly yours,



Kelley S. Elmore
Professional Engineer

Enclosure

cc: Mr. J. Remeniuk (w/o enclosure)
Mr. B. Scott (w/o enclosure)
Mr. M. Kaiseruddin, Sargent & Lundy (w/o enclosure)

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

NUTECH HORIZONTAL MODULE SYSTEM (NUHOMS)
24P ISFSI DRY SHIELDED CANISTER STRUCTURAL ANALYSIS
FOR SIXTEEN NEW ASSEMBLIES

Prepared for: Baltimore Gas & Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657

Prepared by: Hopper and Associates
300 Vista Del Mar
Redondo Beach, CA 90277

January 1999

April 1999, Revision 1

January 2001, Revision 2

BGE 042

1
2

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/04/98 PAGE: i
SUBJECT: TABLE OF CONTENTS BY: AJS CK: SR SHT: i OF vi 1 2

TABLE OF CONTENTS

<u>SECTIONS</u>	<u>PAGE</u>
1.0 INTRODUCTION	
1.1 PROBLEM STATEMENT	1
1.2 INVESTIGATION APPROACH	2
1.3 RESULTS SUMMARY	3
2.0 SYSTEM DESCRIPTION	4
3.0 ANALYSIS APPROACH	
3.1 ASSUMPTIONS AND REQUIREMENTS	5
3.2 CALCULATION METHOD	6
3.3 ANALYSIS CRITERIA	
3.3.1 DSC LOAD COMBINATIONS	8
3.3.2 ALLOWABLE STRESS CRITERIA	10
3.3.3 MECHANICAL PROPERTIES OF MATERIALS	11
3.3.4 DESIGN TEMPERATURES FOR DSC COMPONENTS.....	12
3.3.5 COMPUTER ANALYSIS PROGRAM & PROGRAM VERIFICATION ..	13
4.0 ANALYSIS	
4.1 DSC SHELL ASSEMBLY ANALYSIS	14
4.1.1 ANSYS SHELL ASSEMBLY MODEL	17
4.1.2 DEAD WEIGHT ANALYSIS	29
4.1.3 PRESSURE ANALYSIS	34
4.1.4 THERMAL ANALYSIS	55
4.1.5 HANDLING ANALYSIS	67
4.1.6 SEISMIC ANALYSIS	92
4.1.7 ACCIDENTAL DROP ANALYSIS	98
4.2 GUIDESLEEVE EXTRACTION STOP ANALYSIS	109

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/04/98 PAGE: ii
SUBJECT: TABLE OF CONTENTS BY: AJS CK: SR SHT: ii OF vi | 1 | 2

SECTIONS

PAGE

4.3	SPACER PLATE ANALYSIS	126
4.3.1	COMPONENT DESCRIPTION	127
4.3.2	DEAD WEIGHT ANALYSIS	139
4.3.3	THERMAL ANALYSIS	143
4.3.4	SEISMIC ANALYSIS	148
4.3.5	HANDLING ANALYSIS	149
4.3.6	ACCIDENTAL HORIZONTAL DROP ANALYSIS	154
4.3.7	ACCIDENTAL VERTICAL DROP ANALYSIS	166
4.4	SUPPORT RODS ANALYSIS	
4.4.1	COMPONENT DESCRIPTION	172
4.4.2	ASSUMPTIONS	172
4.4.3	CALCULATION METHOD	173
4.4.4	SUPPORT ROD LOADING	174
4.4.5	CHECK ROD THERMAL EXPANSION	180
4.4.6	BUCKLING CHECK FOR ROD	184
4.4.7	ROD MOMENT-CURVATURE RELATIONSHIP	185
4.4.8	ROD STRESS EVALUATION	187
4.4.9	ROD BENDING DUE TO HORIZONTAL DROP	191
4.4.10	ROD BENDING DUE TO RACKING	192
4.4.11	ROD STABILITY CHECK	197
4.5	GUIDESLEEVE ANALYSIS	206
4.6	WELDS ANALYSIS	231
4.6.1	DSC SHELL AND COVER PLATE WELDS EVALUATION	231
4.6.2	SPACER PLATE TO SUPPORT ROD WELD EVALUATION	239

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/04/98 PAGE: iii

SUBJECT: TABLE OF CONTENTS BY: AJS CK: SR SHT: iii OF vi

1 2

<u>SECTIONS</u>	<u>PAGE</u>
5.0 CONCLUSIONS	245
6.0 REFERENCES	250
APPENDIX A ANSYS PLATE AND ROD ANALYSIS	A1
APPENDIX B ANSYS PRESSURE ANALYSIS	B1
APPENDIX C ANSYS THERMAL ANALYSIS	C1
APPENDIX D ANSYS DROP LOAD ANALYSIS	D1
APPENDIX E ANSYS HYDROSTATIC PRESSURE ANALYSIS	E1
APPENDIX F SPACER PLATE ANSYS INPUT FILES AND MOMENT REACTION OUTPUT	F1
APPENDIX G ANSYS ROD STABILITY ANALYSIS	G1
APPENDIX H LOAD COMBINATION TABLE FOR DSC COMPONENT STRESS INTENSITIES	H1

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/04/98 PAGE: iv
SUBJECT: TABLE OF CONTENTS BY: AJS CK: SR SHT: iv OF vi | 1 | 2

REVISION 0

PREPARED BY: *Robert Short* 1/15/99
DATE
REVIEWED BY: *Stan Reji* 1/22/99
DATE

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 4/10/99 PAGE: 2
SUBJECT: TABLE OF CONTENTS BY: MR CK: a.R. SHT: V OF (VI) 12

REVISION 1 (Revised for: new Design Temperature of 460 F, weld size changes, and revision of the seismic loading conditions)

PREPARED BY: Wm. H. Hoyer 4/8/99
DATE
REVIEWED BY: Alex Reizman 4/20/99
DATE

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/16/01 PAGE: vi
SUBJECT: TABLE OF CONTENTS BY: SR CK: MG SHT: vi OF vi

REVISION 2

Revised to incorporate comments made during a third party review.

PREPARED BY: Steven Rafi 01/16/01
DATE

REVIEWED BY: Mark Zick 01/19/01
DATE

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/04/98 PAGE: 1
SUBJECT: 1.0 INTRODUCTION BY: AJS CK: SR SHT: 1 OF 3

1.1 PROBLEM STATEMENT

The Transnuclear Dry Shielded Canister (DSC) and Internal Basket Assembly in the Nutech Horizontal Module System (NUHOMS) was designed for temporary storage and transport of radioactive Spent Fuel Assemblies (SFAs) to the Independent Spent Fuel Storage Installation (ISFSI).

The purpose of this calculation package is to evaluate the structural integrity of the DSC and Internals design for sixteen new assemblies for the Baltimore Gas and Electric, Calvert Cliffs NUHOMS Project. The new DSC design incorporates changes which include continuous Guide Sleeve longitudinal welding, removal of Guide Sleeve Clip Angles, the addition of Guide Sleeve Extraction Stops and only carbon steel Spacer Plates. Each individual component is investigated under extreme environmental and natural phenomena conditions for compliance with safety criteria specified by the Updated Safety Analysis Report [Ref. 2] and the Safety Evaluation Report [Ref. 21].

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/04/98 PAGE: 2
SUBJECT: 1.0 INTRODUCTION BY: ATJ CK: SR SHT: 2 OF 3

1.2 INVESTIGATION APPROACH

As part of the design evaluation process on the Dry Shielded Canister, all components are to be analyzed for structural integrity. The maximum stress intensity of each individual element when subjected to normal operating and accident loads will be determined.

Previously produced Nutech calculation packages [Ref. 3 & 30] will be referenced as appropriate for some of these analyses. Areas of difference between the Nutech [Ref. 3] and this calculation package will be noted in the appropriate analysis sections and additional issues of concern will also be addressed in this package.

The DSC geometry shall be per the Transnuclear West drawings [Ref. 6]. For Service Levels A, B, and C loads, an elastic analysis will be utilized for Normal Operating Conditions. For Service Level D loads, the components will be analyzed either elastically or plastically where necessary per the ASME Boiler and Pressure Vessel Code Appendix F requirements [Ref. 4].

ESP No.:	ES200100180	Supp No.	000	Rev. No.	0000	Page 1 of 1
----------	-------------	----------	-----	----------	------	-------------

FORM 19, CALCULATION COVER SHEET**INITIATION (Control Doc Type - DCALC)**

Total Number of Pages (including attachments): 890

DCALC No.: CA04977

Revision No.: 0001

Vendor Calculation (Check one):

☒ Yes☐ No

Responsible Group: MEU

Responsible Engineer: B. H. Scott

CALCULATIONENGINEERING
DISCIPLINE:☐ Civil☐ Instr & Controls☐ Nuc Engrg☐ Electrical☒ Mechanical☐ Diesel Gen Project☐ Life Cycle Mngmt☐ Reliability Engrg☐ Nuc Fuel Mngmt☐ Other:

Title:

NUTECH HORIZONTAL MODULE SYSTEM (NUHOMS) 24P ISFSI DRY SHIELDED CANISTER
(DSC) STRUCTURAL ANALYSIS FOR DSC NUMBERS R025 AND BEYOND

Unit

☐ UNIT 1☐ UNIT 2☒ ISFSI

Proprietary or Safeguards Calculation

☐ YES☒ NO

Comments:

THIS IS AN OWNER ACCEPTANCE REVIEW OF AN ORIGINAL VENDOR CALCULATION

Vendor Calc No.:

HABGE-01/99-0745

REVISION NO.:

2

Vendor Name:

HOPPER AND ASSOCIATES ENGINEERS

Safety Class (Check one):

☒ SR☐ AQ☐ NSRThere are assumptions that require Verification during
walkdown:

AIT #:

NONE

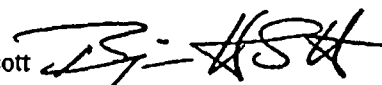
This calculation **SUPERSEDES**:**REVIEW AND APPROVAL:**

Responsible Engineer: Hopper and Associates Engineers

Date: 01/19/2001

Owner Acceptance
Review:

B. H. Scott



Date: 02/27/2001

Approval:

NA

Date:

CALCULATION SHEET

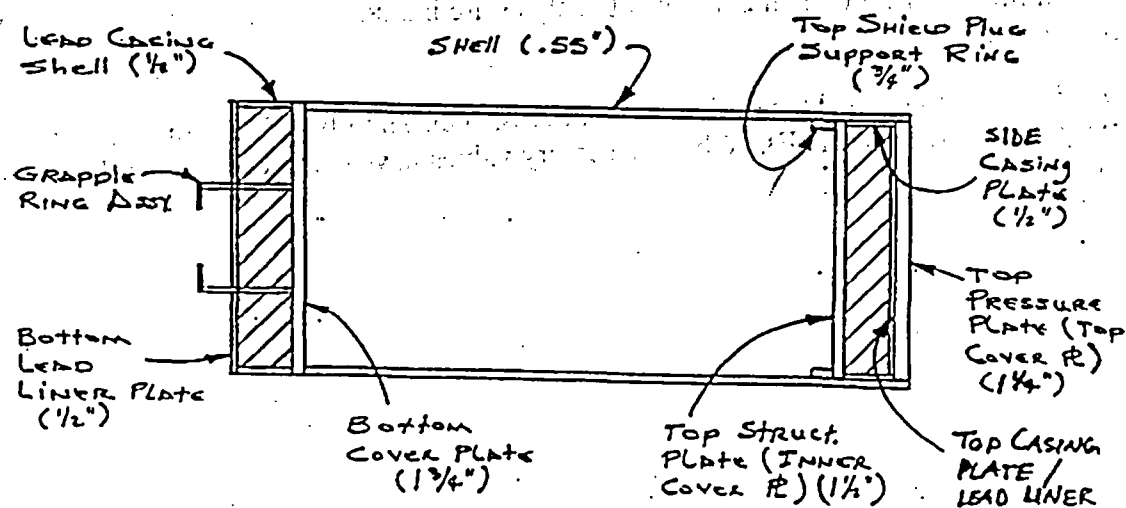
TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/04/98 PAGE: 4
SUBJECT: 2.0 SYSTEM DESCRIPTION BY: AJS CK: SR SHT: 1 OF 1

2.0 SYSTEM DESCRIPTION

The new DSC and Internal Basket Assembly are made up of the following components [Ref. 3]:

1. DSC Basket Assembly
 - a. Spacer Disks (9)
 - b. Support Rods (4)
 - c. Guide Sleeves (24) + Guide Sleeve Extraction Stops (48)
2. DSC Shell assembly
 - a. Right Circular Cylindrical Shell
 - b. Bottom Cover Plate
 - c. Bottom Shield Plug Assembly (Including Bottom Lead Liner Plate and Lead Casing Shell)
 - d. Ram Grapple Ring Assembly
 - e. Drain and Fill Port Assembly
 - f. Top Shield Plug Support Ring
 - g. DSC Lifting Lugs
 - h. Top Pressure Plate (Top Cover Plate)
3. Top Shield Plug Assembly
 - a. Top Shield Plug (Including Top Structural Plate (Inner Cover Plate), Top Casing Plate/Lead Liner, and Side Casing Plate)
 - b. Top Plug Lifting Lugs
 - c. Drain and Fill Port Plugs

Geometries for the above components are from the Transnuclear West drawings [Ref. 6].



DSC SHELL AND TOP SHIELD PLUG ASSEMBLIES

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/04/98 PAGE: 5
SUBJECT: 3.0 ANALYSIS APPROACH BY: AS CK: SR SHT: 1 OF 9

3.1 ASSUMPTIONS AND REQUIRMENTS

The following assumptions are taken:

1. Since the source of flooding is site specific, the flood condition is defined according to the location of the DSC during transfer and storage. The ISFSI location is defined as a dry site [ref.2]; therefore, no flood loads are defined for this site. Furthermore, due to its short term and infrequent use, the NUHOMS-24P transfer cask is not designed for operation during flood conditions, and plant procedures will ensure that the transfer cask is not used for DSC transfer during these precarious conditions [Ref. 1]. Thus, no flood analysis is needed for the DSC and its internal components.
2. Since the corner drop is only postulated for the DSC while it is within the Transfer cask, the corner drop stresses for the DSC are bounded by the vertical and horizontal drops [Ref. 1.] and need not be analyzed.
3. The DSC will be subjected to the environment only during transfer and as such no tornado missile loading need be considered.
4. A bounding dead weight and bounding thermal analysis is performed for the DSC Assembly and internal components. These bounding stress values will conservatively be used in design load combinations tables [/Section 5.0], rather than specific dead weight and thermal condition subcategories that appear in the Topical Report [1] and in Table 3.1 [Section 3.3].
5. The aluminum thermal spray will not significantly alter the temperature distribution.
6. Assumptions for individual component analysis are included in the analysis section for each component.
7. Revision 1 changed the design temperatures. This slightly effected the material properties (ex. lowering E). Where necessary values have been scaled up or down accordingly.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/04/98 PAGE: 6
SUBJECT: 3.0 ANALYSIS APPROACH BY: ATS CK: SR SHT: 2 OF 9

3.2 CALCULATION METHOD

A combination of computer models (using the computer programs ANSYS [7] and STAAD [37]) and hand calculations are used to evaluate DSC Shell and internal components when subjected to normal operating and accident loads.

1. The DSC Shell and end plates are evaluated in Section 4.1 for dead weight, pressure, thermal, handling, seismic, and drop loads.
2. The structural adequacy of the Guide Sleeve Extraction Stops will be evaluated in Section 4.2 using hand calculations and finite element models using ANSYS [7]. The acceptability criteria will be based on ASME Code Section III, Subsection NF requirements, as well as deflection criteria which limits the Guide Sleeve inner surface permanent deformations to preclude Guide Sleeve dimpling from affecting fuel retrieval.
3. The spacer plates are evaluated in Section 4.3 for dead weight, thermal, handling, seismic, and drop loads. The spacer plates are analyzed for an accidental vertical drop in Section 4.3.7 using an ANSYS computer model. Spacer plate response to increasing load is plotted in stress, rotation, and deflection vs. acceleration curves.
4. The support rods are evaluated in Section 4.4. Maximum rod rotations are taken from spacer plate rotation results, and the moments and corresponding stresses are hand calculated. An additional plastic rod ANSYS model considering the effect of Guide Sleeve stiffness is also used to better define the rod rotation and assure rod stability.
5. The structural integrity of the Guide Sleeves is evaluated in Section 4.5. This section also includes a fuel misalignment calculation.
6. Structural welds for the DSC Assembly and internal components are evaluated in Section 4.6.

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/04/98 PAGE: 7
SUBJECT: 3.0 ANALYSIS APPROACH BY: AJS CK: SR SHT: 3 OF 9

The DSC and internal components are designed to conform to the DSC design and safety criteria according to the NUH-002, USAR, and SER documents [Ref. 1, 2, and 21]. Load combinations, allowable stress criteria, material properties, and design temperatures for the DSC are listed respectively in Tables 3.1, 3.2, 3.3, and 3.4.

Since shell and plate components generally have low shear stresses and low stresses in the thickness direction, the use of stress intensities vs. component stresses results in conservative stress intensity values.

**HOPPER AND ASSOCIATES
ENGINEERS**

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS **DATE:** 12/04/98 **PAGE:** 8
SUBJECT: 3.0 ANALYSIS APPROACH **BY:** AJS **CK:** SR **SHT:** 4 **OF:** 9

3.3 ANALYSIS CRITERIA

3.3.1 DSC LOAD COMBINATIONS

The DSC components are qualified by stress analyses considering individual loading conditions added in combination according to Table 3.2-5a of the Topical Report [1], and reproduced below in Table 3.1. Final stress/load combination results are compared to respective Service Level stress allowables in Section 5.0.

Table 3.1 – DSC Design Load Combinations

Load Case ¹			Normal Operating Conditions				Off-Normal Conditions				Emergency and Accident Conditions ²									
Type	I.D.		1	2	3	4	1	2	3	4	1	2	3	4	5	6	1	2		
Dead Weight	Empty DSC	DW ₁	X																	
	DSC w/water	DW ₂		X																
	DSC w/fuel	DW ₃			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Thermal	Inside HSM: normal	T _{ab}				X					X	X			X					
	Inside Cask: normal	T _{ac}		X	X		X									X			X	
	Inside HSM: off-normal	T _{bo}							X				X							
	Inside Cask: off-normal	T _{co}						X		X										
	Inside HSM: Accident	T _{ba}												X						
	Inside Cask: Accident	T _{ca}															X			
Internal Pressure	Normal Operating	P _a			X		X													
	Hydrostatic	P _h		X																
	Off-normal (Blowdown)	P _b				X		X	X	X										
	Accident (inner boundary)	P _{a1}									X	X	X	X	X	X				
	Accident (outer boundary)	P _{a2}															X	X		
Handling Loads	Normal DSC Transfer	L _n			X	X						X								
	Off-normal (Jammed DSC)	L _o					X	X	X						X	X				
Accident Loads	Cask Drop	DL																	X	
	Seismic	E									X									
ASME BPVC Service Level			A	A	A	A	B	B	B	B	C	C	C	C	C	C	D	D		

- The Table has been modified to include hydrostatic and blowdown pressure, to distinguish between accident pressure along the inner boundary (Level C) and outer boundary (Level D), and to delete the flooding accident load for which no analysis is required.
- For emergency and accident load combinations, the DSC shall not be allowed to deform to an extent that would prevent retrieval of spent fuel. For Service Level D, the DSC internal components need only comply with deformation limits that will allow the retrieval of spent fuel. In addition, both end plug assemblies shall maintain their ability to provide shielding for personnel during DSC handling operations.

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/04/98 PAGE: 9
SUBJECT: 3.0 ANALYSIS APPROACH BY: AJS CK: SE SHT: 5 OF 9

The DSC and internal components design loadings are listed in Table 3.2-1 of the Topical Report, under component "Dry Shielded Canister" [Ref. 1].

DSC design loading criteria:

1. The DSC thermal loads are given on page 3.11 and 3.47 of Reference 3.
2. The DSC handling loads are given on page 3.18 and 3.52 of Reference 3.
3. The seismic design loads are given on page 3.31 and 3.51 of Reference 3.
4. The three DSC drop accident orientations are:
 - a. Top Vertical Drop
 - b. Bottom Vertical Drop
 - c. Horizontal Side Drop

**HOPPER AND ASSOCIATES
ENGINEERS**

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS **DATE:** 12/04/98 **PAGE:** 10
SUBJECT: 3.0 ANALYSIS APPROACH **BY:** AJS **CK:** SR **SHT:** 6 **OF:** 9

3.3.2 ALLOWABLE STRESS CRITERIA

The structural design criteria for the DSC and internals are based on ASME Code Section III, Division 1, Subsection NB, (Class 1) [Ref. 4] as supplemented by Appendix F [Ref. 21] and are given in Table 3.2.

Table 3.2 – Allowable Stress Criteria [Ref. 1, Table 3.2-6]

Item	Stress Type	Stress Values ⁽¹⁾			
		Service Levels A & B	Service Level C	Service Level D	
				Elastic Analysis	Plastic Analysis
DSC ⁽²⁾ and Internals	General Membrane	S_m	Greater of $1.2 S_m$ or S_y	Smaller of $2.4 S_m$ or $0.7 S_u$ ⁽⁴⁾	Greater of $0.7 S_u$ or $S_y + 1/3 (S_u - S_y)$ ⁽⁵⁾
	Local Membrane + Bending	$1.5 S_m$	Greater of $1.8 S_m$ or $1.5 S_y$	150% of P_m Limit ⁽³⁾	$0.9 S_u$ ⁽⁵⁾
	Primary + Secondary	$3.0 S_m$	N/A	N/A	N/A
DSC Fillet and Partial Penetration Welds ⁽⁶⁾	Primary	$0.50 S_m$	Greater of 0.65 ⁽⁶⁾ S_m or $0.50 S_y$	Smaller of $1.2 S_m$ or $0.35 S_u$	
	Primary + Secondary	$0.75 S_m$	Smaller of $0.9 S_m$ or $0.75 S_y$	N/A	

1. Values of S_y , S_m , and S_u versus temperature are given in Table 3-3 of this package.
2. Includes full penetration welds.
3. An efficiency factor of 0.5 has been applied for nonvolumetric inspected welds based on ASME Section VIII, Div. 1, Table UW-12 No. 5 [Ref. 36].
4. Local primary membrane stress, P_L , shall not exceed 150 % of the P_m limit.
5. For elastic analysis, an alternative limit for $P_L + P_b$ is that the static or equivalent static loads shall not exceed 90 % of the limit analysis collapse load using a yield stress which is the lesser of $2.3 S_m$ and $0.7 S_u$, or 100 % of the plastic analysis or test collapse load; for plastic analysis, an alternative to the primary stress intensity limits is that the static or equivalent static loads shall not exceed 90 % of the limit analysis collapse load using a yield stress which is the lesser of $2.3 S_m$ and $0.7 S_u$, or 100 % of the plastic analysis or test collapse load.
6. For 0.5 efficiency factor, $0.6 S_m$ is used for the allowable stress. However, it should be noted that even though an efficiency factor of 0.5 is applied for all nonvolumetric inspected welds, an efficiency factor higher than 0.5 is allowed for any individual welds installed by different methods. $0.65 S_m$ is allowed for welds at Service Level C [Ref. 1, Table 3.2-6].

**HOPPER AND ASSOCIATES
ENGINEERS**

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/04/98 **PAGE:** 11

SUBJECT: 3.0 ANALYSIS APPROACH

BY: AJS **CK:** SR **SHT:** 7 **OF** 9

3.3.3 MECHANICAL PROPERTIES OF MATERIALS

The mechanical properties of materials for the DSC and internals are listed in Table 3.3.

Table 3.3 – Mechanical Properties of Materials

Material	Temperature (°F)	Stress Properties ⁽¹⁾ (ksi)			Elastic Modulus (E) ⁽¹⁾ (x 10 ³ ksi)	Instantaneous Coefficient Of Thermal Expansion (x 10 ⁻⁶ in./in./°F)
		Stress Intensity (S _m)	Yield Strength (S _y)	Ultimate Strength (S _u)		
Stainless Steel ASME SA240 Type 304 ⁽³⁾	70	-	30.0	75.0	28.3	8.46
	100	20.0	30.0	75.0	-	8.63
	200	20.0	25.0	71.0	27.6	9.08
	300	20.0	22.5	66.0	27.0	9.46
	400	18.7	20.7	64.4	26.5	9.80
	460	18.0	19.9	64.0	26.08	9.98
	500	17.5	19.4	63.5	25.8	10.10
	600	16.4	18.2	63.5	25.3	10.38
SA479 Type 304 (Rods)	800	15.2	16.8	62.7	24.1	10.79
	70	23.3	38.0	70.0	29.5	5.42
	100	23.3	38.0	70.0	-	5.65
	200	23.1	34.6	70.0	28.8	6.39
	300	22.5	33.7	70.0	28.3	7.04
	400	21.7	32.6	70.0	27.7	7.60
	460	21.0	31.5	70.0	27.5	7.88
	500	20.5	30.7	70.0	27.3	8.07
Carbon Steel ASME SA516 GR70 (Spacer Disc)	600	18.7	28.1	70.0	26.7	8.46

Material	Yield Strength (ksi)	Tensile Strength (ksi)	Modulus of Elasticity (x10 ⁶ psi)	Coefficient of Linear Expansion (x10 ⁻⁶ in./in./°F)	Approximate Melting Point (°F)
Common ⁽²⁾ Lead ASTM B29 (Shield Plugs)	---	2.5	2	16.4	621

1. Steel data and thermal expansion coefficients were obtained from Reference 5. Note: Instantaneous thermal expansion coefficients are larger than average thermal expansion coefficients; thus, using instantaneous values are more conservative.
2. Lead data was obtained from CRC Handbook of Tables for Applied Engineering Science, 2nd Edition, pp. 111 and 118. [Ref. 8]
3. Including the shell, guide sleeve extraction stops, guide sleeves, grapple assembly, support ring, lifting lugs, and all end plates (top cover plate, bottom cover plate, bottom lead casing plates, top lead casing plates).

**HOPPER AND ASSOCIATES
ENGINEERS**

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS **DATE:** 12/04/98 **PAGE:** 12

SUBJECT: 3.0 ANALYSIS APPROACH **BY:** AJS **CK:** SR **SHT:** 8 **OF:** 9

3.3.4 DESIGN TEMPERATURE FOR DSC COMPONENTS

The design temperature for the DSC components are based on the design temperatures used in the SER [Ref 21] and [Ref. 3].

Table 3.4 – Design Temperatures for DSC Components

Components	Design Temperature(°F) Levels A + B	Design Temperature(°F) Levels C + D
DSC Shell	400	460
Top Inner Plate	400	460
Top Outer Plate	400	460
Top Lead Liner	400	460
Bottom Inner Plate	400	460
Bottom Lead Liner	400	460
Grapple Ring	400	460
Guide Sleeve Extraction Stops	70 (Insertion) 600 (Extraction)	
Spacer Disc (Carbon Steel)	400 (Design)** 550 (Extraction)	460 (Design) 550 (Extraction)
Support Rods	400	460
Guide Sleeves	600 (Design) 700 (Accident)	
Welds	400	460

** Allowable stress for 300 for spacer disc primary + Secondary as per the SER Table 2.2.3-8 [21]

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/04/98 PAGE: 13
SUBJECT: 3.0 ANALYSIS APPROACH BY: AS CK: SR SHT: 9 OF 9

3.3.5 COMPUTER ANALYSIS PROGRAM AND PROGRAM VERIFICATION

Throughout this calculation package ANSYS [7] and STAAD [37] computer models are used as the basis for DSC structural evaluation results under various loading conditions. All models, assumptions, boundary conditions, and loading conditions are discussed in the appropriate calculation sections where their results are used, and ANSYS input files are included in the Appendices.

ANSYS, Version 5.2, and STAAD-III have been verified and are currently acceptable for use on nuclear safety related projects [39].

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 14
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 1 OF 95

4.1 DSC SHELL ASSEMBLY ANALYSIS

OBJECTIVE

The structural integrity of the DSC Shell Assembly is qualified by stress analyses considering:

- Dead weight
- Pressure Loads
- Thermal Loads
- Handling Loads
- Seismic Loads
- Drop Loads

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCURAL ANALYSIS DATE: 4/8/99 PAGE: 15A of D
SUBJECT: 4.0 ANALYSIS BY: NR CK: Q.R. SHT: 2A OF 95

CODE ALLOWABLES

STAINLESS STEEL SA240 TYPE 304

DSC ASSEMBLY DESIGN TEMPERATURE = 400° F

$S_m = 18.7$ KSI $S_y = 20.7$ KSI $S_u = 64.4$ KSI

• Service Level A Allowable Stresses

Primary Membrane	$S_m =$	18.7 ksi
Primary Membrane + Bending	$1.5S_m =$	28.0 ksi
Primary + Secondary	$3.0S_m =$	56.1 ksi

• Service Level B Allowable Stresses

Primary Membrane	$S_m =$	18.7 ksi
Primary Membrane + Bending	$1.5S_m =$	28.0 ksi
Primary + Secondary	$3.0S_m =$	56.1 ksi

• Service Level C Allowable Stresses

Primary Membrane greater of $1.2S_m = 22.4$ ksi or $1.0S_y = 20.7$ ksi	$1.2S_m =$	22.4 ksi
Primary Membrane + Bending greater of $1.8S_m = 33.7$ ksi or $1.5S_y = 31.05$ ksi	$1.8S_m =$	33.7 ksi
Primary + Secondary	N/A	

• Service Level D Allowable Stresses

Primary Membrane Elastic smaller of $2.4S_m = 44.9$ ksi or $0.7S_u = 45.1$ ksi	$2.4S_m =$	44.9 ksi
Primary Membrane + Bending Elastic	$1.0S_u =$	64.4 ksi
Primary Membrane + Bending Plastic	$0.9S_u =$	58.0 ksi
Primary + Secondary	N/A	N/A

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCURAL ANALYSIS DATE: 4/8/99 PAGE: 150 of D
SUBJECT: 4.0 ANALYSIS BY: NR CK: O.E. SHT: 28 OF 95

CODE ALLOWABLES

STAINLESS STEEL SA240 TYPE 304

DSC ASSEMBLY DESIGN TEMPERATURE = 460° F

$S_m = 18.0$ KSI $S_y = 19.9$ KSI $S_u = 64$ KSI

• Service Level A Allowable Stresses

Primary Membrane	$S_m =$	18.0 ksi
Primary Membrane + Bending	$1.5S_m =$	27.0 ksi
Primary + Secondary	$3.0S_m =$	54.0 ksi

• Service Level B Allowable Stresses

Primary Membrane	$S_m =$	18.0ksi
Primary Membrane + Bending	$1.5S_m =$	27.0 ksi
Primary + Secondary	$3.0S_m =$	54.0 ksi

• Service Level C Allowable Stresses

Primary Membrane greater of $1.2S_m = 21.6$ ksi or $1.0S_y = 19.9$ ksi	$1.2S_m =$	21.6 ksi
Primary Membrane + Bending greater of $1.8S_m = 32.4$ ksi or $1.5S_y = 29.8$ ksi	$1.8S_m =$	32.4 ksi
Primary + Secondary	N/A	

• Service Level D Allowable Stresses

Primary Membrane Elastic smaller of $2.4S_m = 43.2$ ksi or $0.7S_u = 44.8$ ksi	$2.4S_m =$	43.2 ksi
Primary Membrane + Bending Elastic	$1.0S_u =$	64.0 ksi
Primary Membrane + Bending Plastic	$0.9S_u =$	57.6 ksi
Primary + Secondary	N/A	N/A

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCURAL ANALYSIS DATE: 4/8/99 PAGE: 15C of D
SUBJECT: 4.0 ANALYSIS BY: MR CK: A.B. SHT: 2C OF 95

CODE ALLOWABLES

CARBON STEEL SA516 GR 70

DSC ASSEMBLY DESIGN TEMPERATURE = 400° F

$S_m = 21.7$ KSI $S_y = 32.6$ KSI $S_u = 70$ KSI

• Service Level A Allowable Stresses

Primary Membrane	S_m	=	21.7 ksi
Primary Membrane + Bending	$1.5S_m$	=	32.6 ksi
Primary + Secondary	$3.0S_m$	=	65.1 ksi **

• Service Level B Allowable Stresses

Primary Membrane	S_m	=	21.7 ksi
Primary Membrane + Bending	$1.5S_m$	=	32.6 ksi
Primary + Secondary	$3.0S_m$	=	65.1 ksi

• Service Level C Allowable Stresses

Primary Membrane greater of $1.2S_m = 26.0$ ksi or $1.0S_y = 32.6$ ksi	$1.0S_y$	=	32.6 ksi
Primary Membrane + Bending greater of $1.8S_m = 39.1$ ksi or $1.5S_y = 48.9$ ksi	$1.5S_y$	=	48.9 ksi
Primary + Secondary	N/A		

• Service Level D Allowable Stresses

Primary Membrane Elastic smaller of $2.4S_m = 52.1$ ksi or $0.7S_u = 49$ ksi	$0.7S_u$	=	49.0 ksi
Primary Membrane + Bending Elastic	$1.0S_u$	=	70.0 ksi
Primary Membrane + Bending Plastic	$0.9S_u$	=	63 ksi
Primary + Secondary	N/A		N/A

** Allowable stress 67.5 ksi at 300° F for spacer disc Primary + Secondary as per the SER Table 2.2.3-8 [21]

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCURAL ANALYSIS DATE: 4/8/99 PAGE: 150 of D
SUBJECT: 4.0 ANALYSIS BY: MR CK: A.R. SHT: 20 OF 95

CODE ALLOWABLES

CARBON STEEL SA516 GR 70

DSC ASSEMBLY DESIGN TEMPERATURE = 460° F

$S_m = 21.0$ KSI $S_y = 31.5$ KSI $S_u = 70$ KSI

• Service Level A Allowable Stresses

Primary Membrane	$S_m =$	21.0 ksi
Primary Membrane + Bending	$1.5S_m =$	31.5 ksi
Primary + Secondary	$3.0S_m =$	63.0 ksi

• Service Level B Allowable Stresses

Primary Membrane	$S_m =$	21.0 ksi
Primary Membrane + Bending	$1.5S_m =$	31.5 ksi
Primary + Secondary	$3.0S_m =$	63.0 ksi

• Service Level C Allowable Stresses

Primary Membrane	$1.0S_y =$	31.5 ksi
greater of $1.2S_m = 25.2$ ksi or $1.0S_y = 31.5$ ksi		

Primary Membrane + Bending	$1.5S_y =$	47.3 ksi
greater of $1.8S_m = 37.8$ ksi or $1.5S_y = 47.3$ ksi		

Primary + Secondary	N/A	
---------------------	-----	--

• Service Level D Allowable Stresses

Primary Membrane Elastic	$0.7S_u =$	49.0 ksi
smaller of $2.4S_m = 50.4$ ksi or $0.7S_u = 49$ ksi		

Primary Membrane + Bending Elastic	$1.0S_u =$	70.0 ksi
Primary Membrane + Bending Plastic	$0.9S_u =$	63.0 ksi
Primary + Secondary	N/A	N/A

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 16
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 3 OF 95

TOLERANCES

DSC SHELL

Small dimensional differences in length (176.5" +/- .12") and outside diameter (66" +/- .15") have an insignificant effect in stress computations, and therefore, nominal dimensions are used.

The nominal DSC Shell thickness is 0.625" with a block tolerance of +/- .005", but the measured thickness might be slightly smaller at weld locations. Note 5 on TN West Drawing #ECN-98-0516, Sh. 7, stipulates that "ground weld or base metal shall not be reduced below 0.563 inches. Minimum thickness shall be verified per with TN West fabrication specification." For conservatism, in all DSC Shell analyses, the entire Shell wall thickness is assumed to be 0.55".

DSC ASSEMBLY COVER PLATES

The analysis herein refers to minimum measured Cover Plate thicknesses (from old design), which do not encompass tolerances for the new design (i.e. the Bottom Cover Plate was analyzed using a thickness of 1.68", while the new design minimum thickness is 1.625"). Since stresses were so well below the Level D condition accident allowable (34.8 and 65.2 ksi), no re-analysis is necessary.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 17
SUBJECT: 4.0 ANALYSIS BY: ASJ CK: SR SHT: 4 OF 95

4.1.1 ANSYS SHELL ASSEMBLY MODEL

An ANSYS model of the DSC Shell Assembly is used to calculate internal and external pressure, thermal, and drop stress intensities.

A nodal plot of the model is shown in Figure 4.1.1.

MODEL

The ANSYS model is a complete model of the DSC Shell Assembly including:

- DSC Shell
- Support Ring
- Top and Bottom Cover Plates
- Top and Bottom Lead Shields
- Grapple Ring Assembly

DSC Shell stresses are very conservatively based on a wall thickness of 0.55". The actual Shell wall thickness is 0.625 with a block tolerance of +/- 0.015". The minimum required local wall thickness after weld grinding is 0.563 ".

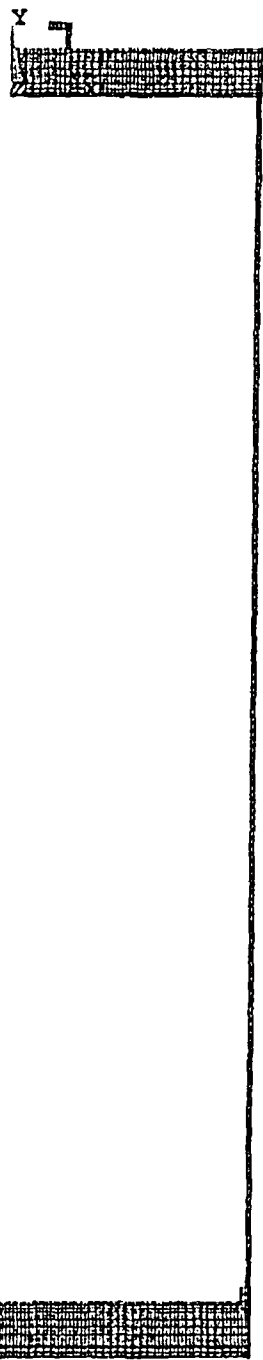
The general model geometry consists of plane elements with axi-symmetric boundary conditions at the centerline.

The structural response of the siphon and vent port cut-out in the Top Shield Plug is not considered due to insignificant moment effects caused by the stiffening of the nozzles.

The Cover Plates are free to displace away from or into the lead liners. In addition, lead liners cannot transfer moment to the plates.

With respect to the model mesh resolution, the finite element mesh is sufficient for the intended analyses where fatigue is not an issue.

THE SUPPORT RING IS MODELED AS A MONOLITHIC CONNECTION TO THE DSC SHELL EVEN THOUGH IT IS ATTACHED WITH A PARTIAL PENETRATION WELD AND A FILLET WELD. THIS WILL AFFECT ONLY VERY LOCALIZED STRESSES; FURTHERMORE, THE CRITICAL DSC SHELL STRESSES OCCUR AWAY FROM THE SUPPORT RING. THE SUPPORT RING WELDS ARE EVALUATED IN SECTION 4.8.



1

FIGURE 4.1
DSC STRUCTURAL ANALYSIS MODEL

(SHEET 1 OF 11)

ANSYS 5.2
FEB 6 1998
15:26:23
ELEMENTS
TYPE NUM

ZV =1
DIST=96.938
XF =16.813
YF =-78.125
Z-BUFFER

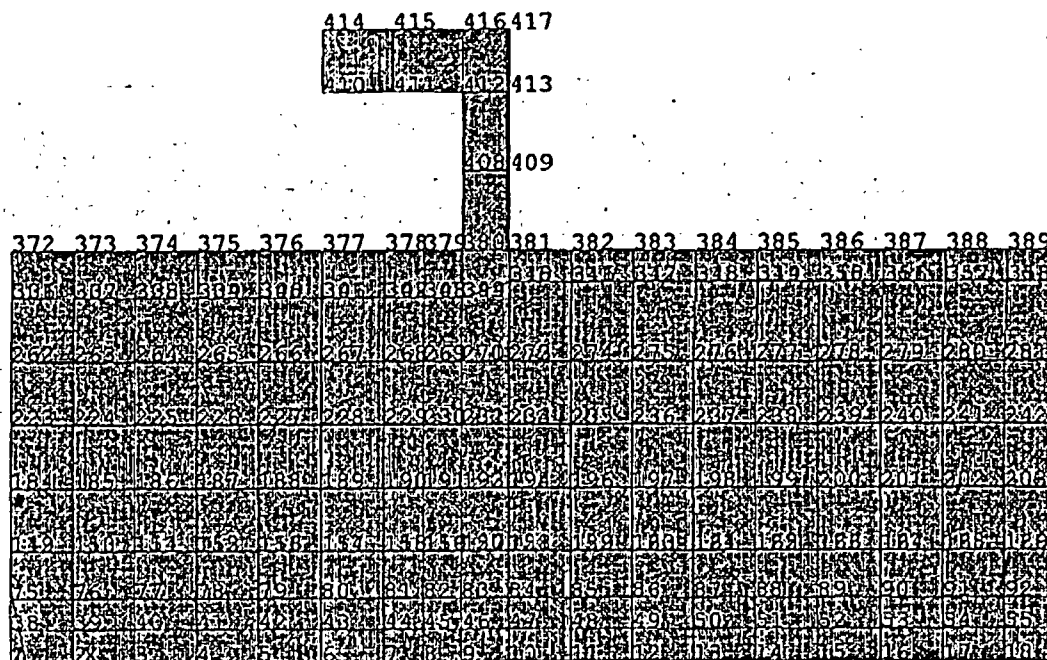
HABGE-01/99-0745, Revision 2

DATE: 1/11/99 PAGE: 18
BY: AJS CK: SR SH: 5 OF 95

ANSYS 5.2
FEB 14 1998
09:50:13
ELEMENTS
TYPE NUM

ZV =1
*DIST=11.62
*XF =5.181
*YF =4.851
Z-BUFFER

HABGE-01/99-0745, Revision 2



```

ANSYS 5.2
FEB 14 1998
09:52:34
ELEMENTS
TYPE NUM

```

```
ZV =1
*DIST=11.62
*XF =24.934
*YF =4.851
Z-BUFFER
```

HABGE-01/99-0745, Revision 2

DATE: 1/11/99 PAGE: 20
BY: ATS CK: SR SHT: 7 OF 75

DSC STRUCTURAL ANALYSIS MODEL

(SHEET 3 OF 11)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37

44467
44468
44469
44470
44471
44472
44473
44474
44475
44476
44477
44478
44479
44480
44481
44482
44483
44484
44485
44486
44487
44488
44489
44490
44491
44492
44493
44494
44495
44496
44497
44498
44499
44500
44501
44502
44503
44504
44505
44506
44507
44508
44509
44510
44511
44512
44513
44514
44515
44516
44517
44518
44519
44520
44521
44522
44523
44524
44525
44526
44527
44528
44529
44530
44531
44532
44533
44534
44535
44536
44537
44538
44539
44540
44541
44542
44543
44544
44545
44546
44547
44548
44549
44550
44551
44552
44553
44554
44555
44556
44557
44558
44559
44560
44561
44562
44563
44564
44565
44566
44567
44568
44569
44570
44571
44572
44573
44574
44575

ANSYS 5.2
FEB 14 1998
09:58:37
ELEMENTS
TYPE NUM

ZV =1
*DIST=11.62
*XF =27.56
*YF =-11.17
Z-BUFFER

HABGE-01/99-0745, Revision 2

DATE: 1/11/99 PAGE: 21
BY: AJS CK: SK SHT: 8 OF 95

1

ANSYS 5.2
FEB 14 1998
10:01:32
ELEMENTS
TYPE NUM

ZV =1
*DIST=11.62
*XF =27.45
*YF =-33.02
Z-BUFFER

HABCE-01/99-0745, Revision 2

DATE: 1/11/99 PAGE: 22
BY: AJS CK: SR SHT: 9 OF 95

473
475
477
479
481
483
485
487
489
491
493
495
497
499
501
503
505
507
509
511
513
515
517

DSC STRUCTURAL ANALYSIS MODEL

(SHEET 5 OF 11)

515
52517
52519
52521
52523
52525
52527
52529
52531
52533
52535
52537
52539
52541
52543
52545
52547
52549
52551
52553
52555
52557
52559
52561

ANSYS 5.2
FEB 14 1998
10:52:37
ELEMENTS
TYPE NUM

ZV =1
*DIST=11.62
*XF =29.01
*YF =-54.23
Z-BUFFER

HABGE-01/99-0745, Revision 2

DATE: 1/11/99 PAGE: 23
BY: ASS CK: SR SHT: 10 OF 95

855
857
859
861
863
865
867
869
871
873
875
877
879
881
883
885
887
889
891
893
895
897
899
901
903
905
907

ANSYS 5.2
FEB 14 1998
11:09:09
ELEMENTS
TYPE NUM

ZV =1
*DIST=13.67
*XF =31.38
*YF =-76.08
Z-BUFFER

HABGE-01/99-0745, Revision 2

DATE: 1/11/99 PAGE: 24
BY: AJS CK: SR SHT: 11 OF 95

607
609
611
613
615
617
619
621
623
625
627
629
631
633
635
637
639
641
643
645
647
649
651
653
655
657
659

ANSYS 5.2
FEB 14 1998
13:15:12
ELEMENTS
TYPE NUM

ZV =1
*DIST=13.603
*XF =31.24
*YF =-101.6
Z-BUFFER

HABGE-01/99-0745, Revision 2

DATE: 1/11/99 PAGE: 25
BY: AJS CK: SK SHT: 12 OF 95

659
661
663
665
667
669
671
673
675
677
679
681
683
685
687
689
691
693
695
697
699
701
703
705
707
709
711
713
715
717
719
721
723

ANSYS 5.2
FEB 14 1998
13:18:43
ELEMENTS
TYPE NUM

ZV =1
*DIST=16.538
*XF =28.986
*YF =-130.39
Z-BUFFER

HABGE-01/99-0745, Revision 2

DATE: 1/11/99 PAGE: 26
BY: AJS CK: SE SHT: 13 OF 95

1

771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------

DSC STRUCTURAL ANALYSIS MODEL

(SHEET 10 OF 11)

ANSYS 5.2
FEB 14 1998
09:55:02
ELEMENTS
TYPE NUM

ZV =1
*DIST=11.62
*XF =24.934
*YF =-157.823
Z-BUFFER

HABCE-01/99-0745, Revision 2

DATE: 1/11/99 PAGE: 27
BY: AJS CK: SR SH: 14 OF 95

ANSYS 5.2
FEB 14 1998
09:57:05
ELEMENTS
TYPE NUM

ZV =1
*DIST=11.62
*XF =6.343
*YF =-157.823
Z-BUFFER

HABGE-01/99-0745, Revision 2

757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774
7992	7993	7994	7995	7996	7997	7998	7999	8000	8001	8002	8003	8004	8005	8006	8007	8008	8009
8010	8011	8012	8013	8014	8015	8016	8017	8018	8019	8020	8021	8022	8023	8024	8025	8026	8027
8028	8029	8030	8031	8032	8033	8034	8035	8036	8037	8038	8039	8040	8041	8042	8043	8044	8045
8046	8047	8048	8049	8050	8051	8052	8053	8054	8055	8056	8057	8058	8059	8060	8061	8062	8063
8064	8065	8066	8067	8068	8069	8070	8071	8072	8073	8074	8075	8076	8077	8078	8079	8080	8081
8082	8083	8084	8085	8086	8087	8088	8089	8090	8091	8092	8093	8094	8095	8096	8097	8098	8099
8100	8101	8102	8103	8104	8105	8106	8107	8108	8109	8110	8111	8112	8113	8114	8115	8116	8117
8118	8119	8120	8121	8122	8123	8124	8125	8126	8127	8128	8129	8130	8131	8132	8133	8134	8135
8136	8137	8138	8139	8140	8141	8142	8143	8144	8145	8146	8147	8148	8149	8150	8151	8152	8153
8154	8155	8156	8157	8158	8159	8160	8161	8162	8163	8164	8165	8166	8167	8168	8169	8170	8171
8172	8173	8174	8175	8176	8177	8178	8179	8180	8181	8182	8183	8184	8185	8186	8187	8188	8189
8190	8191	8192	8193	8194	8195	8196	8197	8198	8199	8200	8201	8202	8203	8204	8205	8206	8207
8208	8209	8210	8211	8212	8213	8214	8215	8216	8217	8218	8219	8220	8221	8222	8223	8224	8225
8226	8227	8228	8229	8230	8231	8232	8233	8234	8235	8236	8237	8238	8239	8240	8241	8242	8243

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 29
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 16 OF 95

4.1.2 DEAD WEIGHT ANALYSIS

Horizontal Dead Weight:

Horizontal dead weight stress intensities are calculated by factoring the ANSYS 75g horizontal drop results (Section 4.1.7) by 1/75. These stresses are summarized in Table 4.1.1.

Maximum DSC Shell stresses are hand calculated assuming the DSC has already been placed into the HSM.

Calculations conservatively assume a DSC Shell wall thickness of 0.55".

Vertical Dead Weight:

Vertical dead weight stress intensities are calculated by factoring the ANSYS 75g vertical drop results (Section 4.1.7) by 1/75. Bottom drop results are used for the DSC top detail, and top drop results are used for the bottom detail.

Dead weight stress intensities are summarized in Table 4.1.1.

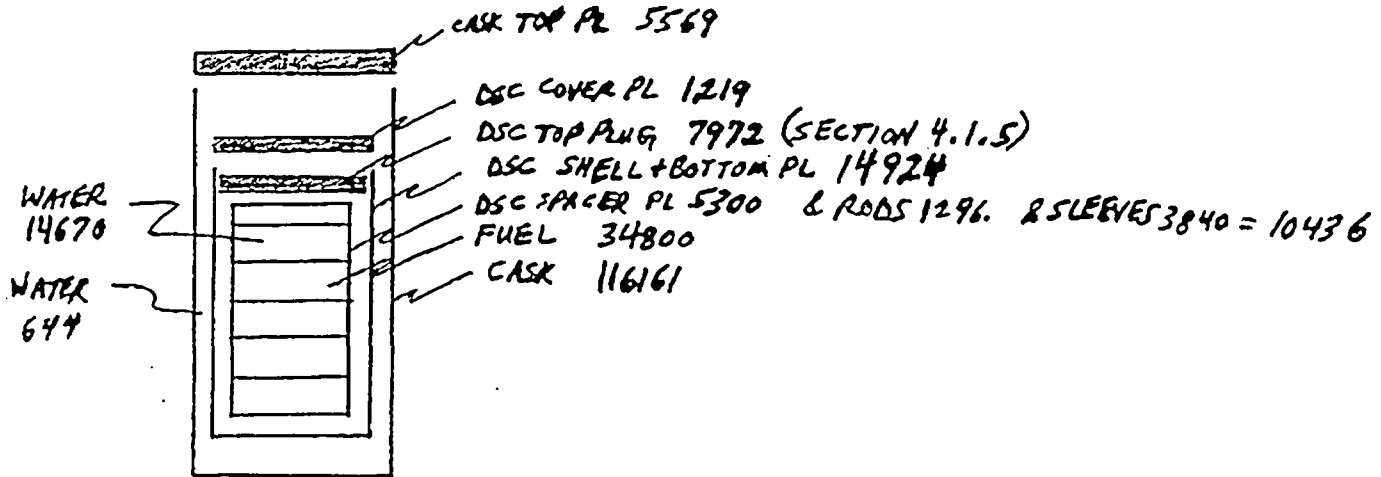
HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 30
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SL SHT: 17 OF 95

WTS BASED ON BGE 001.201A (OR AS INDICATED)



CASK TOP PL	DSC COVER PL	DSC TOP PLUG	DSC SHELL BOT PL	DSC SPACER PL	FUEL	CASK	WATER DSC	WATER CASK	TOT WT #
		X	X	X	X		X		82602
		X	X	X	X	X			184093
		X	X	X	X	X	X	X	199407
	X	X	X	X	X				69151*
			X	X					25160
X	X	X	X	X	X	X			190881

* H&A CALC. [48] RECALCULATES WT. AS 69,402 lbs. (0.36% GREATER) \therefore NEGLECT.

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 3/

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 18 OF 95

DSC SHELL LOCAL BENDING

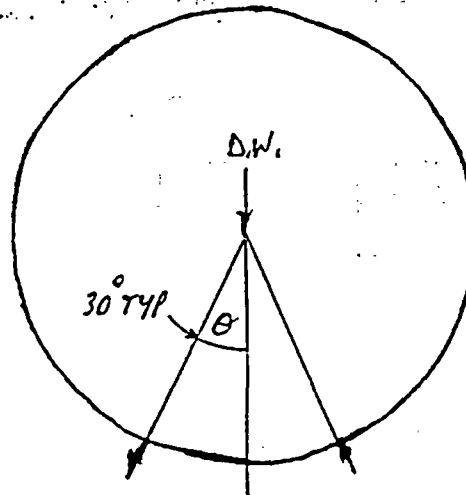
Calculate the dead weight load stress intensity of the DSC shell assuming it is supported below by the t-section guide members in the HSM.

R= 33.55

DSC LENGTH= 172.75"

DW= 80,000 # OR $80,000 \# / 172.75' = 463.1 \# / in$

Bounding
Dsc Weight. [3]



$2W \cos \theta = \text{DEAD WEIGHT}$

$2W \cos(30) = 463.1$

$W = 267.4 \text{ LB/IN}$

$U = 1.75(RT)^{1/2} F_3 / T^2$ (REF 18, PG 193)

WHERE: R=RADIUS
T=THICKNESS
 F_3 =LOAD/IN

$\sigma = 1.75 [(33.55) (0.55)]^{1/2} 267.4 (0.55)^2$

= 6.65 ksi

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 32
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 19 OF 95

DSC HORIZONTAL DEAD WEIGHT STRESS INTENSITIES

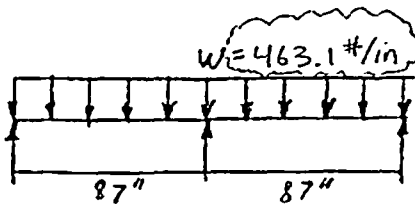
CALCULATED W/ DSC IN HSM

TOTAL WT OF DSC=69150 LBS

(REF 32), 80,000# Bounding

TOTAL LENGTH=172.75"

ASSUMING THE CANISTER IS SIMPLY SUPPORTED IN THE HSM @ THREE POINTS
(CONSERVATIVE)



$$M_{MAX} = WL^2/8 = 463.1 (87)^2/8 = 438,151 \text{ IN-LB}$$

$$S = \pi (OD^4 - ID^4)/OD(32) = \pi (67.1^4 - 66^4)/67.1 (32) = 1898$$

$$S.I. = F_B = M/S = 438,151 / 1898 = 0.23 \text{ KSI}$$

TOTAL DSC SHELL S.I.

$$P_M + P_B = 6.65 + 0.23 = 6.88 \text{ KSI}$$

**HOPPER AND ASSOCIATES
ENGINEERS**

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 33

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 20 OF 95

Table 4.1.1: Dead Weight Maximum Stress Intensities

Component	Stress Type	Maximum Stress Intensity (ksi)		Level A Allowable (ksi)
		Vertical ⁽¹⁾	Horizontal ⁽²⁾	
DSC Shell	P _M	0.13	0.12	18.7
	P _L	0.16	6.65 ⁽³⁾	28.0
	P _L +P _B	0.22	6.88 ⁽³⁾	28.0
Top Pressure (Top Cover) Plate	P _M	-	0.13	18.7
	P _L +P _B	0.16	0.19	28.0
Top Structural (Top Inner Cover) Plate	P _M	-	0.19	18.7
	P _L +P _B	0.35	0.21	28.0
Top Lead Liner	P _M	-	-	18.7
	P _L +P _B	0.30	-	28.0
Bottom Cover Plate	P _M	-	0.13	18.7
	P _L +P _B	0.33	0.19	28.0
Bottom Lead Liner	P _M	-	-	18.7
	P _L +P _B	0.33	-	28.0

1. Values shown are factored (1/75) from maximum of top or bottom drop results (Tables 4.1.10 & 4.1.11).

2. Values shown are factored (1/75) from horizontal drop results (Table 4.1.12).

3. Values shown are hand calculations which bound computer results.

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 34

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 21 OF 95

4.1.3 PRESSURE ANALYSIS

The DSC Shell Assembly is analyzed for pressure loads using the ANSYS model illustrated in Figure 4.1.1.

PRESSURE CONDITIONS

The following pressure loads are considered [35]:

- | | |
|-------------------------------|---------------------------|
| • Normal operating conditions | Service Level A (10 psig) |
| • Blowdown conditions | Service Level B (40 psig) |
| • Accident conditions | Service Level C (50 psig) |
| • Re-flood conditions | Service Level D (40 psig) |
| • Hydrostatic conditions | Service Level A |

ANSYS COMPUTER RUNS

1. The inner pressure boundary consists of the Bottom Inside Cover Plate, the DSC Shell walls, the Top Inside Cover Plate, and the 3/16" seal weld at the top of the Lead Plug to the DSC Shell. A 1.0 psig pressure load is applied along the inner boundary of the ANSYS model, as illustrated in Figure 4.1.2. The resulting stress intensity contour is color plotted in Figure 4.1.3. See Appendix B for input file. The results from this analysis are used for evaluation of normal, blowdown, accident, and reflood conditions. SIDE CASING PLATE
1 2
2. The outer pressure boundary assumes failure of the seal weld and consists of the Bottom Inner Cover Plate, the DSC Shell walls, and the Top Cover Plate. A 1.0 psig pressure is applied along the outer pressure boundary, as illustrated in Figure 4.1.4. The resulting stress intensity contour is color plotted in Figure 4.1.5. See Appendix B for input file. This analysis is not required since the seal weld is not expected to fail. Results from this analysis are compared against Level D accident allowables.
3. Hydrostatic conditions: Under this loading condition the DSC is evacuated, and the 3/8" annulus between the DSC Shell and Transfer Cask is filled with water. This is equivalent to an external pressure equal to the hydrostatic pressure of the water (in the annulus) plus an atmospheric pressure of 14.7 psi. Inward pressure loading on the bottom cover plate is

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

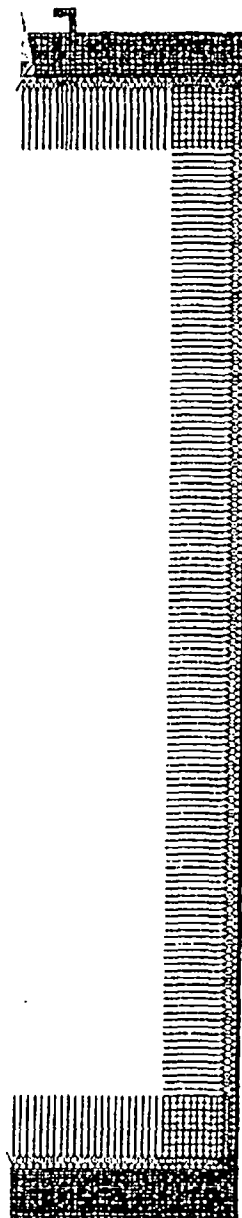
CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS **DATE:** 12/08/98 **PAGE:** 35
SUBJECT: 4.0 ANALYSIS **BY:** AJS **CK:** SR **SHT:** 22 **OF** 95

counteracted by the weight of the fuel and basket bearing on the plate. The loading condition is illustrated in Figure 4.1.6. The resulting stress intensity contour is color plotted in Figure 4.1.7. See Appendix E for input file.

ANSYS 5.2
FEB 11 1998
10:27:04
ELEMENTS
TYPE NUM
PRES

ZV =1
*DIST=106.353
*XF =17.316
*YF =-78.27
PRECISE HIDDEN



DATE: 1/11/99 PAGE: 36
BY: AJS CK: SR SHT: 23 OF 95

FIGURE 4.1.2

DSC PRESSURE ANALYSIS (INNER BOUNDARY) - 0.55" SHELL THICKNESS

ANSYS 5.2
FEB 11 1998
11:02:51
NODAL SOLUTION
STEP=1
SUB =1
TIME=1
SINT (AVG)
DMX =.548E-03
SMN =.400246
SMX =122.822
SMXB=190.18
122.822
109.22
95.618
82.015
68.413
54.81
41.208
27.605
14.003
.400246

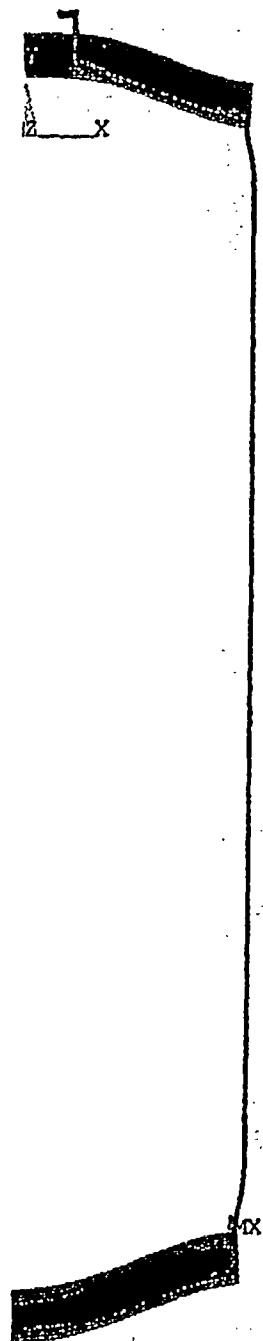


FIGURE 4.1.3

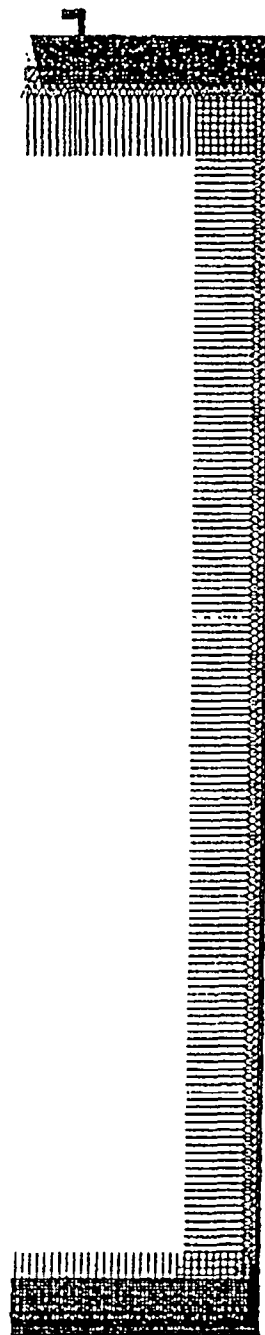
DSC PRESSURE ANALYSIS (INNER BOUNDARY) - 0.55" SHELL THICKNESS

DATE: 1/11/99 PAGE: 37
BY: AJS CK: SR SHT: 24 OF 95

FEB 11 1998
11:28:17
ELEMENTS
TYPE NUM
PRES

ZV =1
DIST=96.938
XF =16.775
YF =-78.125
PRECISE HIDDEN

DATE: 1/11/99 PAGE: 38
BY: AIS CK: SR SHT: 25 OF 95



4.1.4

DSC PRESSURE ANALYSIS (OUTER BOUNDARY) - 0.55" SHELL THICKNESS

ANSYS 5.2
FEB 11 1998
11:11:57
NODAL SOLUTION
STEP=1
SUB =1
TIME=1
SINT (AVG)
DMX =.006612
SMN =.237643
SMX =1191
SMXB=1535

■	.237643
■	132.491
■	264.745
■	396.998
■	529.251
■	661.505
■	793.758
■	926.012
■	1058
■	1191

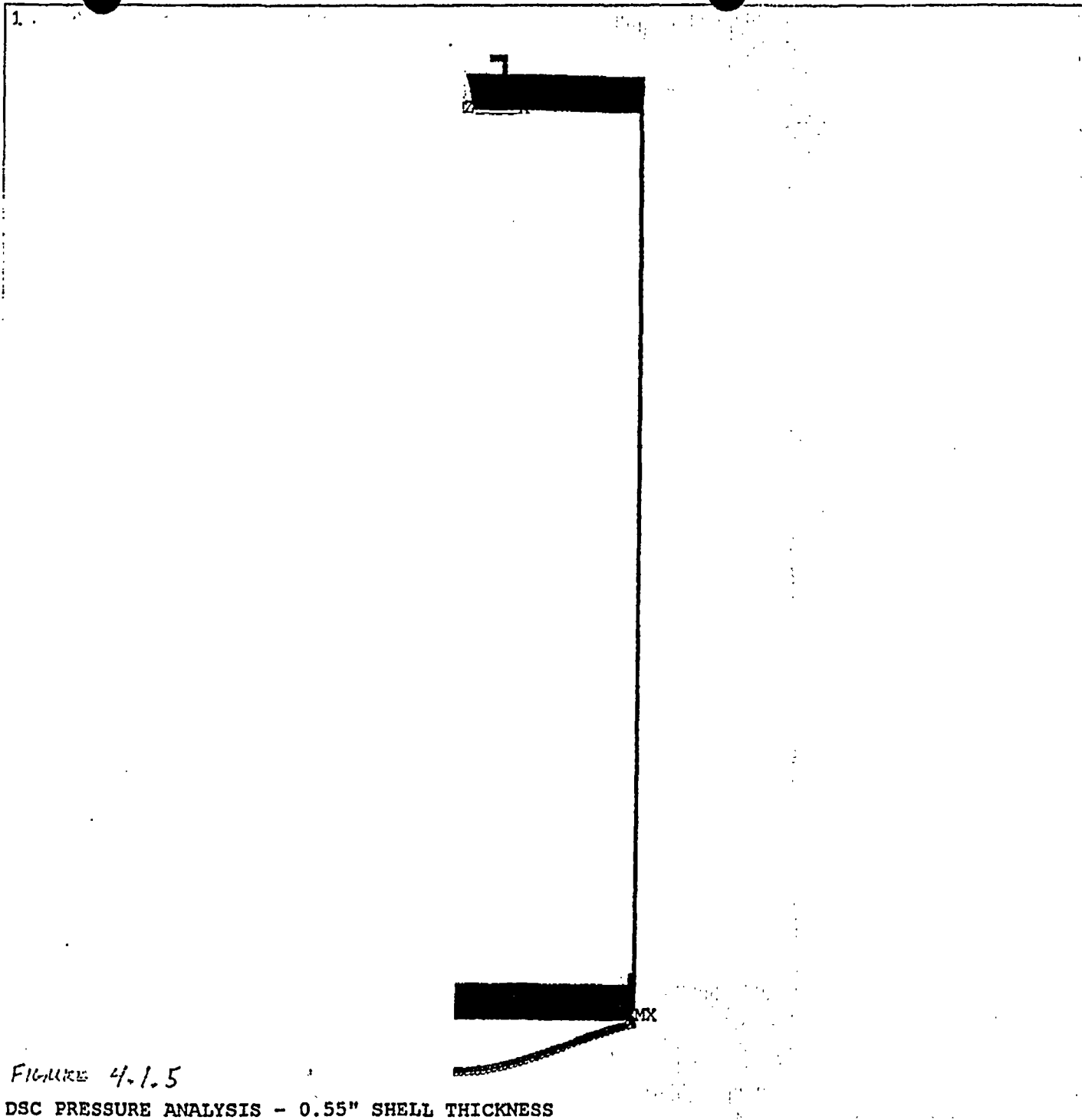


FIGURE 4.1.5
DSC PRESSURE ANALYSIS - 0.55" SHELL THICKNESS

ANSYS 5.2
FEB 15 1998
16:32:18
ELEMENTS
TYPE NUM
PRES

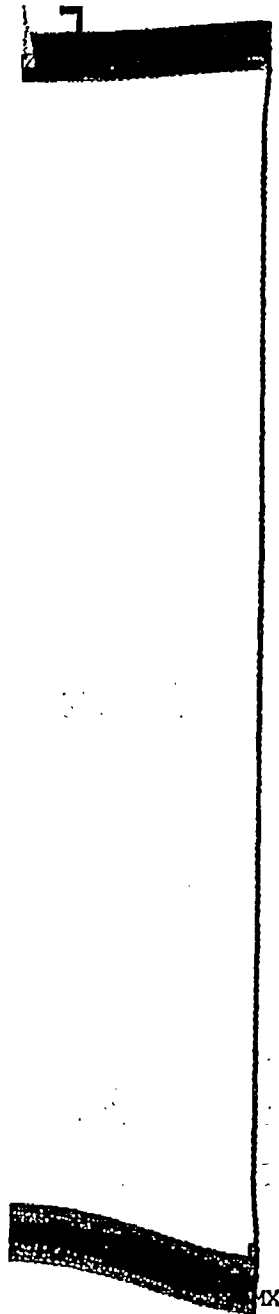
ZV =1
*DIST=96.938
*XF =-12.306
*YF =-78.125
PRECISE HIDDEN

DATE: 1/11/99 PAGE: 40
BY: AJS CR: SR SHT: 27 OF 95

1

FIGURE 4.1.6
DSC HYDROSTATIC PRESSURE ANALYSIS

ANSYS 5.2
 FEB 15 1998
 16:37:27
 NODAL SOLUTION
 STEP=1
 SUB =1
 TIME=1
 SINT (AVG)
 DMX =.020215
 SMN =6.359
 SMX =3293
 SMXB=5054
 6.359
 371.546
 736.733
 1102
 1467
 1832
 2197
 2563
 2928
 3293



DATE: 1/11/99 PAGE: 41
 BY: AJS CK: SR SHT: 28 OF 95

FIGURE 4.1.7:
 DSC HYDROSTATIC PRESSURE ANALYSIS

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 42
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 29 OF 95

NORMAL OPERATING PRESSURE (10 psi)

Under normal operating conditions, a 10 psig pressure load is expected along the inner pressure boundary.

The equivalent stress intensities for an internal pressure of 10 psi are obtained by scaling up the 1.0 psi ANSYS inner boundary run. Stress intensity results at 10 psi are summarized in Table 4.1.2.

- The inner pressure boundary is maintained by a 3/16" groove weld applied to the Top Shield Plug and DSC Shell. Check to see if this weld maintains the pressure boundary.

$$\begin{aligned}\text{Weld load / in} &= P (\pi d^2) / 4 (\pi d) \\ &= 10 (66) / 4 \\ &= 165 \text{ lb./in.}\end{aligned}$$

$$\begin{aligned}\text{Weld Stress} &= 165 / (3/16) \\ &= 0.88 \text{ ksi}\end{aligned}$$

$$\text{Level A allowable} = 0.5S_m = 0.5(18.7) = 9.35 \text{ ksi}$$

Therefore, seal weld maintains the inner pressure boundary.

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 43

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 30 OF 95

- ANSYS assumes fixed end plate conditions. In actuality, end plates are not clearly fixed or pinned but somewhere in between.

A conservative upper bound for maximum end plate bending stresses may be hand calculated by assuming pinned end plates.

From Roark [Ref. 15, Table 24, case 10a], the maximum bending stress in a simply supported circular plate with a uniformly distributed pressure load is:

$$\sigma = 6 M_c / t^2 \quad \text{where} \quad M_c = q a^2 (3 + \nu) / 16$$

The maximum stress in the Top Cover Plate, based on a minimum measured thickness of 1.374" [45] (1.5" nominal), is, therefore:

$$\begin{aligned} \sigma_{\max} &= 6 q a^2 (3 + \nu) / 16 t^2 \\ &= 6 (10) (33)^2 (3 + .3) / 16 (1.374)^2 \\ &= 7.14 \text{ ksi} \end{aligned}$$

And the maximum stress in the Bottom Cover Plate, based on a minimum measured thickness of 1.68" [44] (1.75" nominal), is:

$$\begin{aligned} \sigma_{\max} &= 6 q a^2 (3 + \nu) / 16 t^2 \\ &= 6 (10) (33)^2 (3 + .3) / 16 (1.68)^2 \\ &= 4.77 \text{ ksi} \end{aligned}$$

However, this method is over-simplified. The above calculations take no credit for the end plates, the lead, and lead casing plates bending as a composite section, and therefore, computed stress results are artificially high.

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 44
SUBJECT: 4.0 ANALYSIS BY: ADS CK: SR SHT: 31 OF 95

To better approximate the maximum bending stress, consider the ANSYS evaluations in Section 4.1.7 for pinned end plates under a 75g drop.

- For a simply supported Top Inner Cover (Structural) Plate under a 75g bottom drop ANSYS reports a maximum stress intensity of 26.1 ksi. The load inducing this stress is the weight of the lead, the casing plates, and the self-weight of plate. This converts to an equivalent pressure of:

$$(8000 \text{ lbs.}) (75g,s) / \pi(33)^2 \approx 175 \text{ psi}$$

Taking ratios, the maximum stress intensity for a pressure of 10 psi is, therefore:

$$(10 / 175) (26.1 \text{ ksi}) = 1.49 \text{ ksi.}$$

By comparison, the ANSYS model pictured in Figure 4.1.1 (fixed end plates) gives a maximum stress intensity of 0.97 ksi @ node 900.

- For a simply supported Bottom Cover Plate under a 75g top drop ANSYS reports a maximum stress intensity of 25.0 ksi. The total weight of the lead, casing plates, and Cover Plate converts to an equivalent pressure load of:

$$(9000 \text{ lbs.}) (75g,s) / \pi(33)^2 \approx 200 \text{ psi}$$

Taking ratios, the maximum stress intensity for a pressure of 10 psi is, therefore:

$$(10 / 200) (25.0 \text{ ksi}) = 1.25 \text{ ksi.}$$

By comparison, the ANSYS model pictured in Figure 4.1.1 (fixed end plates) gives a maximum stress intensity of 1.08 ksi @ node 37.

Bending stresses considering simply supported end plates are critical and will be reported in the stress tables.

**HOPPER AND ASSOCIATES
ENGINEERS**

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 45

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 32 OF 95

Table 4.1.2: Normal Operating Pressure (10 psig) Maximum Stress Intensities

Component	Stress Type	Node	Max. Stress Intensity (ksi)	Level A Allowable (ksi)
DSC Shell	P _M	566/567	0.61	18.7
	P _L	827/829	0.74	28.0
	P _L +P _B	827	1.23	28.0
Top Pressure (Top Cover) Plate	P _M	1170/1242	0.34	18.7
	P _L +P _B	1201	1.07	28.0
Top Structural (Top Inner Cover) Plate	P _M	757/868	0.35	18.7
	P _L +P _B	-	1.49 ⁽¹⁾	28.0
Top Lead Liner	P _M	1091/1129	0.10	18.7
	P _L +P _B	1124	0.63	28.0
Bottom Cover Plate	P _M	1/112	0.10	18.7
	P _L +P _B	-	1.25 ⁽¹⁾	28.0
Bottom Lead Liner	P _M	345/381	0.26	18.7
	P _L +P _B	382	0.58	28.0

Bounding hand calculation.

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 46

SUBJECT: 4.0 ANALYSIS

BY: ADS CK: SR SHT: 33 OF 95

BLOWDOWN PRESSURE (40 psi)

During blowdown conditions, a 40 psig pressure load is expected along the inner pressure boundary. The DSC is resting in the vertical position, and the Top Cover is removed.

The equivalent stress intensities for an internal pressure of 40 psi are obtained by scaling up the 1.0 psi ANSYS inner boundary run (Appendix B). Maximum stress intensity results at 40 psi are listed in Table 4.1.3.

- Check seal weld to see if it maintains the pressure boundary.

$$\begin{aligned}\text{Weld load / in} &= 40 (66) / 4 \\ &= 660 \text{ lb./in.}\end{aligned}$$

$$\begin{aligned}\text{Weld Stress} &= 660 / (3/16) \\ &= 3.52 \text{ ksi}\end{aligned}$$

$$\text{Level B allowable} = 0.5S_m = 0.5(18.7) = 9.35 \text{ ksi}$$

Therefore, seal weld maintains the inner pressure boundary.

- Bending stresses considering simply supported end plates are critical. Blowdown pressure (40 psi) is four times Normal pressure (10 psi), and therefore stress intensities are factored up by four:

$$\text{Top Cover (Structural) Plate} = (1.49) (4) = 5.96 \text{ ksi}$$

$$\text{Bottom Cover Plate} = (1.25) (4) = 5.0 \text{ ksi}$$

**HOPPER AND ASSOCIATES
ENGINEERS**

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 47

SUBJECT: 4.0 ANALYSIS

BY: AJS **CK:** SR **SHT:** 34 **OF** 95

Table 4.1.3: Blowdown Pressure (40 psig) Maximum Stress Intensities

Component	Stress Type	Node	Max. Stress Intensity (ksi)	Level B Allowable (ksi)
DSC Shell	P _M	566/567	2.4	18.7
	P _L	827/829	3.0	28.0
	P _L +P _B	827	4.9	28.0
Top Pressure (Top Cover) Plate	P _M P _L +P _B	Top Cover Plate removed during Blowdown conditions		
Top Structural (Top Inner Cover) Plate	P _M	757/868	1.4	18.7
	P _L +P _B	-	5.96	28.0
Top Lead Liner	P _M	1091/1129	0.40	18.7
	P _L +P _B	1124	2.5	28.0
Bottom Cover Plate	P _M	1/112	0.40	18.7
	P _L +P _B	-	5.0	28.0
Bottom Lead Liner	P _M P _L +P _B	DSC rests in the vertical position during Blowdown conditions. Stresses are negligible.		

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 48
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 35 OF 95

ACCIDENT PRESSURE (50 psi)

An accident pressure of 50 psig is expected along the inner pressure boundary. This is a Level C accident condition. Also, consider an accident pressure of 50 psig along the outer pressure boundary, assuming the seal weld has failed. Consider this a Level D condition.

The equivalent stress intensities for an internal pressure of 50 psi are obtained by scaling up the 1.0 psi ANSYS runs (Appendix B). Maximum stress intensity results at 50 psi are listed in Tables 4.1.4 and 4.1.5.

- Check seal weld to see if it maintains pressure boundary at 50 psi:

$$\begin{aligned}\text{Weld load / in} &= 50 (66) / 4 \\ &= 825 \text{ lb./in.}\end{aligned}$$

$$\begin{aligned}\text{Weld Stress} &= 825 / (3/16) \\ &= 4.4 \text{ ksi}\end{aligned}$$

$$\text{Level C allowable} = 0.65S_m = 0.65(18.0) = 11.7 \text{ ksi}$$

Therefore the seal weld maintains the pressure boundary.

- Bending stresses considering simply supported end plates are critical. Accident pressure (50 psi) is five times Normal pressure (10 psi), and therefore stress intensities are factored up by five:

$$\text{Top Cover (Structural) Plate} = (1.49) (5) = 7.45 \text{ ksi}$$

$$\text{Bottom Cover Plate} = (1.25) (5) = 6.25 \text{ ksi}$$

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 49

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 36 OF 95

- Outer boundary accident pressure:

-Bending stresses in the Top Cover (Pressure) Plate considering simply supported edge conditions are critical. From Roark, the maximum stress in a simply supported circular plate with a uniform pressure load is:

$$\begin{aligned}\sigma_{\max} &= 6 q a^2 (3 + \nu) / 16 t^2 \\ &= 6 (50) (33)^2 (3 + .3) / 16 (1.18)^2 \\ &= 48.4 \text{ ksi}\end{aligned}$$

Where $t = 1.18$ ", the minimum measured plate thickness for the Top Cover.

By comparison, the ANSYS model pictured in Figure 4.1.1 reports a maximum stress of 25.0/ksi @ node 1240.

**HOPPER AND ASSOCIATES
ENGINEERS**

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS **DATE:** 12/08/98 **PAGE:** 50
SUBJECT: 4.0 ANALYSIS **BY:** AJS **CK:** SR **SHT:** 37 OF 95

Table 4.1.4: Accident Pressure (50 psig inner boundary) Maximum Stress Intensities

Component	Stress Type	Node	Max. Stress Intensity (ksi)	Level C Allowable (ksi)
DSC Shell	P _M	566/567	3.1	21.6
	P _L	827/829	3.7	32.4
	P _L +P _B	827	6.2	32.4
Top Pressure (Top Cover) Plate	P _M	1170/1242	1.7	21.6
	P _L +P _B	1201	5.35	32.4
Top Structural (Top Inner Cover) Plate	P _M	757/868	1.8	21.6
	P _L +P _B	-	7.45	32.4
Top Lead Liner	P _M	1091/1129	0.5	21.6
	P _L +P _B	1124	3.2	32.4
Bottom Cover Plate	P _M	1/112	0.50	21.6
	P _L +P _B	-	6.25	32.4
Bottom Lead Liner	P _M	345/381	1.3	21.6
	P _L +P _B	382	2.9	32.4

**HOPPER AND ASSOCIATES
ENGINEERS**

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 51 A d c

SUBJECT: 4.0 ANALYSIS

BY: AJS

CK: SR

SHT: 38 A d c

95

**Table 4.1.5: Accident Conditions (50 psig outer boundary) Stress Intensities
(this condition assumes that the seal weld fails)**

Component	Stress Type	Node	Max. Stress Intensity (ksi)	Level D Allowable (ksi)
DSC Shell	P _M	566/567	3.1	43.2
	P _L	1126/1128	27.5	64.0
	P _L +P _B	(1)	36.7	64.0
Top Pressure (Top Cover) Plate	P _M	1167/1239	15.8	43.2
	P _L +P _B		48.4 (2)	64.0
Top Structural (Top Inner Cover) Plate	P _M P _L +P _B	Not part of the pressure boundary.		
Top Lead Liner	P _M P _L +P _B	Not part of the pressure boundary.		
Bottom Cover Plate	P _M	1/112	1.97	43.2
	P _L +P _B		6.25 (2)	64.0
Bottom Lead Liner	P _M P _L +P _B	Not part of the pressure boundary.		

1. Average of nodes 1056, 1128, and 1166. Stress value is conservative since stresses at nodes 1128 and 1166 may be considered "Q" type stresses per Table NB-3217-1, Note 5, of the ASME Code. The stress at node 1056 alone is only 7.5 ksi.
2. Bounding hand calculation.

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/16/00

PAGE: 51 B of C

SUBJECT: 4.0 ANALYSIS

BY: SR

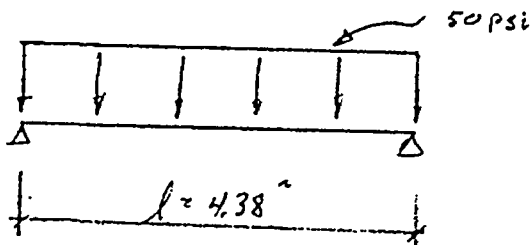
CK: MC

SHT: 328 OF 95

CHECK TOP SIDE CASING PLATE

• 50 PSI ACCIDENT PRESSURE (BOUNDING HAND CALC.)

- ASSUME PINNED-PINNED BEAM:



$t = 0.5"$ NOMINAL
WITH TOLBRANGE RANGING FROM
0.49" TO 0.62"

USE $t = 0.4"$ FOR CONSERVATION.

- ASSUME CONSERVATIVELY THAT LEAD INSIDE PLUG PROVIDES NO SUPPORT FOR CASING PLATE.

$$M_{MAX} = \frac{wl^2}{8} = \frac{50 \times 4.38^2}{8} = 120 \text{ in-}\#$$

$$S.M. = \frac{1}{6} bh^2 = \frac{1}{6} \times 1 \times 0.4^2 = 0.0267 \text{ in}^3$$

$$\frac{P}{S} = \frac{M}{S} = \frac{120}{0.0267} = 4.5 \text{ ksi}$$

$$\begin{aligned} \text{ALLOWABLE STRESS (LEVEL C)} &= 21.6 (P_M) \\ &= 32.4 (P_L), (P_L + P_B) \end{aligned}$$

$$4.5 \text{ ksi} < 21.6 \text{ ksi} \quad \checkmark \text{ O.K.}$$

CONSERVATIVE
TO COMPARE TO P_M ALLOWABLE

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NGW DSC STRUCTURAL ANALYSIS

DATE: 01/16/00

PAGE: 51C of C

SUBJECT: 4.0 ANALYSIS

BY: SR

CK: MG

SHT: 38C OF 95

• DROP LOAD

$$P_L + P_B = 3.4 \text{ ksi}$$

TOP DROP (NODE 1052 - SEE APP. D)

$$P_L + P_B = 12.1 \text{ ksi}$$

BOT. DROP (NODE 1124 - SEE APP. D)

• DW

$$P_L + P_B = 12.1 / 75 = 0.2 \text{ ksi}$$

(NODE 1124 - FACTORED
DROP LOAD STRESS INTENSITY)

• THERMAL

$$Q = 41.4 \text{ ksi} < 56.1$$

✓ O.K. (AVG. OF NODES 1013 & 1014
- SEE APP. C)

• LOAD COMBINATIONS

BY INSPECTION CRITICAL LOAD COMBINATION D2 & B2

$$D2: DW + T + P + DL$$

$$= 0.2 + \phi + 4.5 + 12.1$$

$$= 16.8 \text{ ksi} < 43.2 \text{ ksi}$$

↑
CONSERVATIVE
P_n ALLOWABLE

$$B2: DW + T + P_B + L_o$$

; L_o = OFFNORMAL HANDLING -
NEGLECTIBLE - USE 1.0 ksi
FOR CONSERVATISM.

$$= 0.2 + 41.4 + \left(\frac{4}{5}\right)(4.5) + 1.0$$

$$= 46.2 \text{ ksi} < 56.1 \text{ ksi} (P_L + P_B + Q) \quad \checkmark \text{ O.K.}$$

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 52
SUBJECT: 4.0 ANALYSIS BY: AJS CK: JR SHT: 39 OF 95

REFLOOD PRESSURE (40psi)

The Re-flood condition is bounded by the 50 psig inner boundary accident pressure analysis. No further analysis is necessary.

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 53

SUBJECT: 4.0 ANALYSIS

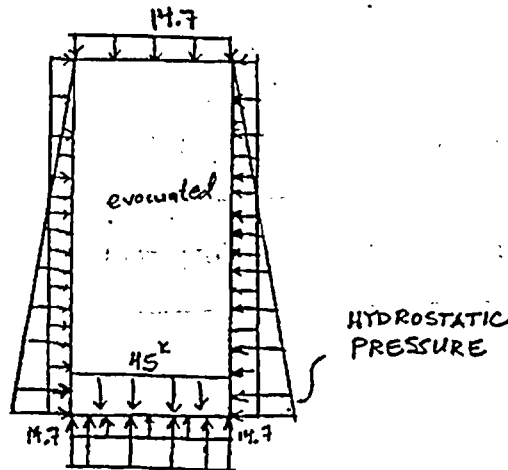
BY: AJS CK: SR SHT: 40 OF 95

HYDROSTATIC PRESSURE

A hydrostatic pressure analysis of the DSC Shell Assembly is performed using the ANSYS axisymmetric model pictured in Figure 4.1.1.

Under this loading condition the DSC is evacuated, and the 3/8" annulus between the DSC Shell and Transfer Cask is filled with water. This is equivalent to an external pressure equal to the hydrostatic pressure of the water (in the annulus) plus an atmospheric pressure of 14.7 psi. Inward pressure loading on the bottom cover plate is counteracted by the weight of the fuel and basket bearing on the plate.

The loading condition is illustrated below and in Figure 4.1.6. The stress intensity contour is plotted in Figure 4.1.7. The maximum DSC component stress intensities are summarized in Table 4.1.6.



**HOPPER AND ASSOCIATES
ENGINEERS**

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 54

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 41 OF 95

Table 4.1.6: Hydrostatic Pressure Maximum Stress Intensities

Component	Stress Type	Node	Max. Stress Intensity (ksi)	Level A Allowable (ksi)
DSC Shell	P_M	450/451	1.28	18.7
	P_L	1126/1128	1.73	28.0
	P_L+P_B	1201	3.30	28.0
Top Pressure (Top Cover) Plate	P_M	1167/1239	0.99	18.7
	P_L+P_B	1239	1.69	28.0
Top Structural (Top Inner Cover) Plate	P_M P_L+P_B	Not part of the pressure boundary.		
Top Lead Liner	P_M P_L+P_B	Not part of the pressure boundary.		
Bottom Cover Plate	P_M	1/112	0.13	18.7
	P_L+P_B	146	0.89	28.0
Bottom Lead Liner	P_M P_L+P_B	Not part of the pressure boundary.		

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 55

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 42 OF 95

4.1.4 THERMAL ANALYSIS

The DSC Shell Assembly is analyzed for thermal loads using the ANSYS model illustrated in Figure 4.1.1.

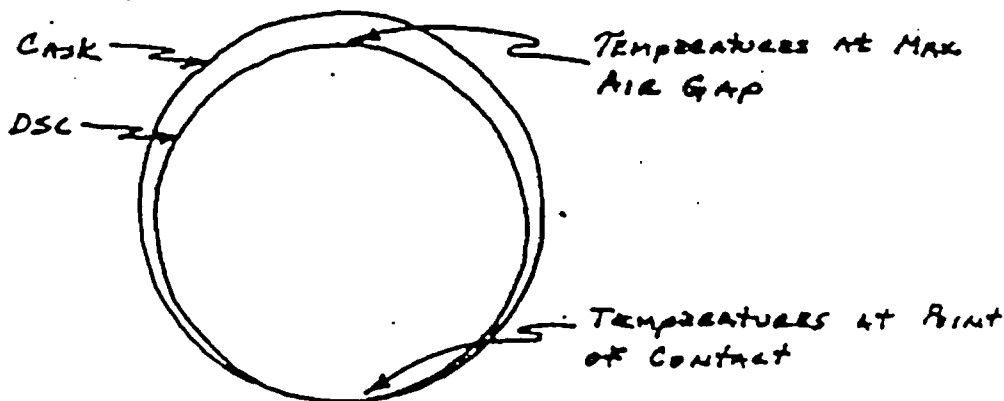
The DSC thermal loads are provided in the original NUTECH calculation package [3]. It is assumed that the DSC is resting within the transfer cask. Wall thicknesses were modified to account for tolerances, and the model was rerun with the same boundary conditions [3]. Two sets of temperatures are provided:

- a) The maximum temperature occurs at the top of the DSC with a maximum air gap between the DSC and the cask inner liner.
- b) The minimum temperature occurs at the opposite end, at the point of contact between the DSC Shell and the cask inner liner.

Note

i) E and α corresponding to 400 F were used in the analysis

ii) For Level C+D the temperature is 460 F which will reduce E and increase α slightly.



HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 56
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 43 OF 95

The DSC thermal analysis consists of two axisymmetric load steps:

1. First ANSYS run - for temperatures at the top of the DSC with a maximum air gap between the DSC and the cask inner liner. The temperature distribution for this load case is illustrated in Figure 4.1.8.
2. Second ANSYS run - for temperatures at the point of contact between the DSC shell and inner cask liner. The temperature distribution for this load case is illustrated in Figure 4.1.9.

The final stress intensities are calculated as the average of runs 1 and 2, and are reported in Table 4.1.7.

ANSYS 5.2
FEB 1 1998
17:43:29
ELEMENTS
TEMPERATURES
TMIN=265
TMAX=358

ZV =1
*DIST=96.938
*XF =16.813
*YF =-78.125
PRECISE HIDDEN
265
275.333
285.667
296
306.333
316.667
327
337.333
347.667
358

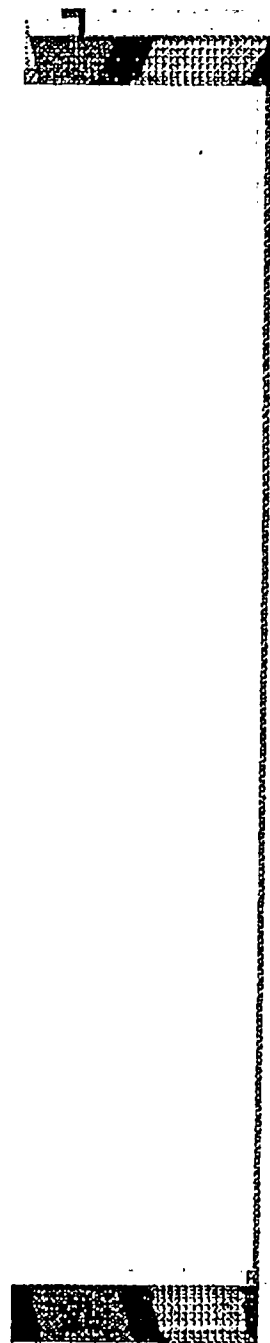


FIGURE 4/1.8

DSC THERMAL ANALYSIS LOADING 1 - DSC WITH AIR GAP

DATE: 1/11/99 PAGE: 57
BY: AJS CK: SR SHT: 44 OF 95

ANSYS 5.2
FEB 1 1998
18:16:11
ELEMENTS
TEMPERATURES
TMIN=191
TMAX=276

ZV =1
*DIST=96.938
*XF =16.813
*YF =-78.125
PRECISE HIDDEN











	191
	200.444
	209.889
	219.333
	228.778
	238.222
	247.667
	257.111
	266.556
	276



FIGURE 4.1.9

DSC THERMAL ANALYSIS LOADING 2 - DSC RESTING ON CASK

DATE: 1/11/99 PAGE: 58
BY: AJS CK: SR SHT: 45 OF 95

**HOPPER AND ASSOCIATES
ENGINEERS**

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 59

SUBJECT: 4.0 ANALYSIS

BY: ASJ

CK: SR

SHT: 46 OF 95

Table 4.1.7: Maximum Thermal Stress Intensities ⁽¹⁾

Component	Stress Type	Node	Max. Stress Intensity (ksi)	Thermal Allowable (ksi)
DSC Shell	P _M	-	-	-
	P _L	-	-	-
	P _L +P _B	-	-	-
	P _L +P _B +Q	1017	30.0	56.1
Top Pressure (Top Cover) Plate	P _M	-	-	-
	P _L +P _B	-	-	-
	P _L +P _B +Q	1268	19.9	56.1
Top Structural (Top Inner Cover) Plate	P _M	-	-	-
	P _L +P _B	-	-	-
	P _L +P _B +Q	901	22.2	56.1
Top Lead Liner	P _M	-	-	-
	P _L +P _B	-	-	-
	P _L +P _B +Q	1124	47.0	56.1
Bottom Cover Plate	P _M	-	-	-
	P _L +P _B	-	-	-
	P _L +P _B +Q	108	14.0	56.1
Bottom Lead Liner	P _M	-	-	-
	P _L +P _B	-	-	-
	P _L +P _B +Q	369	42.5	56.1

Peak, F loads have not been reported.

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 60

SUBJECT: 4.0 ANALYSIS

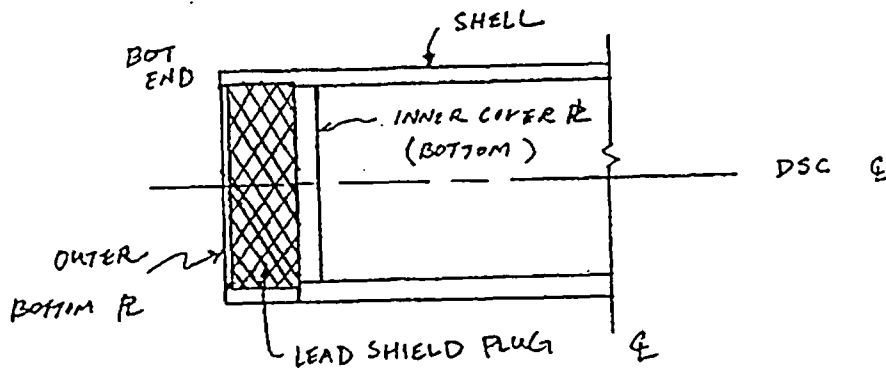
BY: AJS

CK: SR

SHT: 47 OF 95

LEAD THERMAL EXPANSION

The lead shield plug is placed within the cavity at the bottom of the DSC formed by the outer lead casing plate, the DSC inner bottom cover plate, and the lead casing shell.



This portion of the DSC experiences heat up from the fuel. The coefficients of thermal expansion for lead and stainless steel are listed below:

Lead	16.4×10^{-6} in/in F	[8]
Stainless steel	9.98×10^{-6} in/in F	[5]

The difference in thermal expansion between the lead and the stainless steel will result in the lead expanding and imposing forces on the stainless steel.

Assume that the bottom lead plug is critical because the top lead plug is completely contained within its own casing. The bottom lead plug is checked for radial expansion, axial expansion, fatigue effects, and lead creep effects.

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 61
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 48 OF 95

Radial expansion:

Assume the lead has an initial radius of 33", it completely fills the inside of the boundary, and has an assumed relaxed temperature of 200° F, an ambient condition 70° F, and a storage temperature of 460° F. The relaxed temperature stems from the fact that the lead is poured into the cavity in a heated molten state. This occurs when the lead is above 500 degrees, but in order to be conservative the relaxed state is taken well below the fabrication temperature. The radial expansion of the lead is then:

$$\begin{aligned}\Delta R &= \Delta \alpha R \Delta T \\ &= (16.4 - 9.98 \times 10^{-6}) (33) (460 - 200) \\ &= 0.055''\end{aligned}$$

** (Because the difference between the storage temperature and the relaxed temperature is larger than between the ambient temperature and the relaxed temperature, it is the only one analyzed.)

Assume conservatively that the lead is incompressible, and that the lead casing shell must expand to allow this radial increase. The resulting hoop stress can be calculated as follows:

$$\begin{aligned}\sigma_h &= \epsilon E = (\Delta R / R) E \\ &= (0.055 / 33) 26.08 \times 10^3 \\ &= 43.53 \text{ ksi} < 3S_m \text{ (secondary stress)} = 53.94 \text{ ksi}\end{aligned}$$

HOPPER AND ASSOCIATES
ENGINEERS

HABGE-01/99-0745, Revision 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 62

SUBJECT: 4.0 ANALYSIS

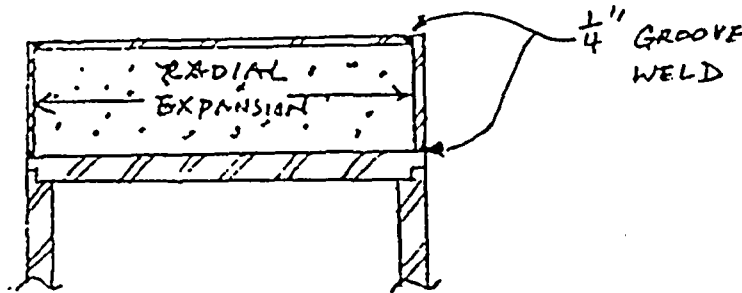
BY: AJS

CK: SR

SHT: 49 OF 95

Check Welds

The lead shield plug is placed within the cavity at the bottom of the DSC formed by the outer lead casing plate, the DSC inner bottom cover plate, and the lead casing shell.



The pressure load necessary to produce a hoop stress of 43.53 ksi in the lead casing shell is:

$$p = (\sigma_{\text{hoop}}) t / r = (43.53) (0.5) / (33) = 660 \text{ psi}$$

The equivalent force on the lead casing inner surface is:

$$F = (2\pi r) (d) (p) = (2\pi 33) (4.25) (660) = 582 \text{ kips}$$

The total area of welds is:

$$A_{\text{weld}} = (2\pi) (33) (1/4) (2 \text{ welds}) = 103.7 \text{ in.}^2$$

The weld stress is then:

$$\sigma = 582 / 103.7 = 5.60 \text{ ksi}$$

which is well below even Level A weld stress allowable. Therefore, the weld is acceptable.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 63

SUBJECT: 4.0 ANALYSIS

BY: AOS CK: SR SHY: 50 OF 95

Axial expansion:

Assume that the total depth of the lead is 4.25". The axial expansion of the lead is then:

$$\begin{aligned}\Delta L &= \Delta \alpha L \Delta T \\ &= (16.4 - 9.98 \times 10^{-6}) (4.25) (460 - 200) \\ &= 0.007''\end{aligned}$$

As the lead expands the cover plates will see a pressure applied. This pressure will result in deflection of the cover plates that will relieve the pressure from the lead. The minimum thickness of the bottom casing plate is 0.38" [6]. Assuming fixed edge conditions, the pressure required to produce a center plate deflection of 0.011" is:

$$q = y_c 64D / a^4 \quad [\text{Roark, Ref.15, Table 24, Case 10b}]$$

$$\begin{aligned}\text{where } D &= E t^3 / 12(1-\nu^2) \\ &= (26.08 \text{ E}6) (.38)^3 / 12(1-.29^2) \\ &= 1.30205 \text{ E}5\end{aligned}$$

$$\begin{aligned}q &= (0.007) (64) (1.30205 \text{ E}5) / (.38)^4 \\ &= 0.05 \text{ psi}\end{aligned}$$

which corresponds to a stress of:

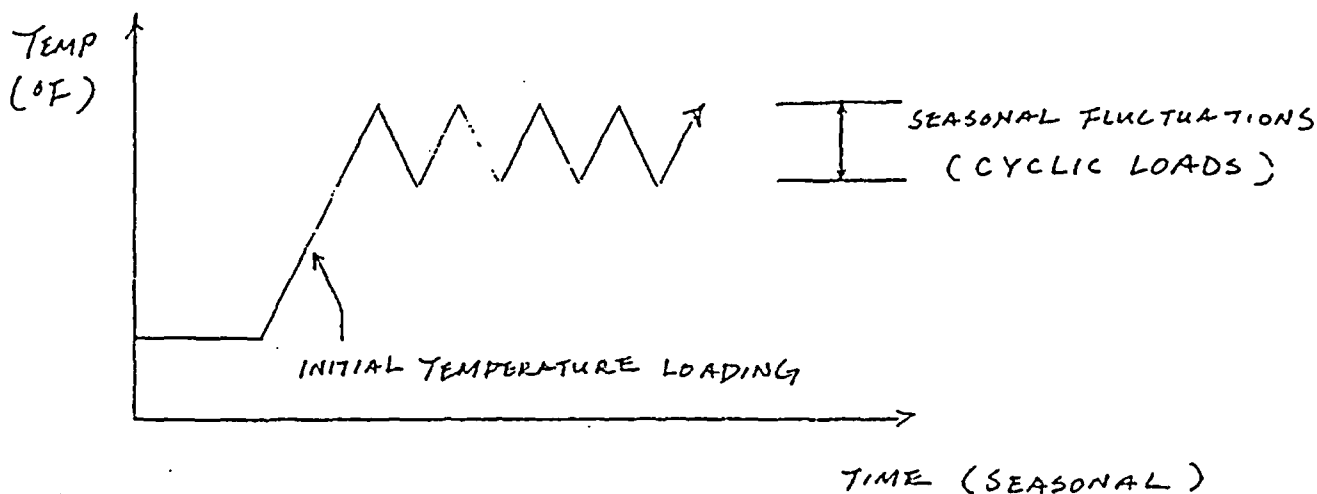
$$\begin{aligned}\sigma &= 6 (q a^2 (1 + \nu) / 16) / t^2 \\ &= 6 [(0.05) (.38)^2 (1 + .3) / 16] / (.38)^2 \\ &= 183 \text{ psi}\end{aligned}$$

A stress this low is hardly significant. Likely, some axial gap exists due to the less than perfect flatness of the lead and cover plates. A gap of 0.01" would be sufficient to accommodate the lead growth.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 64SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 51 OF 95Fatigue effects

The bottom lead casing shell may experience cyclic loading as the temperature fluctuates from season to season, or even day to day.



For a very conservative evaluation of this issue, assume that the temperature fluctuates between storage temperature and ambient temperature ($460^{\circ}\text{E} - 70^{\circ}\text{F}$). For a maximum lead casing hoop stress of 43.53 ksi,

$$S_{\text{alt}} = 43.53 \text{ ksi} / 2 = 21.77 \text{ ksi}$$

From ASME Section III Div. I Appendix I [4], the allowable number of cycles for stainless steel is approximately 5×10^5 , which is \gg than 100 cycles assuming 2 seasonal temperature changes per year for 50 years, or even 18250 cycles assuming daily temperature changes for 50 years.

Therefore, fatigue is not an issue.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 65

SUBJECT: 4.0 ANALYSIS

BY: AJS

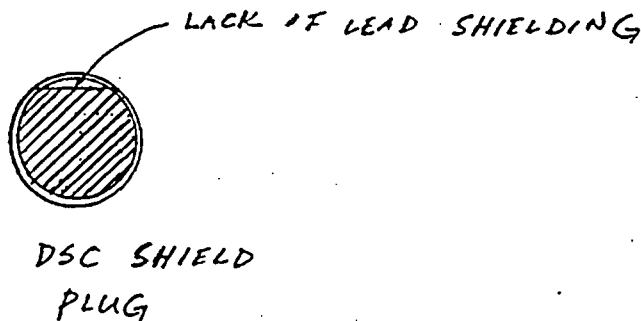
CK: SR

SHT: 52 OF 95

Lead Creep Effects

For the lead creep evaluation, assume that the lead does not completely fill the lead casing, but that there is, say conservatively, a .06" radial gap, and a .015" axial gap.

Since the DSC is resting horizontally, the lead may slump/creep, even at relatively low temperatures, filling the available gap and creating a lack of shielding.



The volume of radial gap is:

$$V_r = [\pi (66.12^2 - 66^2) / 4] [4.25] = 52.9 \text{ in.}^3$$

The volume of axial gap is:

$$V_a = [\pi (66.12^2) / 4] [0.015] = 51.5 \text{ in.}^3$$

The total gap volume, $V_{TOT} = 104 \text{ in.}^3$, is equal to the circular segment at the top of the lead plug after lead creep occurs.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 66
SUBJECT: 4.0 ANALYSIS BY: ADJ CK: SR SHT: 53 OF 95

From the properties of a circle the volume of a segment is equal to:

$$V_{\text{SEG}} = (R^2 / 2) (2\alpha - \sin 2\alpha) (t)$$

$$104 = (33^2 / 2) (2\alpha - \sin 2\alpha) (4.25)$$

$$\Rightarrow (2\alpha - \sin 2\alpha) = 0.045$$

$$\alpha \approx 0.332 \text{ rad}$$

The height of the segment: $= 2R \sin^2 (2\alpha/4)$
 $= 2 (33) \sin^2 (2 \times 0.332 / 4)$
 $= 1.8''$

The length of the chord $= 2R \sin (2\alpha/2)$
 $= 2 (33) \sin (2 \times 0.332 / 2)$
 $= 21.5''$

If this amount of lead creep were to occur there would be a streaming path at the top edge of the DSC in the shape of an arc 1.8" tall, and 21.5" wide at the base.

This would increase radiation dosage during retrieval operations, but would be manageable given the thin depth of the streaming path and the location high on the HSM.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 67SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 54 OF 954.1.5 HANDLING ANALYSIS

CASE 1: NORMAL HANDLING

DEFINITION

As defined in [3], the DSC normal handling loads (L_n) shall be a force equal to 25% of the weight of the loaded, dry DSC, resulting from loading and retrieving the DSC to and from the HSM using the cask.

Normal handling loads do not govern the DSC design. In addition, the orientation of the DSC within the cask is not significant for these loadings.

ANALYSIS

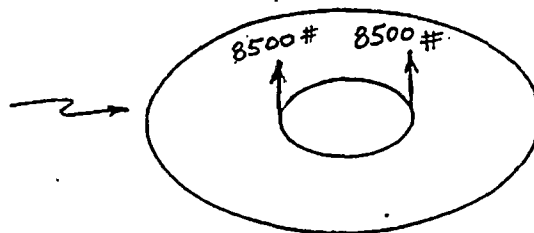
The handling force stress intensities are critical for the grapple assembly, the bottom plate, and the DSC shell to bottom plate junction.

These critical areas are analyzed using the DSC model illustrated in Figure 4.1.1. The analysis was performed in the original NUTECH calculation package [3]. Results and method of analysis are provided below.

APPLIED FORCE @ GRAPPLE
 $= 0.25 (69150 \text{ *}) = 17288 \text{ LBS}$

*NOTE: Calculation should use a bounding DSC weight of 80000 lbs., not 69150 lbs. Stress intensity results are factored up by 80/69.

TOP GRAPPLE RING PLATE



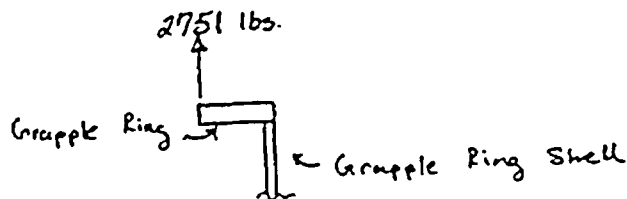
CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 68SUBJECT: 4.0 ANALYSISBY: ATS CK: SR SHT: 55 OF 95

LOADING

$$W = 17288 / 2\pi = 2751 \text{ LB/RAD}$$

APPLY 2751 LB/RAD @ NODE 410 (grapple ring free edge)



It is assumed that the grapple force is distributed around the circumference of the grapple ring. The grapple extension load is in reality applied on two sections of the ring (each approximately 6.50" long and extending from the free edge of the ring to about mid-radius of the ring). Applying the 80 kip load as uniform over the entire ring is not quite accurate, but it is reasonable since we expect the unloaded portion of the plate to respond by taking some of the load. In addition, stress intensity results are well below allowables, such that the effect of any un-conservatism in our assumption is minimal.

COUPLED NODES

COUPLE LEAD TO BOTTOM PLATE U_Y & LEAD TO LEAD COVER PLATE U_Y

BOUNDARY CONDITIONS

CONSTRAIN TOP END OF DSC, NODES 1237-1273 U_X & U_Y

RESULTS

Maximum stress intensity results for normal handling conditions are summarized in Table 4.1.8.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 69
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 56 OF 95

CASE 2: TRANSPORT HANDLING

DEFINITION

From [3], during transport from the fuel building, the DSC and cask are postulated to be subjected to the following loads (L_n):

- a) dead load $\pm 1g$ vertically
- b) dead load $\pm 1g$ axially
- c) dead load $\pm 1g$ longitudinally
- d) dead load $\pm 1/2g$ vertically $\pm 1/2g$ axially $\pm 1/2g$ longitudinally

ANALYSIS

During transport, the DSC is supported within the cask. The $1g$ handling loads are negligible. Resulting stresses are all below 1.0 ksi stress intensity [3].

Conservatively, all component stress intensities are assumed to be 1.0 ksi. This is documented in Table 4.18.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 70SUBJECT: 4.0 ANALYSISBY: ATS CK: SR SHT: 57 OF 95

CASE 3: OFF-NORMAL HANDLING

DEFINITION

As defined in [3], off-normal handling loads (L_o) shall be a force equal to the weight of the loaded dry DSC, resulting from the DSC becoming jammed in the cask or the HSM during the transfer operation.

COMPUTER ANALYSIS

Off-normal handling loads are, therefore, four times as great as normal handling loads. The results from the linear elastic analysis for normal handling loads may be factored up by four to obtain off-normal stress intensities.

HAND ANALYSIS

The Grapple Ring Assembly, Bottom Cover Plate, and DSC Shell are evaluated individually for off-normal handling loads by hand. Calculations begin on the following pages.

The controlling stresses, calculated by hand or computer, will be reported in the handling stress summary in Table 4.1.8.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

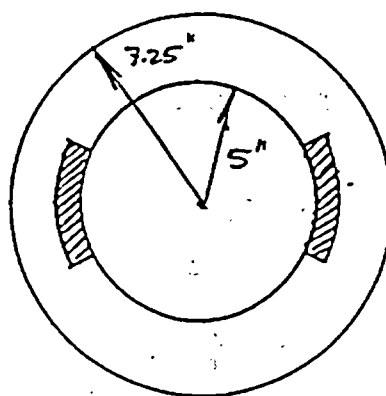
PAGE: 71

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 58 OF 95

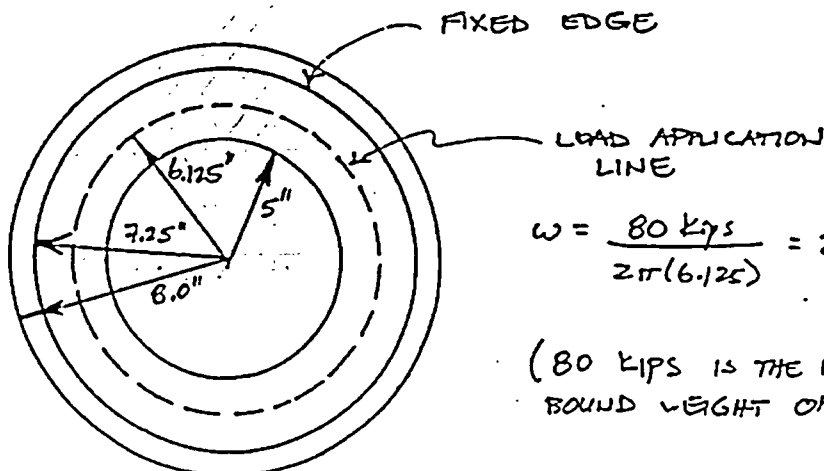
Grapple Ring

LOAD APPLICATION:



(PLAN VIEW)

THE GRAPPLE LOAD IS APPLIED ON TWO SECTIONS OF THE RING (6.5" LONG AND EXTENDING FROM THE FREE EDGE OF THE RING TO MID-SURFACE)



$$w = \frac{80 \text{ kips}}{2\pi(6.125)} = 2.08 \text{ k/in}$$

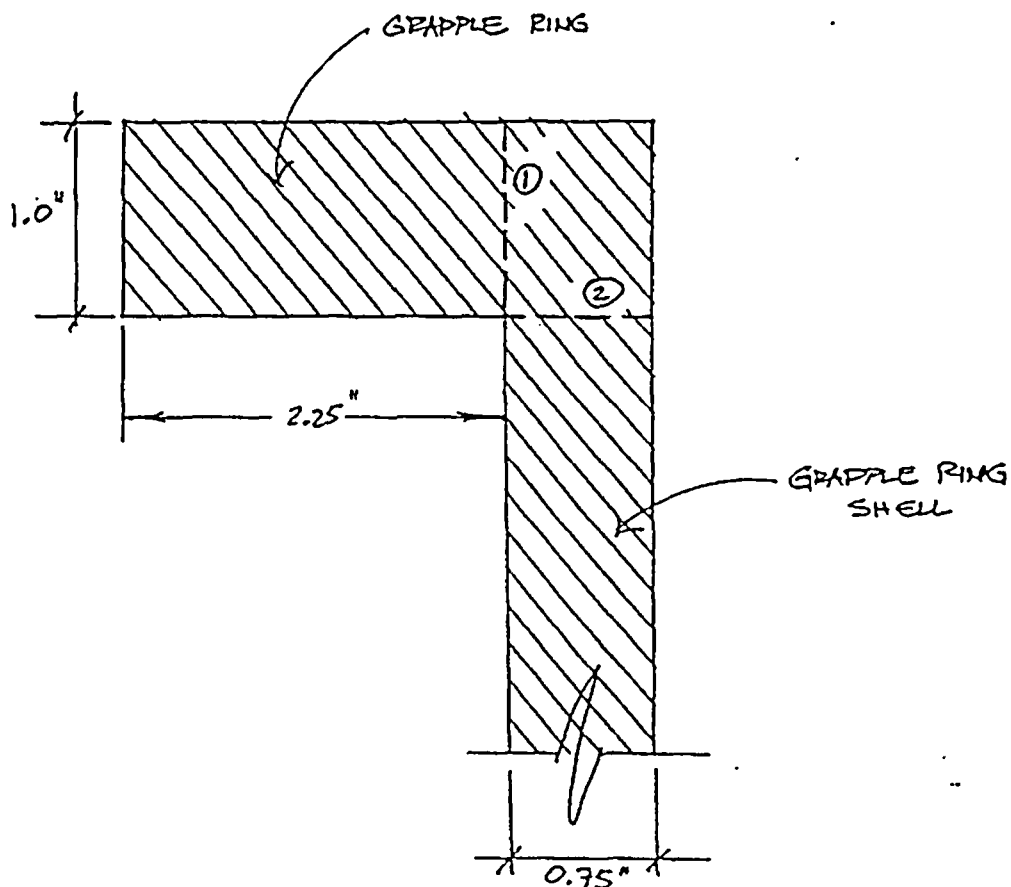
(80 KIPS IS THE UPPER
BOUND WEIGHT OF THE DSC.)

THIS IS A REASONABLE ASSUMPTION, SINCE THE UNLOADED PORTION OF THE RING WILL RESPOND BY TAKING SOME OF THE LOAD.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 72SUBJECT: 4.0 ANALYSISBY: AJSCK: SRSHT: 59 OF 95

- CHECK FOR MATERIAL FRACTURE AT GRAPPLE RING TO GRAPPLE RING SHELL JOINT



CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 73

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 60 OF 95

(FROM ROARK, TABLE 24, CASE 1c)

 $r_o = 6.125'' = \text{RADIUS TO APPLIED LOAD}$ $a = 7.25'' = \text{OUTSIDE RADIUS (TO FIXED EDGE)}$ $b = 5.0'' = \text{INSIDE RADIUS}$

$$\begin{aligned}
 L_1 &= \frac{r_o}{a} \left\{ \frac{1+\nu}{2} \ln\left(\frac{a}{r_o}\right) + \frac{1-\nu}{4} \left[1 - \left(\frac{r_o}{a}\right)^2 \right] \right\} \\
 &= \frac{6.125}{7.25} \left\{ \frac{1+0.3}{2} \ln\left(\frac{7.25}{6.125}\right) + \frac{1-0.3}{4} \left[1 - \left(\frac{6.125}{7.25}\right)^2 \right] \right\} \\
 &= 0.845 \{ 0.1096 + 0.0501 \} = \underline{\underline{0.135}}
 \end{aligned}$$

$$\begin{aligned}
 C_7 &= \frac{1}{2} (1-\nu^2) \left(\frac{a}{b} - \frac{b}{a} \right) \\
 &= \frac{1}{2} (1-0.3^2) \left(\frac{7.25}{5} - \frac{5}{7.25} \right) \\
 &= \frac{1}{2} (0.91) (1.45 - 0.6897) = \underline{\underline{0.346}}
 \end{aligned}$$

$$\begin{aligned}
 L_6 &= \frac{r_o}{4a} \left[\left(\frac{r_o}{a}\right)^2 - 1 + 2 \ln\left(\frac{a}{r_o}\right) \right] \\
 &= \frac{6.125}{4(7.25)} \left[\left(\frac{6.125}{7.25}\right)^2 - 1 + 2 \ln\left(\frac{7.25}{6.125}\right) \right] \\
 &= \frac{6.125}{4(7.25)} \left[-0.2863 + 0.337 \right] = \underline{\underline{0.01076}}
 \end{aligned}$$

$$\begin{aligned}
 C_4 &= \frac{1}{2} \left[(1+\nu) \frac{b}{a} + (1-\nu) \frac{a}{b} \right] \\
 &= \frac{1}{2} \left[(1+0.3) \frac{5}{7.25} + (1-0.3) \frac{7.25}{5} \right] \\
 &= \frac{1}{2} \left[0.89655 + 1.015 \right] = \underline{\underline{0.956}}
 \end{aligned}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 74SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 61 OF 95

$$M_{ra} = \text{FIXED END MOMENT} = w a \left(L_9 - \frac{C_7 L_6}{C_4} \right)$$

$$w = \frac{80 \text{ Kips}}{2\pi (6.125)} = 2.08 \text{ K/in}$$

$$\begin{aligned} M_{ra} &= (2.08)(7.25) \left[0.135 - \frac{(0.346)(0.01076)}{0.956} \right] \\ &= (2.08)(7.25)(0.1311) \\ &= 1.977 \text{ K-in/in} \end{aligned}$$

STRESS AT
CRITICAL SECTION ①

$$\sigma_0 = \frac{6M}{t^2} = \frac{6(1.977)}{1^2} = 11.86 \text{ Ksi}$$

(21.1 Ksi @ ②)

$$\sigma_{\text{SHEAR}} = \frac{P}{A} = \frac{80}{(2\pi)(7.25)(1'')} = 1.76 \text{ Ksi}$$

(2.55 Ksi @ ②)

$$SI = \sqrt{11.86^2 + 1.76^2} = 11.99 \text{ Ksi}$$

STRESS INTENSITY @ CRITICAL SECTION ②

$$SI_{\text{②}} = 11.99 \left(\frac{1''}{0.75''} \right)^2 = 21.3 \text{ Ksi} < 1.5 S_m$$

1.5 (18.0) @ 460°F
27.0 ksi

OK

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 75SUBJECT: 4.0 ANALYSISBY: ASS CK: SR SHT: 62 OF 95Grapple Ring Shell

The 3/4" thick grapple ring shell will experience an axial load as the DSC is pulled from the HSM.

$$\sigma = P / A$$

$$= 80000 / (\pi/4)(16^2 - 14.5^2)$$

$$= 2.23 \text{ ksi} < 27.0 \text{ ksi}$$

Grapple Ring Bottom Plate

Assume that bending stresses in the bottom grapple ring plate are negligible, as the 80 kip ram load is transferred to the inner cover plate through bearing. No calculation is necessary.

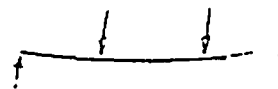
CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 76SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 63 OF 95DSC Bottom Cover Plate

The 80 kip grapple load (pulling), or 80 kip ram load (pushing), is transmitted to the bottom inner cover plate as a uniform annular line load where the grapple ring shell is attached.

From Roark (Table 24, Case 9a), conservatively assuming a simply supported plate, the maximum moment is:

$$\begin{aligned} M_c &= K_M w a \\ &= (0.25) (1670) (33) \\ &= 14 \text{ in.-kip/in} \end{aligned}$$



where,

$$\begin{aligned} w &= P / (\pi 2 r_o) \quad (r_o \text{ is the grapple shell mean radius}) \\ &= 80000 / (2\pi 15.25 / 2) \\ &= 1670 \text{ lbs. / in} \end{aligned}$$

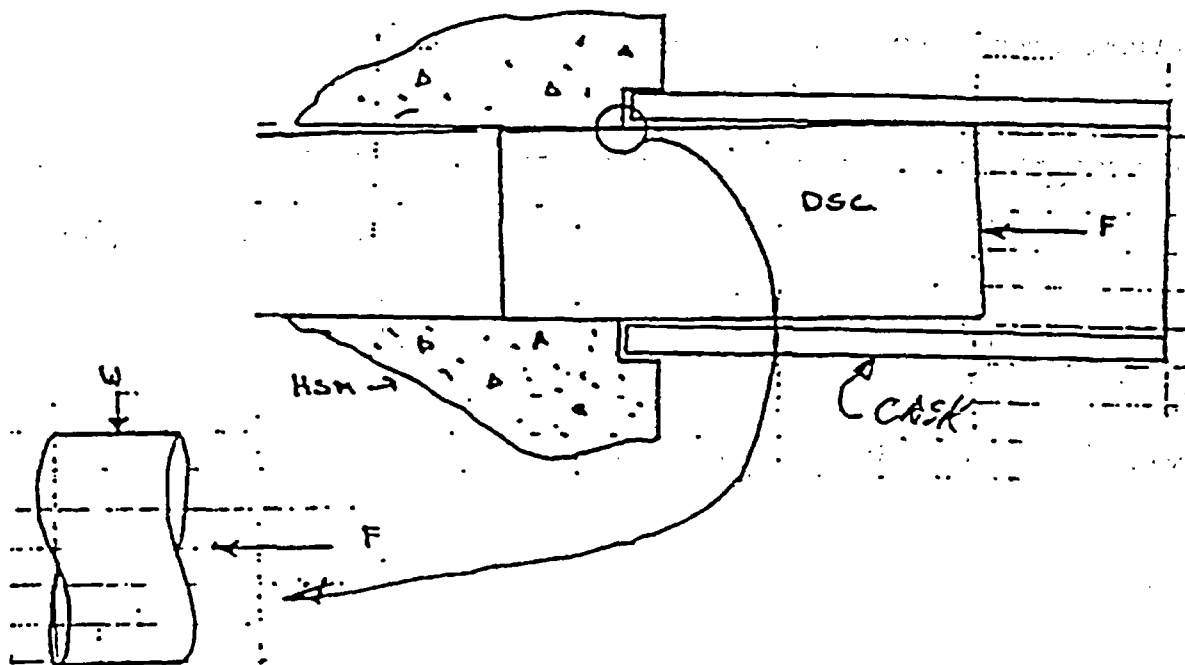
and $K_M = 0.25$, based on (r_o/a) ratio. $(r_o/a) = (15.25 / 2) / 33 = 0.23$

Therefore, the maximum stress in the bottom plate from the grapple load, based on a minimum measured plate thickness of 1.68" [44] (1.75" nominal), is:

$$\begin{aligned} \sigma &= 6 M_c / t^2 \\ &= 6 (14) / (1.68)^2 \\ &= 29.7 \text{ KSI} \end{aligned}$$

Level C primary bending allowable stress is $1.8S_m = 32.4 \text{ ksi.}$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 77SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 64 OF 95DSC Shell - Jammed Canister

LOCAL SHELL STRESSES

The force transmitted to the DSC shell is:

(Assume a 1° angle of pinch)

$$F = W \sin(1) = 80000 \sin(1) = 1396 \text{ LBS}$$

Assuming application of load is a point load, where DSC hits the inner cask wall, then from Roark, [15] case 8a Table 30,

$$\sigma_2 = 0.4P/T^2 \quad P_L$$

$$\sigma_2^1 = 2.4P/T^2 \quad P_B$$

$$\sigma_2 = 0.4 (1396)/1000 (.55)^2 = 1.8 \text{ ksi}$$

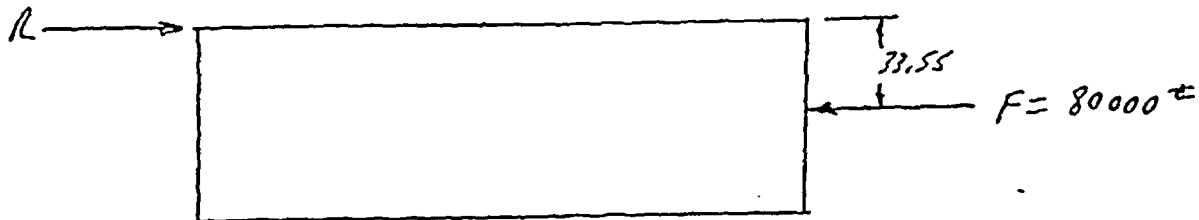
$$\sigma_2^1 = 2.4 (1396)/1000 (.55)^2 = 11.1 \text{ ksi}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 78SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 65 OF 95

GLOBAL SHELL STRESSES

Assume one corner of the DSC is restrained.



$$M_{MAX} = FL = 80000 (33.55) / 1000 = 2684 \text{ K-IN}$$

$$\sigma = M / S$$

$$S = [\pi / (32 D_o)] (D_o^4 - D_i^4) \quad [33]$$

$$= (\pi / 32 (67.1)) (67.1^4 - 66.0^4) = 1898 \text{ IN}^3$$

$$\sigma = 2684 / 1898 = 1.4 \text{ KSI}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 79

SUBJECT: 4.0 ANALYSIS

BY: ASS CK: SR

SHT: 66 OF 95

CASE 4: PRELIMINARY HANDLING

Preliminary handling analysis includes an evaluation of:

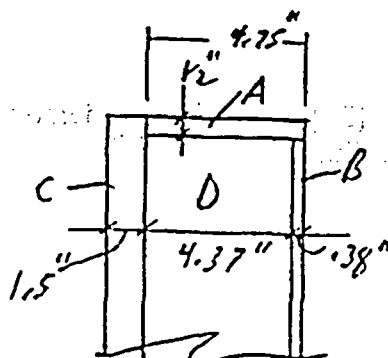
- The eyebolts used to lift the Top Plug Assembly and DSC Top Cover Plate
- The lifting lugs used to lift the unloaded DSC from horizontal and vertical positions
- Canister shell stresses during lift
- Bottom Cover Plate stresses during lift
- Bottom Lead Casing Plate during lift

Eyebolt Evaluation

TOP PLUG ASSEMBLY

Lead density = $710 \text{ #/FT}^3 = .411 \text{ #/IN}^3$ Stainless steel density = $515 \text{ #/FT}^3 = .298 \text{ #/IN}^3$

AREA A	$\pi/4 (D_0^2 - D_1^2) L = \pi/4 (65.84^2 - 64.84^2) 4.75 (.298) =$	145 LBS
AREA B	$\pi/4 D_0^2 L = \pi/4 64.84^2 (.38) (.298) =$	374 LBS
AREA C	$\pi/4 D_0^2 L = \pi/4 65.84^2 1.5 (.298) =$	1522 LBS
AREA D	$\pi/4 D_0^2 L = \pi/4 64.84^2 4.37 (.411) =$	5931 LBS
		7972 LBS



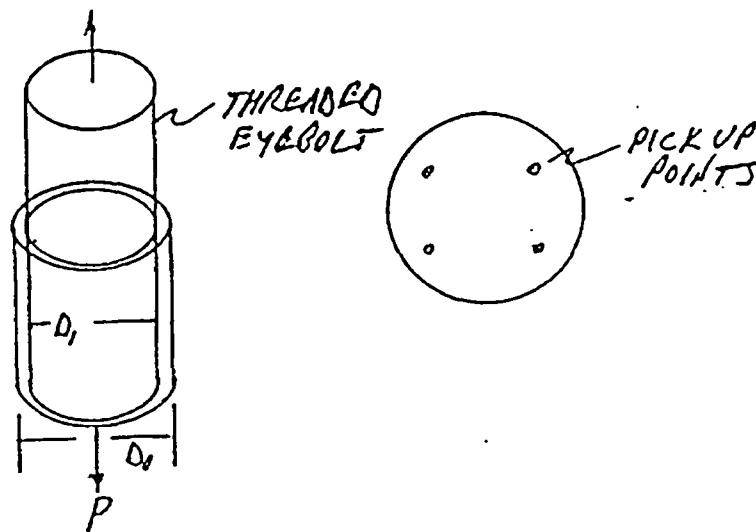
CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 80
 SUBJECT: 4.0 ANALYSIS BY: ASS CK: SR SHT: 67 OF 95

4-3/4" -10 UNC X 1" DEEP threaded bolt holes are used, only two at a time, to pick up the Top Plug Assembly. Assume a safety factor of 5, and an allowable stress intensity of ($S_m = 18.0$ ksi.)

Therefore the total load on one pick-up point = $7972 (5) / 2 \text{ bolts} = 19930 \#$

Check Shear:



$$A = \pi (D_0 + D_1) / 2 L = \pi (.75 + .627) / 2 (1.0) = 2.16 \text{ IN}^2$$

$$\text{Max. Allowable load on thread} = 0.6 S_M A = (0.6) (18.0) (2.16) = 23^K > 19.9^K \therefore \text{OK}$$

[4]

Material Handling components should be sized for the intended load.

DSC TOP COVER PLATE

The Top Cover Plate weighs 1219 lbs. [32], which is considerably less than the Plug Assembly. Therefore, the Plug Assembly is controlling.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

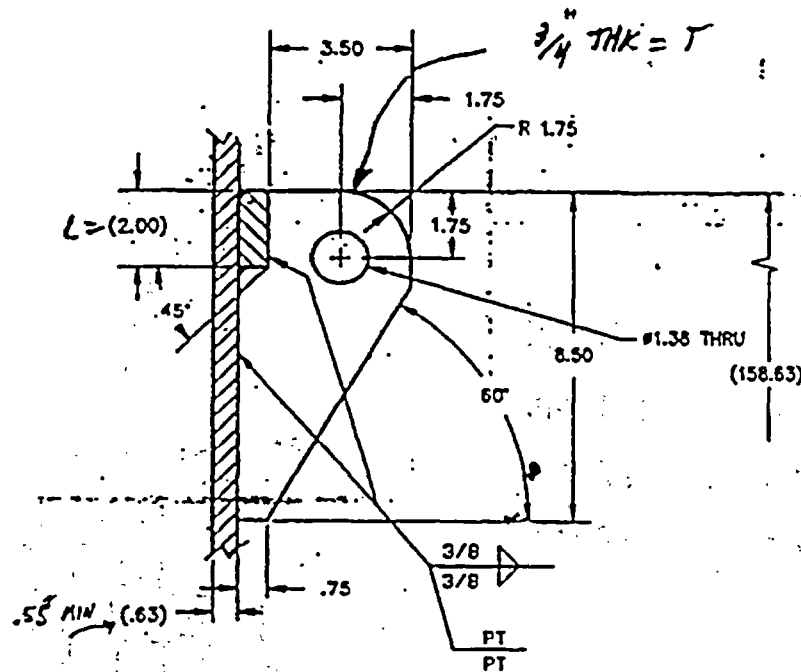
DATE: 12/08/98

PAGE: 21

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 68 OF 95 ::

Lifting Lug Analysis



The lifting lugs are used to lift the DSC into the transfer cask. The lugs are welded to the inside of the DSC Shell by 3/8" fillet welds (2" along the support ring and conservatively 5" along the DSC shell). The lugs are located at 0°, 90°, 180°, and 270°.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 82SUBJECT: 4.0 ANALYSISBY: AJSCK: SRSHT: 69 OF 95

LIFTING BRIDLE

The DSC is upended and lifted from the vertical position with the bridle shown below.

Slings

4ft/20 ton

6ft/17 ton

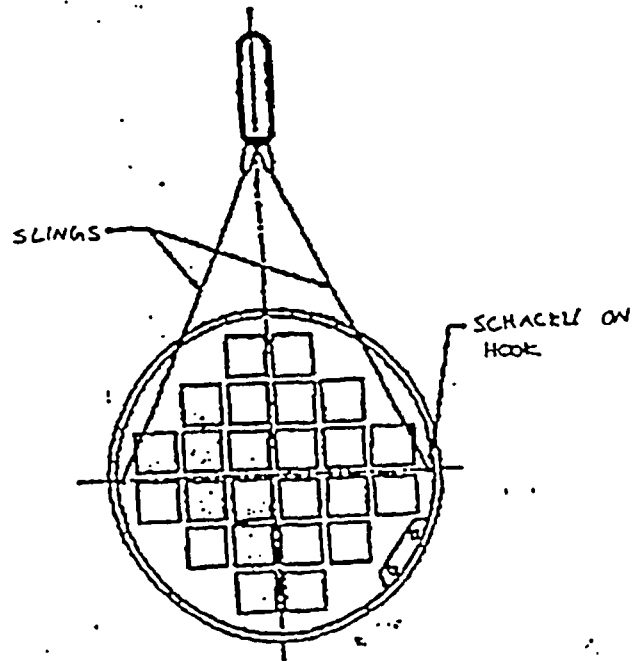
8ft/15 ton

Shackles

20 ton

17 ton

15 ton



CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 83

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 70 OF 95

UPRIGHTING THE DSC

This lift occurs with the bottom edge of the DSC in continuous contact with the ground such that the lifting lugs are not required to support the entire DSC weight for this lift. Two lugs are used for this lift.

Prior to the lift (with the DSC in the horizontal orientation), the lugs will be oriented at 3 and 9 o'clock (i.e. horizontally). The lug is attached to the shell by a 3/8" fillet weld 7" long (2" along the support ring, and 5", conservatively estimated, along the shell).

The lift occurs with the DSC inner and outer top cover plates, top shield plug, and fuel not yet installed. The weight of the unloaded DSC is 25160 lbs. [3].

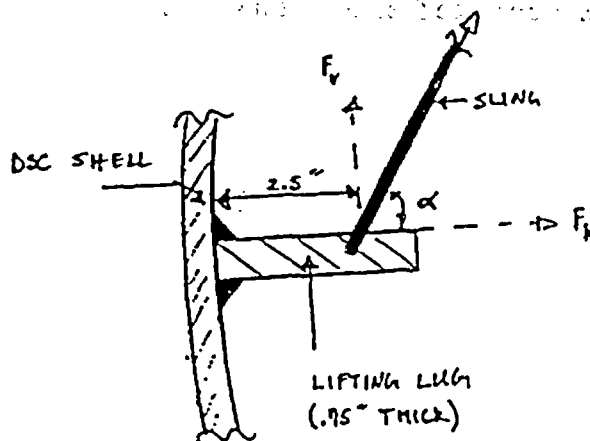
Assume that the bottom end DSC components (cover plate and bottom lead shield) are supported entirely by the ground, about 8000 lbs. Assume that the ground additionally takes half the remaining load (DSC shell and basket assembly). Therefore, the load carried by each lifting lug is:

$$P = (25160 - 8000)(1.15) / (2 \times 2) \approx 5000 \text{ lbs.}$$

A 1.15 factor is included to account for potential handling loads.

The four-foot sling is critical.

$\alpha = 51^\circ$, $F_v = 5000 \text{ lbs.}$, and $F_h = 4049 \text{ lbs.}$



CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 84SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 71 OF 75

- Shear due to vertical component:

$$P = 5000 \text{ lbs. per lug}$$

$$A_{\text{WELD}} = (2)(.707)(3/8)(7) = 3.7 \text{ in}^2$$

$$\sigma = P / A_{\text{WELD}} = 1.35 \text{ ksi}$$

- Shear due to eccentric moment produced by vertical component:

$$M = Pe = (5000)(2.5) = 12500 \text{ in.} - \text{lbs.}$$

$$I_{\text{WELD}} = bh^3/12 + Ad^2$$

$$= (2)\{(.7)(.707 \times 3/8)^3/12 + 2\{(.7)(.707 \times .375)(1/2)^2\} = 0.95 \text{ in}^4$$

$$c = .75 \text{ in.}$$

$$\sigma = Mc / I_{\text{WELD}} = 9.87 \text{ ksi}$$

- Tension due to horizontal component:

$$P = 4049 \text{ lbs. per lug}$$

$$A_{\text{WELD}} = (2)(.707)(3/8)(7) = 3.7 \text{ in}^2$$

$$\sigma = P / A_{\text{WELD}} = 1.09 \text{ ksi}$$

- Weld Stress Intensity:

$$= \{(9.87 + 1.09)^2 + (1.35)^2\}^{1/2} = 11.0 \text{ ksi} < .75S_m = 15 \text{ ksi}$$

($S_m = 20 \text{ ksi}$ – ambient temperature since fuel not yet installed)

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 85SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 72 OF 95

VERTICAL LIFT

The DSC is lifted vertically using two lifting lugs. The lift occurs with the DSC inner and outer top cover plates, top shield plug, and fuel not yet installed.

The weight of the DSC minus the fuel and top end components is $25160 \times 1.15 = 28934$ lbs. [3] (15% increase to account for potential impact effects). The vertical load per lug is:

$$P = 28934 / 2 = 14467 \text{ lbs.}$$

The four-foot sling is critical.

$$\alpha = 51^\circ, F_v = 14467 \text{ lbs., and } F_h = 11715 \text{ lbs.}$$

- Shear due to vertical component:

$$\sigma = P / A_{\text{WELD}} = 14467 / (2)(.707)(3/8)(7) = 3.9 \text{ ksi}$$

- Shear due to eccentric moment produced by vertical component:

$$M = Pe = (14467)(2.5) = 36168 \text{ in.} - \text{lbs.}$$

$$I_{\text{WELD}} = bh^3/12 = (2)\{(.707 \times 3/8)(7)^3/12\} = 15.12 \text{ in}^4$$

$$c = 3.5 \text{ in.}$$

$$\sigma = Mc / I_{\text{WELD}} = 8.4 \text{ ksi}$$

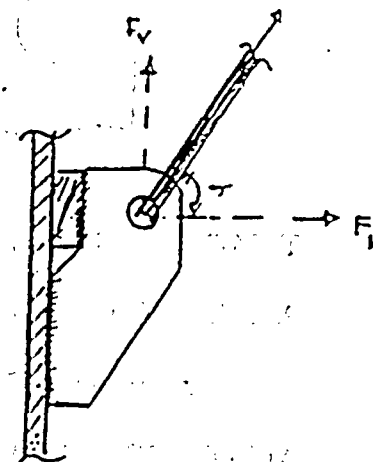
- Tension due to horizontal component:

$$\sigma = P / A_{\text{WELD}} = 11715 / (2)(.707)(3/8)(7) = 3.2 \text{ ksi}$$

- Weld Stress Intensity:

$$\{(8.4 + 3.2)^2 + (3.9)^2\}^{1/2} = 12.24 \text{ ksi} < .75S_m = 15 \text{ ksi}$$

($S_m = 20$ ksi – ambient temperature since fuel not yet installed)

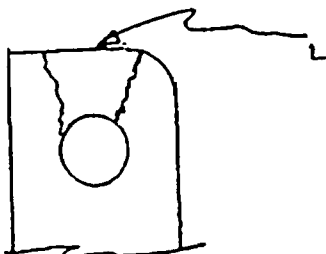


CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 86
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 73 OF 95

SHEAR TEAROUT

CRITICAL TEAROUT AREAS



$$T = 3/4" \quad L = 1.75 - (1.38/2) = 1.06"$$

$$AREA = \frac{1}{4} (1.06)^2 = 1.59 \text{ IN}^2$$

$$\sigma = F/A = 14467 / 1.59 = 9.1 \text{ KSI}$$

$$ALLOWABLE \text{ SHEAR STRESS} = 0.6 S_M \text{ (REF 4)}$$

$$= 0.6(18.0) = 10.8 \text{ KSI}$$

$$\{ 10.8 \text{ KSI} > 9.1 \text{ KSI} \quad \text{OK}$$

ALL HANDLING ANCHOR SHACKLES TO BE RATED FOR A LOAD OF 50% OF THE DSC TOTAL WEIGHT PLUS ADEQUATE SAFETY FACTOR.

EDGE DISTANCES FROM EYE CENTER MEET AISC GUIDE LINES.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 87

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 74 OF 95

Canister Shell Stress During a DSC Lift

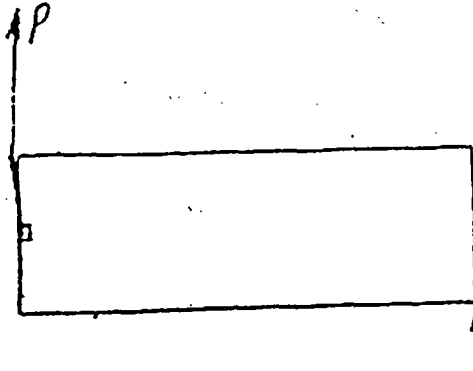
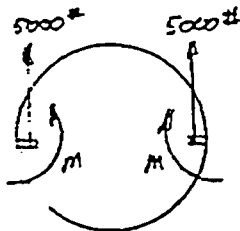
Local stresses around the lifting lugs are not critical. Critical areas of stress are in the lifting lugs as previously calculated.

SHELL MEMBRANE STRESS

Weight of unloaded DSC = 25160# [3]

$$\sigma = P/A = 25160 / \pi (66.55)^2 = 219 \text{ psi, OK}$$

SHELL BENDING STRESS



CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 88SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 75 OF 95

Moment from lugs:

 $P = 5000\#$ (from above, Uprighting the DSC) $M = P L = 5000 (2.5") = 12500 \text{ in-lbs}$ $M_{MAX} = K_M M_0 = .5 (12500) = 6250 \text{ in-lbs}$ (REF 15, TABLE 17, CASE #3) $\alpha = I/AR^2 = .015 / (.55) (33.6)^2 = 2.4 \times 10^{-5} \approx 0$ $\beta = FEI/GAR^2 = (6/5) 28.3 \times 10^6 (.015) / 8.5 \times 10^6 (.55) (33.6)^2 = 1.4 \times 10^{-6} \approx 0$ $I = T^3/12 (1-v^2) = (.55)^3/12 (1-.3^2) = 0.015 \text{ in}^4$ $A = T L = .55 (1") = .55 \text{ in}^2$ $\sigma = 6M/T^2 = 6 (5111) / (.55)^2 = 101 \text{ ksi}$

This is per inch of length. The lug is 8.5" long. Assume an additional 50% for distribution of the load to the shell. Therefore,

 $\sigma = 101 / 12.75 = 8.0 \text{ ksi} < 1.5S_m = 1.5 \times 18.0 = 27.0 \text{ ksi OK}$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/99

PAGE: 89

SUBJECT: 4.0 ANALYSIS

BY: ASS

CK: SR

SHT: 76 OF 95

Bottom Cover Plate Stress During DSC Lift

During vertical lifting of the DSC, the bottom plate will carry the basket assembly weight, without the fuel.

Basket assembly weight = 10500 lbs. [3]
with 2g handling load = 21000 lbs.

Assuming an evenly distributed load:

$$q = 21000 / \pi (33)^2 = 6.14 \text{ psi}$$

Conservatively assume pinned edges.

From Roark [Ref. 15, Table 24, case 10a],

$$M_c = q a^2 (3 + \nu) / 16 \quad \text{and} \quad \sigma = 6 M / t^2$$

The maximum stress in the Bottom Plate, based on a minimum measured thickness of 1.68" [44] (1.75" nominal), is then:

$$\begin{aligned} \sigma_{\max} &= 6 q a^2 (3 + \nu) / 16 t^2 \\ &= 6 (6.14) (33)^2 (3 + .3) / 16 (1.68)^2 \\ &= 2.9 \text{ ksi} \end{aligned}$$

This stress is well below the material allowable.

Use 6.5 ksi in stress tables. [3]

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 90

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 77 OF 95

Bottom Lead Casing Plate During DSC Lift

The bottom lead shield plug puts deadweight loads on the bottom lead casing plate during vertical lifting of the DSC:

$$(\pi r^2)(t)(\rho) = (\pi 33^2)(4.25)(.411) = 5976 \text{ lbs. (bottom lead shield plug)}$$

$$(\pi r^2)(t)(\rho) = (\pi 33^2)(.5)(.283) = 484 \text{ lbs. (bottom lead casing plate self weight)}$$

say, 7500 lbs. to conservatively account for handling effects. Note that the weight of the 1.75" thick bottom inner cover plate is not included since it is welded to the DSC Shell.

Assume conservatively that the bottom lead casing plate is simply supported along the edges, with a uniform distributed pressure load of:

$$q = 7500 / (\pi 33^2) = 2.19 \text{ lb./in.}^2$$

From Roark (Ref. 15, Table 24, Case 10a),

$$\begin{aligned} M_{\max} &= q a^2 (3 + \nu) / 16 \\ &= (2.19) (33)^2 (3 + .3) / 16 \\ &= 492 \text{ in-lb / in,} \end{aligned}$$

From the drawings [6], the minimum plate thickness is 0.38". Therefore the maximum stress is:

$$\begin{aligned} \sigma_{\max} &= 6 M / t^2 \\ &= 6(492) / 0.38^2 \\ &= 20.4 \text{ ksi} < 1.5 S_m = 28.0 \text{ ksi} \end{aligned}$$

Allowable is based on Level A primary membrane + bending.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 91SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 78 OF 95

Table 4.1.8: Handling Stress Intensity Summary

Component	Stress Type	Level A	Level A	Level B
		Normal Handling (ksi)	Transport Handling (ksi)	Off-Normal Handling (ksi)
DSC Shell	P_M	0.3	1.0	1.8
	P_L	0.4	1.0	1.8
	$P_L + P_B$	2.5	1.0	12.9
Top Pressure (Top Cover) Plate	P_M	-	1.0	-
	$P_L + P_B$	-	1.0	-
Top Structural (Top Inner Cover) Plate	P_M	-	1.0	-
	$P_L + P_B$	-	1.0	-
Top Lead Liner	P_M	-	1.0	-
	$P_L + P_B$	-	1.0	-
Bottom Cover Plate	P_M	-	1.0	-
	$P_L + P_B$	3.2	1.0	6.5
Bottom Lead Liner	P_M	-	1.0	-
	$P_L + P_B$	-	1.0	-
Grapple Ring Assembly	P_M	-	-	2.3
	$P_L + P_B$	4.9	-	21.3

* All values are within allowables.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 92
SUBJECT: 4.0 ANALYSIS BY: AJB CK: SR SHT: 79 OF 95

4.1.6 SEISMIC ANALYSIS

IN ACCORDANCE WITH REF 3 THE SEISMIC DESIGN LOADS ARE:

1.0G HORIZONTAL
0.68G VERTICAL

The seismic analysis is based on an equivalent static load method. Horizontal and vertical accelerations are considered separately. Roll over stability is considered.

The seismic stresses are calculated as the absolute sum of the horizontal and vertical stresses.

The OBE load is not required per the specification identified in the SAR. Also, the seismic loads are much less than the horizontal and vertical drop conditions and therefore, will not govern the design. Even though the seismic loading is considered a LEVEL C loading vs. The drop loads as LEVEL D, the difference in acceleration loads (1g seismic vs. 75g drop loads) results in the drop case being the governing load case.

The seismic loads are much less than the horizontal and vertical drop load conditions and therefore, will not govern the design. The damping value used is considered appropriate and has been included in the design calculations for the DSC and is included in the license basis.

The calculation uses scaling of the drop loads for the vertical seismic loads. However, the scaling is adequate for the longitudinal and vertical loadings. The horizontal deadweight calculation is used for determining lateral stresses. All assumptions are adequate.

CALCULATION SHEET

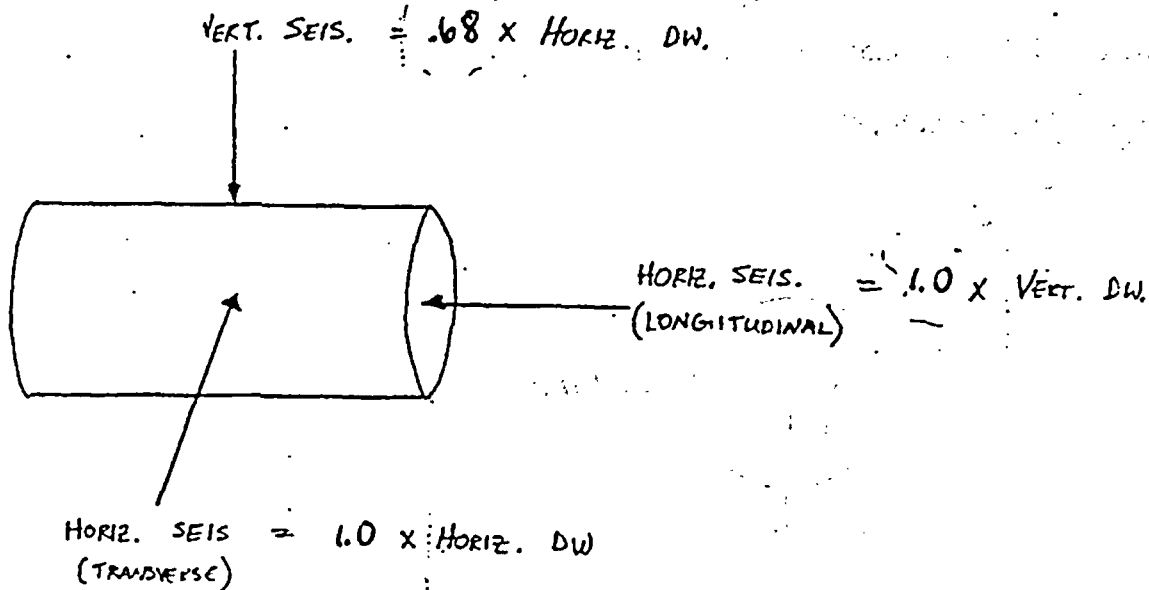
TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 93SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 80 OF 95

VERTICAL SEISMIC

The DSC shell component stresses resulting from the 1.0g vertical seismic acceleration are equal to the DSC shell component dead weight stresses for the DSC in the horizontal orientation.

$$\text{Vert. Seismic} = .68 \times (\text{Horiz. DW})$$

The controlling horizontal dead weight stresses may be found in Table 4.1.1. Also, considered is the DSC shell bending stress in the HSM assuming a supported condition similar to the dead weight calculations [Section 4.1.2].



$$\therefore \text{TOTAL Horiz. SEISMIC} = 1.0 \times (\text{Vert. DW} + \text{Horiz. DW})$$

(CONSERVATIVE)

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 94SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 81 OF 95

HORIZONTAL SEISMIC

The DSC rests in the horizontal orientation within the HSM. A 1.5g horizontal seismic acceleration may act longitudinally or transversely. For conservatism the horizontal seismic stress is equal to:

$$\text{Horiz. Seismic} = 1.0 \times (\text{Vert. DW} + \text{Horiz. DW}),$$

The controlling horizontal and vertical dead weight stresses may be found in Table 4.1.1. Also consider the following hand calc:

AXIAL

The DSC is restrained axially in the HSM by two stop plates. This will produce a membrane stress in the DSC shell as calculated below.

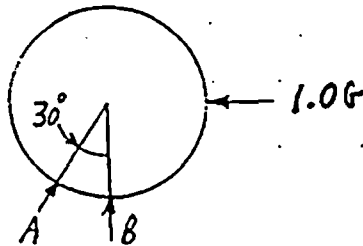
$$P_L \quad \text{DSC WT} = 80,000 \text{ \#} \quad [\text{Section 4.1.2}] \quad (\text{Banding WT.})$$

$$\text{DSC WT LOADING} = 80,000 \text{ \#} (1.0) = 80,000 \text{ \#}$$

$$\text{SHELL AREA} = \pi DT = \pi (66.55)(.55) = 115.0 \text{ IN}^2$$

$$\sigma = 80,000 / 115 = 0.7 \text{ KSI}$$

LATERAL



ONLY @ PT 'A' WILL THE HORIZONTAL RESISTIVE FORCE BE DEVELOPED.

DSC LENGTH = 172.75"

$$\text{RESULTANT @ "A" HORIZONTAL} = 80,000 (1.0) / 172.75 = 463.1 \text{ LB/IN}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 95SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 82 OF 95

FROM REF 18 PG 193

$$\sigma_1 = 0$$

$$\sigma_2 = 0$$

$$\sigma_3 = 1.75 (RT)^{1/2} F_3 / T^2$$

WHERE:

$$R = 33.55''$$

$$T = 0.55''$$

$$F_3 = P/L = 463.1 \text{ LBS/IN}$$

$$\sigma_3 = 1.75 [(33.55 (.55))^{1/2} (463.1)] / (.55)^2 = 11.5 \text{ KSI}$$

 P_B

$$P_L = 0.7 \text{ KSI}$$

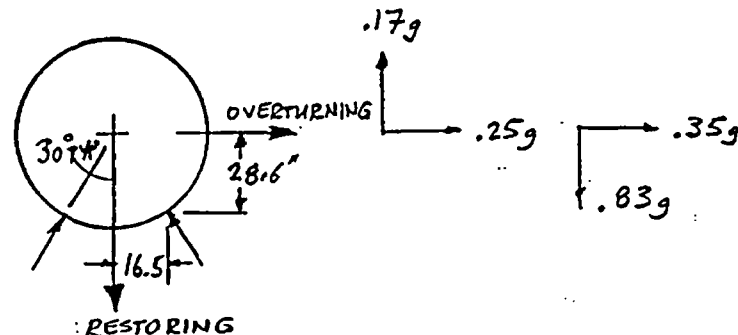
$$P_L + P_B = 0.7 + 11.5 = 12.2 \text{ KSI}$$

1
12

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 96
 SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 83 OF 95

STABILITY OF DSC IN HSM



The seismic loadings applied to the DSC which would cause instability are based on the rigid range seismic inputs to the HSM of 0.25g horizontal and 0.17g vertical. The stability analysis is based on showing that the overturning moment of the DSC on the HSM support structure is smaller than the restoring force moment due to gravity. The non-rigid body modes of the DSC do not contribute to overturning so that the use of the rigid body accelerations are appropriate.

ASSUME THE FOLLOWING:

HORIZONTAL ACCELERATION IS BASED ON SRSS OF 2 HORIZONTAL DIRECTIONS = $0.35G = A_H$.

VERTICAL RESTORING FORCE IS BASED ON GRAVITY LESS THE VERTICAL ACCELERATION = $0.83G = A_V$.

VERTICAL DISTANCE FROM SUPPORT RAIL TO DSC CENTERLINE = $28.6" = D_1$.

HORIZONTAL DISTANCE FROM SUPPORT RAIL TO DSC CENTERLINE = $16.5" = D_2$.

$$\text{OVERTURNING MOMENT} = M_O = W (A_H) D_1 = W (.35) 28.6 = 10 W$$

$$\text{RESTORING MOMENT} = M_R = W (A_V) D_2 = W (.83) 16.5 = 13.7 W$$

THE OVERTURNING MOMENT IS LESS THAN THE RESTORING MOMENT.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 97SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 84 OF 95

Table 4.1.9: Maximum Seismic Stress Intensities

Component	Stress Type	Vertical ⁽¹⁾ Stress Intensity	Horizontal ⁽²⁾ Stress Intensity	TOTAL
DSC Shell	P _M P _L P _L +P _B	0.08 4.52 4.68	0.7 ⁽³⁾ 6.81 ⁽³⁾ 12.2 ⁽³⁾	0.78 11.33 16.88
Top Pressure (Top Cover) Plate	P _M P _L +P _B	0.09 0.13	0.13 0.35	0.22 0.48
Top Structural (Top Inner Cover) Plate	P _M P _L +P _B	0.13 0.14	0.19 0.56	0.32 0.7
Top Lead Liner	P _M P _L +P _B	- -	0.3	0.3
Bottom Cover Plate	P _M P _L +P _B	0.09 0.13	0.13 0.52	0.22 0.65
Bottom Lead Liner	P _M P _L +P _B	- -	0.33	.33

1. Vertical seismic = .68 X Horizontal dead weight, (Table 4.1.1).
2. Horizontal seismic = 1.0 X (Vert. DW + Horiz. DW), (Table 4.1.1).
3. Bounding hand calculation.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 98
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 85 OF 95

4.1.7 ACCIDENTAL DROP ANALYSIS

Four accidental drop orientations are postulated:

1. Top Vertical Drop
2. Bottom Vertical Drop
3. Horizontal Side Drop
4. Corner Drop

No evaluation is performed for the corner drop. Corner drop stresses are considered bounded by the vertical drop stresses [3].

$E = 26.5 \times 10^6$ (Appx. D) corresponds to $400^\circ F$ for
Level C & D at $460^\circ F$, E would be lower.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/08/98

PAGE: 99

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 86 OF 95

TOP END VERTICAL DROP

The DSC Shell Assembly is analyzed for the top end vertical drop using the ANSYS model illustrated in Section 4.1.1.

BOUNDARY CONDITIONS

The top end of the model is fixed in the axial direction (nodes 1239-1275 constrained in Uy).

The top end is also fixed against out of plane motion.

LOADING

The weight of the Basket and fuel assemblies is idealized as an equivalent pressure load against the Top Pressure Plate. The support rods support their own self weight plus the weight of the nine spacer discs (guide sleeves are self supporting once clip angles fail - 43g's [Section 4.2]):

$$(5400 + 1300) / 4 = 1675 \text{ lbs.}$$

The 24 fuel assemblies and guide sleeves rest directly on the Top Pressure Plate inner surface:

$$1450 + 165 = 1615 \text{ lbs.}$$

Therefore, it is reasonable to assume that the entire Basket weight and fuel weight is spread evenly over the Top Pressure Plate inner surface.

24	guide sleeves (165 lbs. each)	=	3960 lbs.
24	fuel assemblies (1450 lbs. each)	=	34800 lbs.
9	spacer plates (600 lbs. each)	=	5400 lbs.
4	support rods (325 lbs. each)	=	1300 lbs.

Total DSC Basket Assembly Weight = 45460 lbs.

$$P_{eq} = 45460 / \pi (33)^2 = 13.3 \text{ psi}$$

At maximum 75g acceleration the equivalent pressure becomes:

$$P_{eq} = (75) 13.3 = 997.5 \text{ psi, say 1000 psi.}$$

RESULTS

The maximum stress intensities are given in Appendix D, and summarized in Table 4.1.10.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 100
 SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 87 OF 95

Table 4.1.10: Top End Vertical Drop Maximum Stress Intensities

Component	Stress Type	Node	Max. Stress Intensity (ksi)	Level D Allowable (ksi)
DSC Shell	P _M	730/731	8.75	43.2
	P _L	1164/1166	10.9	64.0
	P _L +P _B	425	16.5	64.0
Top Pressure (Top Cover) Plate	P _M	-	-	43.2
	P _L +P _B	1200	6.17	64.0
Top Structural (Top Inner Cover) Plate	P _M	-	-	43.2
	P _L +P _B	757	1.70	64.0
Top Lead Liner	P _M	-	-	43.2
	P _L +P _B	1131	2.25	64.0
Bottom Cover Plate	P _M	-	-	43.2
	P _L +P _B	-	25.0	64.0
Bottom Lead Liner	P _M	-	-	43.2
	P _L +P _B	-	25.0	64.0

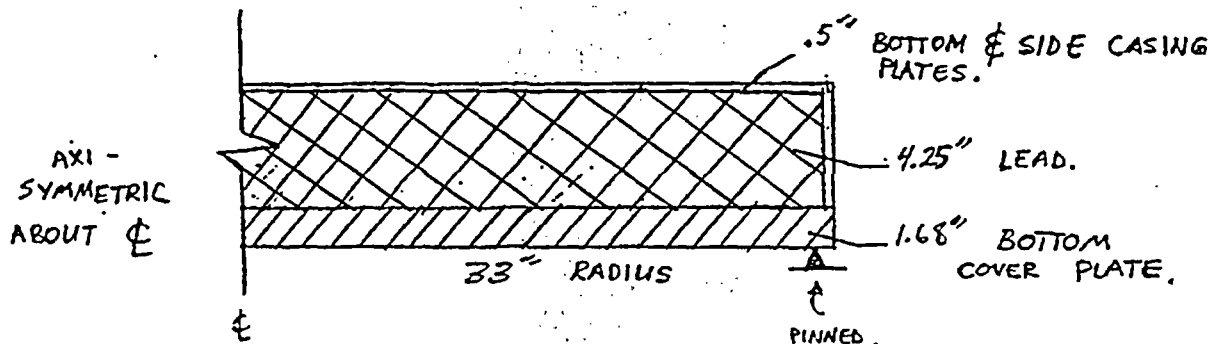
CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 101SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 88 OF 95Bottom Cover Plate (confirmatory analysis)

During a 75g top end drop, the Bottom Cover Plate supports the weight of the bottom lead shielding. Evaluate separately the Bottom Cover Plate using minimum measured tolerances and simply supported edge conditions.

ANSYS MODEL

The model below is an axisymmetric, plane element model of the Bottom Cover Plate, bottom lead shielding, and the associated lead casing plates. The lead nodes are coupled to the Bottom Cover Plate and bottom lead casing plate in the U_y direction. The edge of the plate is pin supported, and a 75g acceleration load is applied. This is a plastic run.



RESULTS

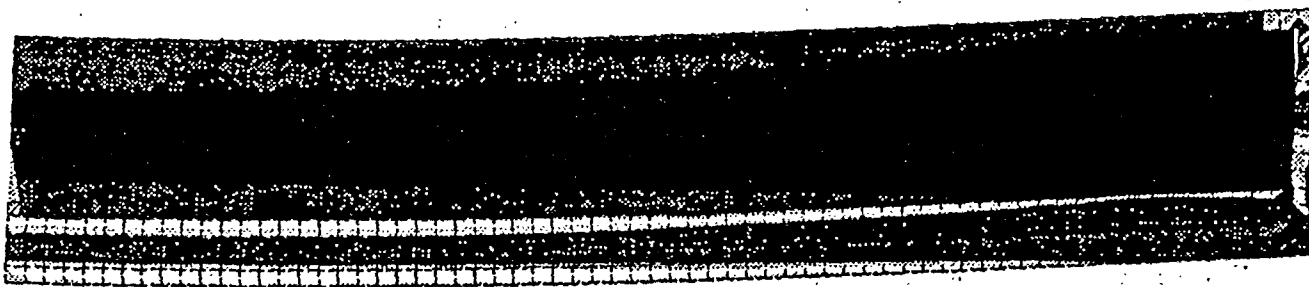
A stress intensity contour is color plotted on the following page.

Maximum stresses in the Bottom Cover Plate occur near midspan along the outermost fibers, as the plate bends downward under the lead load. The maximum stress in the Bottom Cover Plate is 25 ksi. From Table 3.2, the code allowable stress for a Level D plastic analysis is $.9S_u = .9(64.0) = 57.6$ ksi.

The maximum inward deflection of the Bottom Cover Plate is 0.46". (The deflection has been scaled up due to a lower E at 460 F)

DATE: 1/11/99 PAGE: 102
 BY: AJ5 CK: SR SHT: 89 OF 95

ANSYS 5.2
 APR 30 1998
 16:01:44
 NODAL SOLUTION
 STEP=1
 SUB =10
 TIME=1
 SINT (AVG)
 DMX =.444356
 SMN =390.855
 SMX =28076
 390.855
 3467
 6543
 9619
 12695
 15771
 18848
 21924
 25000
 28076



Bottom Shield Plug Stress Contour (75g top drop)

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 103SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 90 OF 95

BOTTOM END VERTICAL DROP

The DSC Shell Assembly is analyzed for the bottom end vertical drop using the ANSYS model illustrated in Section 4.1.1.

BOUNDARY CONDITIONS

The bottom end of the model is fixed in the axial direction (nodes 381-407 constrained in Uy)

The bottom end is fixed against out of plane motion.

LOADING

An equivalent internal pressure of 1000 psi is applied to the Bottom Cover Plate, assuming the fuel and DSC Basket Assembly weight is spread evenly across the plate inner surface.

24	guide sleeves (165 lbs. each)	=	3960 lbs.
24	fuel assemblies (1450 lbs. each)	=	34800 lbs.
9	spacer plates (600 lbs. each)	=	5400 lbs.
4	support rods (325 lbs. each)	=	1300 lbs.

Total DSC Basket Assembly Weight = 45460 lbs.

$$P_{eq} = 45460 / \pi (33)^2 = 13.3 \text{ psi}$$

At maximum 75g acceleration the equivalent pressure becomes:

$$P_{eq} = (75) 13.3 = 997.5 \text{ psi, say 1000 psi}$$

RESULTS

The maximum stress intensities are given in Appendix D, and summarized in Table 4.1.11.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 104
 SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 91 OF 95

Table 4.1.11: Bottom End Vertical Drop Maximum Stress Intensities

Component	Stress Type	Node	Max. Stress Intensity (ksi)	Level D Allowable (ksi)
DSC Shell	P _M	440/442	9.63	43.2
	P _L	1126/1128	12.0	64.0
	P _L +P _B	1164	15.8	64.0
Top Pressure (Top Cover) Plate	P _M	-	-	43.2
	P _L +P _B	1242	11.9	64.0
Top Structural (Top Inner Cover) Plate	P _M	-	-	43.2
	P _L +P _B	-	26.1	64.0
Top Lead Liner	P _M	-	-	43.2
	P _L +P _B	-	22.8	64.0
Bottom Cover Plate	P _M	-	-	43.2
	P _L +P _B	9	3.60	64.0
Bottom Lead Liner	P _M	-	-	43.2
	P _L +P _B	404	3.27	64.0

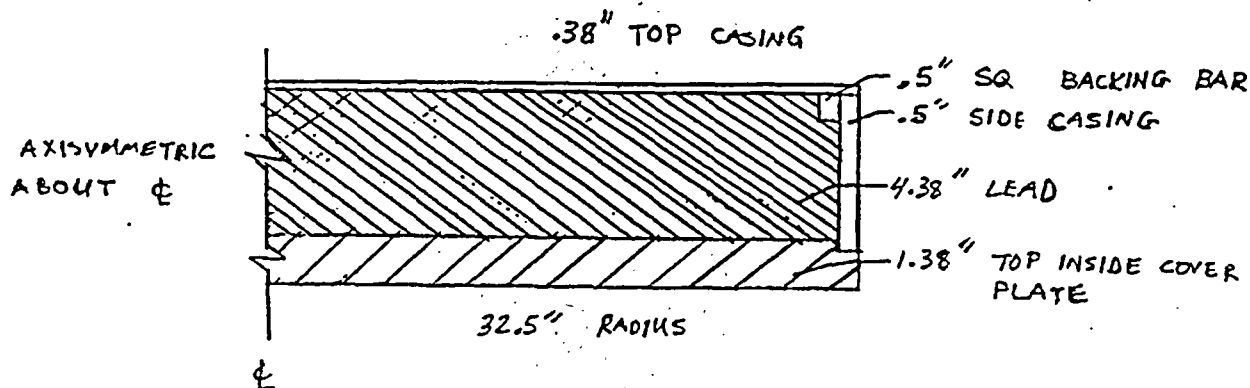
CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 105SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 92 OF 95Top Inside Cover Plate (confirmatory analysis)

During a 75g bottom end drop, the Top Inside Cover Plate supports the weight of the Top Lead Shield Plug. Evaluate separately the Top Cover Plate using minimum measured tolerances and simply supported edge conditions.

ANSYS MODEL

The model below is an axisymmetric, plane element model of the Top Shield Plug Assembly. The lead nodes are coupled to the Top Cover Plate and top lead casing plate in the U_y direction. The edge of the plate is pin supported, and a 75g acceleration load is applied. This is a plastic run.



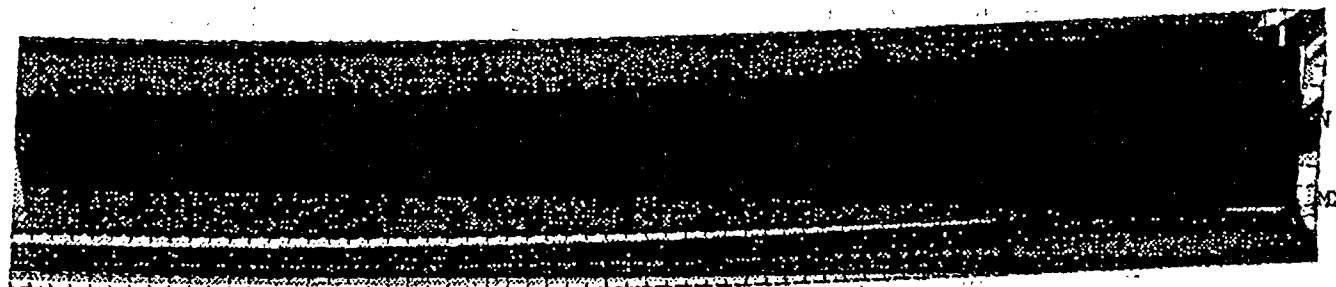
RESULTS

A stress intensity contour is color plotted on the following page.

Stresses of about 20 ksi occur near midspan of the Top Inside Cover Plate along the outermost fibers, as the plate bends downward under the lead load. A maximum stress intensity of 29 ksi occurs near the side casing plate connection. From Table 3.2, the code allowable stress for a Level D plastic analysis is $.9S_u = .9(64.0) = 57.6$ ksi.

The maximum inward deflection of the Top Inside Cover Plate is 0.45". (The deflection has been scaled up due to a lower E at 460 F). The vertical clearance between the Bottom Cover Plate and fuel rod assemblies is 0.5".

ANSYS 5.2
 APR 30 1998
 15:03:48
 NODAL SOLUTION
 STEP=1
 SUB =10
 TIME=1
 SINT (AVG)
 DMX =.43931
 SMN =240.203
 SMX =29273
 240.203
 3466
 6692
 9918
 13144
 16370
 19596
 22822
 26047
 29273



DATE: 1/11/99 PAGE: 106
 BY: KJS CK: SR SH: 93 OF 95

Top Lead Shield Plug Stress Contour

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 107
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SL SHT: 94 OF 95

HORIZONTAL SIDE DROP

The DSC Shell Assembly has been analyzed in the original NUTECH calculation package [3], and updated in [30], for increased fuel rod weights. The stress intensities are summarized in Table 4.1.12.

The results in [30] come from side drop results for a different DSC design. The Basket Assembly loads are distributed over one more spacer disc for our design, which will result in lower stresses. Therefore, the side drop stresses reported in [3] bound the side drop results for this analysis.

Side drop stress intensities are less than vertical drop stress intensities, and will not control the load combinations.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/08/98PAGE: 108SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 95 OF 95

Table 4.1.12: Side Drop Maximum Stress Intensities [3]

Component	Stress Type	Node	Max. Stress Intensity (ksi)	Level D Allowable (ksi)
DSC Shell	P_M	-	9.2	43.2
	P_L	-	-	64.0
	$P_L + P_B$	-	12.4	64.0
Top Pressure (Top Cover) Plate	P_M	-	9.5	43.2
	$P_L + P_B$	-	14.6	64.0
Top Structural (Top Inner Cover) Plate	P_M	-	14.0	43.2
	$P_L + P_B$	-	15.9	64.0
Top Lead Liner	P_M	-	-	43.2
	$P_L + P_B$	-	-	64.0
Bottom Cover Plate	P_M	-	9.5	43.2
	$P_L + P_B$	-	14.6	64.0
Bottom Lead Liner	P_M	-	-	43.2
	$P_L + P_B$	-	-	64.0

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 12/11/98

PAGE: 109

SUBJECT: 4.0 ANALYSIS

BY: AJS

CK: SR

SHT: 1 OF 17

4.2 GUIDE SLEEVE EXTRACTION STOP ANALYSIS

This section will evaluate Guide Sleeve Extraction Stop structural adequacy using hand calculations and finite element models using ANSYS [7]. The purpose of the Extraction Stops is to ensure that the Guide Sleeves remain in the DSC during Fuel Assembly removal. The loading cases considered will be top and bottom drops, Guide Sleeve insertion, and fuel retrieval. Extraction Stop (Clip) and Guide Sleeve stresses and deformation will be checked during insertion into the DSC. A Clip deformation vs. loading during extraction curve will be generated. "Dimpling" of the Guide Sleeves during extraction will also be evaluated. Acceptance criteria will be based on ASME Code Sect. III, Subs. NF requirements, as well as deflection criteria which limits Guide Sleeve inner surface permanent deformations to preclude Guide Sleeve dimpling from affecting fuel retrieval. Clip dimensions and location are shown in Figures 4.2.1 and 4.2.2 respectively.

ASSUMPTIONS AND REQUIREMENTS

1. Tangent modulus is 5% of Young's modulus.
2. Guide Sleeve insertion temperature is 70° F.
3. Guide Sleeve extraction temperature is 600° F.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/98 PAGE: 110
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 2 OF 17

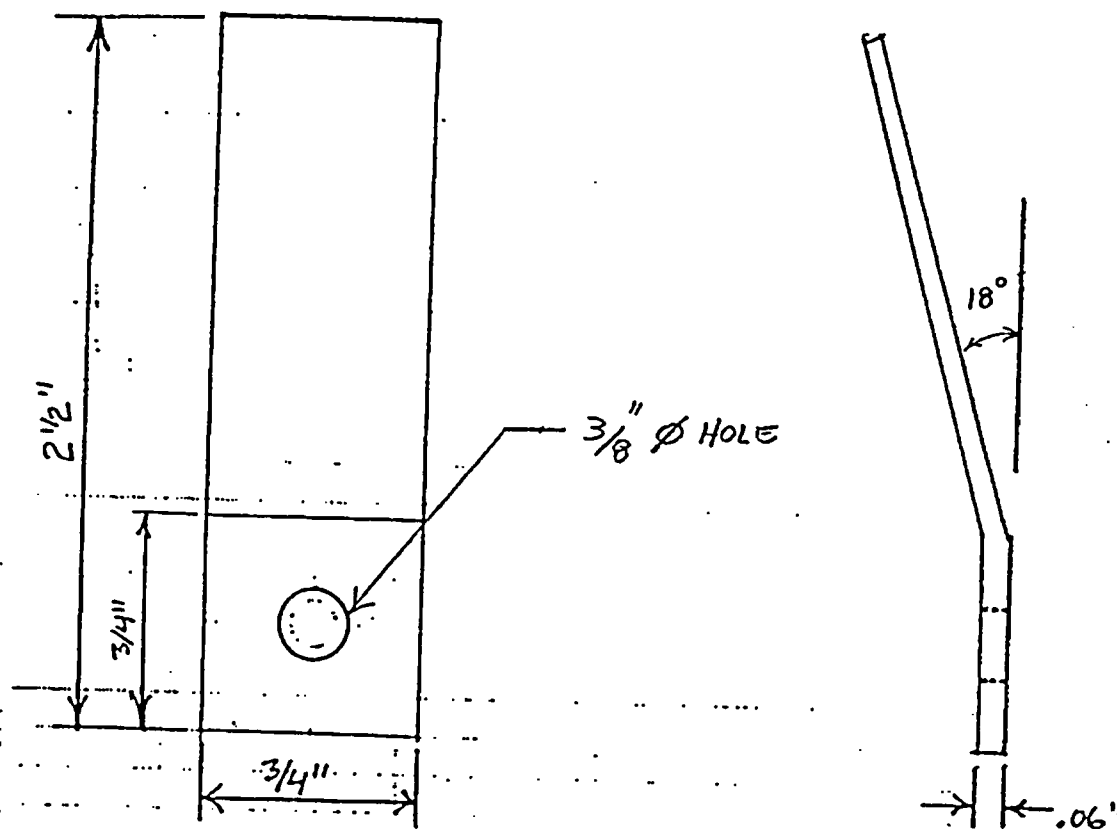


FIGURE 4.2.1 - GUIDE SLEEVE EXTRACTION STOP [6]

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/98 PAGE: 111
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 3 OF 17

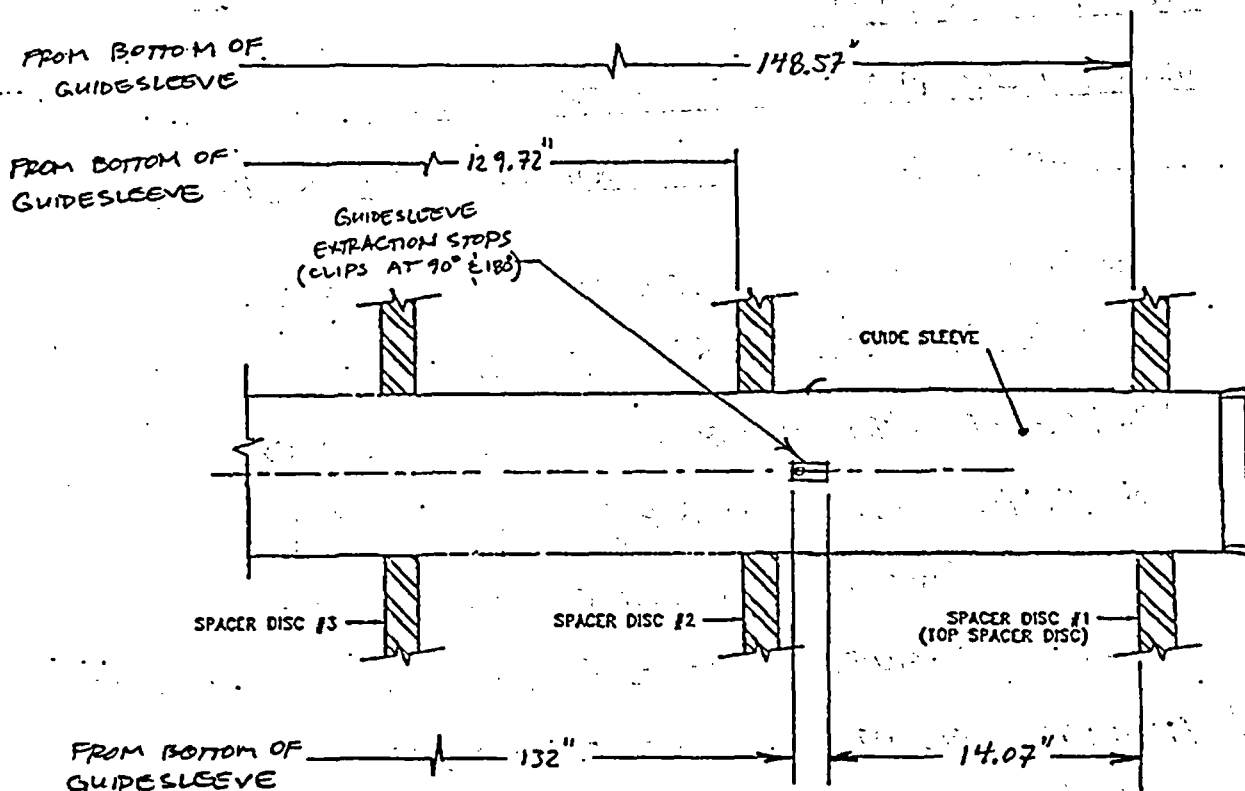


FIGURE 4.2-2 - GUIDESLEEVE EXTRACTION STOP LOCATION [6]

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/18 PAGE: 112
SUBJECT: 4.0 ANALYSIS BY: ATS CK: SR SHT: 4 OF 17

1. CLIP PLACEMENT

VERIFY CLIP PLACEMENT SO THAT CLIP WILL
NOT LOAD SPACER DISC DURING VERTICAL DROP.

SPACING BETWEEN SPACER DISC #1 AND #2

$$148.57 - 129.72 - 1.53 = 17.32"$$

MAX. DISTANCE BETWEEN TOP OF GUIDE SLEEVE AND

$$\text{TOP PLATE} = 158.63 - 155 + 1.5 = 5.13" [6]$$

↑
(ASSUME GUIDESLEEVE TOP LIP CRUSHES)

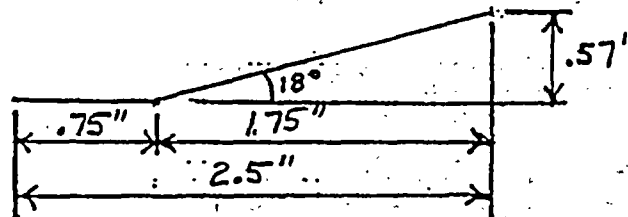
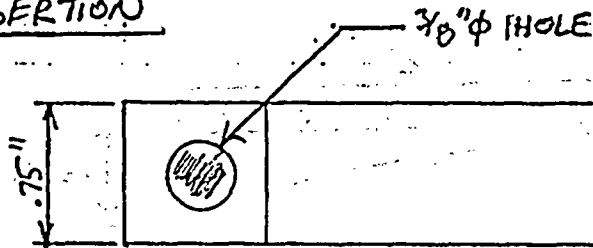
BOTTOM OF GUIDESLEEVE IS FLUSH WITH BOTTOM PLATE

∴ MAXIMUM AMOUNT OF SLIDE TOWARDS TOP

$$= 5.13" < 14.1" ∴ \text{LOCATION OF CLIP O.K.}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/98 PAGE: 113
 SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 5 OF 17

2. INSERTION

$$h = 1.75 \tan 18 = .57"$$

$$\text{GUIDESLEEVE OUTER DIMENSION} = 8.7 + .105 \times 2 = 8.91"$$

$$\text{SPACER DISC HOLES} = 9.07 \text{ SQR}$$

$$9.07 - 8.91 = .16" \text{ MAX. CLEARANCE BETWEEN GUIDESLEEVE AND SPACER DISC}$$

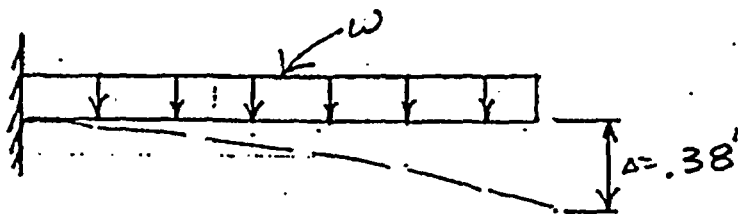
$$0.57 - .16 = .41"$$

∴ CLIP NEEDS TO DEFLECT .41" PERPENDICULAR TO GUIDESLEEVE MOTION.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/98 PAGE: 114
 SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 6 OF 17

WORST CASE LOADING IDEALIZATION



$$\Delta = \frac{wl^4}{8EI} \Rightarrow w = \frac{\Delta 8EI}{l^4} \quad I = \frac{1}{12}(.75)(.06)^3 = 1.35 \times 10^{-5} \text{ in}^4$$

$$w = \frac{.41 \times 8 \times 28,300,000 \text{ psi} \times 1.35 \times 10^{-5} \text{ in}^4}{(1.84 \text{ in})^4} = 109.3 \text{ #/in}$$

$$M = \frac{wl^2}{2} = \frac{109.3 (1.84)^2}{2} = 185.0 \text{ in-lb}$$

$$\sigma = \frac{Mx}{I} = \frac{185.0 (.06)}{2 \times 1.35 \times 10^{-5}} = 411,111 \text{ psi}$$

∴ CLIP GOES PLASTIC

DETERMINE AMOUNT OF ELASTIC DEFLECTION

$$\frac{\sigma_y 2I}{t} = M = \frac{30,000 \times 2 \times 1.35 \times 10^{-5}}{.06} = 13.5 \text{ in-lb}$$

$$w = \frac{2M}{l^2} = \frac{2(13.5 \text{ in-lb})}{(1.84 \text{ in})^2} = 7.97 \text{ in-lb}$$

$$\Delta = \frac{7.97 \text{ in-lb} (1.84 \text{ in})^4}{8 \times 28.3 \times 10^6 \times 1.35 \times 10^{-5}} = .03 \text{ in}$$

NOTE: THIS CALCULATION UNDERESTIMATES ELASTIC DEFLECTION, BECAUSE THE ACTUAL LOADING DOES NOT LOAD THE ENTIRE CLIP. GUIDESLEEVE FLEXIBILITY IS ALSO NEGLECTED, HOWEVER, DUE TO ELASTIC REBOUND, THE CLIP WILL CATCH ONTO THE SPACER DISC UPON EXTRACTION.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/98 PAGE: 115SUBJECT: 4-D ANALYSIS BY: AJS CK: SR SHT: 7 OF 17

$$\text{PLASTIC DEFLECTION} = 0.41 - 0.03 = 0.38$$

$$w = \frac{(38) \times 8 \times 0.5 \times 28.3 \times 10^6 \times 1.35 \times 10^{-5}}{(1.84)^4} = 7.65 \text{ lb/in}$$

$$M = \frac{wl^2}{2} = 7.87 \text{ in-lb}$$

$$\sigma = \frac{Mc}{I} = \frac{7.91 (1.06)}{2 \times 1.35 \times 10^{-5}} = 17,488 \text{ psi}$$

$$\sigma_{\text{TOTAL}} = 30,000 + 17,488 = 47,488 \text{ psi} < 75,000 \text{ psi} = S_u$$

∴ CLIP O.K.

CHECK GUIDESLEEVE

LOADS APPLIED TO GUIDESLEEVE ARE SIGNIFICANTLY
GREATER DURING EXTRACTIONS. SEE SHT. 12

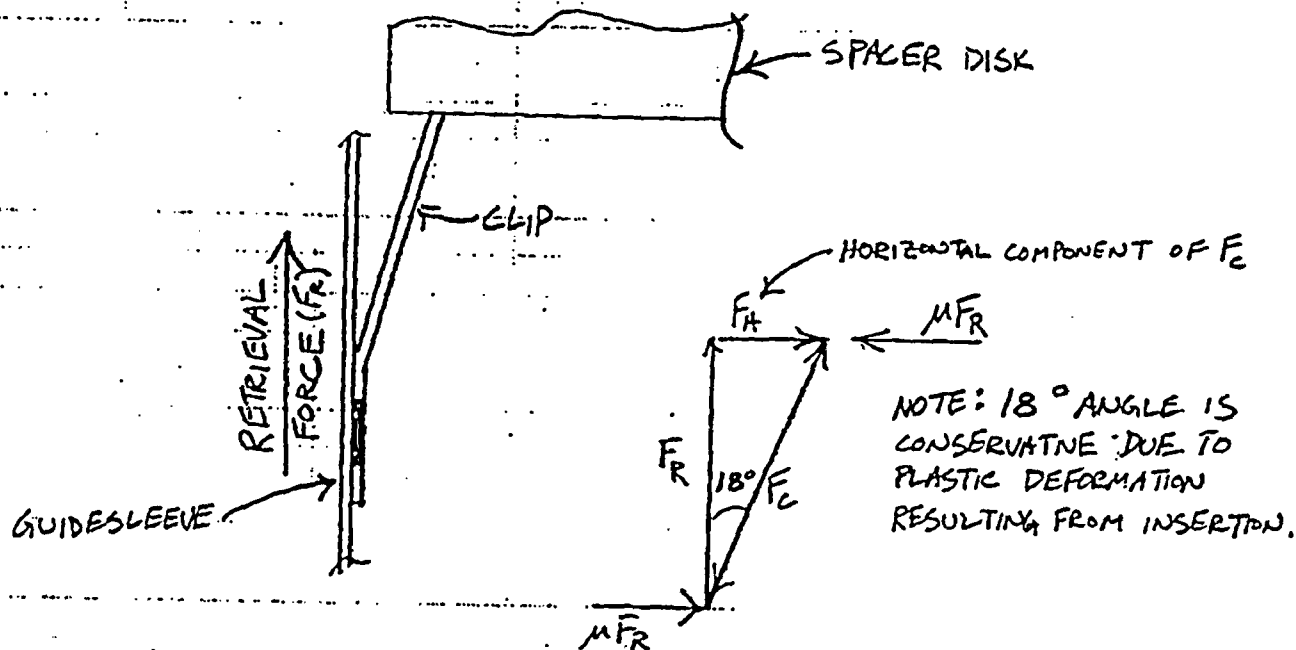
FOR GUIDESLEEVE EXTRACTION LOADING CALCULATION.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/98 PAGE: 116

SUBJECT: H-D ANALYSIS BY: AJS CK: SR SHT: 8 OF 17

3. FUEL EXTRACTION



IF $\mu F_R > F_H$, THEN CLIP CAN NOT SLIDE. THE CLIP WILL BEHAVE AS A COMPRESSION ONLY MEMBER.

BUCKLING OF THE CLIP OR WELD STRENGTH WILL GOVERN.

USE $\mu = .5$ (CONSERVATIVE) [26]

$$\tan 18 = \frac{F_H}{F_R} \Rightarrow F_H = F_R \tan 18 = .32 F_R$$

$$\mu F_R > F_H = .32 F_R$$

$\mu = .5 > .32 \therefore$ CLIP CAN NOT SLIDE

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/98 PAGE: 117
 SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 9 OF 17

EVALUATE CLIP FOR COMPRESSION

$$\sqrt{F_R^2 + F_H^2} = F_C = \sqrt{F_R^2 + (F_R \tan 18)^2} = F_R \sqrt{1 + \tan^2 18} = 1.05 F_R$$

$$A_c = .75(.06) = .045 \text{ in}^2$$

$$r_y = \sqrt{\frac{I}{A}} = \sqrt{\frac{1.35 \times 10^{-5}}{.045}} = .017" \quad K = .8 \quad [33]$$

$$\frac{Kl}{r_y} = \frac{.8(1.84")}{.017"} = 86.6 \Rightarrow 87 \quad F_a = 14.56 \text{ ksi}$$

$$\frac{1.05 F_R}{.045} = 14,560 \text{ psi}$$

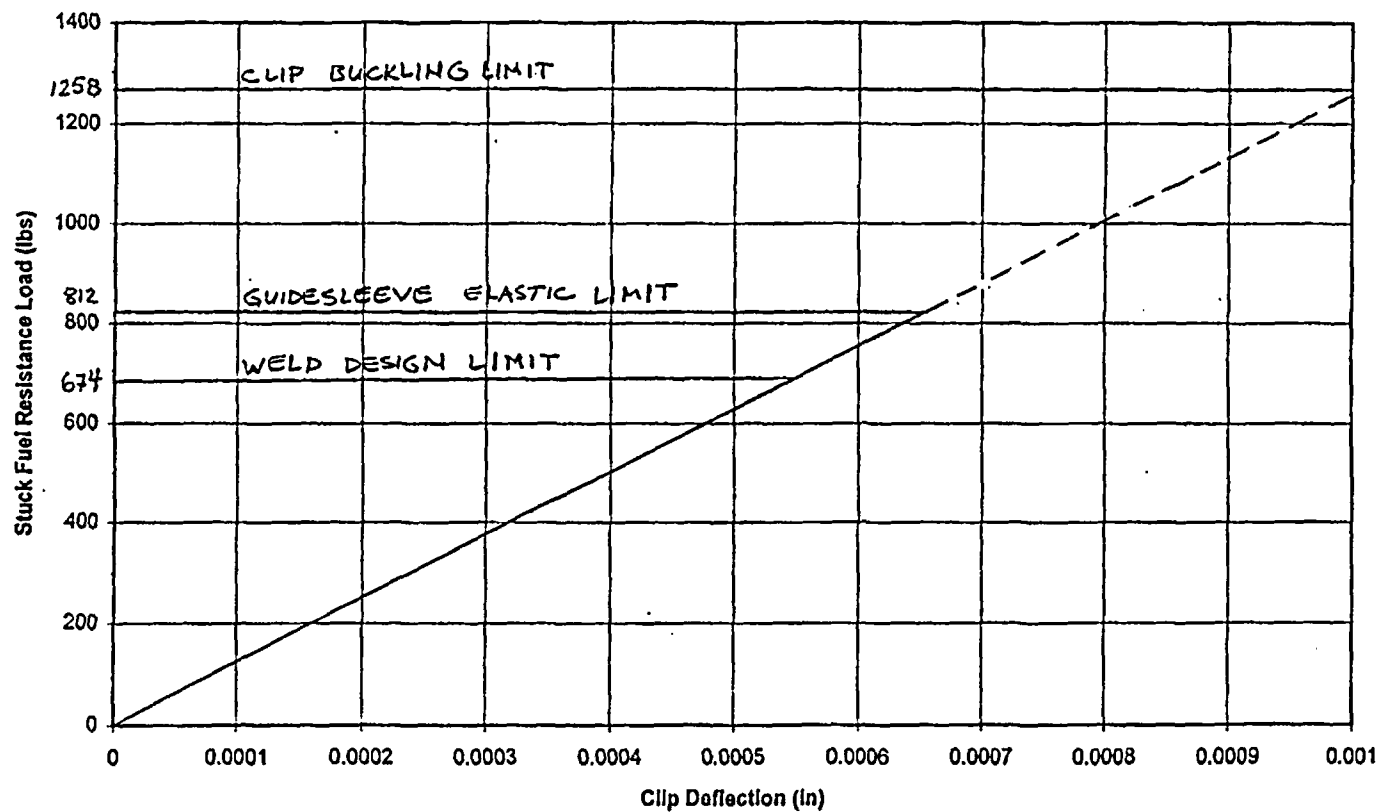
$$F_R = 624 \text{ \#}$$

FIGURE 4.2.3 BELOW SHOWS A CURVE OF STUCK FUEL RESISTANCE
 LOAD VS. CLIP DEFLECTION. THE CURVE WAS GENERATED

USING THE FORMULA $\Delta = \frac{PL}{AE}$.

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/98 PAGE: 118
 SUBJECT: 4.0 ANALYSIS BY: ATS CK: SR SHT: 10 OF 17

Figure 4.2.3 Stuck Fuel Resistance Load vs. Clip Deflection



CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/98 PAGE: 119
 SUBJECT: H.O. ANALYSIS BY: AJS CK: SR SHT: 11 OF 17

THE GUIDESLEEVE WITH APPLIED EXTRACTION LOADS WAS
 MODELLED ON ANSYS. THE LOADING IS SHOWN BELOW
 IN FIGURE 4.2.4. THE STRESS CONTOUR IS SHOWN IN FIG. 4.2.5.

MAX. STRESS = 15,113 psi < 18,200 psi = S_y @ 600°F
 ↑ SEE FIG. 4.2.5

THE GUIDESLEEVE DEFLECTIONS ARE IN THE
 ELASTIC RANGE. DEFLECTION = .021" (SEE FIG. 4.2.5)

$337 \times \frac{18,200}{15,113} = 406 \therefore$ GUIDESLEEVE REMAINS ELASTIC UP
 TO 812 # STUCK FUEL RESISTANCE
 LOAD

DUE TO THE LOW DEFLECTION, THE GUIDESLEEVE
 WILL NOT IMPINGE UPON THE FUEL ASSEMBLY
 DURING EXTRACTION.

∴ BASED UPON REASONABLE EXTRACTION LOADS (i.e. 900# OR LESS)
"DIMPLING" OF THE GUIDESLEEVE IS SMALL AND WILL
NOT AFFECT FUEL RETRIEVAL.

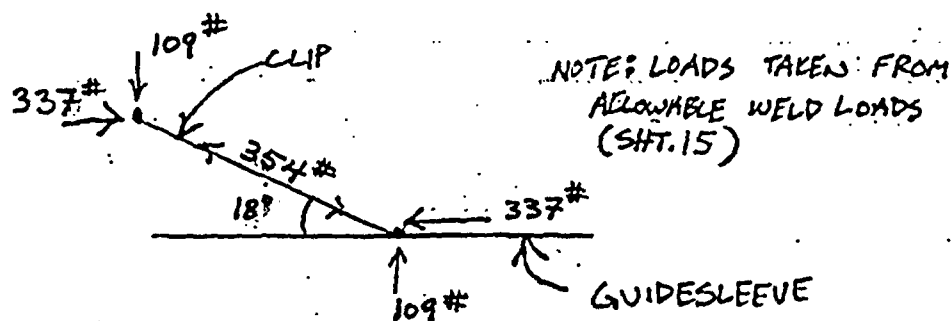


FIG. 4.2.4 GUIDESLEEVE LOADING

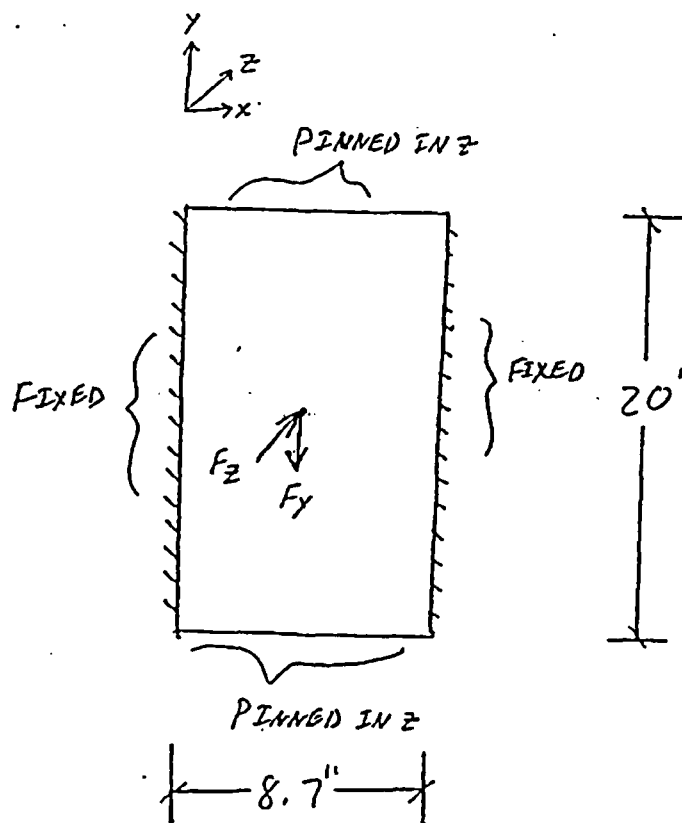
DATE: 12/15/98 PAGE: 120

BY: AJS CK: SR SHT: 12 OF 17

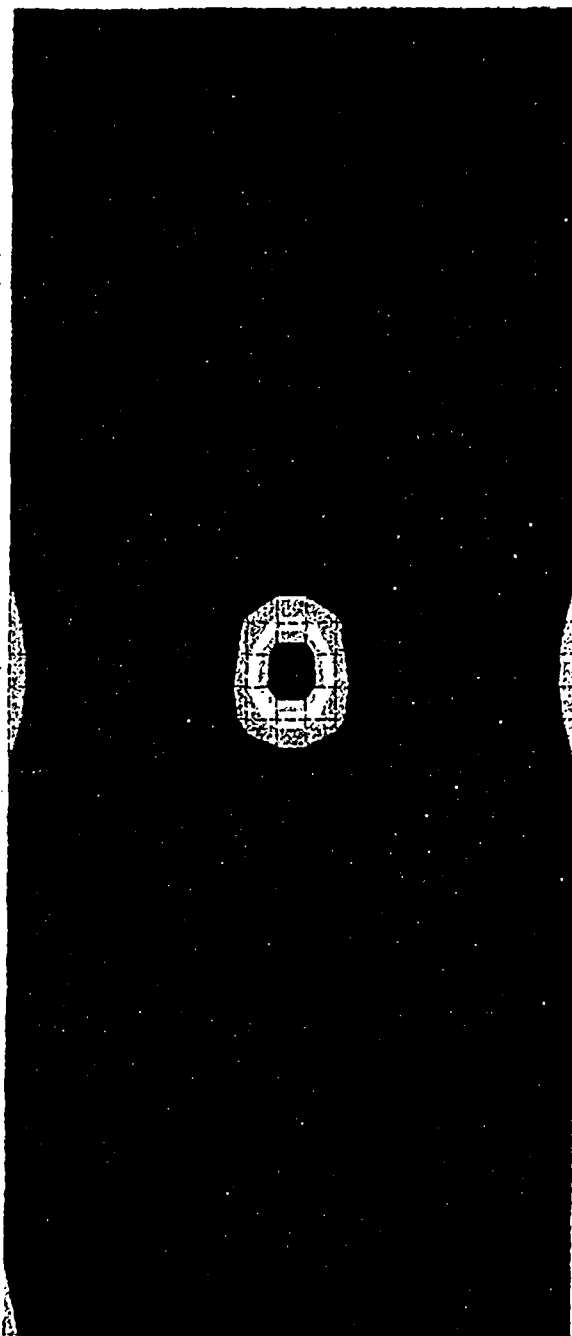
```

C***GUIDESLEEVE CLIP LOADING
/prep7
ET,1,63
R,1,0.105
MP,EX,1,25.3E6
MP,NUXY,1,0.3
RECTANGLE,0,8.7,0,20
LSEL,S,LINE,,1,3,2
LESIZE,ALL,,19
LSEL,S,LINE,,2,4,2
LESIZE,ALL,,41
AMESH,ALL
NSEL,S,LOC,Y,0
NSEL,A,LOC,Y,20
D,ALL,UZ,0
NALL
NSEL,S,LOC,X,0
NSEL,A,LOC,X,8.7
D,ALL,ALL,0
NALL
F,460,FZ,27.25
F,461,FZ,27.25
F,500,FZ,27.25
F,501,FZ,27.25
F,460,FY,-84.25
F,461,FY,-84.25
F,500,FY,-84.25
F,501,FY,-84.25
/SOLU
SOLVE
/POST1
PLNSOL,S,INT

```



ANSYS 5.2
 DEC 15 1998
 16:06:20
 NODAL SOLUTION
 STEP=1
 SUB =1
 TIME=1
 SINT (AVG)
 TOP
 DMX =.021388
 SMN =30.422
 SMX =15113
 SMXB=16060
 30.422
 1706
 3382
 5058
 6734
 8410
 10085
 11761
 13437
 15113



GUIDESLEEVE WITH CLIP LOAD

DATE: 12/15/98 PAGE: 121
 BY: AJS CK: SK SHT: 13 OF 17

CALCULATION SHEET

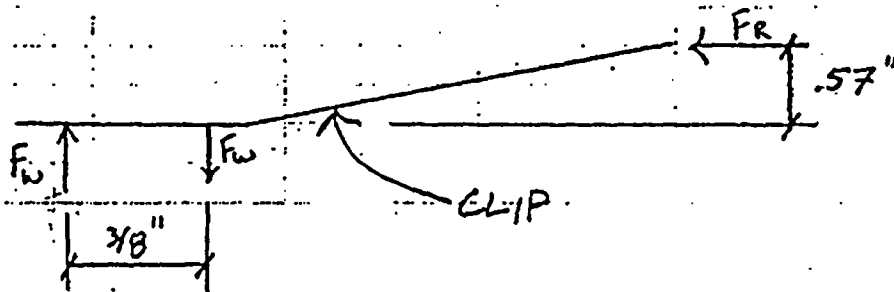
TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/98 PAGE: 122
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 14 OF 17

-CHECK WELD

PER NF 3324.5 E2

MATERIAL THICKNESS = $1/16"$ MIN. WELD DIAMETER = $1/16 + 5/16 = 3/8" = .375"$ MAX. WELD DIAMETER = $1/16 \times 2.25 = .14"$ $.375" < \text{WELD DIAMETER} < .14"$ N.G. PER NF

PER ANSI/AWS D1.1 1992

MIN. WELD DIAMETER = $1/16 + 5/16 = 3/8" = .375"$ MAX. WELD DIAMETER = GREATER OF $3/8 + 1/8 = 1/2"$ OR $.14"$ $\therefore 3/8"$ PLUG WELD IS O.K.

$$F_w = \frac{F_R (.57)}{(3/8)} = 1.52 F_R$$

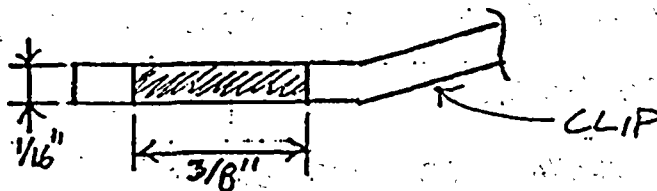
CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/98 PAGE: 123

SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 15 OF 17

$$\sqrt{(1.52 F_R)^2 + F_R^2} = F_R \sqrt{1.52^2 + 1} = 1.8 F_R$$

WELD AREA



$$A_1 = \frac{1}{16} \times \pi \times \frac{3}{8} = .074 \text{ in}^2$$

$$A_2 = \frac{\pi (\frac{3}{8})^2}{4} = .11 \text{ in}^2 \quad \therefore \text{USE } A_1$$

↙ @ 600°F

$$\sigma_w = \frac{1.8 F_R}{.074 \text{ in}^2} \leq .5 S_m = .5 \times 16.4 \text{ ksi} = 8.2 \text{ ksi}$$

$$F_R \leq \frac{8200 \text{ psi} (.074)}{1.8} = 337 \#$$

CHECK @ AMBIENT TEMP:

$$.5 S_m = .5 (20,000 \text{ psi}) = 10,000 \text{ psi}$$

$$F_R \leq \frac{10,000 \text{ psi} (.074)}{1.8} = 411 \#$$

\therefore WELD GOVERNS

MAXIMUM STUCK FUEL RESISTANCE LOAD

$$= 2 \times 337 \# = 674$$

↖ 2 CLIPS

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/15/98 PAGE: 124
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 16 OF 17

4. TEST RESULTS COMPARISON [51]

CLIP DISTANCE FROM GUIDESLEEVE AFTER INSERTION

TEST = .25" ~ .3125" CALC. = .22"

THE CALCULATION DID NOT CONSIDER GUIDESLEEVE
FLEXIBILITY (ELASTIC REBOUND) WHICH RESULTS IN A
LOWER BOUND ESTIMATE.

CALCULATED MAXIMUM STOCK FUEL RESISTANCE LOADS

SHOULD NOT BE COMPARED TO TEST RESULTS, BECAUSE

THIS CALCULATION DETERMINED THE MAXIMUM ALLOWABLE

LOAD BASED ON ASME CODE SECT. III, SUBS. NF

ALLOWABLE STRESSES. THE TEST TOOK THE

CLIPS TO FAILURE.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/16/98 PAGE: 125
SUBJECT: 4-D ANALYSIS BY: AJS CK: SR SHT: 17 OF 17

CONCLUSIONS

CLIP AND GUIDE SLEEVE STRESSES AND DEFORMATIONS DURING INSERTION ARE SATISFACTORY. "DIMPING" OF THE GUIDE SLEEVE DURING EXTRACTION IS NEGUGIBLE. THE CLIP MEETS ASME CODE SECT. III, SUBS. NF STRESS REQUIREMENTS. THE CALCULATED POSITION OF THE CLIP AFTER INSERTION AGREES WITH THE RESULTS OF THE CLIP TEST BY RANOR [51]. THE GUIDE SLEEVE IS FOUND TO DEFLECT ELASTICALLY UP TO A STUCK FUEL RESISTANCE LOAD OF 812#. HOWEVER, IN ORDER TO MEET SECT. III, SUBS. NF STRESS REQUIREMENTS, THE MAXIMUM ALLOWABLE STUCK FUEL RESISTANCE LOAD IS 674# BASED ON ALLOWABLE STRESSES.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/07/99 PAGE: 126
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHY: 1 OF 46

4.3 SPACER PLATE ANALYSIS**OBJECTIVE**

The structural integrity of the DSC spacer plate is qualified by stress analyses considering:

- Dead weight
- Thermal loads
- Seismic loads
- Handling loads
- Loads induced by an accidental horizontal drop
- Loads induced by an accidental vertical drop

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 127

SUBJECT: 4.0 ANALYSIS

BY: ASS CK: SR

SHT: 2 OF 46

4.3.1 COMPONENT DESCRIPTION

A SCHEMATIC OF THE DSC BASKET ASSEMBLY INTERNALS IS SHOWN BELOW IN FIGURE 4.3.1.

THERE ARE NINE SPACER PLATES. EACH PLATE IS PERFORATED TO ALLOW 24 GUIDE SLEEVES AND FOUR SUPPORT RODS TO PASS THROUGH. THE NEW DSC IS DESIGNED HAVING NO GUIDESLEEVE CLIP ANGLES.

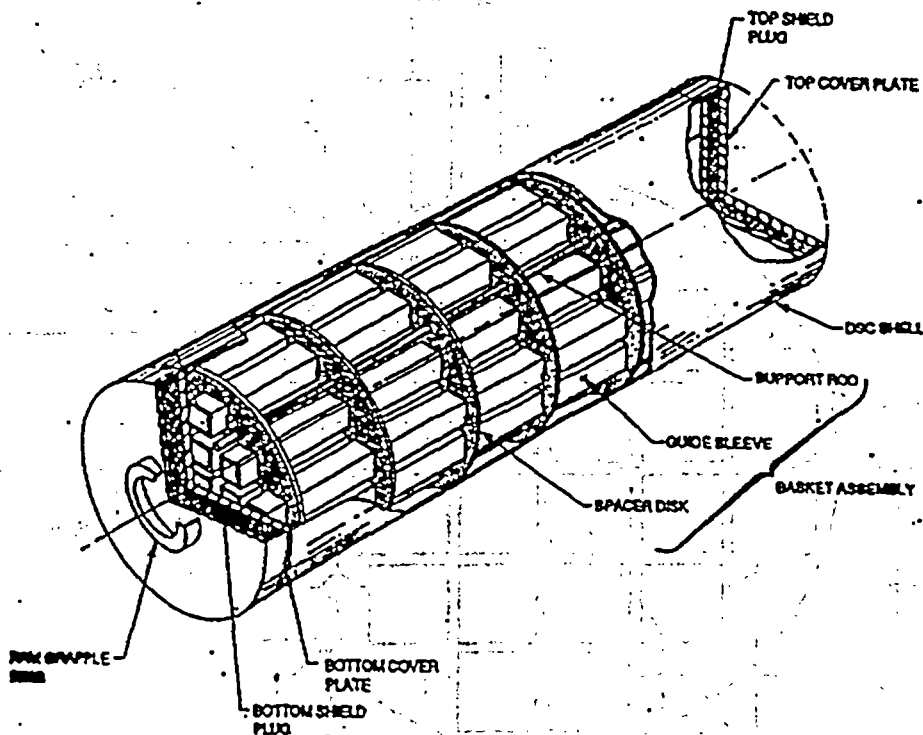


FIGURE 4.3.1: DSC BASKET ASSEMBLY [6]
INTERNALS

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 128

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 3 OF 46

DIMENSIONS

THE SPACER PLATE GEOMETRY [6] IS SHOWN BELOW IN FIG. 4.3.2. THE PLATE IS NOMINALLY 65.5" IN DIAMETER AND 1.5" THICK. GUIDE SLEEVE HOLES ARE 9.1" SQUARE AND SUPPORT ROD HOLES ARE 3.1" IN DIAMETER. THE SUPPORT RODS ARE WELDED TO ALL THE PLATES.

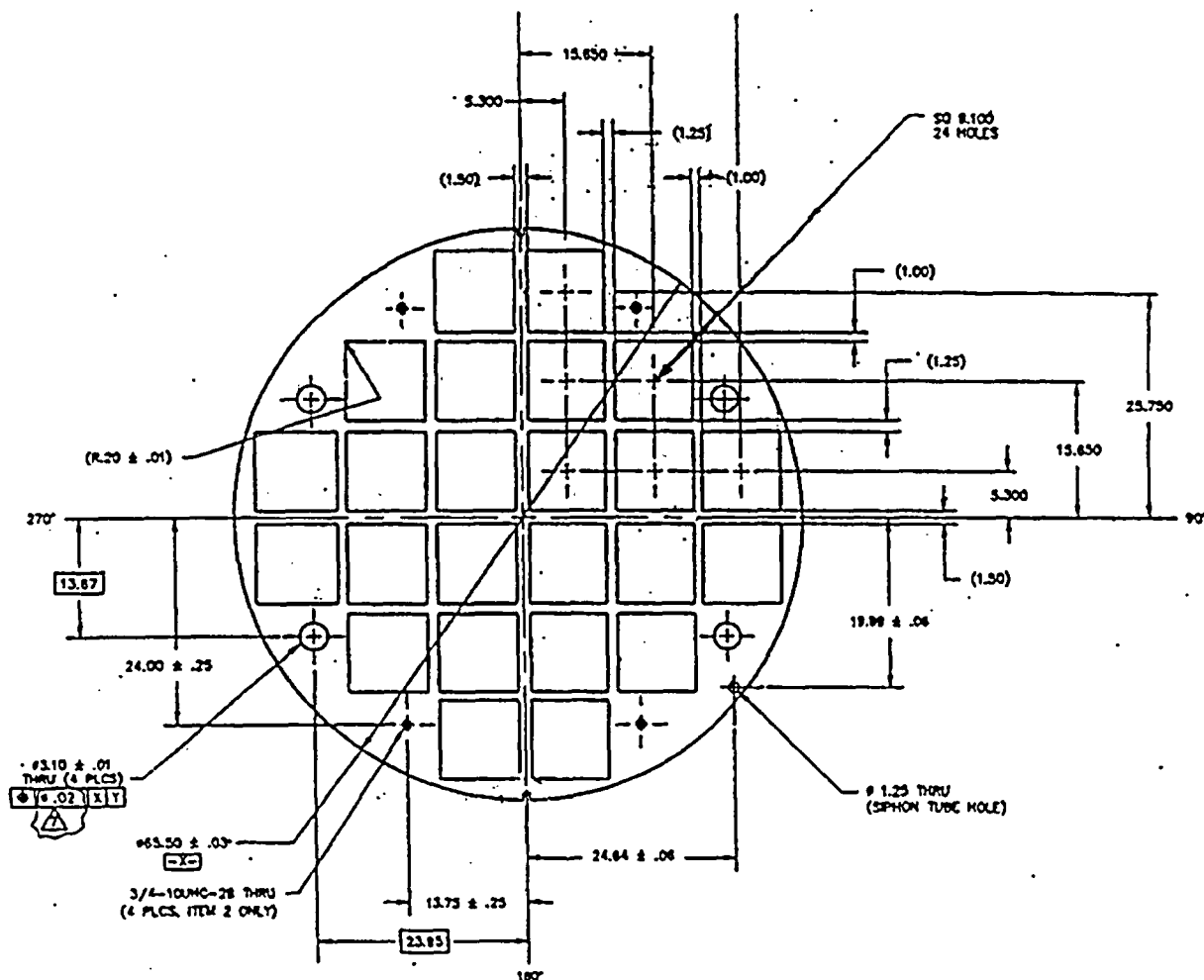


FIGURE 4.3.2 : SPACER PLATE GEOMETRY [6]

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/07/99PAGE: 129SUBJECT: 4.0 ANALYSISBY: ATS CK: SR SHT: 4 OF 46

- TOLERANCES

- SPACER PLATE DIMENSIONAL TOLERANCES ARE:

PLATE DIAMETER: $65.5" \pm .03"$ [6]PLATE THICKNESS: $1.5" \begin{matrix} +.07 \\ -.01 \end{matrix}$ LIGAMENT WIDTHS: $\begin{matrix} 1.455" \\ 1.205" \\ 0.955" \end{matrix}$

CRITICAL MINIMUMS

[6]

- Aluminium coating thickness .015" max

- GLOBAL STRESS CONSIDERATIONS WILL BE BASED ON NOMINAL DIMENSIONS.

- LOCAL STRESS CONSIDERATIONS WILL ALSO BE BASED ON NOMINAL DIMENSIONS.

* CHECK -

critical
ligament
section
modulus

$$S_{MAX} = \frac{bh^2}{6} = \frac{1.5(1)^2}{6} = .25 \text{ in}^3$$

$$S_{MIN} = \frac{bh^2}{6} = \frac{1.5(.955)^2}{6} = .228 \text{ in}^3$$

9% DIFFERENCE (2% IN OTHER DIRECTION)

CALCULATED STRESSES ARE WELL WITHIN CODE ALLOWABLES. BY INSPECTION USE OF CONSERVATIVE TOLERANCES WILL NOT INCREASE STRESS OVER ALLOWABLES.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

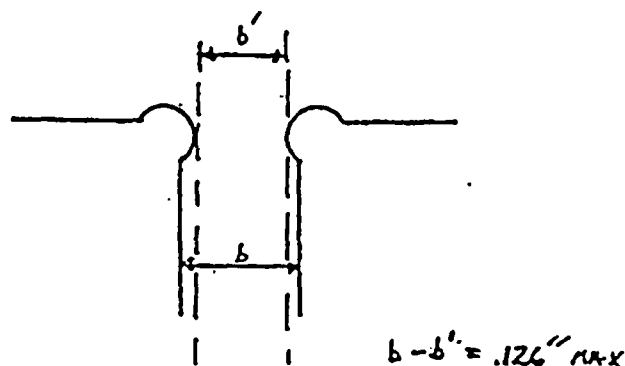
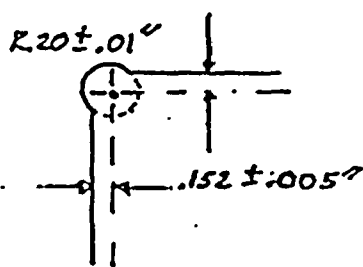
PAGE: 130

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 5 OF 46

Effect of Corner Radii

The effect of the corner radii locally reduces the spacer plate ligament widths. Corner radii measure $0.20 \pm .01"$ and centered $.152 \pm .005"$ from the edges in both directions. Therefore, the maximum ligament width reduction is $2 \times (0.21 - 0.147) = 0.126"$.



Compare section properties for a 1" ligament (ligament thickness, $t=1.5"$):

	No reduction ($b=1"$)	reduction ($b'=.874"$)	
Vertical direction ($S=bt^2/6$)	$S = .375"$	$S' = .328"$	(13%)
Horizontal direction ($S=tb^2/6$)	$S = .250"$	$S' = .191"$	(24%)

Therefore, the reduced ligament widths theoretically result in increased stress values of 13% for bending in the vertical direction, and 24% for bending in the horizontal direction, at these very localized regions. Spacer plate computed maximum stress intensities are well within the acceptable limit (38 ksi , $38 \text{ ksi} < .9S_u = 63 \text{ ksi}$) such that it is reasonable to omit corner radii from finite element modeling.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 131

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 6 OF 46

TOP SPACER PLATE

THE TOP SPACER PLATE HAS .75" TAPPED HOLES FOR EYEBOLTS TO LIFT THE BASKET ASSEMBLY. THE EYE BOLTS ARE REMOVED AFTER THE BASKET ASSEMBLY IS PLACED INTO THE CANISTER SHELL. THE TOP PLATE ALSO HAS TWO 0.8 BY .78" RECTANGULAR ALIGNMENT KEY CUTS FROM THE PLATE EDGE AT 0° AND 180°. THE TOP, BOTTOM, AND SEVEN INSIDE PLATES HAVE A 1.25" DIAMETER HOLE FOR A SIPHON TUBE.

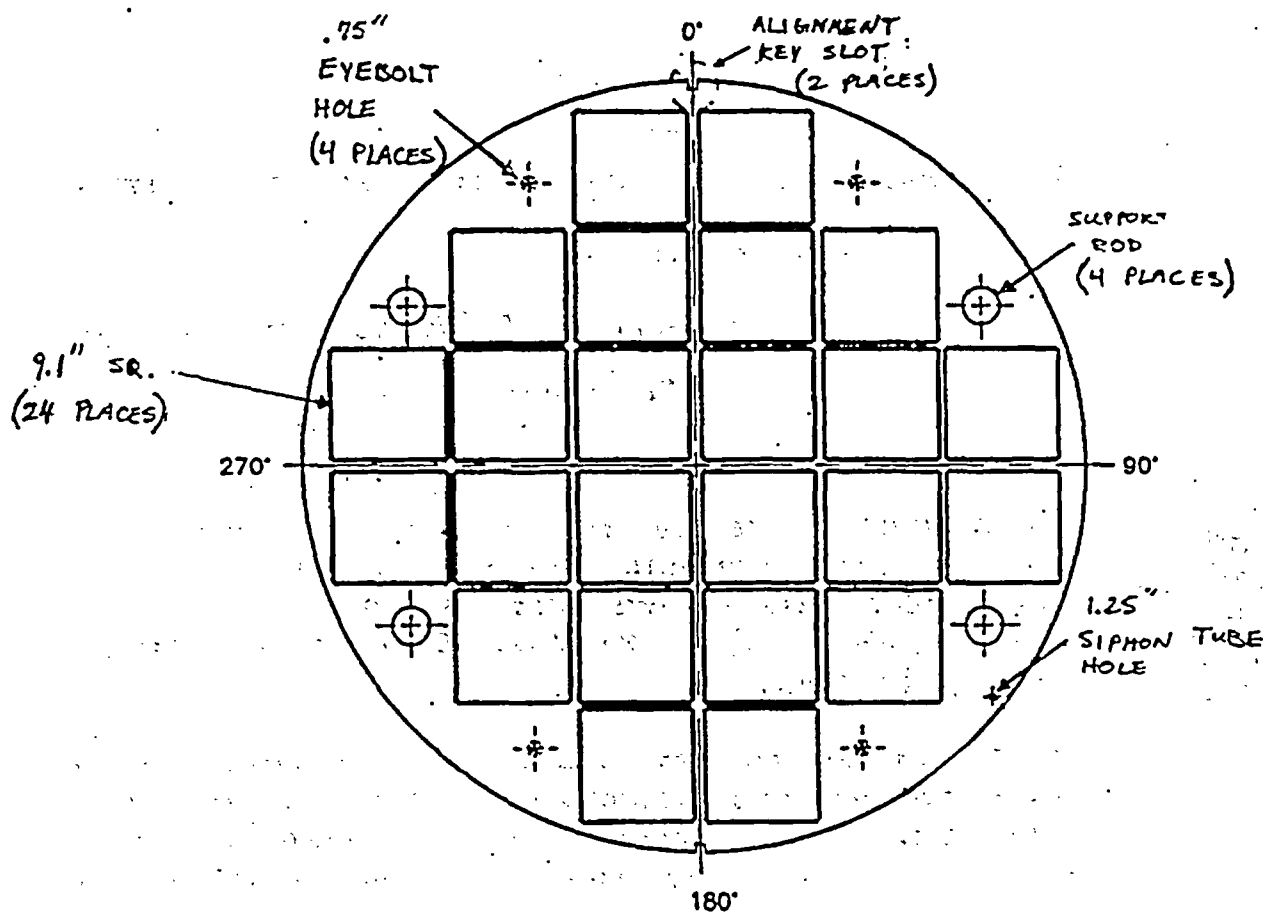


FIGURE 4.3.3 : TOP SPACER DISC [6]

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 132

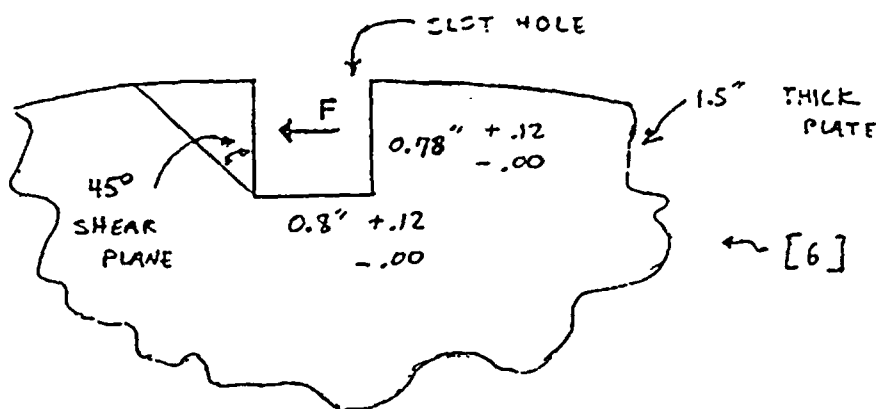
SUBJECT: 4.0 ANALYSIS

BY: AJS

CK: SR

SHT: 7 OF 46

- ALIGNMENT KEY SLOT HOLES



THE AMOUNT OF FORCE REQUIRED TO SHEAR THE PLATE:

$$F = \sigma \cdot A$$

$$= (70 \text{ ksi}) \times \sqrt{2} (.78)(1.5) = 116 \text{ kips}$$

↑ σ_u , conservative - code min.

* VERY CONSERVATIVE SINCE SLOTS ARE NOT EXPECTED TO CARRY THE WHOLE WEIGHT OF THE SYSTEM.

THE MAXIMUM FORCE ON SLOT HOLE OCCURS WITH THE OSC IN THE HORIZONTAL POSITION. THE WEIGHT OF THE BASKET ASSEMBLY INTERNALS IS 80 000 lbs. $F_{MAX} = 80/2$ (2 SLOT HOLES) = 40 kips. EVEN AT 2g SEISMIC LOAD, $80 < 116$.

SLOT NOTCHES DO NOT OCCUR AT A CRITICAL SPACER PLATE SECTION AND REDUCTION OF CROSS SECTION IS NEGLIGIBLE. NOTCHES PRODUCE ONLY LOCALIZED SECONDARY STRESSES AND ARE NOT INCLUDED IN ANY ANSYS MODELS.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 133

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 8 OF 46

EYEBOLT + SIPHON TUBE HOLES IN ANALYSIS

- SMALL HOLES CUT THROUGH THE SPACER PLATES ARE IGNORED IN OUR ANALYSIS. FIRST, HOLES DO NOT OCCUR IN CRITICAL SECTIONS OF THE PLATE. SECOND, THE REDUCTION IN CROSS SECTION IS NEGLIGIBLE AND MAY BE CONSIDERED MORE OF A MINOR DISCONTINUITY THAN A "WEAK LINK".
- THE BASKET ASSEMBLY IS LIFTED INTO THE DSC VIA THE FOUR EYEBOLTS.

BASKET ASSEMBLY WEIGHT:

$$600 \text{ } 1/8 \text{ plate} \times 9 \text{ plates} = 5400 \text{ lbs.}$$

$$160 \text{ } 1/8 \text{ guide sleeve} \times 24 = 4000 \text{ lbs.}$$

$$500 \text{ } 1/8 \text{ rod} \times 4 \text{ rods} = \underline{2000 \text{ lbs}}$$

$$11400 \text{ lbs.}$$

$$11.4/4 = 2.85 \text{ kips/BOLT}$$

BOLT CAPACITY: (3/4 - 10 UNC - 2B THRU) 60 ksi MIN STRENGTH ASSUMED.

$$\text{SHEAR FORCE: } \pi (3/4) (1.5) (60.0 \text{ ksi} / 2) = 106 \text{ kips}$$

$$2.85 < 106 \text{ kips}$$

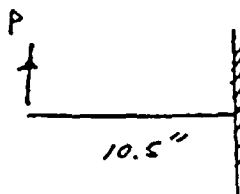
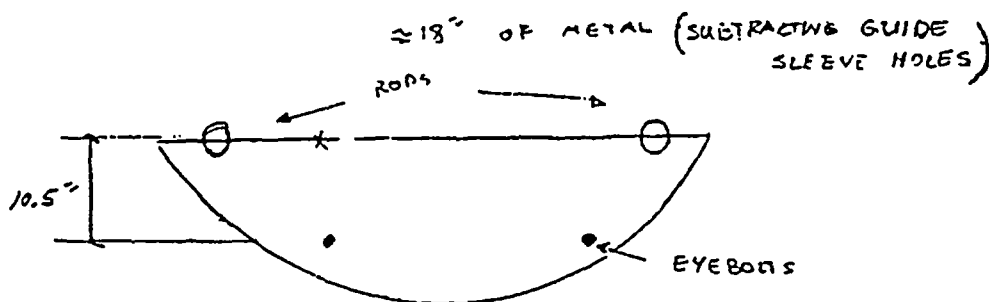
$$\text{AXIAL FORCE: } \frac{\pi}{4} (3/4)^2 (60 \text{ ksi}) = 27 \text{ kips}$$

$$2.85 < 27 \text{ kips}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/07/99PAGE: 134SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 9 OF 46

CHECK MOMENT IN PLATE :

ASSUME OUTSIDE EDGES BEND UPWARD AT HINGE LINES
BETWEEN RODS.

SAY $b = 15"$
 conservatively low.

$$M = Pl = 2(2850)(10.5) = 60,000 \text{ in-lbs.}$$

$$S = \frac{bh^2}{6} = \frac{(15)(1.5)^2}{6} = 5.625$$

$$\sigma = \frac{M}{S} = 10.7 \text{ ksi} < (21.0 \text{ ksi } (S_m @ 460^\circ F))$$

∴ PLATES ARE O.K. DURING LIFT.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/07/99PAGE: 135SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 10 OF 46

A DETAIL OF A TYPICAL SPACER PLATE IS SHOWN BELOW IN FIGURE 4.3.4. LOADING FOR EACH SPACER PLATE IS THE SAME.

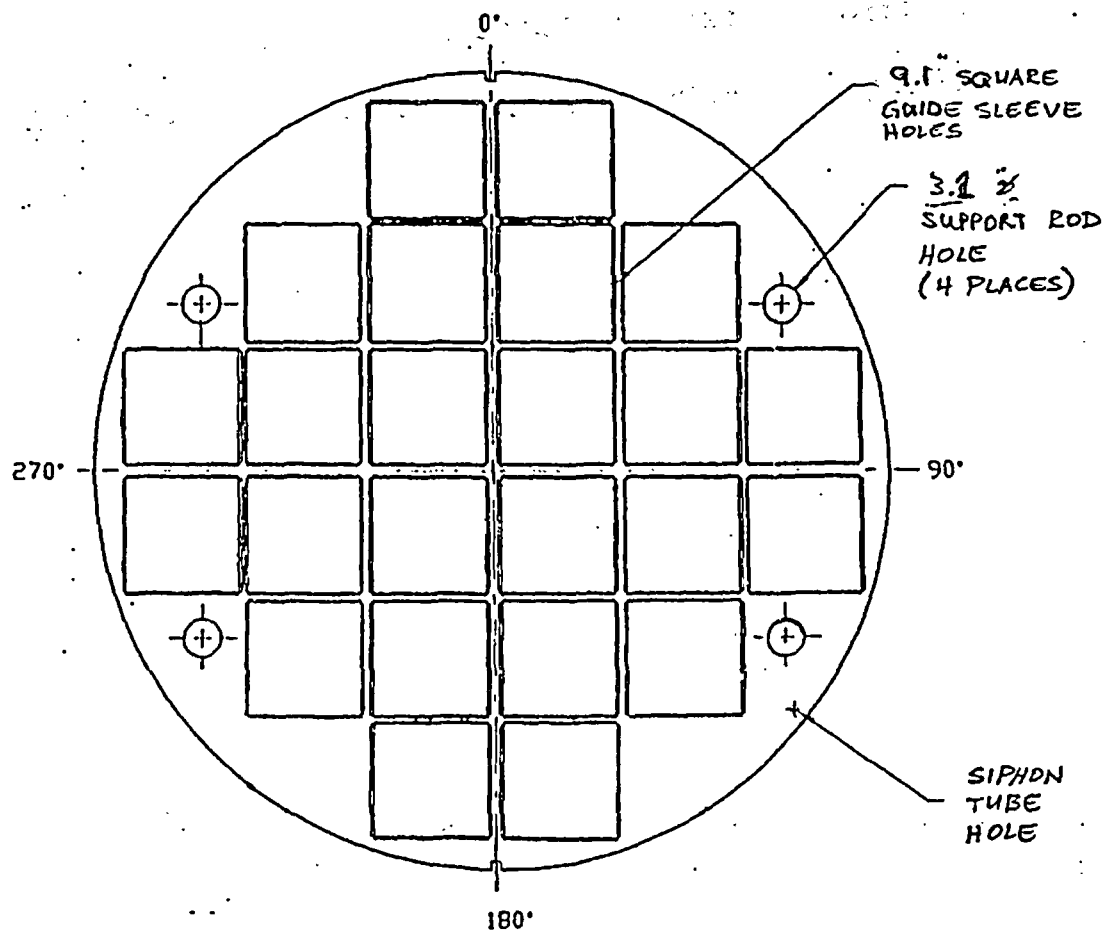


FIGURE 4.3.4 : SPACER PLATE DETAIL [6]

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/7/99 PAGE: 136
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 11 OF 46

MATERIALS

THE DSC DRAWINGS [6] INDICATE THAT THE SPACER
PLATES ARE FABRICATED USING SA 516, GR. 70
CARBON STEEL MATERIAL.
MATERIAL PROPERTIES ARE LISTED IN TABLE 3.3.

CALCULATION SHEET

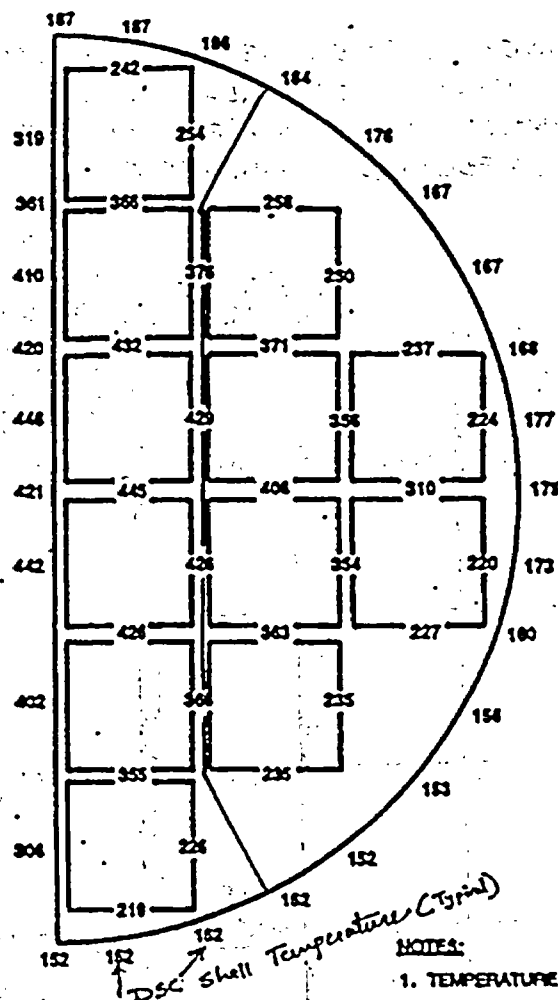
TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 137

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SE SHT: 12 OF 46

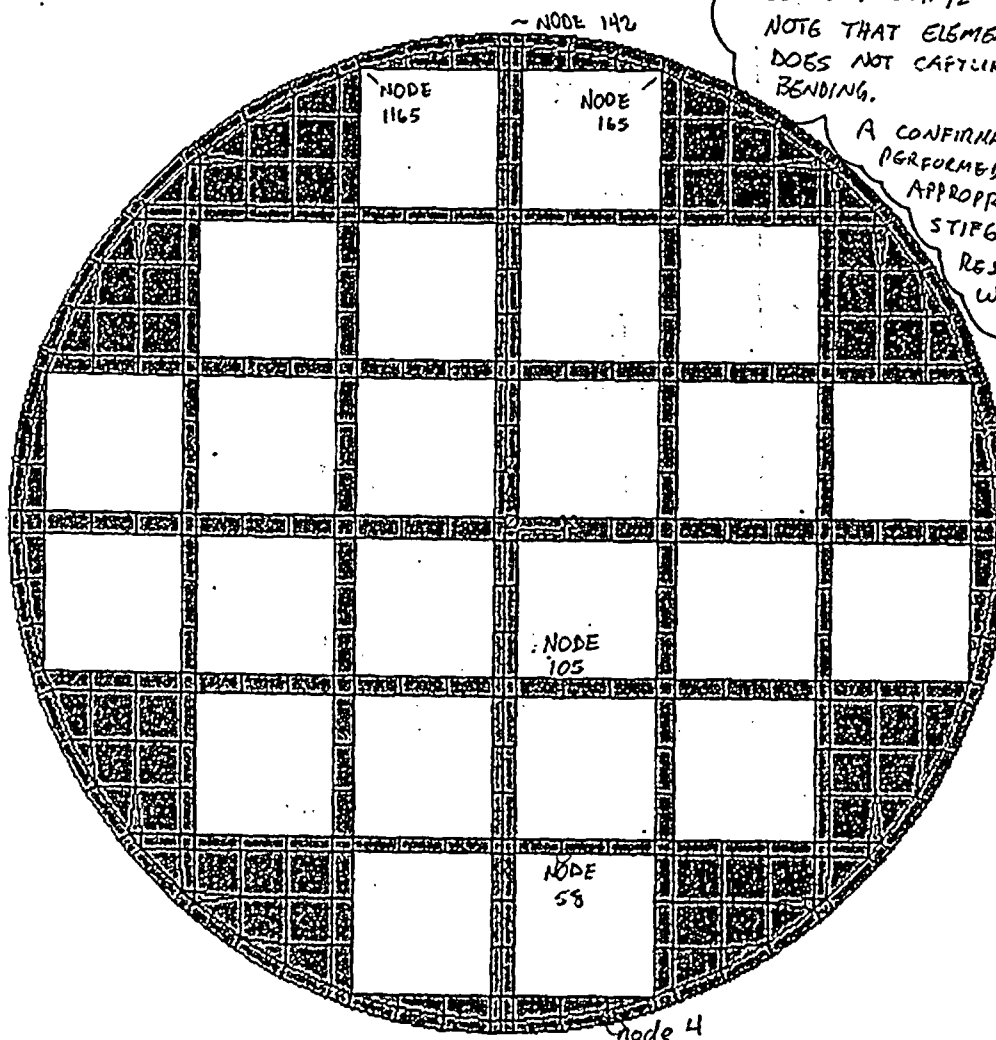
TEMPERATUREFIGURE 4.3.5 : SPACER PLATE
TEMPERATURE
DISTRIBUTION

[17]

ANSYS MODEL

THE ANSYS MODEL ILLUSTRATED BELOW IS USED TO CALCULATE THERMAL STRESSES.

SINCE AVERAGE STRESS RESULTS ARE USED AND NOT PEAK STRESS LEVELS (TYPICALLY USED IN FATIGUE ANALYSIS), THE EXISTING MESH RESOLUTION IS ADEQUATE FOR THE PERFORMED ANALYSIS.



* ELEMENT STIF42 WAS USED.
NOTE THAT ELEMENT STIF42 DOES NOT CAPTURE OUT-OF-PLANE BENDING.

A CONFIRMATORY ANALYSIS WAS PERFORMED USING A MORE APPROPRIATE ELEMENT - STIF63. THERMAL STRESS RESULTS WERE STILL WITHIN ALLOWABLES. [58]

FIGURE 4.3.6 - ANSYS MODEL FOR THERMAL STRESSES

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 1/11/99

PAGE: 139

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR

SHT: 14 OF 46

4.3.2 DEAD WEIGHT ANALYSISVertical Dead Weight

Vertical dead weight loading of the spacer plate is due to self weight only. The stresses in the spacer plate due to vertical dead weight loading are obtained by scaling the accidental vertical drop stresses at 75g, calculated in Section 4.3.7, by a factor of 1/75. This provides the stresses at 1g. Scaling of stresses is acceptable because the vertical drop analysis is an elastic analysis, so stresses are linearly related to load.

The maximum vertical dead weight stress intensity on the spacer plate is 0.32 ksi, at node 391.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/07/99PAGE: 140SUBJECT: 4.0 ANALYSISBY: AJSCK: SRSHT: 15 OF 46HORIZONTAL DEAD WEIGHT

WHEN THE DSC IS IN THE HORIZONTAL POSITION THE SPACER DISKS CARRY THE COMBINED LOADING OF THE FUEL RODS AND GUIDE SLEEVES.

- FUEL RODS : Wt. = 1450 lbs. per ASSEMBLY [30]
L = 157.44"

$$W = 9.21 \text{ lb/in}$$

- GUIDE SLEEVES : Wt. = 160 lbs.
L = 157.0" [6]

$$U = 1.02 \text{ lb/in}$$

$$AL \text{ BETWEEN SPACER DISKS} = 18.86" \text{ (MAX.) [6]}$$

∴ THE TOTAL STATIC LOAD PER SPACER DISC CELL

$$= (9.21 + 1.02)(18.86)$$

$$= \underline{\underline{193 \text{ lbs./cell}}}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 141

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 16 OF 46

 P_M - GENERAL MEMBRANE STRESS

BOTTOM OF CENTER LIGAMENT IS CRITICAL AS IT SUPPORTS 12 CELLS. ASSUME $\frac{1}{2}$ THE WEIGHT FROM EACH CELL.

$$P = 193 \left(\frac{12}{2} \right) = 1160 \text{ lbs.}$$

$$A = (1.5)(1.5) = 2.25 \text{ in}^2$$

$$\sigma = P/A = \underline{\underline{0.52 \text{ ksi}}}$$

 $P_L + P_B$ - MAXIMUM BENDING STRESS (ASSUMING PINNED-PINNED BEAM)

LIGAMENT OF SMALLEST WIDTH (1") IS CRITICAL. TAKE ONE CELL AND CONSERVATIVELY MODEL BOTTOM 1" LIGAMENT AS A SIMPLY SUPPORTED BEAM OF UNIFORM LOADING.

$$W = 193 \text{ lb/cell} / 9.1" \leftarrow \text{CELL WIDTH}$$

$$= 21.2 \text{ lb/in}$$

$$M = \frac{Wl^2}{8} = (21.2)(9.1)^2 / 8 = 220 \text{ lb-in}$$

$$S = \frac{bl^2}{6} = (1.5)(1)^2 / 6 = .25 \text{ in}^3$$

$$\sigma = M/S = 220 / .25 = \underline{\underline{0.88 \text{ ksi}}}$$

MAXIMUM STRESS OCCURS IN THE MIDDLE OF LIGAMENT:

$$\left. \begin{array}{l} P_L = 0 \\ P_B = .88 \end{array} \right\}$$

$$P_L + P_B = 0.88 \text{ ksi}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 142

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 17 OF 46

 $P_L + P_B$ - MAXIMUM BENDING STRESS (ASSUMING FIXED-FIXED BEAM)

SAME LOADING, BUT ASSUME A FIXED-FIXED BEAM

$$M = w l^2 / 12 = (21.2)(9.1)^2 / 12 = 146.3 \text{ lb-in}$$

$$S = .25 \text{ in}^3$$

$$\sigma = .59 \text{ ksi}$$

MAXIMUM STRESS OCCURS AT THE BOTTOM LIGAMENT INTERSECTION
WITH THE CENTER LIGAMENT:

$$P_L = 0.52 \text{ ksi (MEMBRANE AT CORNER)}$$

$$P_B = 0.59 \text{ ksi}$$

From previous page

$$P_L + P_B = \underline{\underline{1.13 \text{ ksi}}}$$

WHICH GOVERNS OVER
SIMPLY SUPPORTED LIGAMENT
STRESSES.

Maximum Dead Weight Stress Intensity Summary

Stress Type	Stress Intensity (ksi)	
	Horizontal	Vertical
P_m	0.57	0
$P_L + P_B$	1.24	0.35

** NOTE

The values that appear in the table are calculated dead weight stress intensities increased by 10% to account for minimum ligament widths and spacer plate thickness.

* BEARING STRESS OF PLATE AGAINST INNER SHELL IS LOCALIZED
AND WILL BE IGNORED. SUPPORTING LIGAMENTS ARE THE PRINCIPAL
STRENGTH ELEMENTS.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 143

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 18 OF 46

4.3.3 THERMAL ANALYSIS

Thermal stresses are calculated using the ANSYS model illustrated in Figure 4.3.6.

Thermal loads are based on the spacer plate temperature distribution illustrated in Figure 4.3.5.

Stress intensity contours for elastic and plastic material properties are color plotted in Figure 4.3.8 and 4.3.9. The elastic analysis forms the basis for final results.

ELASTIC RESULTS

- **Spacer Disc Ligaments:**
The maximum thermal stress in a ligament is 31.778 ksi.
- **Perforation Cell Corner:**
The maximum thermal stress at a cell corner is 44.202 ksi.
- **Un-perforated Solid Rim:**
The maximum thermal stress in the plate rim is 56.626 ksi.

NOTE:

The Spacer Plate analytical models in this section were developed and analyzed based on a stainless steel (SA 240, Type 304) material. The Spacer Plate material given in the drawings [6] is carbon steel (SA 516, Gr. 70). However, the reduction in E (26.5 E6 vs. 27.7 E6) and the increase in the coefficient of thermal expansion (9.80 E-6 vs. 7.60 E-6) in this analysis result in higher stresses. Therefore, the analysis performed is conservative.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/07/99 PAGE: 144
SUBJECT: 4.0 ANALYSIS BY: ATS CK: SR SHT: 19 OF 46

ALLOWABLE STRESS

The supporting ligaments are the principal strength elements, requiring design qualification for primary and secondary stresses. The perforation corners and the solid rim plate edge are exposed to local secondary peak stresses, which need to be analyzed only for suitability to cyclic operation [5], which is not required/expected in the service life.

In accordance with ASME Code design procedure, the structural integrity qualification of the spacer disc is performed for the supporting ligaments only, neglecting the effects of the perforation corner discontinuities.

$$31.8 \text{ ksi} < 3S_m = 3(21.7 \text{ ksi}) = 65.1 \text{ ksi} \quad (400^\circ \text{ design temperature})$$
$$31.8 \text{ ksi} < 3S_m = 3(19.60 \text{ ksi}) = 58.80 \text{ ksi} \quad (550^\circ \text{ accident temperature})$$

Local peak stresses at the corners are only evaluated to provide information of their magnitude.

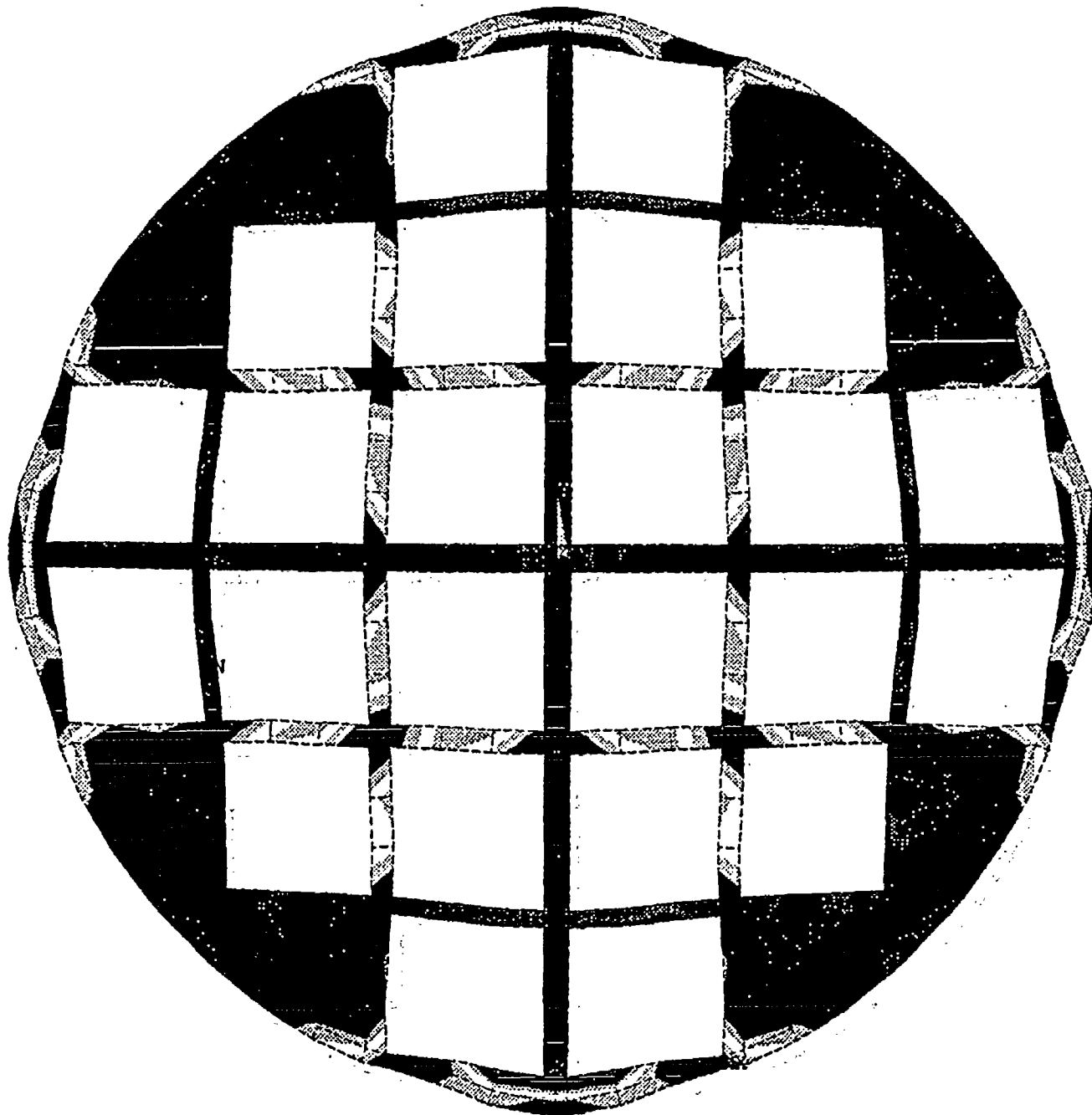
ANSYS 5.2
 FEB 11 1998..
 09:20:31
 NODAL SOLUTION
 STEP=1
 SUB =1
 TIME=1
 SINT (AVG)
 TOP
 DMX =.108076
 SMN =717.834
 SMX =56626
 SMXB=63930

717.834
 6930
 13142
 19354
 25566
 31778
 37990
 44202
 50414
 56626

FIGURE 4.3.8 :

THERMAL STRESS
 INTENSITY
 DISTRIBUTION
 (ELASTIC)

DATE: 1/7/99 PAGE: 145
 BY: AJS CK: SR BHT: 20 OF 46



SPACER DISC PLASTIC THERMAL ANALYSIS

ANSYS 5.2
 FEB 11 1998
 09:43:19
 NODAL SOLUTION
 STEP=1
 SUB =1
 TIME=1
 SINT (AVG)
 TOP
 DMX =.055907
 SMN =1935
 SMX =23458
 1935
 4327
 6718
 9110
 11501
 13893
 16284
 18676
 21067
 23458

FIGURE 4.3.9 :

THERMAL STRESS
 DISTRIBUTION
 (PLASTIC)

DATE: 1/7/79 PAGE: 146
 BY: AJS CK: SR SHT: 21 OF 46

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 147

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 22 OF 46

SPACER PLATE THERMAL GROWTHDIAMETER = 65.56" ^{worst case}CIRCUMFERENCE = $\pi \times \text{DIAMETER} = 205.96"$

← conservative

ASSUME LINEAR EXPANSION FOR SOLID PLATE:

$$\Delta L = \alpha L (T_2 - T_1)$$

$$L = 205.96"$$

instantaneous
is conservative

$$\alpha_{CS} = 7.98 \times 10^{-6}$$

$$T_2 = 1460^\circ$$

$$T_1 = 70^\circ$$

FOR CARBON STEEL:

$$\Delta L = 6.39"$$

$$L' = \Delta L + L$$

$$206.59"$$

$$d' = L'/\pi$$

$$65.76"$$

$$\text{DSC SHELL I.D.}$$

$$66.0"$$

THE SPACER DISC TOTAL THERMAL GROWTH IS LESS THAN THE $\frac{1}{2}$ " GAP PROVIDED BETWEEN THE PLATE AND DSC SHELL. OVER-CONSERVATIVE CALCULATION: (1.) INSTANTANEOUS COEFFICIENT OF THERMAL EXPANSION USED (2.) AT 450°F (3.) FOR A SOLID PLATE.

SPACER DISC THERMAL GROWTH WAS ORIGINALLY CHECKED IN NUTECH CALC. PACKAGE WHICH REPORTED A GROWTH MUCH LESS THAN THE GAP. [REF. 5]

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/07/99 PAGE: 148
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 23 OF 46

4.3.4 SEISMIC ANALYSIS

The total spacer plate seismic stresses are calculated as the absolute sum of the vertical and horizontal stresses per the topical report [3, (page 3.51)]. The seismic design loads are:

1.0 g vertical
1.5 g horizontal

Stresses due to a vertical seismic loading are equal to horizontal deadweight stresses.
Stresses due to a horizontal seismic loading are conservatively equal to:

$$1.5 \times (\text{Vert. DW} + \text{Horiz. DW})$$

Maximum Seismic Stress Intensities

Stress Type	Stress Intensity (ksi)		
	Horizontal	Vertical	Total
PM	0.86	0.57	1.43
PL + PB	2.39	1.24	3.63

NOTE:

The Spacer Plate analytical models in this section were developed and analyzed based on a stainless steel (SA 240, Type 304) material. The Spacer Plate material given in the drawings [6] is carbon steel (SA 516, Gr. 70). However, the reduction in E (26.5 E6 vs. 27.7 E6) and the increase in the coefficient of thermal expansion (9.80 E-6 vs. 7.60 E-6) in this analysis result in higher stresses. Therefore, the analysis performed is conservative.

The seismic load used in this analysis is more conservative than the load used on pg. 92 of this calculation.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 149

SUBJECT: 4.0 ANALYSIS

BY: AJS

CK: SR

SHT: 24 OF 46

4.3.5 HANDLING ANALYSIS

The spacer plate is not loaded during normal or off-normal HSM transfer operations. Therefore, the only loads to consider are during transport.

Maximum Handling Stress Intensities

Stress Type	Stress Intensity (ksi)			
	Case 1 ± 1g Vert.	Case 2 ± 1g Axial	Case 3 ± 1g Long.	Case 4 ± 1/2g Vert. ± 1/2g Axial ± 1/2g Long.
PM	± 0.57	0	± 1.14	± 0.86
PL + PB	± 1.24	± 0.35	± 2.48	± 2.04

- 1-g vertical stress equivalent to the deadweight stress for DSC oriented horizontally
- 1-g axial stress equivalent to the deadweight stress for DSC oriented vertically
- 1-g longitudinal stress equivalent to the deadweight stress for DSC oriented horizontally multiplied by a factor of 2.0 to account for the DSC resisted by one rail

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 150

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 25 OF 46

LONGITUDINAL LOADING

PROBLEM

- THE DSC IS DESIGNED WITH A 0.5" GAP BETWEEN THE SUPPORT RODS AND SHELL BOTTOM. LONGITUDINAL LOADING (SEISMIC OR NORMAL TRANSPORT) MAY RESULT IN DIFFERENTIAL DISPLACEMENT OF THE SUPPORT ROD THAT CLOSES THE GAP, (SEE FIG. 4.3.10) DEFORMING THE PLATE.

EVALUATION

- IMPOSE A 0.5" DISPLACEMENT ON ONE SET OF ADJACENT SUPPORT RODS WHILE HOLDING THE OTHER TWO RODS FIXED.
- ASSUME
 1. AN EQUIVALENT THICKNESS FOR A SOLID, NON-PERFORATED SPACER PLATE.

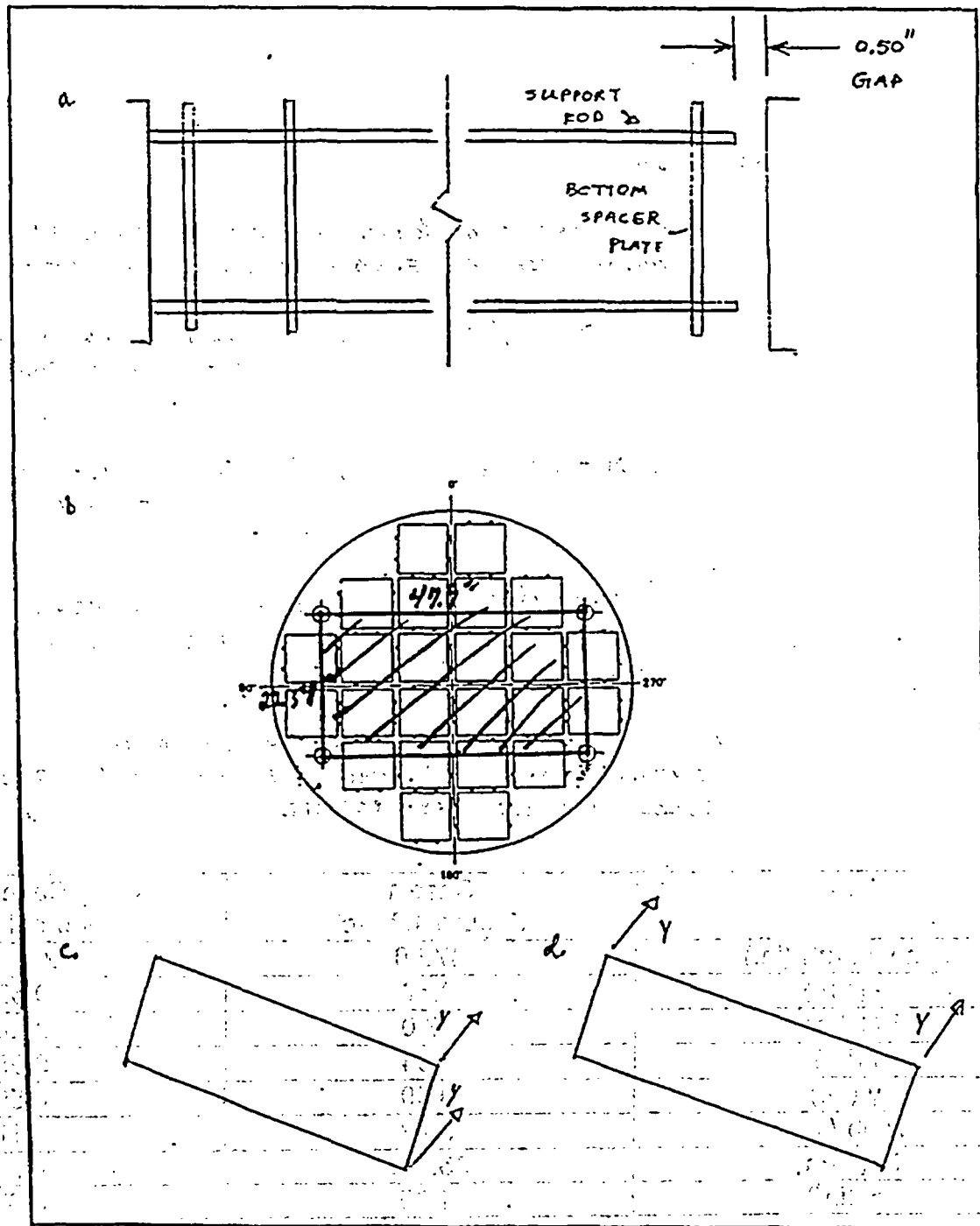
$$V_{\text{SOLID}} = \left[\left(\pi \left(\frac{d}{2} \right)^2 \right) - 24 (9.1)^2 \right] t = 2073 \text{ in}^3$$

$$(d = 65.5", t = 1.53")$$

$$t_{\text{eq}} = V_s / \pi \left(\frac{d}{2} \right)^2 = 0.62"$$

2. THE RECTANGULAR PORTION OF PLATE BETWEEN THE SUPPORT RODS (47.9" x 27.34") BEHAVES AS A FIXED-GUIDED BEAM.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/07/99PAGE: 151SUBJECT: 4.0 ANALYSISBY: AJS CK: SRSHT: 26 OF 46FIGURE 4.3.10 : SPACER DISK RESPONSE TO LONGITUDINAL
LOADING

- a. SCHEMATIC
- b. FIXED-GUIDED BEAM
- c. CASE 1
- d. CASE 2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/07/99 PAGE: 152
 SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 27 OF 46

- SOLUTION

FROM ROARK AND YOUNG (TABLE 3, CASE 2b) [15],
 FORMULAS FOR A FIXED-GUIDED BEAM ARE:

$$y = \frac{wl^4}{24EI} \quad , \quad y = \text{RELATIVE DISPLACEMENT OF THE SUPPORT RODS.}$$

$$M = \frac{wl^2}{3} \quad , \quad M = \text{MAXIMUM MOMENT LOADING IN THE PLATE}$$

$$\sigma = \frac{M}{S} \quad , \quad \sigma = \text{MAXIMUM BENDING STRESS IN THE PLATE}$$

TWO EVALUATIONS ARE PERFORMED BASED ON THE CONFIGURATIONS IN FIGURE 4.3.10-c AND d. THE TABLE BELOW PROVIDES THE RESULTS.

Item	Case 1 (Figure 4.3. -c)	Case 2 (Figure 4.3. -d)
plate length (in.)	47.90	27.34
t_{eq} (in.)	0.62	0.62
E (10 ⁶ psi)	27.0	27.0
I (in ⁴)	0.54	0.95
y (in.)	0.50	0.50
w (lb / in)	33.2	551
M (lb-in.)	25,418	137,262
S (in ³)	1.75	3.07
σ (ksi)	14.5	44.7
Level D allowable stress (ksi)	70	70

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/07/99 PAGE: 153SUBJECT: 4.0 ANALYSISBY: AJS CK: SL SHT: 28 OF 46

THE ACTUAL LOADING REQUIRED TO PRODUCE 0.5" DISPLACEMENT:

$P = 9wl$, 9 SPACER DISKS
w and l ARE PROVIDED IN TABLE

CASE 1 : $P = 14312 \text{ lbs.}$ CASE 2 : $P = 135579 \text{ lbs.}$

CONSERVATIVELY, THE WEIGHT OF THE BASKET AND FUEL IS 80,000 lbs. MAXIMUM LOADING THAT CAN BE PRODUCED UNDER SEISMIC OR NORMAL TRANSPORT CONDITIONS IS 2g, OR 160,000 lbs. FOR CASE 1, THE 0.5" DISPLACEMENT CAN BE ACHIEVED, BUT THE STRESS IS WELL BELOW THE ALLOWABLE. FOR CASE 2, THE 0.5" DISPLACEMENT CANNOT BE ACHIEVED AND THE STRESS WILL ALSO BE WELL BELOW ALLOWABLE.

- CONCLUSION

THE LONGITUDINAL RESPONSE OF THE BASKET TO SEISMIC AND NORMAL TRANSPORT LOADING DOES NOT RESULT IN A POTENTIAL SAFETY ISSUE.

NOTE:

The Spacer Plate analysis performed above was developed based on a stainless steel (SA 240, Type 304) material. The Spacer Plate material given in the drawings [6] is carbon steel (SA 516, Gr. 70). However, the reduction in E (26.5 E6 vs. 27.7 E6) and the increase in the coefficient of thermal expansion (9.80 E-6 vs. 7.60 E-6) in this analysis result in higher stresses. Therefore, the analysis performed is conservative.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 154

SUBJECT: 4.0 ANALYSIS

BY: AJS

CK: SR

SHT: 29 OF 46

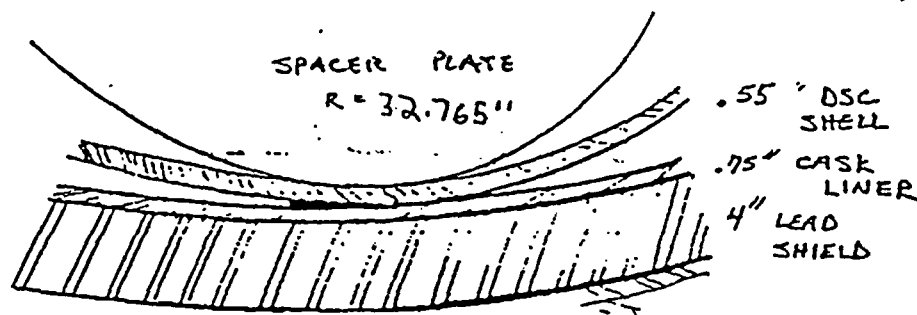
4.3.6 ACCIDENTAL HORIZONTAL DROP ANALYSIS

The Spacer Plates have been analyzed for a 75g side drop in Appendix D of the original NUTECH calculation package [3]. The plates were analyzed using the ANSYS finite element program. Results and method of analysis are provided below.

MODEL

When the DSC is oriented in the horizontal position, the spacer plate carries the fuel rods and guide sleeves (193 lbs. per cell - Section 4.3.2). The resultant stress intensities in the spacer disc are dependent on the contact area, or bearing of the plate edge on the DSC shell inner surface. The plate rests inside the DSC shell, which rests inside the transfer cask shell as shown below.

SPACER DISC O.D. = 65.53"
DSC I.D. = 66.0"
DSC O.D. = 67.1"
CASK I.D. = 68.0"

NOTE:

The Spacer Plate analytical models in this section were developed and analyzed based on a stainless steel (SA 240, Type 304) material. The Spacer Plate material given in the drawings [6] is carbon steel (SA 516, Gr. 70). However, the reduction in E (26.5 E6 vs. 27.7 E6) and the increase in the coefficient of thermal expansion (9.80 E-6 vs. 7.60 E-6) in this analysis result in higher stresses. Therefore, the analysis performed is conservative.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/07/99PAGE: 155SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 30 OF 46

The vertical displacements of the spacer disk, DSC and transfer cask are dependent on the stiffness of the loaded structural components.

It is assumed that the 4" thick transfer cask lead liner will control vertical deflection. This is a reasonable assumption since lead has a stiffness of ten times "softer" ($E = 2E6$ psi) than steel.

With this assumption the plate is effectively modeled using spring and gap elements. See following page for an illustration of the ANSYS model.

SPACER DISC

The spacer disc mesh is the same as that used for our dead weight and thermal analyses, and is illustrated in Figure 4.3.11. The nodal mesh resolution effectively produces anticipated results. The plate is pinned at the rod locations. Bi-linear material properties at reference temperature of 450°F and 5% tangent modulus is used.

LEAD SPRING ELEMENTS

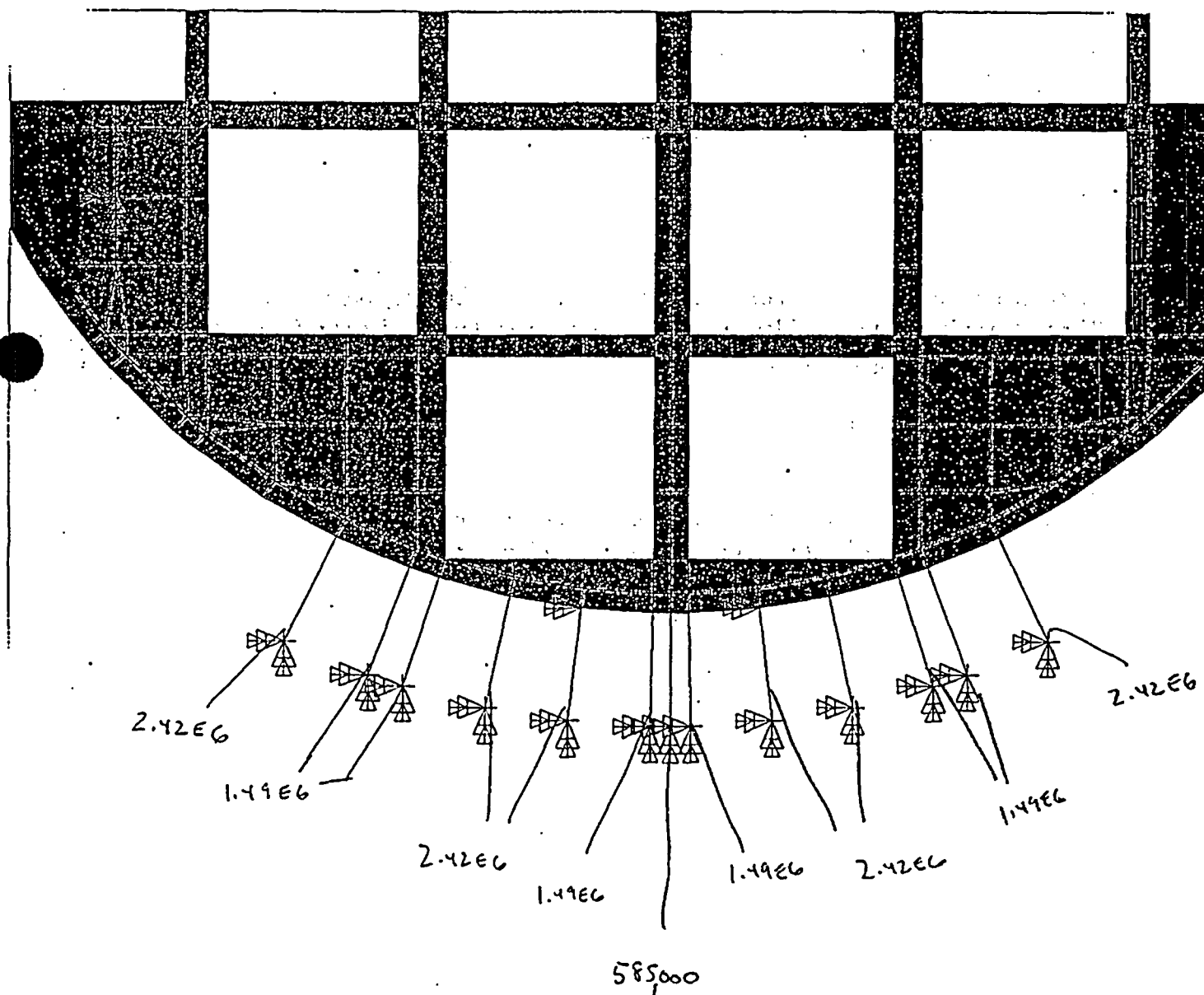
The 4" thick transfer cask lead liner is idealized as a spring. Spring elements, having equivalent lead stiffnesses, are located in the pattern of nodes along the spacer disk outer bottom edge. The lead stiffness ($k = EA / L$) is dependent on the effective area of each lead spring/node. $E = 2.0 \times E6$, $L = 4"$ (depth of lead liner), and $A = t \times l$, where t = the plate thickness (1.5") and l = the effective width based on appropriate chord lengths between each spacer plate node.

GAP ELEMENTS

A double gap condition exists between the spacer plate, DSC shell, and cask shell. The gap element is conservatively calculated assuming the DSC shell has deflected to the inner liner of the cask. See NUTECH calculation package [3]. Gap calculations utilize nominal dimensions of the components to determine the gaps, which is an adequate assumption for the spacer disc evaluation.

FIGURE 4.3.11**Horizontal Drop ANSYS Model**

This is a close-up cut of the spacer disc. Node location, lead spring location, and value of each lead spring constant can be seen.



CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 157

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 32 OF 46

RESULTS

The critical stress intensities for a 75g horizontal drop based on the plastic ANSYS analysis just described are [Appendix D of Ref. 3]:

supporting ligaments	$P_L + P_B$	41.1 ksi (node 45)
Plate cell corners	$P_L + P_B$	37.9 ksi (node 70)
plate solid rim	$P_L + P_B$	42.5 ksi (node 4)

The numbers reported in this table have been factored up by 25% for the following two reasons:

1. The analysis was performed based on a fuel rod weight of 1300 lbs. per assembly plus the weight of the guide sleeves. The actual fuel weight is 1450 lbs. per assembly, which represents a 12% load increase. To account for the load increase, the reported disc stresses shall be factored up by 12%. Although the drop model includes gaps and elastic-plastic material properties, linearly scaling up the stresses is likely to be conservative because the gap between the spacer disc and DSC shell would close with increasing load, thus increasing the bearing area.
2. The analysis is based on a DSC flat surface drop with spacer discs oriented at 0°. An evaluation considering a DSC side drop on one rail and an evaluation considering disc orientation, provided on the following pages, indicate that stresses are approximately 10% greater than computed stresses for a flat side drop with the spacer disc oriented at 0°. Therefore, the reported stress intensities should be factored up by 10% to account for a drop on one rail and worst case drop orientation.

The allowable stress for a Level D plastic analysis is equal to:

$$0.9S_u = 0.9(70.0 \text{ ksi}) = 63.0 \text{ ksi} \quad (460^\circ \text{ F design temperature})$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/07/99 PAGE: 158
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 33 OF 46

SIDE DROP ON ONE RAIL

The drop on a single cask rail results in a point impact that may result in a more severe spacer disc structural response.

An evaluation has been performed comparing spacer disc response to a drop on a single cask rail (18°) to response to a drop on a flat surface (0°). The drop models include the spacer plate, DSC shell, cask liner, and lead shielding. The study demonstrates that the use of the cask rail in the model produces only a marginal impact on the overall spacer disc structural response:

1. The overall response of the disc under the two drop loads, show stress intensity magnitudes that are similar for the majority of the disc.

Location	Drop on Rail (approx. stress, ksi)	Drop on a flat surface (approx. stress, ksi)
Contact Point	60	52
Ligament thru 1 st row	30	30
Ligament thru 2 nd row	30	30
Ligament thru 3 rd row	30	27
Ligament thru 4 th row	25	22
Ligament thru 5 th row	20	15
At 90° edge	15	10
At 270° edge	15	10

2. The maximum stress intensity is higher for the drop on a single rail; however this increase is a very localized stress only.
3. The stress distribution at the impact area is slightly higher for the drop on the single cask rail by approximately 10%.
4. The location of maximum stress intensity across a section is at the bottom of the disc below the 1st row of holes in both cases and the results are very comparable with averages of 30 ksi and bending across the ligament of 20 ksi(at the hole) to 50 ksi (at the disc edge).

The above evaluation has been performed using a similar 2" thick 24P spacer disc [46]. The evaluation demonstrates that the use of the cask rail in the model produces a marginal impact on the overall spacer disc structural response. Therefore, the assumption of excluding the single cask rail drop is reasonable as it produces only a marginal stress intensity increase in the spacer disc.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

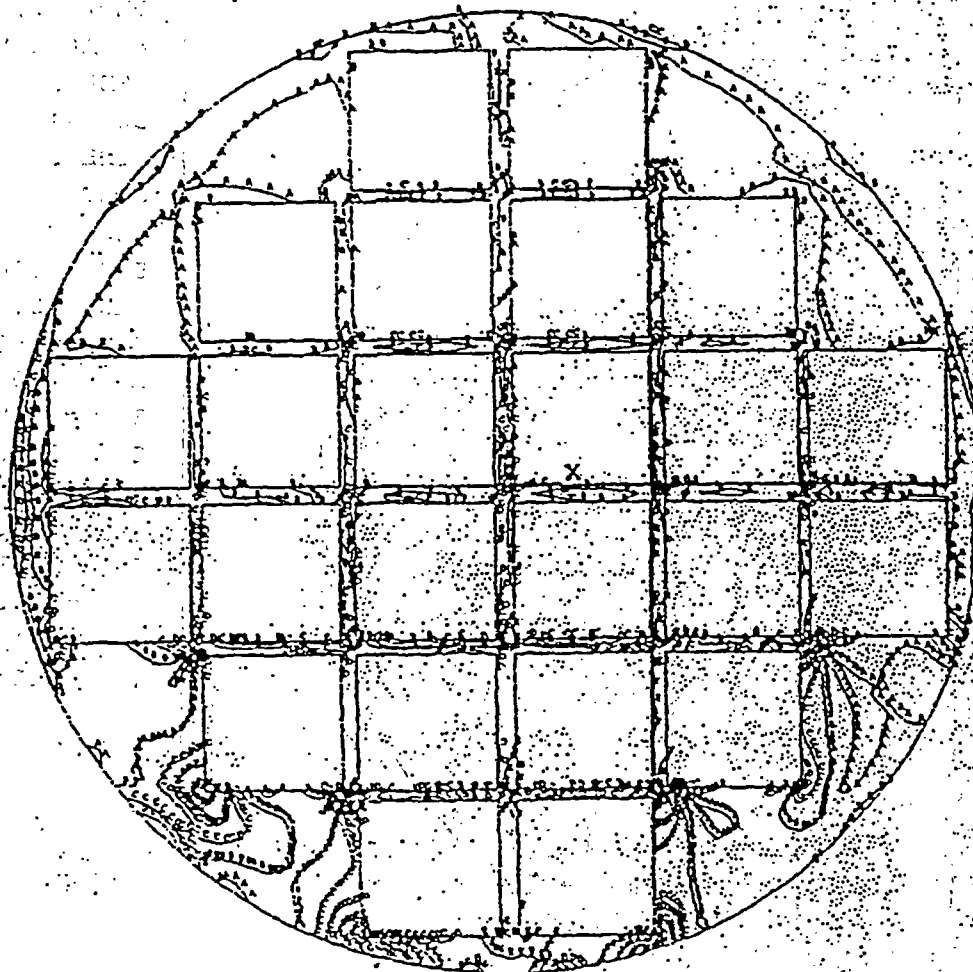
PAGE: 159

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 34 OF 46

FIGURE 4.3.12 [46]

Stress Intensity Plot for Spacer Disc Drop on One Rail



ANSYS 5.3
FEB 27 1998
15:40:21
PLOT NO. 1
NODAL SOLUTION
STEP=2
SUB =1
TIME=2
SINT (AVG)
TOP
DMX =1.154
SMN =288.786
SMX =64158
A =3837
B =10934
C =18030
D =25127
E =32223
F =39320
G =46416
H =53513
I =60610

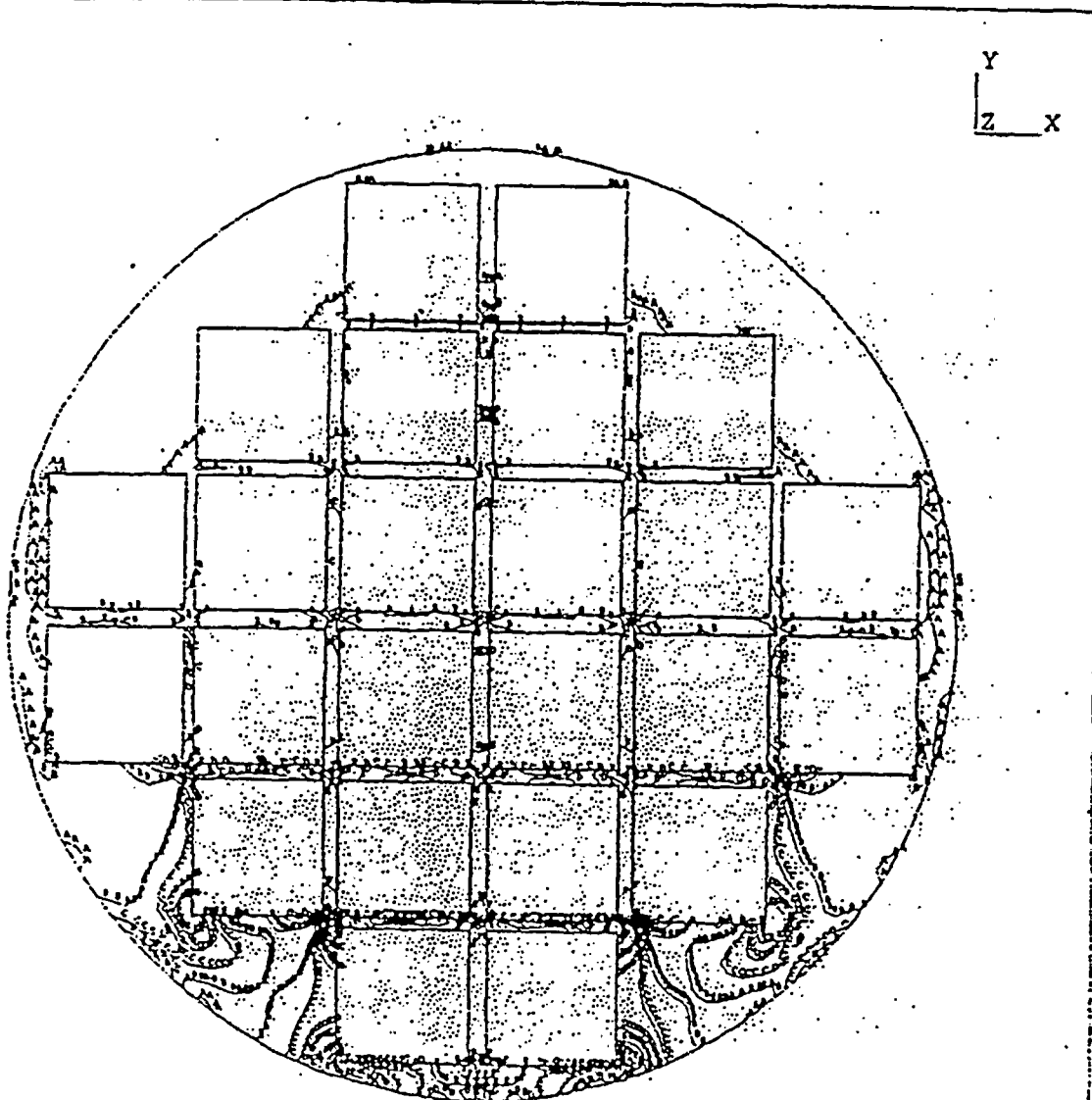
Load Step 2 - 24P DSC - 75g - 18.5 Degree Drop On Cask Rails

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/07/99PAGE: 160SUBJECT: 4.0 ANALYSISBY: AJSCK: SRSHT: 35 OF 46

FIGURE 4.3.13 [46]

Stress Intensity Plot for Spacer Disc Drop on Smooth Cask Surface



ANSYS 5.3
FEB 27 1998
15:15:59
PLOT NO. 1
NODAL SOLUTION
STEP=2.
SUB =1
TIME=2
SINT (AVG)
TOP
DMX =1.044
SMN =25.433
SMX =55387
A =3101
B =9252
C =15404
D =21555
E =27706
F =33857
G =40009
H =46160
I =52311

Load Step 2 - 24P DSC - 75g - 0 Degree Drop On Cask Rails

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 161

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SK SHT: 36 OF 46

DROP ORIENTATION

This summary provides a discussion of the effects of spacer disc orientation during a side drop. The purpose of this discussion is to describe the significance of the drop orientation on the structural response and qualification of the spacer disc. The discussion presented here utilizes the evaluation of a similar 1.25" thick 24P spacer disc [47].

The spacer disc dimensions are:

- Diameter = 65.5"
- Thickness = 1.25"
- Material = SA-537, Class 2

The basket assembly has the same 24P fuel grid, but it contains more discs. The geometry of the disc is basically the same. Drop loads at 0°, 18°, and 45° spacer disc orientations were looked at. The drop orientations are shown in the attached figures. The applied loading was a 75g equivalent static loading using an elastic analysis of the spacer disc. The results of the different drop cases are:

drop orientation	P_M	$P_L + P_B$
0°	50.4 ksi	70.6 ksi
18°	40.5 ksi	76.2 ksi
45°	36.6 ksi	78.3 ksi

Based on the study performed for the 1.25" spacer discs, the following conclusions can be drawn relative to the impact of drop orientation on the structural response of the 1.5" spacer discs:

1. The maximum membrane stress intensity occurs for the 0° drop orientation. All other drop orientations are enveloped by this orientation.
2. The maximum membrane + bending stress intensity occurs at the 45° drop orientation. However, all other orientations are within 10% of this maximum result.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 162

SUBJECT: 4.0 ANALYSIS

BY: AJS

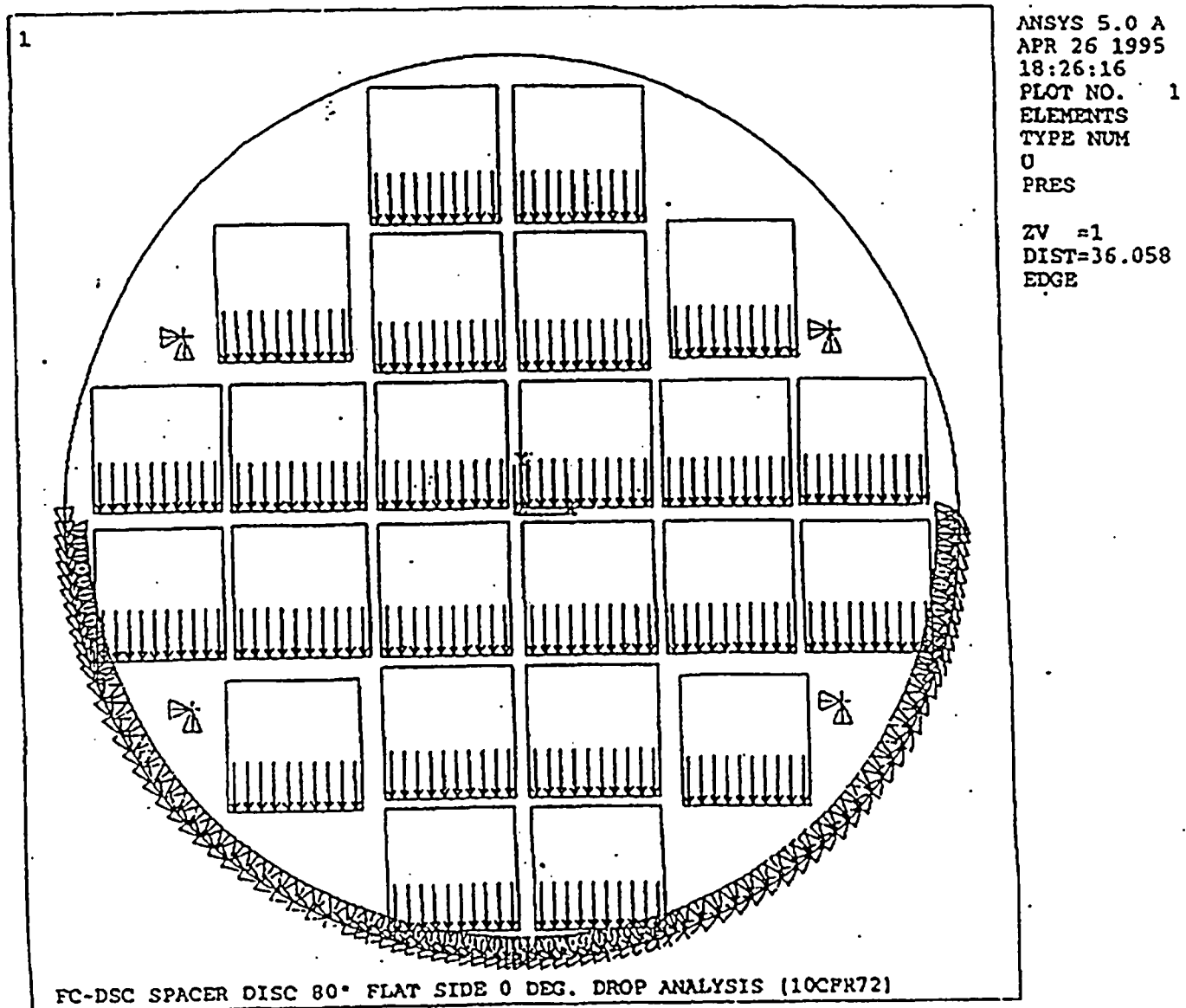
CK: SR

SHT: 37 OF 46

Therefore, the drop orientation does have an effect on the spacer disc results. Based on this study, the qualification for the spacer disc can be demonstrated by using the membrane stress intensity results obtained in 0° drop case, and by using the membrane + bending stress intensity results obtained in 0° drop case factored up by 10%.

FIGURE 4.3.14 [47]

Spacer Disc Flat Side Drop Pressure and Boundary Conditions (0°)



CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 163

SUBJECT: 4.0 ANALYSIS

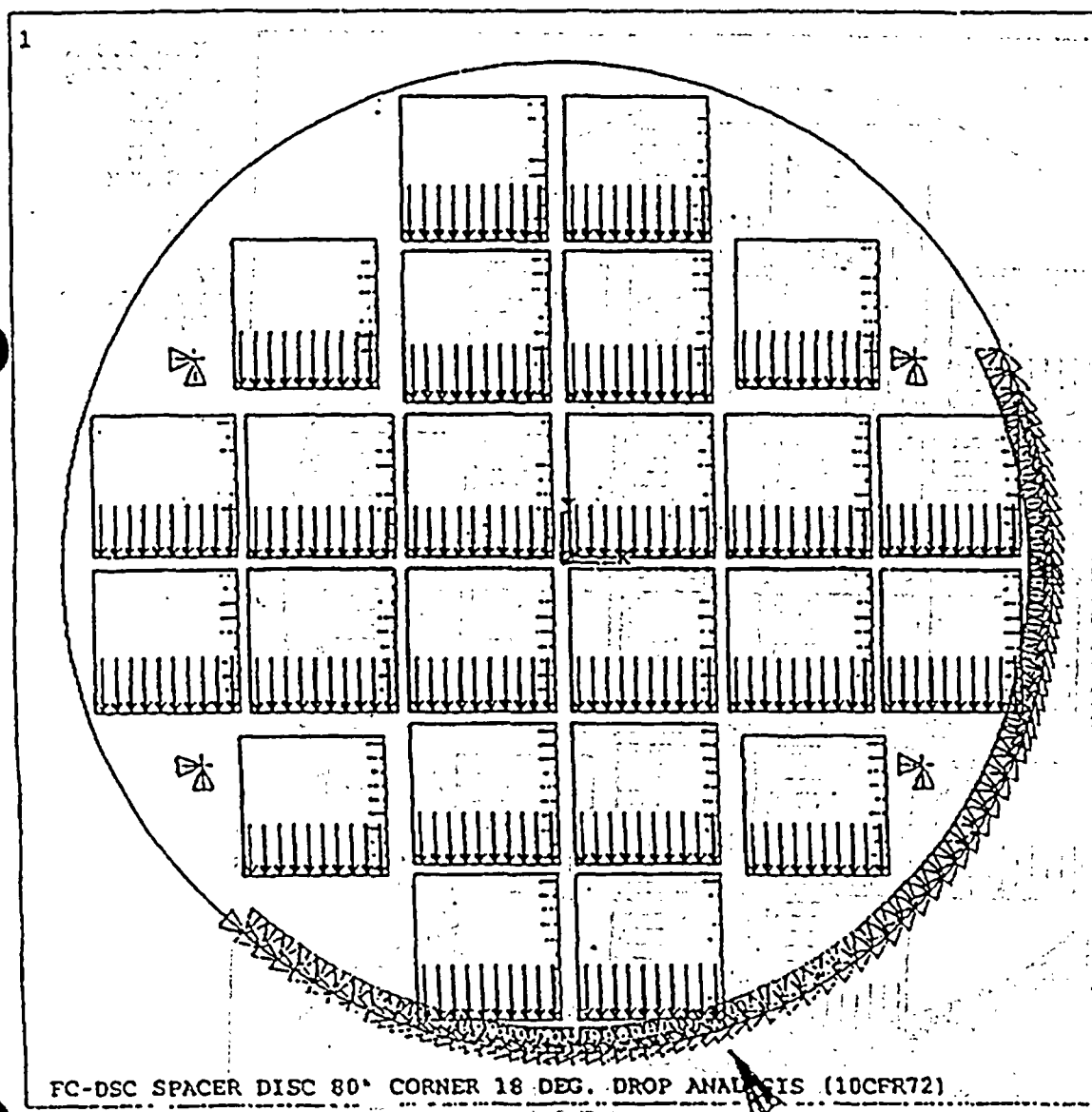
BY: AJS

CK: SR

SHT: 38 OF 46

FIGURE 4.3.15 [47]

Spacer Disc Flat Side Drop Pressure and Boundary Conditions (18°)



ANSYS 5.0 A
APR 25 1995
07:37:23
PLOT NO. 1
ELEMENTS
TYPE NUM
U
PRES

ZV =1
DIST=36.058
EDGE

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

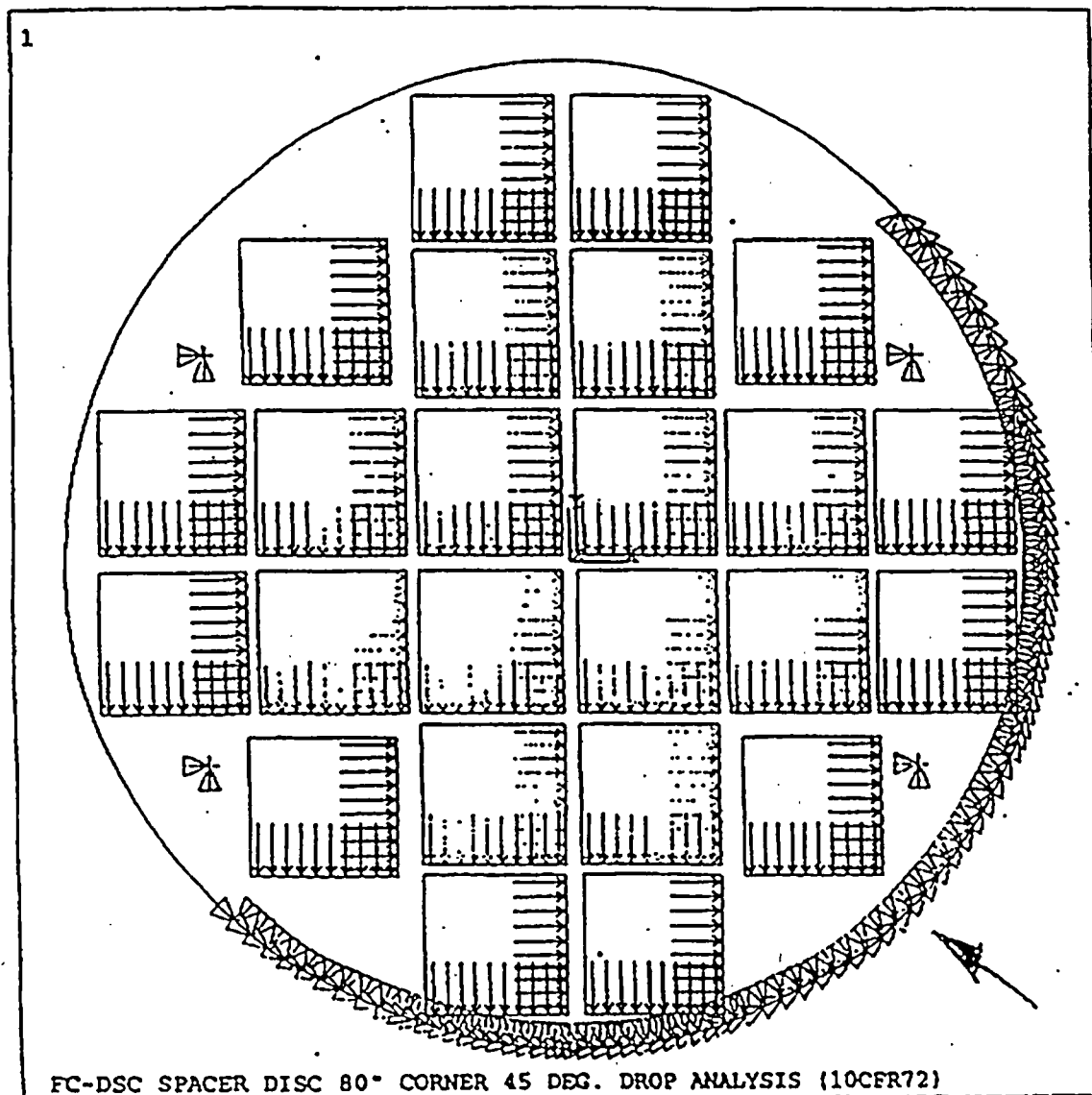
PAGE: 164

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 39 OF 46

FIGURE 4.3.16 [47]

Spacer Disc Flat Side Drop Pressure and Boundary Conditions (45°)



ANSYS 5.0 A
APR 26 1995
19:30:38
PLOT NO. 1
ELEMENTS
TYPE NUM
U
PRES
ZV =1
DIST=36.058
EDGE

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/07/99

PAGE: 165

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 40 OF 46

PLATE BUCKLING

In plane and out of plane buckling of the spacer plate supporting ligaments was checked on page 3.71 of the NUTECH calculation package [3]. These calculations were revised in [30] to account for an increased fuel assembly weight. The in plane buckling safety factor is 10.4, well above the 1.5 required, and out of plane buckling resistance is adequate.

PUNCHING SHEAR

The DSC shell is backed by the cask body in a drop event. Therefore, the potential for punching shear in the shell due to the spacer disc is not a realistic failure mode. The shell will experience bearing stresses; however, there is a geometric constraint to prevent a punching shear failure.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/11/99 PAGE: 166
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 41 OF 46

4.3.7 ACCIDENTAL VERTICAL DROP ANALYSIS

A coupled ANSYS finite element model of the spacer disc and the support rod was used to analyze the spacer disc vertical drop. The model consists of a one quarter symmetric portion of the bottom spacer disc and one of four support rods modeled from the bottom of the rod up to the second spacer disc from the bottom. The spacer disc is modeled with elastic 3D shell elements and the support rod with 3D brick elements. The model was analyzed for a 75g vertical drop. The only load acting on all nine spacer discs during the vertical drop is the 75g deceleration of the disc self weight. Therefore the results of the analysis are applicable to all nine discs.

A plot of the model with boundary conditions is shown in Figure 4.3.17. The support rod is fixed at the location of the second spacer disc and appropriate symmetry boundary conditions are applied at the disc cut edges. The model is decelerated at 75g's in the positive Z direction, which represents a top drop condition (bottom drop loading is the same but in the opposite direction, so only the top drop is analyzed). The somewhat coarse meshing of the solid rod is acceptable because this model is not used to evaluate rod stresses; the rod is included in the model only to represent rod stiffness as the disc and rod deform during the drop loading. The analysis is performed with carbon steel (SA516 Gr. 70) disc material properties at 450°F and stainless steel (SA479 Type 304) rod material properties at 400°F. The ANSYS input file is provided in Appendix A.

An elastic analysis was performed and the results of the analysis are shown in Figures 4.3.18 through 4.3.20. Figure 4.3.18 shows the stress contour at 75g's. The maximum stress intensity on the spacer disc is 24.3 ksi at node 391 (see stress output listing in Appendix A). A somewhat higher stress (30.9 ksi) appears in the contour plot, but this stress occurs on the support rod, which is not being evaluated in this analysis. A close-up of the maximum stress location is

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/11/99 PAGE: 167
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 42 OF 46

shown in Figure 4.3.19. Note that the stresses throughout the plate are below yield. The peak stress in the rod is above yield, but only at two highly localized points. Therefore, it is reasonable to conclude that the rod maintains primarily elastic behavior and the elastic analysis approach is acceptable.*

Because the spacer disc and rod maintain primarily elastic behavior during the vertical drop, the spacer disc deformation is minimal. A contour plot of inward (X direction) spacer disc deflection is shown in Figure 4.3.20. The plot indicates that the maximum inward deflection is 0.0013". This deflection is far too small to cause pinching of the guide sleeves during an accidental drop, so no fuel retrieval difficulties will occur due to spacer disc deformation.

Code Check (conservatively use max. stress intensity for membrane and membrane plus bending):

$$P_m = 24.3 \text{ ksi} < 0.7 S_u = 49 \text{ ksi}$$

$$P_m + P_b = 24.3 \text{ ksi} < 0.9 S_u = 63 \text{ ksi}$$

Therefore the spacer disc stresses meet code requirements for the accidental vertical drop load condition.

* Changing the Design temperature to 460 will reduce the E of the materials slightly, but not enough to warrant or require a new ANSYS run.

NOTE: VERTICAL DROP STRESS INTENSITIES ARE NOT CRITICAL. SIDE DROP STRESS INTENSITIES ARE GREATER, AND THEREFORE GOVERN THE LOAD COMBINATION TABLES IN SECTION 5.0 FOR BOTH GENERAL MEMBRANE (P_m) AND MEMBRANE + BENDING ($P_m + P_b$).

HABGE-01/99-0745, Revision 2

DATE: 1/11/99 PAGE: 168
BY: AJS CK: GR SHT: 43 OF 46

ANSYS 5.2
JAN 11 1999
13:52:26
ELEMENTS
MAT NUM
U
ROT

XV = -.8805
YV = .397
ZV = -.2591
*DIST=17.54
*XF =12.724
*YF =11.37
*ZF =6.388
A-ZS=-96.47
PRECISE HIDDEN

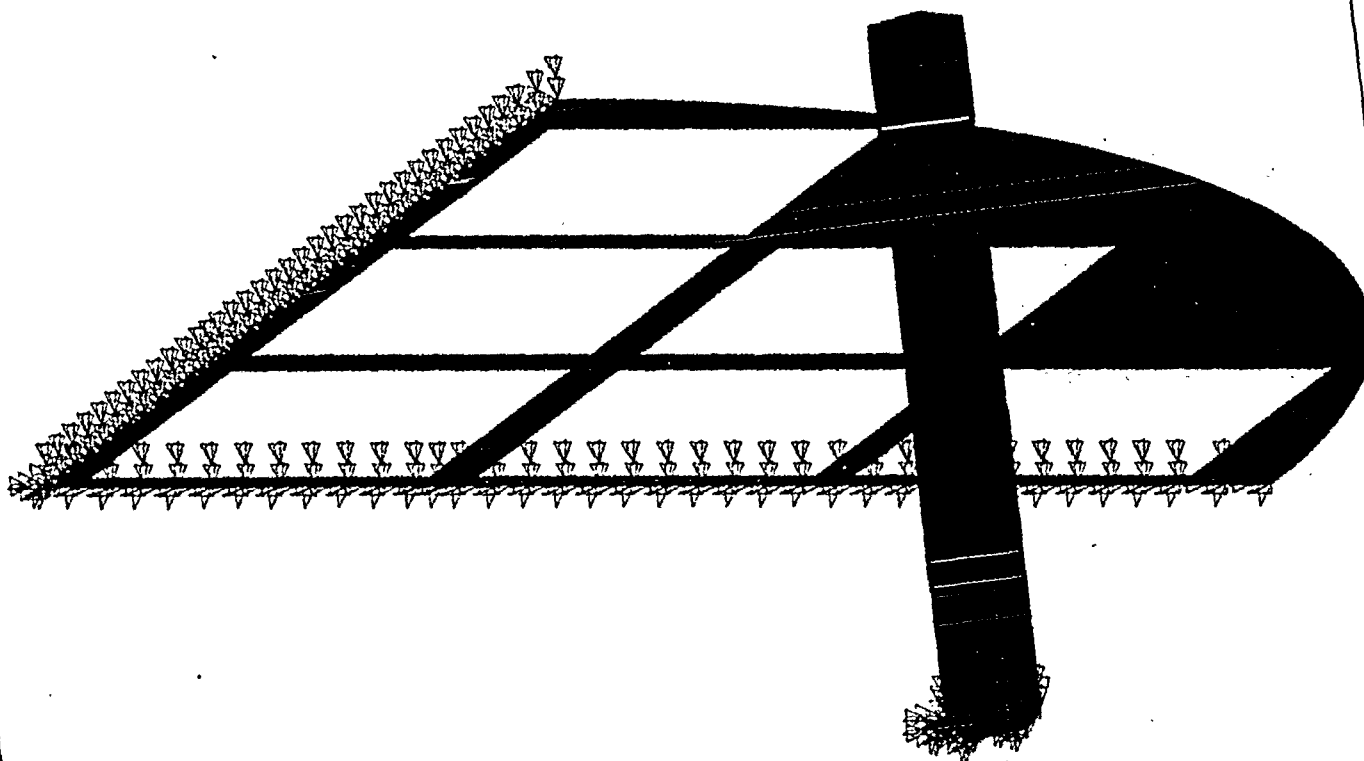
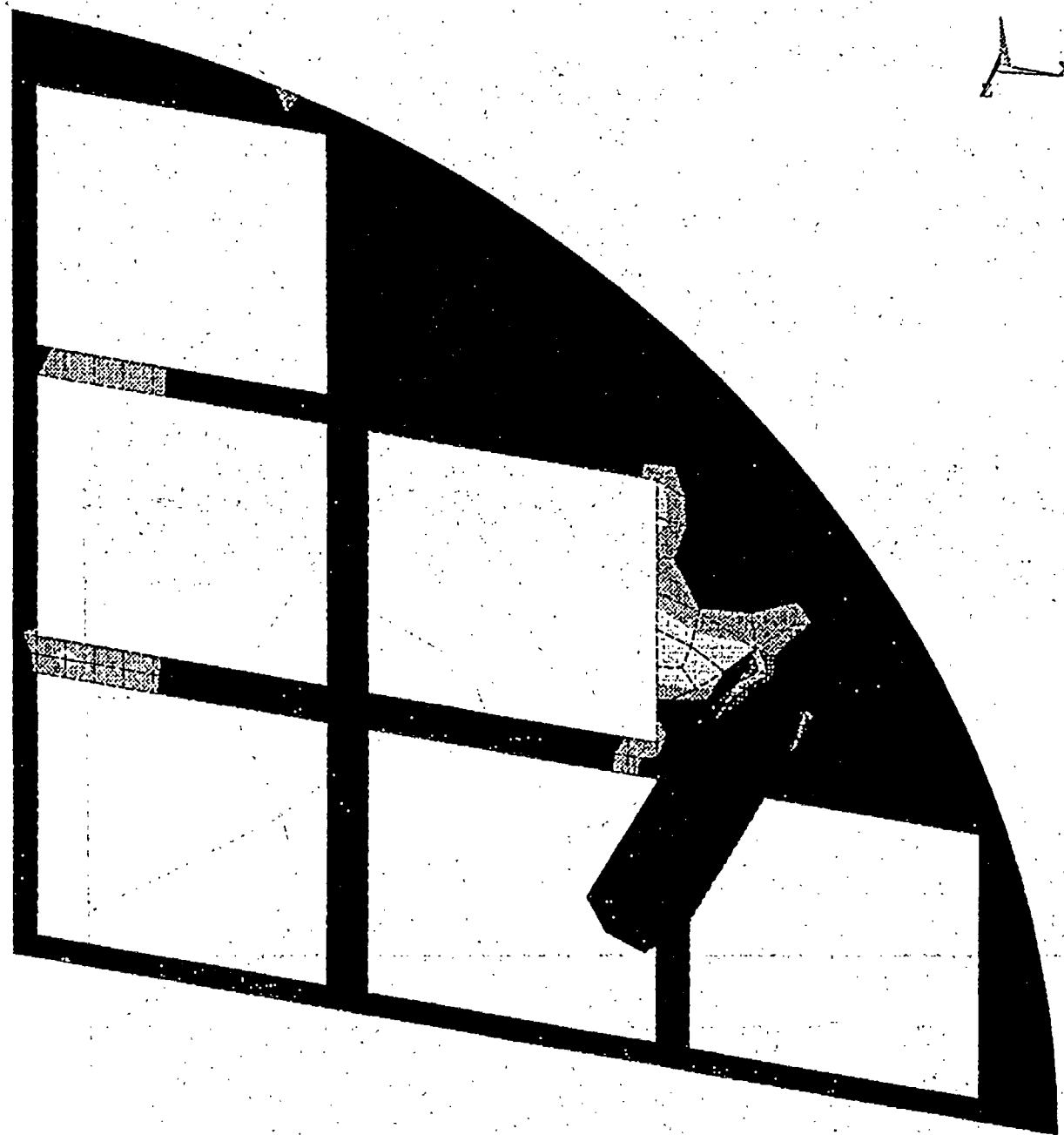


FIGURE 4.3.17
SPACER DISC AND ROD MODEL



ANSYS 5.2
 JAN 6 1999
 10:46:31
 NODAL SOLUTION
 STEP=1
 SUB =1
 TIME=1
 SINT (AVG)
 TOP
 DMX =.246188
 SMN =15.985
 SMX =30876
 SMXB=55171

XV =1
 YV =2
 ZV =3
 *DIST=18.586
 *XF =15.49
 *YF =16.33
 *ZF =5.025
 PRECISE HIDDEN
 15.985
 3445
 6874
 10303
 13732
 17160
 20589
 24018
 27447
 30876

FIGURE 4.3.18 - STRESS CONTOUR

SPACER DISC AND ROD MODEL - 75g VERTICAL DROP

DATE: 1/11/99 PAGE: 170

BY: AJS CK: SR SH: 45 OF 46

ANSYS 5.2
JAN 8 1999
14:55:35
NODAL SOLUTION
STEP=1
SUB =1
TIME=1
SINT (AVG)
TOP
DMX =.246188
SMN =15.985
SMX =30876
SMXB=55171

XV =1
YV =2
ZV =3
*DIST=3.248
*XF =22.505
*YF =13.573
*ZF =4.504
PRECISE HIDDEN
15.985
3445
6874
10303
13732
17160
20589
24018
27447
30876

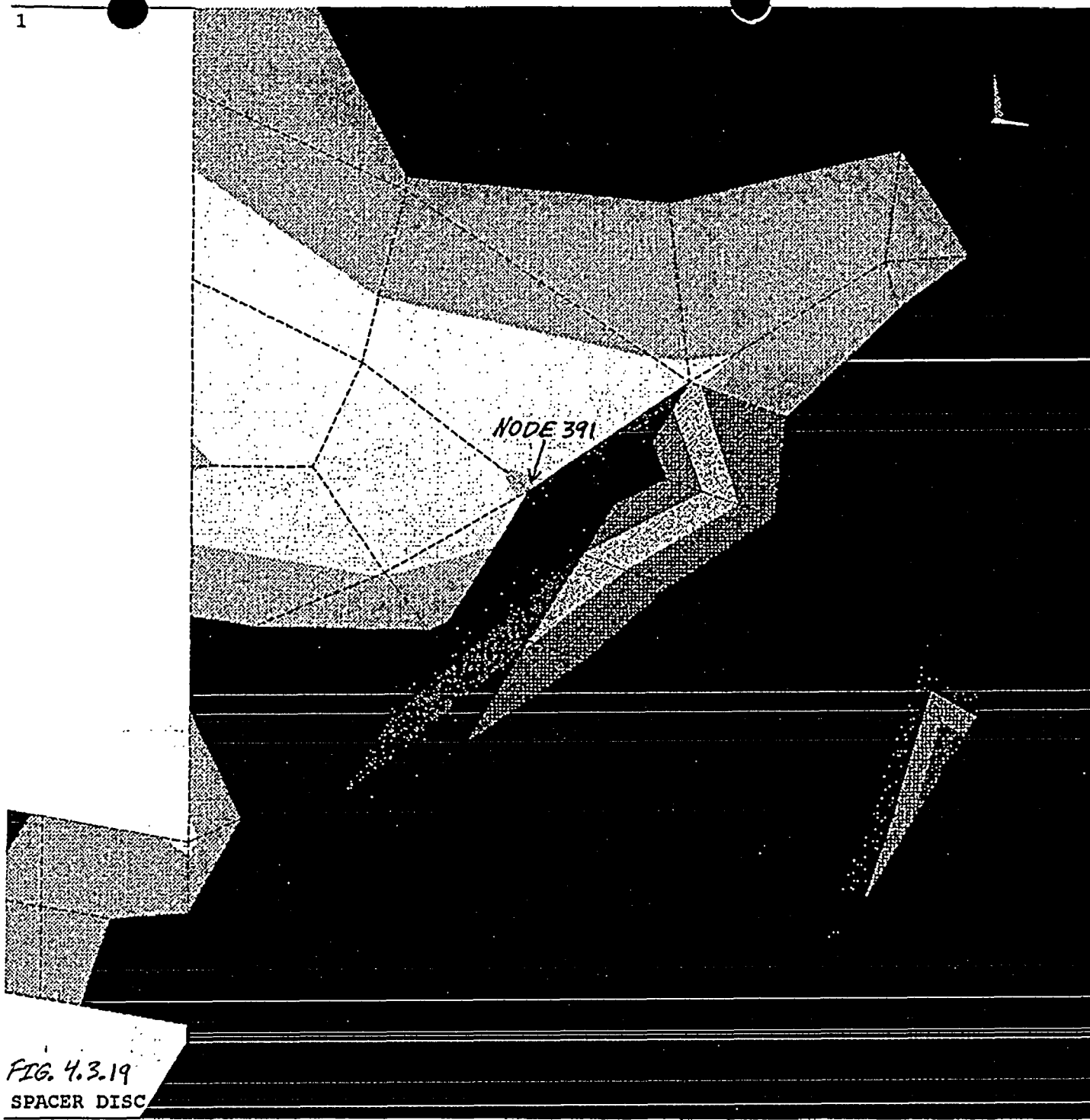


FIG. 4.3.19
SPACER DISC

ANSYS 5.2
JAN 11 1999
14:38:19
NODAL SOLUTION
STEP=1
SUB =1
TIME=1
UX
TOP
RSYS=0
DMX =.246188
SEPC=22.999
SMN =-.001286
SMX =.784E-05

ZV =1
*DIST=19.447
*XF =15.705
*YF =15.122
*ZF =4.782

PRECISE HIDDEN

■	-.001286
■	-.001142
■	-.998E-03
■	-.854E-03
■	-.711E-03
■	-.567E-03
■	-.423E-03
■	-.280E-03
■	-.136E-03
■	.784E-05

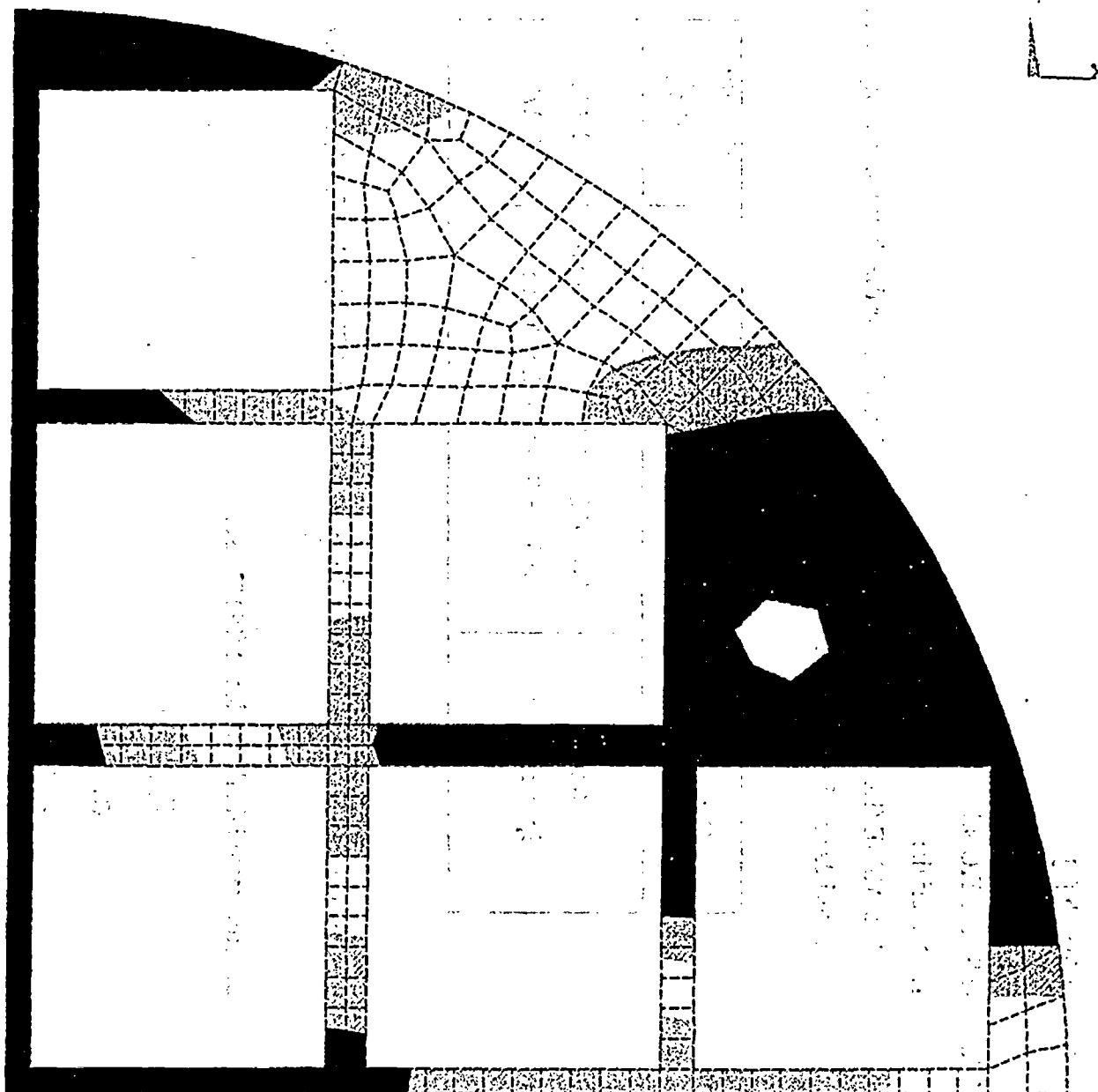


FIGURE 4.3.20 - DEFLECTION CONTOUR
SPACER DISC AND ROD MODEL - INWARD DEFLEC. AT 75g's

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/17/98PAGE: 172SUBJECT: 4.0 ANALYSISBY: AJS CK: SRSHT: 1 OF 344.4 SUPPORT ROD ANALYSIS

4.4.1 DESCRIPTION OF COMPONENT

The DSC Basket System includes 4 – 3.0" diameter Rods which are welded to and provide support for the nine (9) 1.5" thick Spacer Plates. Each Support Rod is 158.13" in length [6].

4.4.2 ASSUMPTIONS

1. Materials:

The ASME (Ref. [5], Table NF-2) material densities for the following component materials are shown below:

Component	Code Designation	Density (lb/in ³)
Rods	ASME SA-479, Type 304 (ss)	0.290
Spacer Plates	ASME SA-516, Gr. 70 (cs)	0.279

2. The Design Temperature of the Support Rods is 460°F (Section 3.3.4, Table 3.4)

3. Rod material allowables at 460°F are:

$$S_y = 19.9$$

$$S_u = 64$$

$$S_m = 18.0$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/17/98PAGE: 173SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 2 OF 34

4. For the beam-column buckling analysis, the Support Rod is assumed to be pinned-fixed at the Spacer Plate locations (see Section 4.4.7).
5. Beam-column differential equations used in the elastic model are derived with non-linear, large rotation effects and specialized to linear small strain and small rotation theory (see Section 4.4.7).

4.4.3 CALCULATION METHOD

Support Rod axial stress for a 75g drop is calculated by hand in Section 4.6.4. Support Rod dead weight is determined by scaling the 75g drop stress to 1g. Handling stress is also determined by scaling the 75g drop stress result. Rod bending stress is determined from an ANSYS [7] analysis based on the Spacer Plate model found in Section 4.3. The analysis was performed in order to incorporate the effect of the additional bending stresses due to bending moments transferred by the Spacer Plates. For purely illustrative purposes, the moment-curvature relationship is determined based on an elastic beam-column with pinned-fixed ends (Section 4.4.7). Rod stress levels are shown in Section 4.4.8.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/17/98 PAGE: 174
 SUBJECT: H.O ANALYSIS BY: AJS CK: SR SHT: 3 OF 34

4.4.4: SUPPORT ROD LOADING:SUPPORT RODS - (STAINLESS STEEL)

$$\text{WT. SUPPORT ROD} = 158.13 \text{ in} \times \frac{\pi (3.0 \text{ in})^2}{4} \times 0.290 \text{ lb/in}^3 = 324.1 \text{ lb/rod}$$

$$\text{TOTAL WT. SUPPORT RODS} = 4 \times 324.1 \text{ lb/rod} = \underline{1296.6 \text{ lb}}$$

SPACER PLATES - (CARBON STEEL)

$$S_p = 0.279 \text{ lb/in}^3$$

$$\phi = 65.5 \text{ in}, t = 1.53 \text{ in} \quad (\text{REF. [6]})$$

$$A_{\text{tot}} = \frac{\pi (65.5 \text{ in})^2}{4} = 3369.55 \text{ in}^2$$

$$A_{\text{rods}} = 4 \times \frac{\pi (3.0)^2}{4} = 28.27 \text{ in}^2$$

$$A_{\text{guide tubes}} = (9.1 \text{ in})^2 \times 24 = 1987.4 \text{ in}^2$$

$$A_{\text{spacer plates}} = 3369.55 \text{ in}^2 - 1987.4 \text{ in}^2 - 28.27 \text{ in}^2 = 1353.88 \text{ in}^2$$

$$\angle \text{WT. SPACER PLATES} = 1353.88 \text{ in}^2 \times 1.5 \text{ in} \times 0.279 \text{ lb/in}^3 \times 9 \text{ plates} = 5201.4 \text{ lb}$$

MAX P_m =

$$\text{TOTAL AXIAL LOAD} = \frac{1296.6 + 5201.4}{4 \text{ RODS}} \times 75g = 121.8 \text{ K/ROD}$$

$$f_a = \frac{P}{A} = \frac{121.8 \text{ K}}{\frac{\pi (3.0)^2}{4}} = 17.2 \text{ Ksi}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 12/17/98PAGE: 175SUBJECT: 4.0 ANALYSISBY: ATS CK: SRSHT: 4 OF 34• DEAD WEIGHT STRESS -

$$\text{FOR } I_g \Rightarrow P_m /_{DW} = 17.2 \text{ ksi} / 75g = 0.23 \text{ ksi}$$

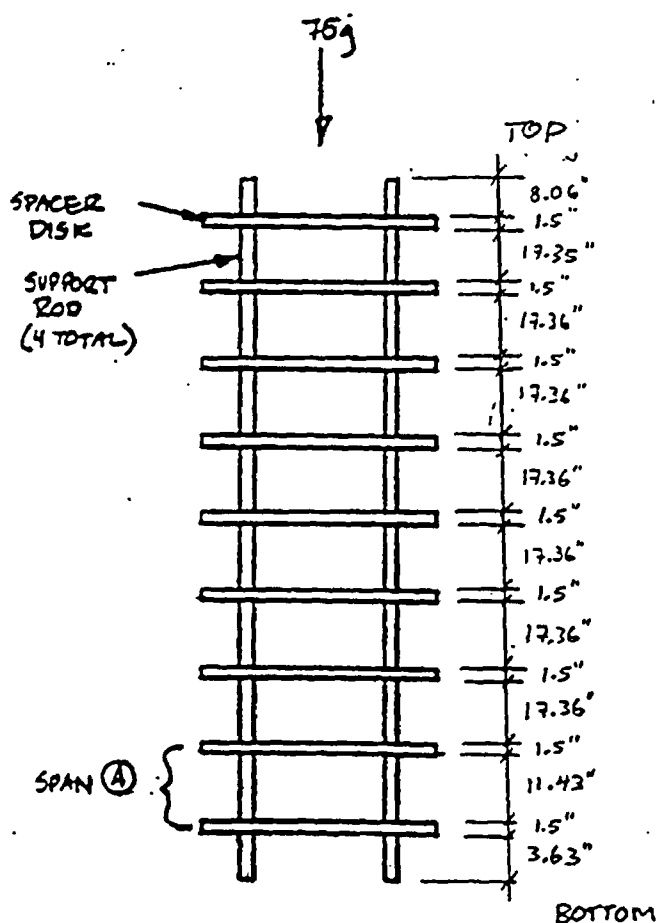
• HANDLING STRESS -

NORMAL HANDLING LOAD IS 25% OF LOADED
DSC WEIGHT [1];

OFF-NORMAL HANDLING LOAD IS 100% OF LOADED
DSC WEIGHT [1]

\Rightarrow USE A BOUNDING HANDLING LOAD OF
2g, OR 0.46 ksi

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/17/98 PAGE: 176SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 5 OF 34ROD VERTICAL DROPDROP ORIENTATION
N.T.S.

NOTE: FOR AXIAL LOADS, SPAN (A) ($L = 11.43"$) CONTROLS SINCE THIS SPAN SUPPORTS THE WEIGHT OF THE EIGHT (8) SPACER PLATES ABOVE.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/17/98 PAGE: 177
SUBJECT: 4.0 ANALYSIS BY: ATS CK: SR SHT: 6 OF 34

• ROD AXIAL LOAD AT SPAN (A) (@ 75g):

$$P_{TOT} = \frac{1296.6 + \frac{8}{9}(5201.4)}{4 \text{ RODS}} \times 75g = 111.0 \frac{k}{rod}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/18/98 PAGE: 178
 SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 7 OF 34

SUPPORT ROD LOADING w/ CONSERVATIVE TOLERANCES:SUPPORT RODS (CS)

$$WT. = 158.19 \times \frac{\pi (3.03 \text{ in})^2}{4} \times .290 \text{ lb/in}^3 = 330.8 \text{ lb/rod}$$

$$TOTAL \text{ WT.} = 4 \times 330.8 \text{ lb/rod} = \underline{1323.2}$$

SPACER PDS (CS)

$$\phi = 65.5 \pm .03 \text{ in}, \quad t = 1.5 \pm .085 \text{ in} \quad (\text{REF. [6]})$$

$$A_{TOT} = \frac{\pi (65.53 \text{ in})^2}{4} = 3372.64 \text{ in}^2$$

$$A_{rods} = \frac{4 \times \pi (3.0 \pm .03)^2}{4} \Rightarrow A_{rods} = 28.27 \text{ in}^2$$

more conservative

$$A_{guide tubes} = (9.1 \pm .03)^2 \times 24 = 1974.4$$

$$A_{spacer pds} = 3372.64 \text{ in}^2 - 1974.4 \text{ in}^2 - 28.27 \text{ in}^2 = 1369.97 \text{ in}^2$$

$$\Sigma \text{ WT. SPACER PDS} = 1369.97 \text{ in}^2 \times 1.585 \times 0.279 \text{ lb/in}^3 \times 9 = \underline{5452.4 \text{ lbs}}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/18/98 PAGE: 179
SUBJECT: H.O ANALYSIS BY: AJS CK: SR SHT: 8 OF 34

• MAX P_m - ASSUMING CONSERVATIVE TOLERANCES

$$\text{TOTAL AXIAL LOAD} = \frac{1323.2 + 5452.4}{4} \times 759 = 127.0 \text{ K/ROD}$$

$$f_a = \frac{127.0 \text{ K}}{\frac{\pi (3.0)^2}{4}} = 17.97 \text{ KSI} \quad (4.9\% \text{ increase})$$

THE INCREASE IN STRESS DUE TO CONSERVATIVE TOLERANCES IS NEGLIGIBLY SMALL.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/18/98 PAGE: 180
 SUBJECT: 4-D ANALYSIS BY: AJS CK: SR SHT: 9 OF 34

4.4.5 CHECK ROD THERMAL EXPANSION IN AXIAL DIRECTION

INITIAL ROD LENGTH, $L_0 = 158.13"$ [REF. #6]

$$\Delta L = \alpha L_0 (T_2 - T_1)$$

FOR A STAINLESS STEEL ROD:

$$\alpha = 9.98 \times 10^{-6} \text{ in/in/}^\circ\text{F} \text{ @ } 460^\circ\text{F} \quad [\text{TABLE 3.3}]$$

$$\Delta L = [9.98 \times 10^{-6} \text{ in/in/}^\circ\text{F}] 158.13" (460 - 70) = 0.62 \text{ in}$$

DETERMINE EXPANSION OF SHELL @ 250°F (ASSUMING DSC SHELL TEMP. IS SOMEWHERE IN BETWEEN AMBIENT AND 460°F DESIGN TEMP.)
 $\alpha = 9.27 \times 10^{-6} \text{ in/in/}^\circ\text{F} \text{ @ } 250^\circ\text{F} \quad [\text{TABLE 3.2}]$

$$\Delta L = [9.27 \times 10^{-6} \text{ in/in/}^\circ\text{F}] 158.55" (250 - 70) = 0.26 \text{ in}$$

↑
 CONSIDERING $\pm .08"$
 CONSERVATIVE
 TOLERANCE

↓
 GAP BETWEEN ROD END AND COVER PLATE = $0.5 - .08 = 0.42$

$$0.62 < 0.26 + 0.42$$

$$0.62 < 0.68$$

OK

THEREFORE ROD DOES NOT IMPACT COVER PLATE CONSIDERING THERMAL EFFECTS.

CALCULATION SHEET

TITLE: NEW DEC STRUCTURAL ANALYSIS DATE: 12/18/98 PAGE: 181
 SUBJECT: H.O ANALYSIS BY: AJS CK: SR SHT: 10 OF 34

CHECK DIFFERENTIAL THERMAL EXPANSION BETWEEN SPACER PLATE
AND SUPPORT ROD (LATERAL DIRECTION)

FOR THE CASE OF THERMAL EXPANSION BETWEEN A
 STAINLESS STEEL ROD AND A CARBON STEEL
 SPACER PLATE WE ASSUME THE FOLLOWING :

- STAINLESS STEEL :

$$\alpha_{\text{ROD}} = 9.98 \times 10^{-6} \text{ in/in/}^{\circ}\text{F @ } 460^{\circ}\text{F} \quad [\text{TABLE 3.3}]$$

- CARBON STEEL :

$$\alpha_{\text{R}} = 7.388 \times 10^{-6} \text{ in/in/}^{\circ}\text{F @ } 460^{\circ}\text{F} \quad [\text{TABLE 3.3}]$$

ASSUMING AMBIENT TEMP. = 70°F

- SINCE CHANGES IN TEMPERATURE AFFECT ALL DIMENSIONS THE SAME WAY, THE CIRCUMFERENCE OF THE 4-3.10" \emptyset PLATE HOLES AND THE 3.0" \emptyset ROD CIRCUMFERENCE IS A LINEAR DIMENSION THAT FOLLOWS THE FOLLOWING EQUATION :

$$\Delta L = \alpha L_0 (T_2 - T_1)$$

1. EXPANSION OF ROD :

$$\text{CIRCUMFERENCE, } C_{\text{ROD}} = 2\pi r = \pi d$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/4/99 PAGE: 182SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 11 OF 34

$$\phi_{\text{rod}} = 3.0" + .03" \begin{matrix} \text{assume} \\ \text{worst case} \end{matrix} \Rightarrow \phi = 3.03"$$

$$C_o|_{\text{rod}} = \pi (3.03 \text{ in}) = 9.5190"$$

$$\Delta C|_{\text{rod}} = 9.98 \times 10^{-6} (9.5190") [460 - 70] = 0.03705$$

$$\therefore C_2|_{\text{rod}} = 9.55605"$$

$$d_2|_{\text{rod}} = 3.04179"$$

2. EXPANSION OF ϕ @ ROD LOCATION:

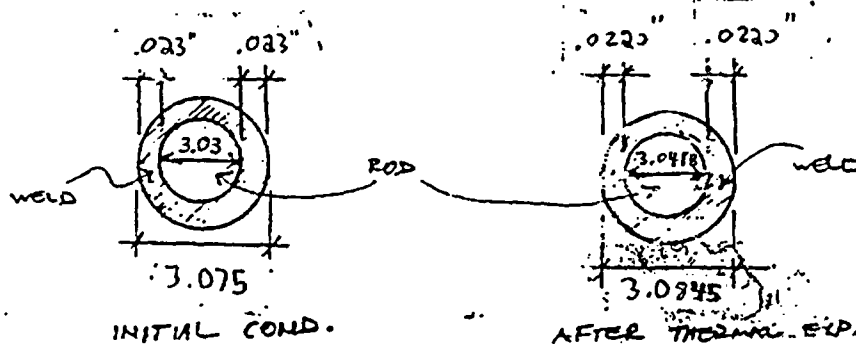
$$\phi_{\text{R.Hole}} = 3.1" \pm .01 \Rightarrow \begin{matrix} \text{assume} \\ \text{worst} \\ \text{case} \end{matrix} \Rightarrow \phi = 3.09 - .015 (\text{AI corr.})$$

$$C_o|R = \pi (3.075) = 9.66040" \rightarrow 3.075$$

$$\Delta C|R = 7.88 \times 10^{-6} (9.66040) [460 - 70] = .02969$$

$$\therefore C_2|R = 9.6901$$

$$d_2|R = 3.0844$$

3. DEGREE OF GAP CLOSURE BETWEEN ϕ & ROD:

NOTE: THE WELD
IS OK BECAUSE
IT EXPANDS ALONG
W/ PLATE.

→ GAP CLOSURES 0.001"

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/4/99 PAGE: 183
SUBJECT: H.O. ANALYSIS BY: AJS CK: SR SHT: 12 OF 34

CHECK WELD (SERVICE LEVEL D)

SEE SECTION 4.6.2

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/4/99 PAGE: 184
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 13 OF 34

4.4.6 BUCKLING CHECK FOR ROD:

FOR CRITICAL ROD SPAN, CLEAR LENGTH:

$$L = 17.36''$$

$$r = r_{\min} = \sqrt{\frac{I_{\min}}{A}} = \sqrt{\frac{3.976 \text{ in}^4}{7.069 \text{ in}^2}}$$

$$r = 0.74997 \text{ in}$$

ASSUME $K=1.0$,

$$\frac{KL}{r} = \frac{1.0(17.36 \text{ in})}{0.74997 \text{ in}} = 23.15$$

$$\frac{KL}{r} = 23.15 < 200$$

$$\frac{KL}{r} = 23.15 \Rightarrow F_a = 20.41 \text{ Ksi} \quad [33]$$

 $(\bar{r}_y = 3.8 \text{ in})$

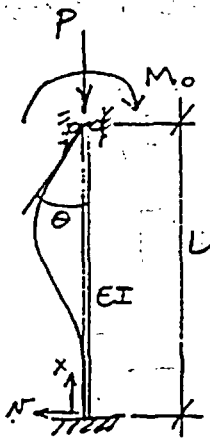
$$\frac{F_a}{.6 F_y} = 0.945$$

[SEE SECTION 4.4.11 FOR DETAILED COMPUTER ANALYSIS]

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 1/5/99PAGE: 185SUBJECT: 4.0 ANALYSISBY: AJSCK: SRSHT: 14 OF 344.4.7 ROD MOMENT-CURVATURE RELATIONSHIP

THE TRANSVERSE DISPLACEMENT, v , FOR A PINNED-FIXED BEAM-COLUMN IS GOVERNED BY THE FOLLOWING FOURTH-ORDER LINEAR DIFFERENTIAL EQUATION WITH CONSTANT COEFFICIENTS.



$$\frac{d^4 v}{dx^4} + \lambda^2 \frac{d^2 v}{dx^2} = \frac{P}{EI} \quad (\text{REF. 9, CHAP. 3})$$

(ASSUMING SMALL ANGLE THEORY,
 $\theta = 0$, NO TRANSVERSE LOADING)

THE GENERAL SOLUTION IS:

$$v(x) = C_1 + C_2 x + C_3 \cos \lambda x + C_4 \sin \lambda x$$

$$\text{WHERE } \lambda^2 = \frac{P}{EI}$$

$$\frac{dv}{dx} = C_2 - C_3 \lambda \sin \lambda x + C_4 \lambda \cos \lambda x$$

$$\frac{d^2 v}{dx^2} = -C_3 \lambda^2 \cos \lambda x - C_4 \lambda^2 \sin \lambda x$$

BOUNDARY CONDITIONS:

$$\textcircled{1} \quad v(0) = 0 \Rightarrow C_1 + C_3 = 0 \Rightarrow C_1 = -C_3$$

$$\textcircled{2} \quad \frac{dv}{dx}(0) = 0 \Rightarrow C_2 + \lambda C_4 = 0 \Rightarrow C_2 = -\lambda C_4$$

$$\textcircled{3} \quad v(L) = 0 \Rightarrow C_1 + C_2 L + C_3 \cos \lambda L + C_4 \sin \lambda L = 0$$

$$\text{SUBSTITUTING } \Rightarrow -C_3 - C_4 \lambda L + C_3 \cos \lambda L + C_4 \sin \lambda L = 0$$

$$C_3 (\cos \lambda L - 1) = C_4 (\lambda L - \sin \lambda L)$$

$$\Rightarrow C_3 = \frac{C_4 (\lambda L - \sin \lambda L)}{(\cos \lambda L - 1)}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 1/5/99

PAGE: 186

SUBJECT: H.O ANALYSIS

BY: AJS

CK: SR

SHT: 15 OF 34

$$\textcircled{4} \frac{d^2 m}{dx^2}(\ell) = \Theta = c_2 - c_3 \lambda \sin \lambda \ell + c_4 \lambda \cos \lambda \ell$$

$$\Theta = -\lambda c_4 - \lambda \sin \lambda \ell \left[\frac{c_4 (\lambda \ell - \sin \lambda \ell)}{(\cos \lambda \ell - 1)} \right] + c_4 \lambda \cos \lambda \ell$$

$$(\cos \lambda \ell - 1) \Theta = c_4 \left[-\lambda \cos \lambda \ell + 1 - \lambda^2 \ell \sin \lambda \ell + \lambda \sin^2 \lambda \ell + \lambda \cos^2 \lambda \ell - \lambda \cos \lambda \ell \right]$$

$$(\cos \lambda \ell - 1) \Theta = c_4 \left[-\lambda \cos \lambda \ell + 1 - \lambda^2 \ell \sin \lambda \ell + \lambda - \lambda \cos \lambda \ell \right]$$

$$(\cos \lambda \ell - 1) \Theta = c_4 \left[-2 \lambda \cos \lambda \ell + 1 + \lambda - \lambda^2 \ell \sin \lambda \ell \right]$$

OR

$$c_4 = \Theta \left\{ \frac{(\cos \lambda \ell - 1)}{-2 \lambda \cos \lambda \ell + 1 + \lambda - \lambda^2 \ell \sin \lambda \ell} \right\}$$

$$\therefore \frac{d^2 m}{dx^2}(0) = -c_3 \lambda^2$$

$$M(0) = -M_0 = -c_3 \lambda^2 EI = -\frac{c_4 (\lambda \ell - \sin \lambda \ell)}{(\cos \lambda \ell - 1)} \lambda^2 EI$$

$$M_0 = \Theta \frac{(\lambda \ell - \sin \lambda \ell)}{(\cos \lambda \ell - 1)} \lambda^2 \left[\frac{(\cos \lambda \ell - 1)}{-2 \lambda \cos \lambda \ell + 1 + \lambda - \lambda^2 \ell \sin \lambda \ell} \right] EI$$

$$M_0 = \left[\frac{EI \lambda^2 (\lambda \ell - \sin \lambda \ell)}{(-2 \lambda \cos \lambda \ell + 1 + \lambda - \lambda^2 \ell \sin \lambda \ell)} \right] \Theta$$

$$\text{WHERE } \lambda^2 = \frac{P}{EI}, \quad \lambda = \sqrt{\frac{P}{EI}}$$

THE ABOVE SHOWS THE MOMENT CURVATURE RELATIONSHIP
BASED ON AN ELASTIC PINNED-FIXED BEAM-COLUMN

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/8/99 PAGE: 187
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 16 OF 34

4.4.8 ROD STRESS EVALUATION

BENDING STRESS IN THE SUPPORT ROD DUE TO BENDING MOMENT TRANSFERRED BY THE SPACER PLATES IS DETERMINED USING AN ANSYS [7] FINITE ELEMENT ANALYSIS. THE SPACER DISK MODEL (SEE SECTION 4.3) IS MODIFIED TO INCLUDE RESTRAINTS AT THE SUPPORT ROD LOCATIONS AND TO REMOVE THE SOLID ROD PORTION OF THE MODEL. AS DESCRIBED IN SECTION 4.3, THE SPACER DISK WAS MODELED USING ELASTIC 3-D SHELL ELEMENTS. THE ANSYS ELEMENT PLOT IS SHOWN IN FIGURE 4.4.1. THE LOADING IS IDENTICAL TO THAT USED IN SECTION 4.3 (75g DROP CASE). A QUARTER MODEL IS USED TO TAKE ADVANTAGE OF SYMMETRY.

ANSYS 5.2
JAN 7 1999
09:26:22
ELEMENTS
MAT NUM
U
ROT

XV =1
YV =2
ZV =3
*DIST=18.586
*XF =15.528
*YF =16.233
*ZF =5.057
PRECISE HIDDEN

DATE: 1/11/99 PAGE: 188
BY: AJS CK: SK SH: 17 OF 34

1

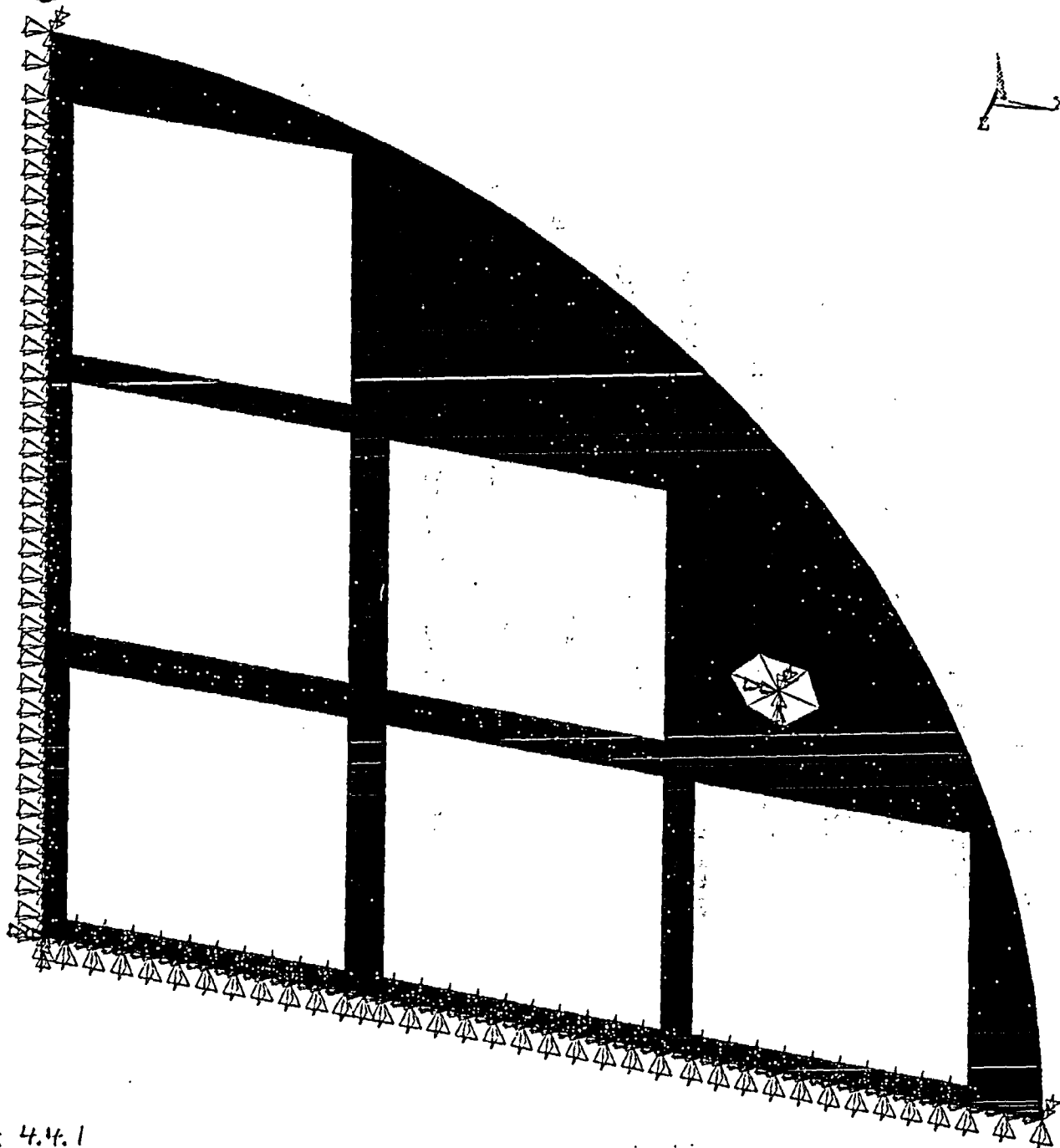


FIGURE 4.4.1

DISC MODEL USED TO CALCULATE MOMENT APPLIED TO ROD

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/11/99 PAGE: 189
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 18 OF 34

FROM THE ANSYS REACTION LISTING FOUND IN APPENDIX F,
THE MOMENTS AT THE SUPPORT ROD / SPACER PLATE
INTERSECTION ARE :

$$M_x = 35.9 \text{ K-in}$$

$$M_y = 55.9 \text{ K-in}$$

DETERMINE BENDING STRESS TRANSFERRED TO THE
ROD BY THE SPACER PLATE :

$$M_{\text{resultant}} = \sqrt{35.9^2 + 55.9^2}$$
$$= 66.4 \text{ K-in}$$

$$S_{\text{ROD}} = 2.651 \text{ in}^3$$

$$\sigma_{\text{ROD}} = \frac{M_{\text{resultant}}}{S_{\text{ROD}}} = \frac{66.4}{2.651} = \underline{\underline{25.0 \text{ KSI}}}$$

$$M_y = S' \sigma_y = (2.651)(20.7) = 54.88 \text{ K-in}$$

$$M_p = 1.7 M_y = 1.7(54.88) = 93.30 \text{ K-in}$$

SHAPE FACTOR FOR
CIRCULAR SECTION

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/11/99 PAGE: 190
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 19 OF 34

THE ROD STRESSES ARE SHOWN BELOW IN
TABLE 4.4.1 .

75g DROP CASE :

$$P_m = \underline{17.0 \text{ Ksi}} < 2.4 S_m = 43.2 \text{ Ksi}$$

$$P_m + P_b = 17.0 + 25.0 = \underline{42.0 \text{ Ksi}} < \textcircled{1.0 S_{uc} = 64.0} \text{ Ksi}$$

OK

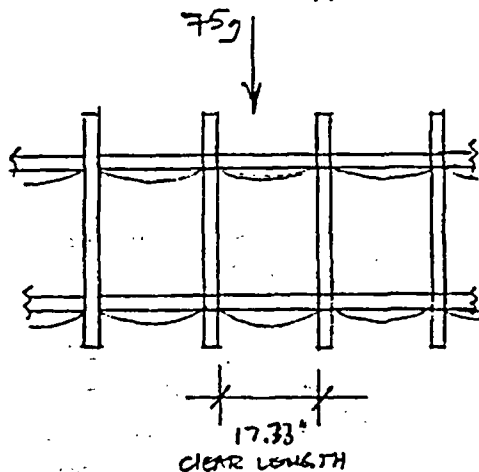
CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/5/99 PAGE: 191
 SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 20 OF 34

4.4.9 ROD BENDING DUE TO HORIZONTAL DROP

FOR THE TRANSPORT AND SEISMIC CASES, ROD BENDING IS GOVERNED BY THE FOLLOWING LOAD CASE

ASSUME A $75g$ ACCIDENT LOAD FOR A CASK HORIZONTAL DROP (CONSERVATIVE)



TOTAL WEIGHT OF SUPPORT RODS = 1296.6 lb

• FOR CRITICAL SPAN:

$$WT. = \frac{17.33''}{158.13''} (1296.6) = 142.1 \text{ lb}$$

SELF WT. LOAD:

$$142.1 \text{ lb} \times 75g = 10.66 \text{ K/ROD SPAN}$$

(CONSERVATIVELY ASSUME S.S. BEAM)

ROD MOMENTS RESULTING FROM $75g$ HORIZ. DROP =

$$M_{\text{total}} = \frac{wL^2}{8} = \frac{10.66 \text{ K}}{17.36''} \frac{(17.36'')^2}{8} = 23.1 \text{ K-in}$$

$$M_{\text{rod}} = 5.8 \text{ K-in} < 66.4 \text{ K-in}$$

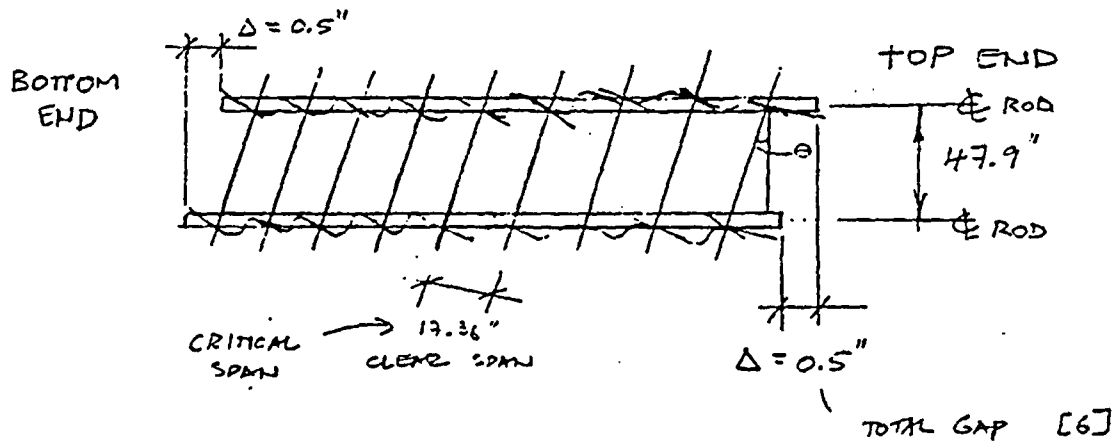
← MOMENT FOR $75g$ VERTICAL DROP

THUS, HORIZONTAL DROP CASE DOES NOT GOVERN FOR ROD BENDING.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/5/99 PAGE: 192
 SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 2 OF 34

4.4.10 ROD BENDING DUE TO RACKING

ASSUMPTIONS:

1. FOR MAXIMUM ROD BENDING, ASSUME SPACER PLATES REMAIN RIGID
2. ASSUME WORST CASE CONDITION OF 2 UPPER RODS DISPLACING 0.25" TOWARDS THE TOP END AND 2 LOWER RODS DISPLACING 0.25" TOWARDS THE BOTTOM (0.5" TOTAL). ANALYSIS CONSERVATIVELY USES 0.69".

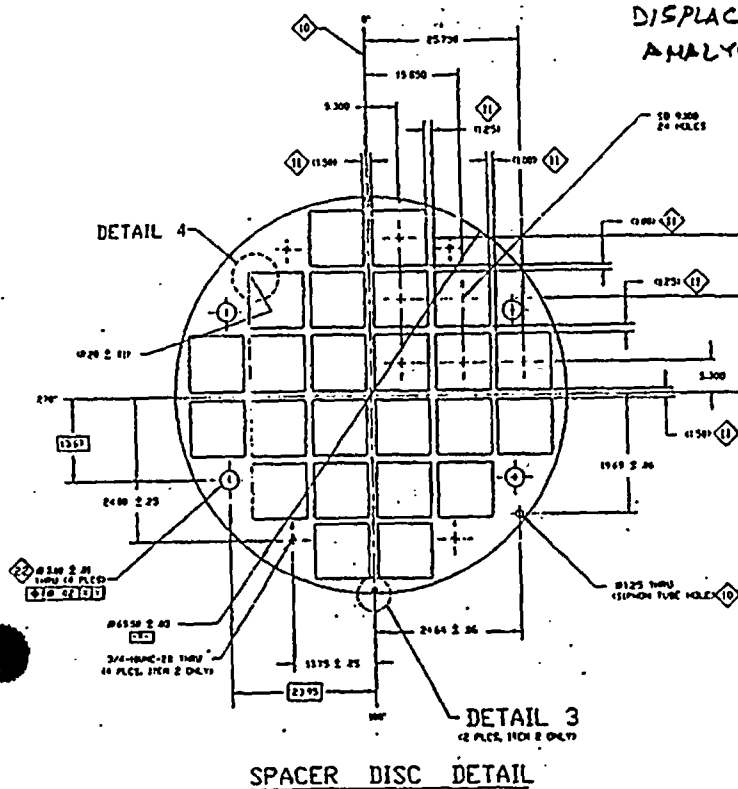
THE EFFECT OF RACKING IN SHELL CAN BE ANALYZED BY CONSIDERING A PORTAL FRAME

EFFECTIVE PLATE SECTION: $1.5" \times 1.0" + 1.25" \times 1.5"$

$$A_R = 3.375 \text{ in}^2$$

$$I_R / x = \frac{(1.0)(1.5)^3}{12} + \frac{1.25(1.5)^3}{12} = 0.633 \text{ in}^4$$

$$I_R / y = \frac{1.5(1.0)^3}{12} + \frac{1.5(1.25)^3}{12} = 0.369 \text{ in}^4$$



CALCULATION SHEET

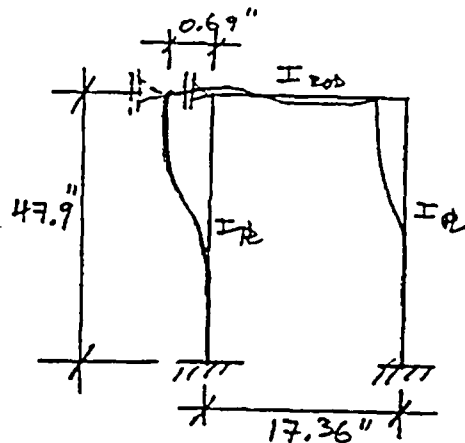
TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/5/99 PAGE: 193
 SUBJECT: A.O ANALYSIS BY: AJS CK: SR SHT: 22 OF 34

ROD SECTION

$$A_{ROD} = 7.069 \text{ in}^2$$

$$I_{ROD} = 3.976 \text{ in}^4$$

TO ANALYZE THE EFFECT OF RACKING IN TERMS OF ADDITIONAL MOMENT IN THE RODS, A STAAD [37] COMPUTER MODEL WAS USED. THE PROBLEM WAS IDEALIZED AS A FRAME WITH A LATERAL DISPLACEMENT OF 0.69" IMPOSED AS SHOWN BELOW.

NOTE:

MODEL CONSIDERS ONLY
 1 ROD ACTING AND
 2 PLATE LIGAMENTS
 PROVIDING STIFFNESS.

THE STAAD COMPUTER INPUT AND OUTPUT FILE ARE GIVEN ON THE FOLLOWING SHEETS. BASED ON THE ANALYSIS, THE ROD MOMENT DUE TO A MAXIMUM RACKING EFFECT IS:

$$M_{ROD} = 28.9 \text{ K-in} < 66.4 \text{ K-in}$$

THUS, RACKING EFFECT IN SHELL DOES NOT GOVERN IN TERMS OF ROD BENDING.

CALCULATION SHEET

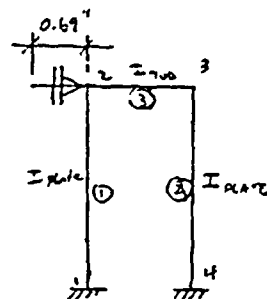
TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/5/99 PAGE: 194
SUBJECT: H.O ANALYSIS BY: AJS CK: SR SHT: 23 OF 34

```

*****
*
*          S T A A D - I I I
*          Revision 22.0W
*          Proprietary Program of
*          Research Engineers, Inc.
*          Date=   FEB 13, 1998
*          Time=   11:21:27
*
*          USER ID: HOPPER AND ASSOCIATES
*
*****

```

1. STAAD PLANE DSC RACKING
2. UNIT IN KIP
3. JOINT COORDINATES
4. 1 0 0
5. 2 0 47.9
6. 3 17.36 47.9
7. 4 17.36 0
8. *
9. MEMBER INCIDENCE
10. 1 1 2
11. 2 3 4
12. 3 2 3
13. *
14. MEMBER PROPERTIES
15. 1 2 PRIS AX 3.375 IZ 0.633 IY 0.369
16. 3 PRIS AX 7.069 IZ 3.976 IY 3.976
17. *
18. CONSTANTS
19. E 26500 ALL
20. DENSITY 0.000290 MEMB 3
21. DENSITY 0.000279 MEMB 1 2
22. *
23. BETA 0 ALL
24. *
25. SUPPORTS
26. 1 4 FIXED
27. 2 FIXED BUT FY FZ MX MY MZ
28. *
29. LOADING 1 RACKING EFFECT
30. SUPPORT DISPL
31. 2 FX -0.69
32. *
33. PERFORM ANALYSIS



DSC ROD/PLATE MODEL

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/5/99 PAGE: 195
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 24 OF 34

P R O B L E M S T A T I S T I C S

NUMBER OF JOINTS/MEMBER+ELEMENTS/SUPPORTS = 4/ 3/ 3
ORIGINAL/FINAL BAND-WIDTH = 1/ 1
TOTAL PRIMARY LOAD CASES = 1, TOTAL DEGREES OF FREEDOM = 5
SIZE OF STIFFNESS MATRIX = 25 DOUBLE PREC. WORDS
REQRD/AVAIL. DISK SPACE = 12.00/ 194.8 MB, EXMEM = 47.5 MB

++ Processing Element Stiffness Matrix. 11:21:27
++ Processing Global Stiffness Matrix. 11:21:27
++ Processing Triangular Factorization. 11:21:27
++ Calculating Joint Displacements. 11:21:27
++ Calculating Member Forces. 11:21:27

34. PRINT SUPPORT REACTIONS

SUPPORT REACTIONS -UNIT KIP IN STRUCTURE TYPE = PLANE

JOINT	LOAD	FORCE-X	FORCE-Y	FORCE-Z	MOM-X	MOM-Y	MOM Z
1	1	1.22	-3.33	0.00	0.00	0.00	-29.57
4	1	1.22	-3.33	0.00	0.00	0.00	-29.56
2	1	-2.44	0.00	0.00	0.00	0.00	0.00

***** END OF LATEST ANALYSIS RESULT *****

35. PRINT MEMBER FORCES

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/5/99 PAGE: 196
SUBJECT: 4-D ANALYSIS BY: AJS CK: SR SHT: 25 OF 34

MEMBER END FORCES STRUCTURE TYPE = PLANE

ALL UNITS ARE -- KIP IN

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
1	1	1	3.33	-1.22	0.00	0.00	0.00	-29.57
		2	-3.33	1.22	0.00	0.00	0.00	-28.87
2	1	3	-3.33	-1.22	0.00	0.00	0.00	-28.87
		4	3.33	1.22	0.00	0.00	0.00	-29.56
3	1	2	-1.22	3.33	0.00	0.00	0.00	28.87 ←
		3	1.22	-3.33	0.00	0.00	0.00	28.87

***** END OF LATEST ANALYSIS RESULT *****

36. *

37. FINISH

***** END OF STAAD-III *****

**** DATE= FEB 13,1998 TIME= 11:21:27 ****

* For questions on STAAD-III, contact: *
* Research Engineers, Inc at *
* West Coast: Ph- (714) 974-2500 Fax- (714) 921-2543 *
* East Coast: Ph- (508) 688-3626 Fax- (508) 685-7230 *

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/11/99

PAGE: 197

SUBJECT: 4.0 ANALYSIS

BY: AJS

CK: SR

SHT: 26 OF 34

4.4.11 ROD STABILITY CHECK

The four (4) Support Rods that position and support the Spacer Discs in the DSC Basket Assembly were analyzed previously for the vertical drop condition. To gain further understanding of Rod plastic behavior during a vertical drop accident condition, a 3-D solid finite element model of the Rod will be constructed and a plastic analysis will be performed. The purpose of the analysis is to verify stability of the Rods during a vertical drop. ANSYS load and property data are given in Appendix G.

ANALYSIS APPROACH

The Rod will be modeled using ANSYS [7] finite element software. Axial and bending loads due to selfweight and the Spacer Disc will be applied to the Rod for a top drop condition. Bending loads due to Disc rotation will be obtained from the Spacer Disc finite element model (Section 4.4.8). Appropriate boundary conditions will be applied and a plastic analysis will be performed to evaluate Rod stresses and stability. To verify that a 50% collapse load margin exists, the Rod will be loaded to $1.5 \times 75g = 112.5g$. A bounding analysis idealization was selected to ensure that no Rod failure mechanisms are possible other than evaluated in the previous calculations. The idealization utilizes maximum possible Spacer Disc moments as the appropriate boundary conditions representing Rod flexural effects. With this approach it is ensured that a collapse mechanism does not form by limiting stresses. This analysis approach clearly identifies any mechanism formation risk.

RESULTS SUMMARY

Rod stability has been verified for the worst case 75g top end drop condition with a 50% margin against collapse. At this load level, no collapse mechanism is observed. Local stresses and strains are well below ultimate values. Code requirements for collapse load evaluation of components based on a plastic analysis are satisfied. Because the Rod remains stable under a 112.5g load, it has been shown that at least a 50% margin against plastic collapse is available.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/11/99 PAGE: 198
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 27 OF 34

EVALUATION CONDITIONS

1. A 50% collapse load margin is imposed on the drop acceleration of 75g's:
 $1.5 \times 75 = 112.5g$
2. The top and bottom drop cause essentially the same rod loading. However, both the column span length between spacer discs and the length from the last disc to the end of the rod are larger at the top end, so the top end drop will be analyzed for buckling.
3. The bending moment applied to the support rod by the spacer disc is calculated using the same method as in Section 4.4.8. In Section 4.4.8, an ANSYS finite element model of the spacer disc with rotational restraints at the rod/disc interface was used to calculate the bending moment applied to the rod at 75g's. For the rod stability evaluation, this model was re-analyzed at 112.5g's. The output reactions are in Appendix F. The bending moments are:

$$M_x = 53824 \text{ in-lb}$$

$$M_y = 83821 \text{ in-lb}$$

$$M_{\text{total}} = (M_x^2 + M_y^2)^{1/2} = 99614 \text{ in-lb}$$

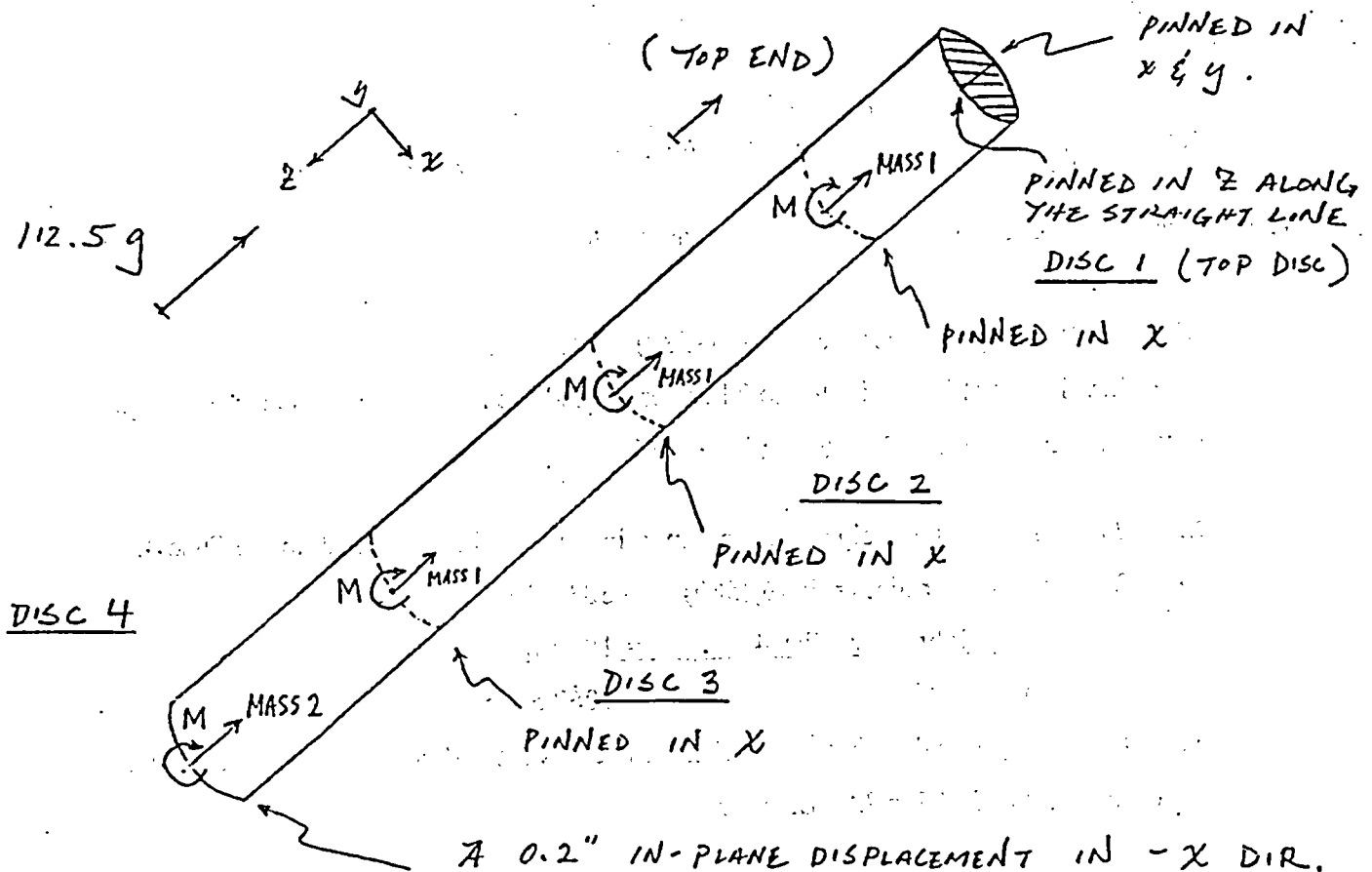
The same moment occurs at each spacer disc/rod interface.

4. An axial load of 112.5g's is also applied to the model.
5. To represent the plastic behavior of the material, a tangent modulus of 2% of the elastic modulus will be used.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 1/11/99PAGE: 199SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 28 OF 34MODEL DESCRIPTION

The support rod is modeled with 3D elastic-plastic solid elements (Solid45). The mass of the spacer discs and the portion of the rod not included in the model are added using lumped mass elements (Mass21). The axial and bending loads are applied simultaneously and are ramped up together to the 112.5g level. The portion of the rod included in the model is from the top end down to the fourth spacer disc from the top. The boundary conditions are summarized below:

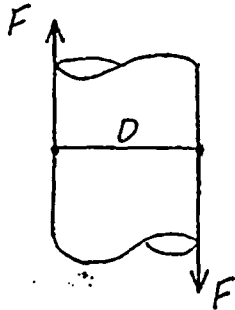


CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/11/99 PAGE: 200
 SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 29 OF 34

The 0.2" imposed displacement at the Disc 4 location represents the total clearance between the spacer disc cutout holes and the guide sleeves. After this gap is closed, the guide sleeves provide resistance to further lateral rod movement. This gap is included in the model to account for any eccentricity effects it may cause.

The moments M due to disc rotation are applied as force couples:



$$M = 99614 \text{ in-Lb @ each disc}$$

$$\text{FORCE COUPLE } F = \frac{M}{D}, D = 3''$$

$$F = \frac{99614}{3'' \cdot 3 \text{ nodes/side}} = 11070 \text{ Lb} \quad (\text{@ each node})$$

The masses used at each disc location are calculated below:

$$\text{Mass 1} = \frac{1}{4} \times 1 \text{ spacer disc weight} = \frac{1}{4} (589) = 147.25 \text{ Lb}$$

The Mass 1 weight is distributed to 24 nodes around the rod circumference at each spacer disc location, or $147.25/24 = 6.14 \text{ Lb per node}$.

Mass 2 accounts for the weights of the remaining spacer discs and rod above Disc 4.

$$\text{Mass 2} = \frac{1}{4} \times 6 \text{ spacer discs} = \frac{1}{4} (6)(589) = 883.5 \text{ Lb}$$

$$+ \text{rod weight above disc 4} = 186 \text{ Lb}$$

$$\text{Total} = 1069.5 \text{ Lb}$$

The Mass 2 weight is distributed to 121 nodes across the rod cross-section at the Disc 4 location, or $1069.5/121 = 8.84 \text{ Lb per node}$.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/11/99 PAGE: 201
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 30 OF 34

ANALYSIS

An elastic-plastic analysis of the rod model is performed up to 112.5g's. The results of the analysis are shown in Figures 4.4.2 through 4.4.4. The converged analysis with no failure mechanisms forming at 112.5g's verifies that the rod remains stable at 75g's and at least a 50% margin against plastic collapse is available. Figure 4.4.2 shows stress contours and an exaggerated deformed shape at 112.5g's. Note that stresses remain below ultimate levels and no collapse mechanism occurs. Figure 4.4.3 shows a close-up of exaggerated deflection of the rod near the top at the location of maximum lateral deflection. This maximum lateral deflection as a function of increasing acceleration is plotted in Figure 4.4.4. The plot indicates that deflection is remains linear as a function of acceleration even as the load approaches 112.5g's. This provides further evidence of considerable additional margin against plastic collapse.

ANSYS 5.2
JAN 8 1999
13:48:38
NODAL SOLUTION
STEP=1
SUB =12
TIME=112.5
SINT (AVG)
DMX =.492739
SMN =1279
SMX =47978

YV =1
*DIST=38.073
*XF =2.464
*ZF =23.479
PRECISE HIDDEN
1279
7117
12954
18791
24629
30466
36304
42141
47978

DATE: 1/11/99 PAGE: 202
BY: AJS CK: SR SHT: 31 OF 34

FIGURE 4.4.2: STRESS CONTOUR/EXAGGERATED DEFORMED SHAPE @ 112.5G's

ANSYS 5.2
JAN 8 1999
14:02:41
DISPLACEMENT
STEP=1
SUB =12
TIME=112.5
RSYS=0
DMX =.492739

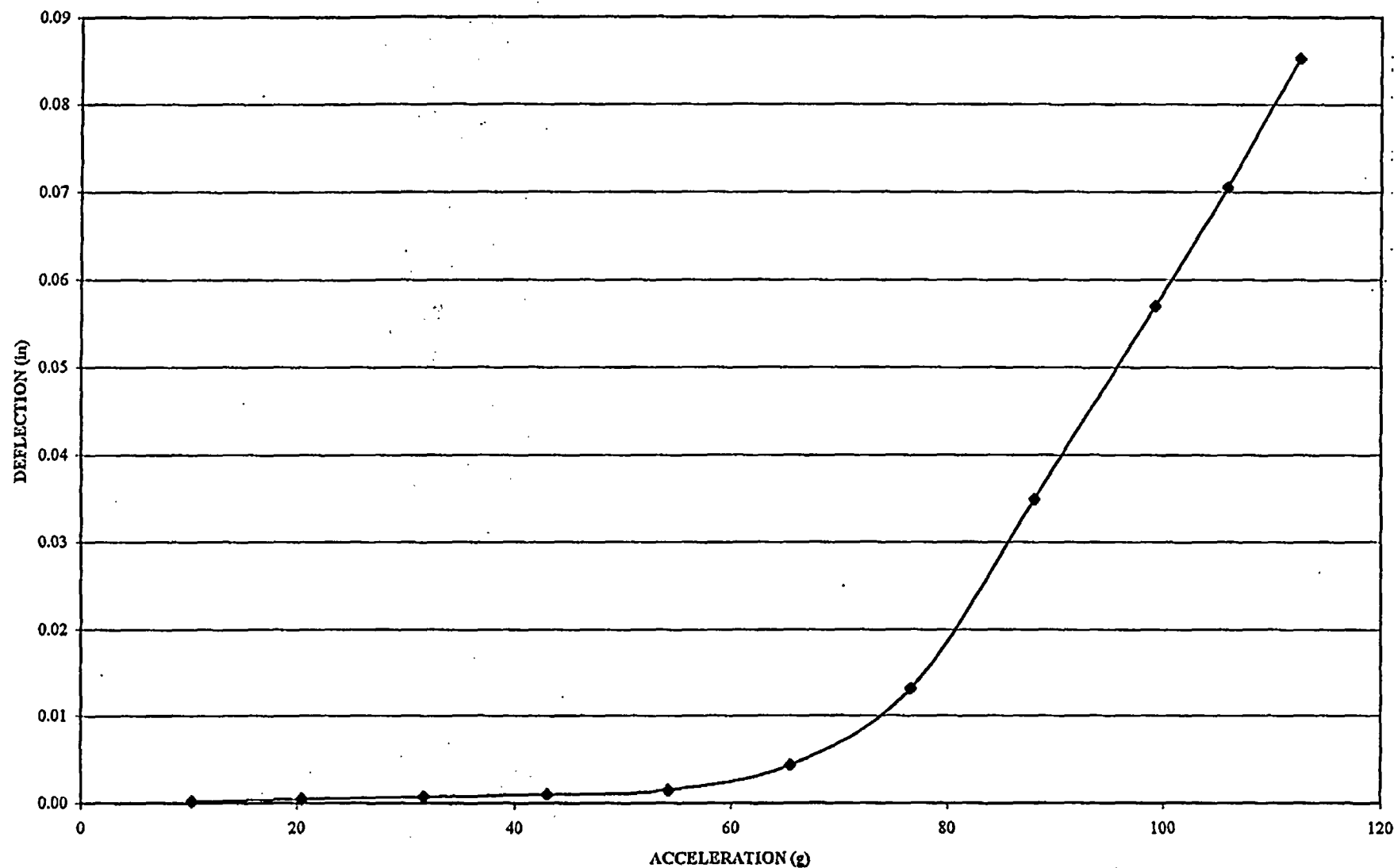
*DSCA=3
YV =1
*DIST=10.547
*XF =.390517
*ZF =-1.281
PRECISE HIDDEN

NOTE: THIS POINT DEFLECTION
IS DUE TO THE LINE
BOUNDARY RESTRAINT.
ACTUAL STRESSES AND
DEFORMATIONS WOULD
BE EVENLY DISTRIBUTED
ACROSS THE ROD CROSS-SECTION.

POINT OF MAXIMUM
LATERAL DEFLECTION

FIG. 4.4.3-EXAGGERATED
DEFORMED SHAPE

DATE: 1/11/99 PAGE: 203
BY: AJS CK: SR SH: 32 OF 34



MAXIMUM LATERAL DEFLECTION VERSUS ACCELERATION

FIGURE 4.4.4

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/11/99

PAGE: 205

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 34 OF 34

CONCLUSIONS

No Rod failure mechanisms are possible other than those originally considered. The Rods withstand maximum possible axial and concomitant flexural loads. At all Rod locations, stresses remain below ultimate levels. The ASME Code [4] allows acceptance criteria for components based on the collapse load (F-1341.3). This section requires that loads do not exceed 100% of the plastic analysis collapse load. An additional requirement for components under compression (F-1331.5) is that the load does not exceed 2/3 of the buckling load, or in other words, there is a 50% margin for buckling. Both requirements are met because the Rod is stable at 112.5g.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/13/99 PAGE: 206
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SK SHT: 1 OF 25

4.5 GUIDE SLEEVE ANALYSIS

The following issues are to be addressed:

1. Fuel pinching may result from Guide Sleeve dimpling and can cause difficulty in fuel retrieval.
2. Local buckling at the bottom end of the guide sleeve adjacent to the cut outs.
3. Since seismic loading is a Service Level C condition, a load of 1g in the horizontal direction and 0.68 g's in the vertical direction are used for seismic analysis. Since the drop loading condition uses 75 g's for analysis, which is considerably higher than that used for seismic, the drop loading criteria governs the critical load for the Guide Sleeves.
4. Local Bending on the Guide Sleeves occurs due to Spacer Plate and Fuel End Plate misalignment.

The Maximum Stress Intensities for the Guide Sleeves are [Ref. 3, Section 3.4]:

$$\begin{aligned} \text{Bending Stress } (\sigma_b) &= 320 \text{ psi.} \\ \text{Shear Stress } (\sigma_v) &= 585 \text{ psi.} \end{aligned} \quad \ll \quad \text{Allowable SI for drop accident.}$$

Although the DSC Design calls for a Guide Sleeve with continuous longitudinal welding, both the misalignment analysis and the weld checks which appear in this section assume a Guide Sleeve design with intermittent (stitch) welding (2" @ 6" centerline). This analysis serves as a bounding case for fuel retrievability, the risk of Guide Sleeve wall piercing by the Fuel End Plate, and weld stress levels since the actual Guide Sleeve stress state and deformation will be lower than that determined by this analysis.

• FUEL PINCHING / RETRIEVAL CHECK

Based on reasonable extraction loads (i.e. 900 lbs. or less), "dimpling" of the Guide Sleeve is small and will not affect fuel retrieval (see Section 4.2).

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

PAGE: 207

SUBJECT: 4.0 ANALYSIS

BY: AJS

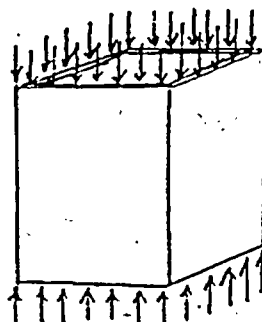
CK: SR

SHT: 2 OF 25

• GUIDE SLEEVE BUCKLING ANALYSIS

A buckling load analysis will be performed. The resulting critical buckling load will then be compared to the actual compressive load, which is equal to the Guide Sleeve self-weight x 75g's. Guide Sleeve stress due to a 75g drop will then be calculated.

The analysis will be based on the idealized square tube subjected to a uniform compressive pressure.



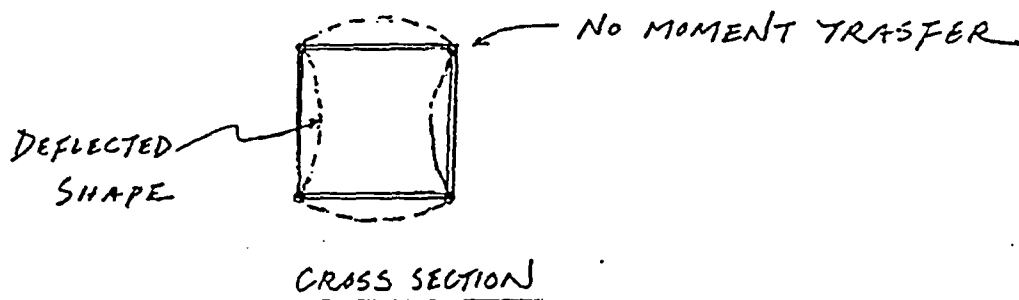
SQUARE TUBE UNDER
COMPRESSION

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/13/99PAGE: 208SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 3 OF 25

ACCORDING TO THE THEORY OF ELASTIC STABILITY [REFS2],
THERE CANNOT BE ANY BENDING MOMENTS TRANSFERRED
BETWEEN THE SIDES OF EACH WALL.

EACH WALL BEHAVES AS A SIMPLY SUPPORTED
PLATE UNDER UNIFORM COMPRESSION.



THUS THE GUIDESLEEVE CAN BE ANALYZED AS:

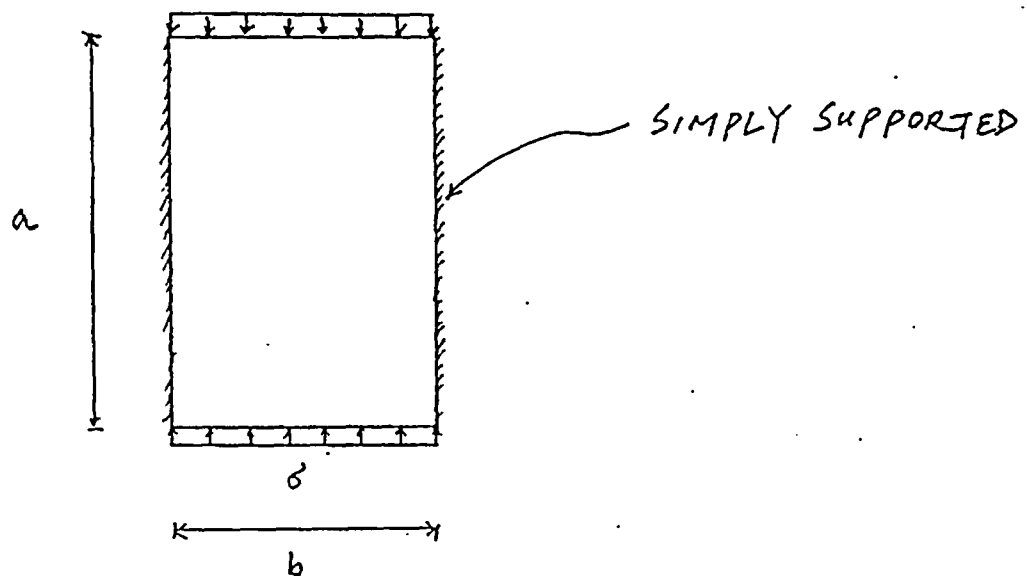


PLATE UNDER COMPRESSION

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

PAGE: 209

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 4 OF 25

$a = 18.9"$, UNSUPPORTED LENGTH ON THE GUIDESLEEVE
(LONGEST DISTANCE SPACER DISC TO SPACER DISC)

$b = 8.8"$, WIDTH OF EACH GUIDESLEEVE WALL

$t = 0.105"$, THICKNESS OF GUIDESLEEVE

THE ABOVE SIMPLY SUPPORTED PLATE CAN BE
ANALYZED BY USING ROARK, TABLE 35 CASE 1a [15].

$$\begin{aligned} \sigma_{CR} &= K \frac{E}{1-\nu^2} \left(\frac{t}{b} \right)^2 \quad \frac{a}{b} = 2.15, K \approx 3.3 \\ &= 3.3 \frac{25.3 \times 10^6}{1-0.3^2} \left(\frac{0.105}{8.8} \right)^2 \quad \begin{array}{l} E = 25.3 \times 10^6 \text{ psi} \\ @ 600^\circ \text{F FOR DESIGN} \end{array} \\ &= 13,100 \text{ psi} \quad \left(\begin{array}{l} \text{SINCE } \sigma_{CR} < \sigma_y = 20.7 \text{ ksi,} \\ \text{ELASTIC BUCKLING OCCURS} \end{array} \right) \end{aligned}$$

$$\text{BUCKLING FORCE, } N_{CR} = 13,100 \text{ psi} \cdot 0.105" \cdot 8.8"$$

$$N_{CR} = 12,100 \text{ lbs} \quad \text{PER WALL OF GUIDESLEEVE}$$

TOTAL COMPRESSION FORCE REQUIRED TO BUCKLE

EACH GUIDE SLEEVE IS $4 \times N_{CR}$ OR 48,400 lbs

FOR COLUMNS, $F_{CR} = \left(\frac{12}{23} \right) \frac{\pi^2 EI}{L^2}$. USE $\left(\frac{12}{23} \right)$ FACTOR,
 \uparrow S.F.

$$F_{CR} = \left(\frac{12}{23} \right) \cdot 48,400 \text{ lbs} = \underline{\underline{25,250 \text{ lbs}}}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/13/99 PAGE: 210A of C
SUBJECT: H.O ANALYSIS BY: AJS CK: SR SHT: 5 Apr 25

THE COMPRESSIVE LOAD ON THE GUIDE SLEEVE IS THE
GUIDE SLEEVE WEIGHT X 75 g's. THE TOTAL COMPRESSIVE
LOAD IS :

$$166 \text{ lbs/sleeve} \times 75 \text{ g's} = \underline{12,450 \#}$$

$$< F_{cr} = 25,250 \#$$

∴ NO BUCKLING WILL OCCUR AND NO "FUEL
PINCHING" EFFECTS ARE EXPECTED DUE
TO BUCKLING.

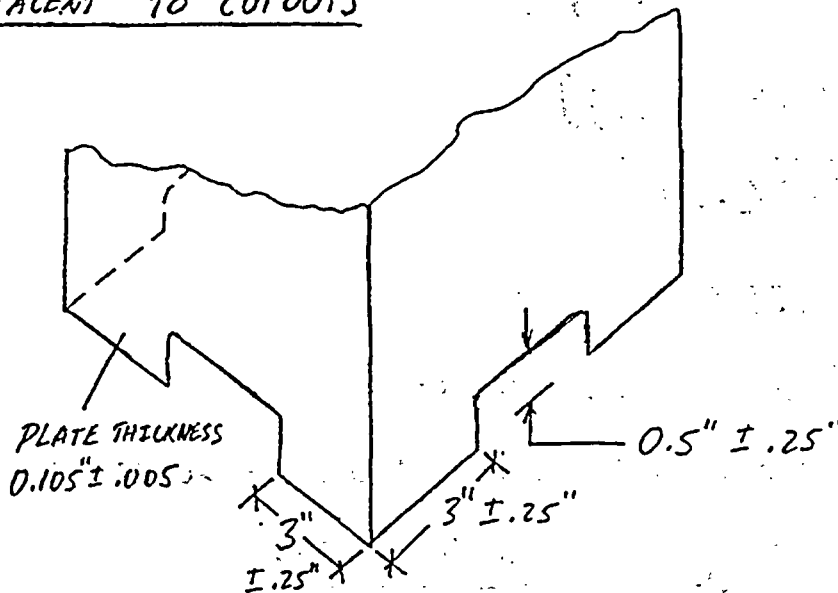
RESULTING GUIDE SLEEVE STRESS :

$$\sigma_{\text{GUIDE SLEEVE}} = \frac{12,450 \text{ lbs}}{8.8" \times 0.105"} = \underline{\underline{13.5 \text{ ksi}}}$$

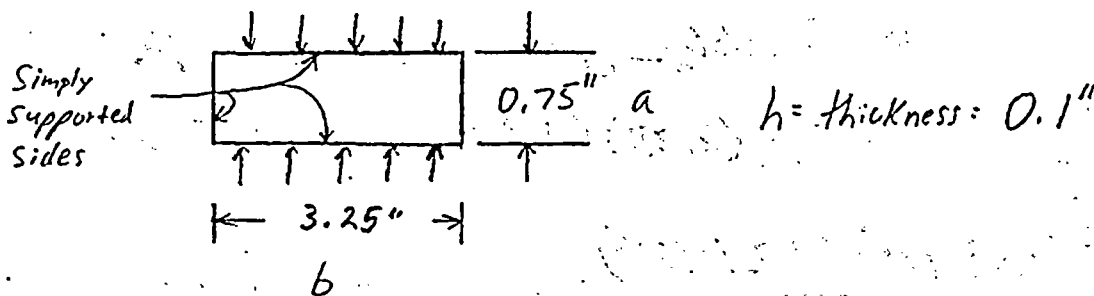
CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 3/3/99 PAGE: 1210 B of C
 SUBJECT: 4.0 ANALYSIS BY: MG CK: A.R. SHT: 5B OF 25

LOCAL BUCKLING CHECK AT BOTTOM END OF GUIDESLEEVE
ADJACENT TO CUTOUTS



[52] FROM TIMOSHENKO, UNIFORMLY COMPRESSED RECTANGULAR PLATE
 SIMPLY SUPPORTED ON THREE SIDES (WITH WORST CASE TOLERANCES):



$$\sigma_{CR} = \frac{K \pi^2 D}{b^2 h}$$

$$K = \left(0.456 + \frac{b^2}{a^2} \right) \quad \text{FOR LONG PLATES}$$

$$= \left(0.456 + \frac{3.25^2}{0.75^2} \right) = 19.23$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 3/3/89 PAGE: 210 CAC
 SUBJECT: 4.0 ANALYSIS BY: MG CK: A.R. SHT: 5C OF 25

$$D = \frac{Eh^3}{12(1-\nu^2)} = \frac{(25.3 \times 10^6)(0.1)^3}{12(1-.3^2)} = 2317$$

$$\sigma_{CR} = \frac{(19.23)(D^2)(2317)}{(3.25)^2(-.1)}$$

$$= 416 \text{ ksi}$$

416 ksi > Yield stress

\therefore ELASTIC BUCKLING DOES NOT OCCUR

$$\text{Actual stress} = \frac{F}{A} = \frac{166 \text{ lb} \times 75}{8(.1)(2.75)}$$

$$= 5.7 \text{ ksi} < \text{Yield stress}$$

\therefore Plastic Buckling / Collapse
DOES NOT OCCUR

Check if Column Buckling gives Lower P_{cr}

$$P_{cr} = \frac{\pi^2 EI}{L^2} \quad I = \frac{1}{12}(2.75)(.1)^3 = 2.29 \times 10^{-4} \text{ in}^4$$

$$P_{cr} = \frac{\pi^2 (25.3 \times 10^6) (2.29 \times 10^{-4})}{(.75)^2} = 102000 \text{ LB}$$

$$\sigma_{cr} = \frac{102000}{(.1)(3)} = 340 \text{ ksi} < 420 \text{ ksi} \text{ But still}$$

well above yield

\therefore NO ELASTIC BUCKLING

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/13/99 PAGE: 211
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 6 OF 25

- SPACER PLATE / FUEL END PLATE MISALIGNMENT ANALYSIS

In the Dry Shielded Canister (DSC), the Fuel Assembly End Plate can be offset from the Spacer Plate Number 9 by varying distances. During the horizontal drop case, the Guide Sleeve will be deformed and possibly pierced by the Fuel End Plate. This misalignment between Spacer Grids and Spacer Plates was identified in Issue Reports IR3-007-609 and IR3-007-611 [49]. The purpose of this analysis is to address the above Issue Reports by determining the stress state and deformation imposed on the Guide Sleeve from Fuel Assemblies 1D, E, F, G, H, and J and 2A, B, C, D, E, F, G, and H during a horizontal drop.

Approach

The system will be analyzed under 1 g, 31 g's, and 75 g's. The Guide Sleeve will be modeled as a simply supported beam. The deflections for the above loadings as well as the loads required to yield and pierce the Guide Sleeve will be calculated. The amount of offset between the Fuel Assembly End Plate and Spacer Plate Number 9 is 0.5992" for Unit 1 Batches D, E, F, G, H, and J as well as Unit 2 Batches A, B, C, D, E, F, G, and H [43]. However, since the maximum offset for any Fuel Assembly is 0.9742 [43], the analysis in this section will be performed based on this maximum value. Further, the offset will be varied from 0.1" to 2.0" (worst case for Guide Sleeve bending between longitudinal stitch welds) so that a deflection versus offset curve can be drawn. The computer analysis program ANSYS [7] will be used to backup the hand calculations. As long as the Guide Sleeve is not pierced, the Fuel Assembly is assumed to remain retrievable. The Fuel Grid directly above the End Plate, despite its degree of match or mismatch with the number 9 Spacer Plate, will be ignored. Due to the End Plate's greater size and stiffness, it will be assumed that the End Plate carries all the tributary load to the Guide Sleeve.

Although the DSC Design calls for a Guide Sleeve with continuous longitudinal welding, the misalignment analysis described above assumes a Guide Sleeve design with intermittent (stitch) welding (2" @ 6" centerline). This analysis serves as a bounding case for fuel retrievability and the risk of Guide Sleeve wall piercing by the Fuel End Plate since the actual Guide Sleeve stress state and deformation will be lower than that determined by this analysis.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

PAGE: 212

SUBJECT: 4.0 ANALYSIS

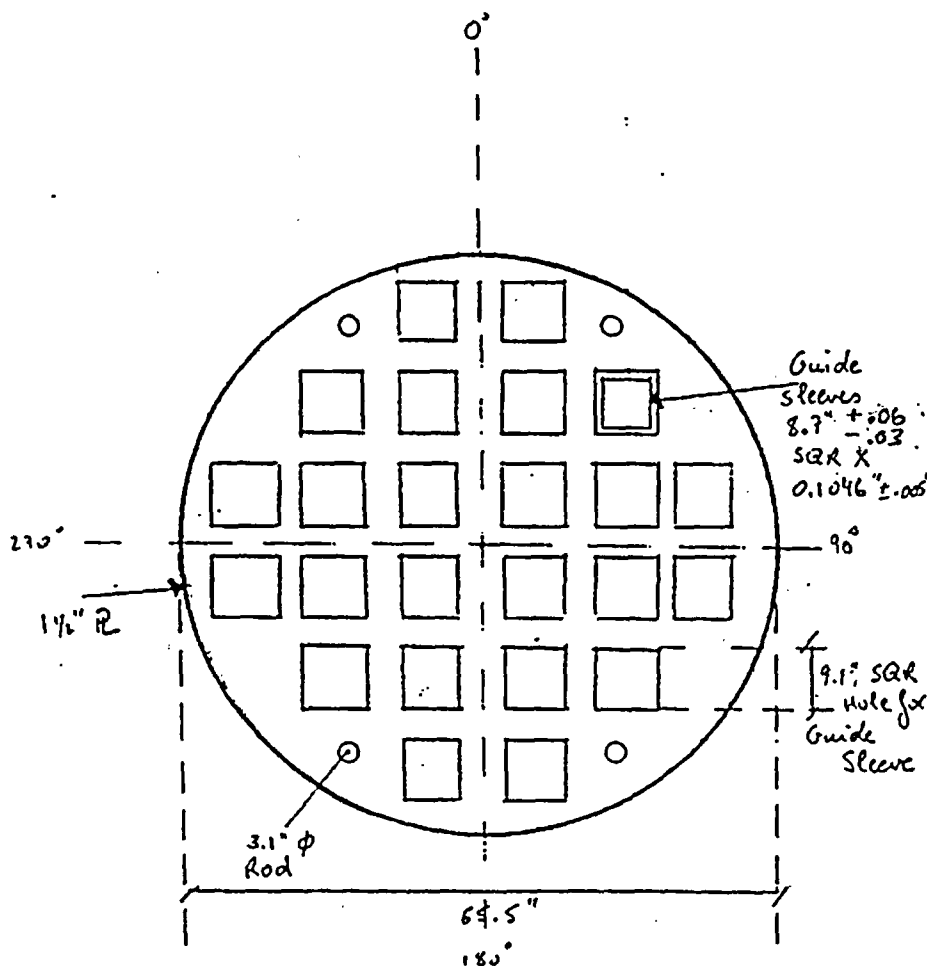
BY: ASS CK: SR SHT: 7 OF 25

System Description

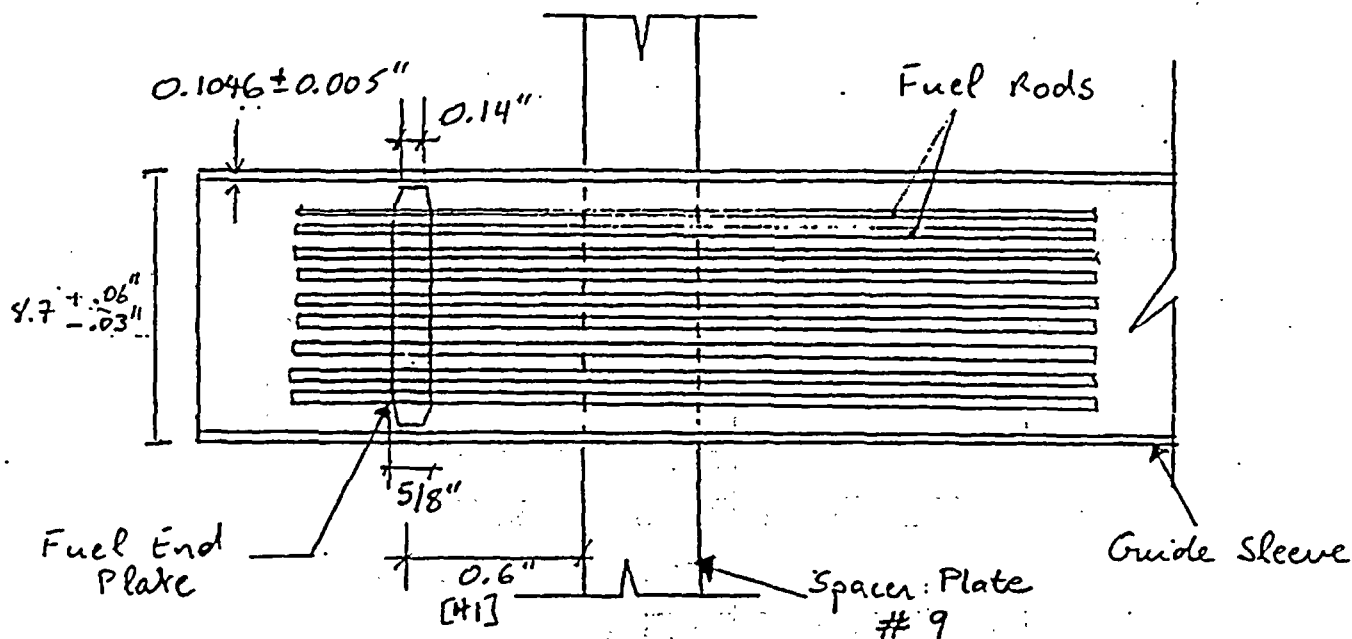
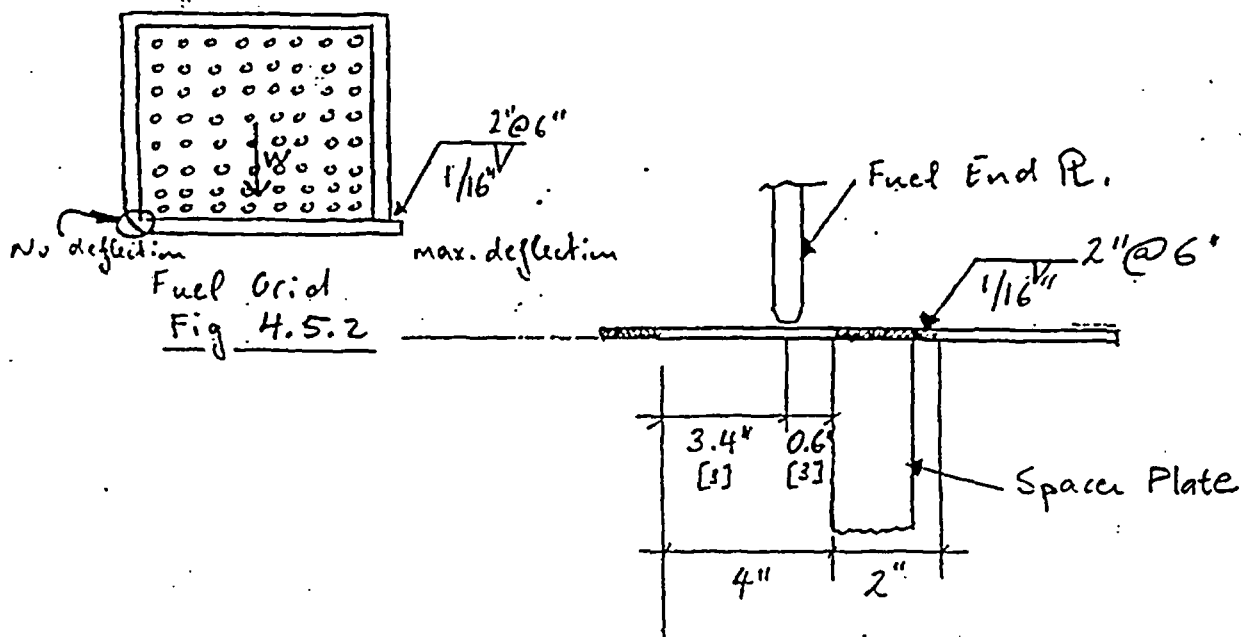
The DSC Internal Basket Assembly is made of the following components:

- a) Spacer Plate (9)
- b) Support Rods (4)
- c) Guide Sleeves (24)

The Guide Sleeves run through the Spacer Plates and remain in the DSC during Fuel Assembly removal by means of Guide Sleeve Extraction Stops (see Section 4.2). The Fuel Assemblies with Grids and End Plates are slid into the Guide Sleeves (see Figures 4.5.1, 4.5.2, and 4.5.3 on the following page).

SPACER PLATE PLAN VIEW

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/13/99PAGE: 213SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 8 OF 25Fig. 4.5.1Fig. 4.5.3

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/13/99 PAGE: 214
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 9 OF 25

MATERIALS :

<u>Spacer Plate</u>	Carbon Steel ASME SA516 GR70 Type 304
<u>Guide Sleeves</u>	Stainless Steel ASME SA240 Type 304
<u>Grid Plate</u>	Inconel

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

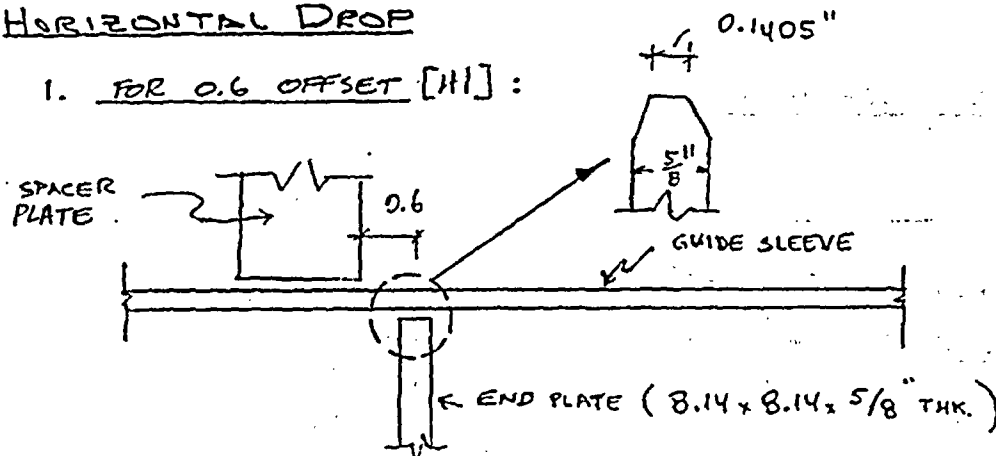
PAGE: 215

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 10 OF 25

HORIZONTAL DROP

1. FOR 0.6 OFFSET [11]:

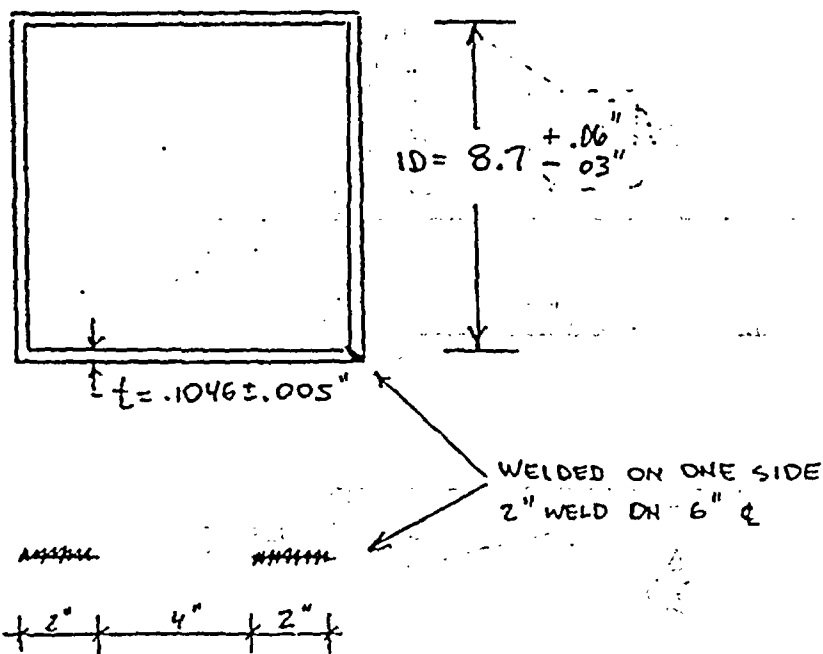


Tributary weight per C.E.

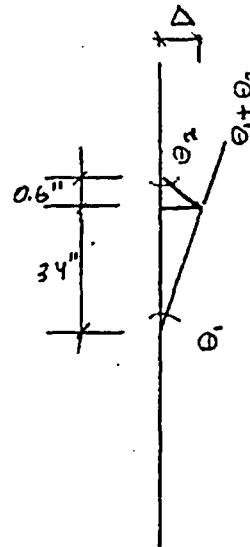
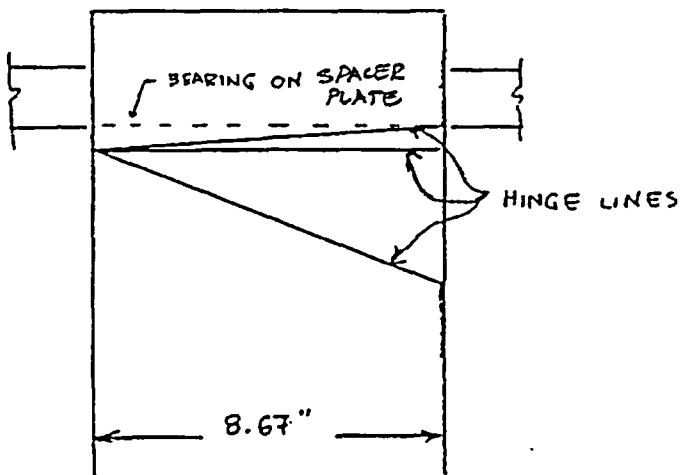
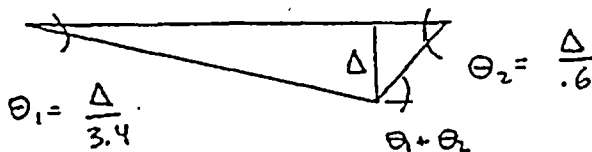
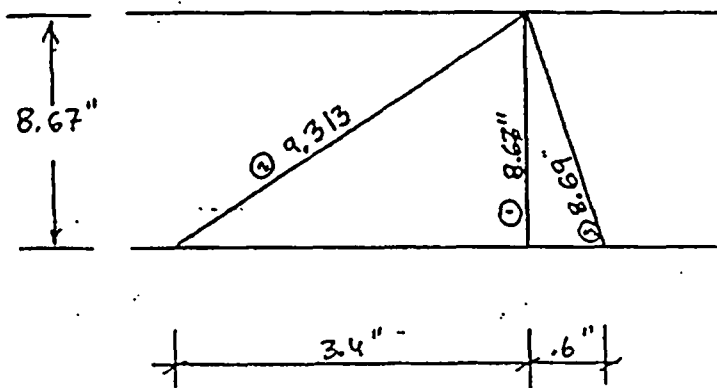
$$W_t = (176 \text{ (wt of tubes)}) \left(\frac{13.8125 \text{ in}}{2} \right) + 12.59 + 1.5 \text{ (wt of plate)} \quad [42]$$

$$= 73.77 \text{ lbs}$$

(NOTE: REF. 3 GIVES WT. = 72.15 LBS. USE 73.77 LBS, CONSERVATIVE)

GUIDE SLEEVE DIMENSIONS

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/13/99PAGE: 216SUBJECT: 4.0 ANALYSISBY: ATS CK: SR SHT: 11 OF 25FAILURE MECHANISMINTERNAL ENERGY

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

PAGE: 217

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 12 OF 25

Δ is maximum at one edge and is zero at the other edge $\therefore \Delta_{avg}$ is

$$\Delta_{avg} = \frac{\Delta_{max} + 0}{2} = \frac{\Delta_{max}}{2}$$

$$\begin{aligned} \text{Internal energy} &= M_p (\theta_1 + \theta_2 + (\theta_1 + \theta_2)) \\ &= M_p \frac{\Delta_{max}}{2} \left(\frac{1}{3.4} + \frac{1}{.6} + \frac{1}{.6} + \frac{1}{3.4} \right) \\ &= M_p \frac{\Delta_{max}}{2} (3.922) \end{aligned}$$

$$\text{External energy} = F \frac{\Delta_{max}}{2}$$

So,

$$F \frac{\Delta_{max}}{2} = M_p \frac{\Delta_{max}}{2} (3.922)$$

$$\underline{F = 3.922 M_p}$$

At yield,

$$\begin{aligned} M_{py} &= Z \times \sigma_y = \frac{(0.996)^2 (9.313 + 8.67 + 8.69)}{4} \times 17.7 \\ &= 1.17 \text{ K-IN} \end{aligned}$$

yield @ 700°F

At ultimate

$$M_{pu} = .06615 (63.5) = 4.20 \text{ K-IN}$$

@ 700°F

$$F_y = 3.922 (1.17) = \underline{4.59 \text{ KIPS}}$$

$$\left(\frac{4590}{73.17} = 629 \text{ lbs} \right)$$

$$F_u = 3.922 (4.20) = \underline{16.5 \text{ KIPS}}$$

$$\left(\frac{16500}{73.17} = 2243 \text{ lbs} \right)$$

\therefore Guide Sleeve will not rupture

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

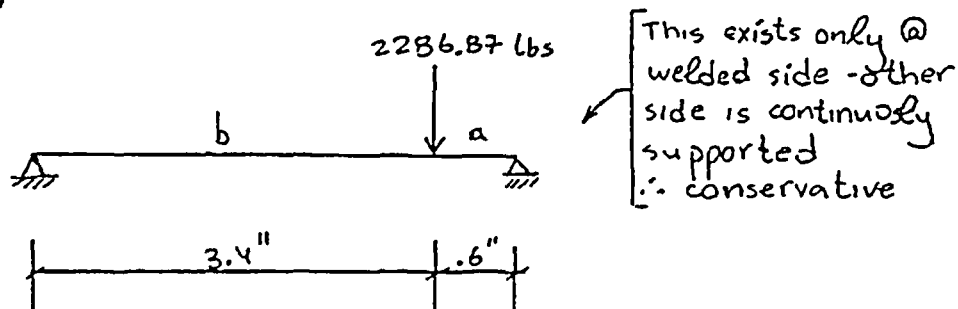
PAGE: 218

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 13 OF 25

CHECK DEFLECTION - BOUNDING ANALYSIS

At 31g; $W = 73.77 \times 31 = 2286.87 \text{ lbs}$



$$\Delta = \frac{Pab(a+2b)\sqrt{3a(a+2b)}}{27EIL} \quad (\text{AISC, Pg 2-298})$$

$$= \frac{.5101 P}{EI}$$

$$I = \frac{(0.0996)^3 (8.67)}{12} = 7.139 \times 10^{-4} \text{ in}^4$$

$$E = 24.8 \times 10^6 \text{ psi} \quad \text{S/S 304 @ 700°F}$$

$$\Delta_{\max} = \frac{2286.87 \times .5101}{24.8 \times 10^6 (7.139 \times 10^{-4})} = 0.066 \text{ inch}$$

← Neglect global deflection of cantilever guide sleeve tube

At 75 g's

$$\Delta_{\max} = 0.066 \left(\frac{75}{31} \right) = 0.16 \text{ inch}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

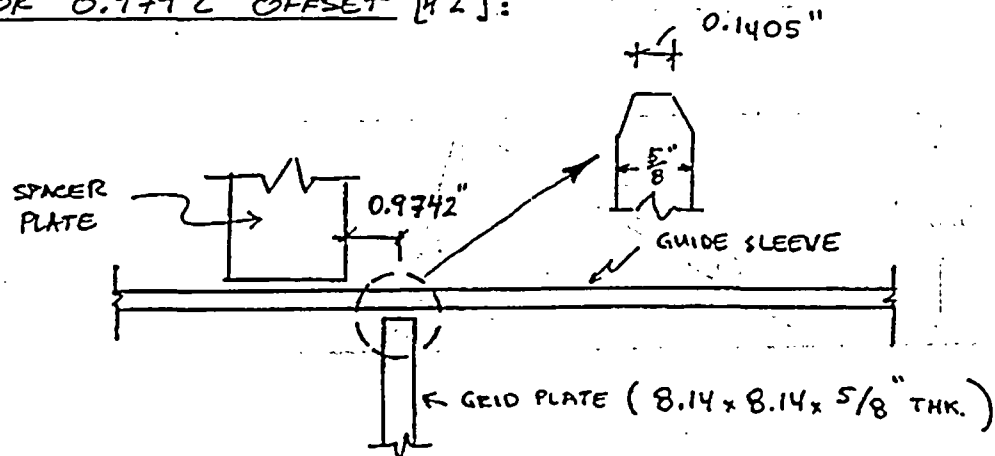
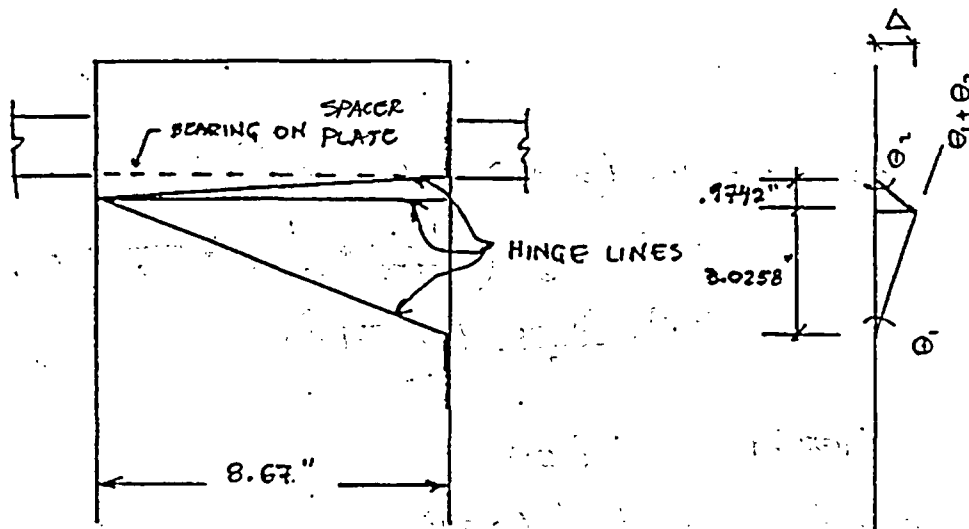
DATE: 01/13/99

PAGE: 219

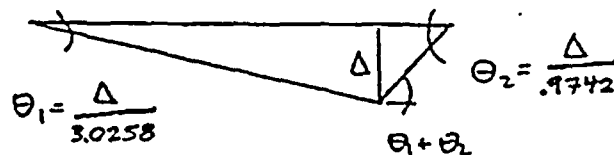
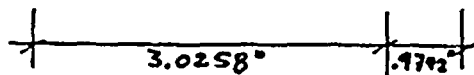
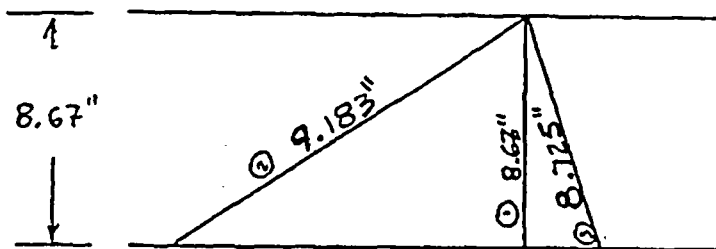
SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 14 OF 25

2. FOR 0.9742 OFFSET [42]:

FAILURE MECHANISM

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/13/99PAGE: 220SUBJECT: 4.0 ANALYSISBY: AJSCK: SRSHT: 15 OF 25INTERNAL ENERGY

$$\begin{aligned}
 \text{INTERNAL ENERGY} &= M_p (\theta_1 + \theta_2 + (\theta_1 + \theta_2)) \\
 &= M_p \frac{\Delta_{\max}}{2} \left(\frac{1}{3.0258} + \frac{1}{.9742} + \frac{1}{.9742} + \frac{1}{3.0258} \right) \\
 &= M_p \frac{\Delta_{\max}}{2} (2.714)
 \end{aligned}$$

$$\text{EXTERNAL ENERGY} = F \frac{\Delta_{\max}}{2}$$

$$F \frac{\Delta_{\max}}{2} = M_p \frac{\Delta_{\max}}{2} (2.714)$$

$$F = 2.714 M_p$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/13/99 PAGE: 221SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 16 OF 25

At YIELD,

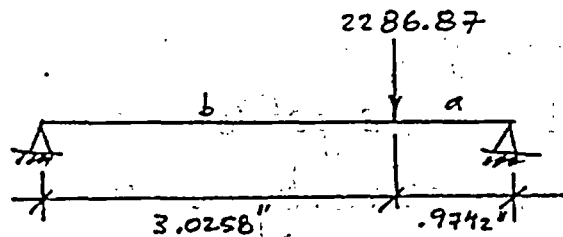
$$M_{py} = \frac{.0996^2 (9.183" + 8.67" + 8.125")}{4} \times 17.7 = 1.17$$

At ULTIMATE,

$$M_{pu} = .0659 (63.5) = 4.18 \text{ k-in}$$

$$\therefore F_y = 2.714 (1.17) = \underline{3.18 \text{ Kips}} \quad \left(\frac{3180}{73.77} = 43.1 \text{ g's} \right)$$

$$F_u = 2.714 (4.18) = \underline{11.34 \text{ Kips}} \quad \left(\frac{11340}{73.77} = 154 \text{ g's} \right)$$

 \therefore GUIDE SLEEVE WILL NOT RUPTURECHECK DEFLECTION - BOUNDING ANALYSIS@ 31g's:

$$\Delta_{max} = \frac{0.8689 \cdot P}{EI}$$

$$I = 7.139 \times 10^{-4} \text{ in}^4$$

$$E = 24.8 \times 10^6 \text{ psi} \quad (3/5 \text{ 304 @ } 700^\circ\text{F})$$

$$\Delta_{max} = \frac{2286.87 \times 0.8689}{24.8 \times 10^6 (7.139 \times 10^{-4})} = \underline{0.112 \text{ inch}}$$

@ 75g's:

$$\Delta_{max} = 0.112 \left(\frac{75}{31} \right) = \underline{0.271 \text{ inch}}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/13/99PAGE: 222SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 17 OF 25ANSYS RUN

The computer program ANSYS [Ref. 7] will be run to verify the hand calculations. The run will be based on the [Reference 41] data, i.e. 0.6" offset

$$Wt = 75g's \times 72.15 = 5411 \text{ lbs.}$$

The load will be applied as a uniform line load. A non-linear model will be run using the stress-strain curve for stainless steel at 700°F.

The runs input file and stress contour plot are included on the following pages. The maximum stress intensity is 47.28 ksi.

The allowable membrane + bending stress is $0.9S_u$.

$$S_u = 63.5 \text{ ksi @ } 700^\circ\text{F}$$

$$\underline{47.28 \text{ ksi} < .9 \times 63.5 = 57.15 \text{ ksi} \quad \text{O.K.}}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

PAGE:

223

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 18 OF 25

```
/BATCH
/COM,ANSYS
/prep7
/menu,off
et,1,43,,,,,2
mp,ex,1,24.8e6
mp,nuxy,1,,.3
r,1,,.0996
MPTEMP,1,0
TB,MISO,1,1,12
TBTEMP,0
TBPT,DEFI,0.000714,17.7E3
TBPT,DEFI,0.0188,28E3
TBPT,DEFI,0.0377,34E3
TBPT,DEFI,0.0568,39.5E3
TBPT,DEFI,0.0763,44E3
TBPT,DEFI,0.0962,48E3
TBPT,DEFI,0.1167,51E3
TBPT,DEFI,0.1380,54.5E3
TBPT,DEFI,0.1600,58E3
TBPT,DEFI,0.2400,63E3
TBPT,DEFI,0.3200,65E3
TBPT,DEFI,0.4000,65E3
k,1,0,0,0
k,2,8.67,0
k,3,0,0.6,0
k,4,8.67,.6,0
k,5,0,4,0
k,6,8.67,4,0
l,1,2
l,3,4
l,5,6
l,1,3
l,2,4
l,3,5
l,4,6
save
lesize,1,,,12
lesize,2,,,12
lesize,3,,,12
lesize,4,,,3
lesize,5,,,3
lesize,6,,,10
lesize,7,,,10
save
a,1,2,4,3
a,3,4,6,5
save
```

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

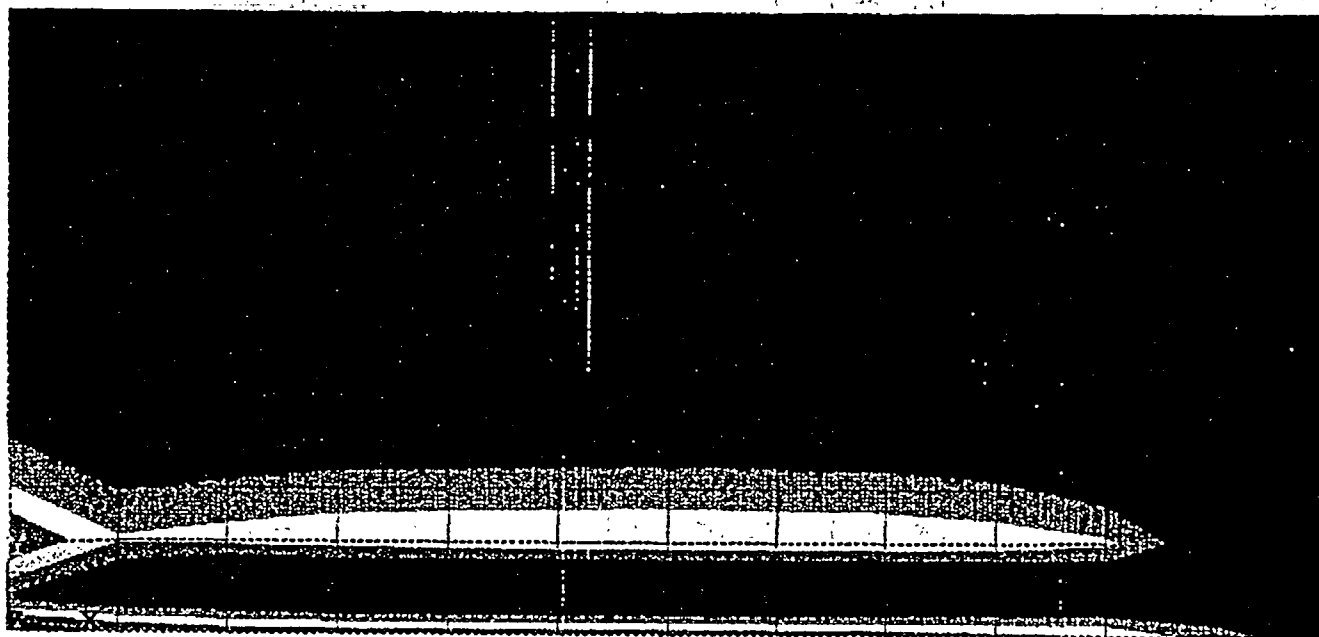
PAGE: 224

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 19 OF 25

```
amesh,all
save
lset,s,line,,1,3,2
allsel,below,line
d,all,all
allsel
lset,s,line,,5,7,2
allsel,below,line
d,all,all
allsel
save
fini
/menu,off
/solu
antype,static
NLGEOM,ON
AUTOTS,ON
lset,s,line,,2
allsel,below,line
f,all,fz,430
allsel
TIME,1.0
DELTIM,.01,.001,.05
NEQIT,50
c***CNVTOL,U,,.01
c***CNVTOL,F,,.01
OUTRES,ALL,ALL
OUTPR,ALL,ALL
PRED,ON
SSTIF,ON
solve
fini
/post1
set
plns,eplo,int
```

ANSYS
MAY 5 1998
10:23:40
PLOT NO. 1
NODAL SOLUTION
STEP=1
SUB =23
TIME=1
SINT (AVG)
TOP
DMX =0.187164
SMN =883.109
SMX =47274
883.109
6038
11192
16347
21501
26656
31811
36965
42120
47274



GUIDESLEEVE STRESS CONTOUR PLOT

DATE: 1/13/99 PAGE: 225
BY: AJS CK: SE SHT: 20 OF 25

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

PAGE: 226A of B

SUBJECT: 4.0 ANALYSIS

BY: AJS

CK: SR

SHT: 21A of 25

Conclusion

The analysis to determine the deformation and stress of the guide sleeve due to an offset of the bottom fuel end plate during the horizontal drop case has been performed. The results of the analysis are shown in Table 4.5.1. The deflection as a function of the offset is plotted on Figure 4.5.4. The acceleration required to yield and pierce the guide sleeve wall are shown in Table 4.5.2. With acceleration required to pierce the guide sleeve greater than 75 g's, the fuel assemblies will remain retrievable.

Table 4.5.1

	Load (LBS)	Guide Sleeve Deformation (in)	
		0.5992 offset	0.9742 offset
1 g's	73.77	N/A	N/A
31 g's	2287	0.066	0.112
75 g's	5333	0.160	0.271

Table 4.5.2

	0.5992" Offset	0.9742" Offset
Acceleration to yield guide sleeve	62 g's	43 g's
Acceleration to pierce guide sleeve	224 g's	154 g's

CALCULATION SHEET

TITLE: NEW OSC STRUCTURAL ANALYSIS DATE: 3/3/99 PAGE: 226B of B
SUBJECT: 4.0 ANALYSIS BY: MR CK: A.R. SHT: 21B OF 25

GUIDE SLEEVE/SPACER DISC INTERFERENCE CHECK

$$\alpha_{ss} = 10.38 \times 10^{-6} \text{ in/in } ^\circ\text{F} \quad @ 600^\circ\text{F}$$

$$\alpha_{cs} = 7.88 \times 10^{-6} \text{ in/in } ^\circ\text{F} \quad @ 460^\circ\text{F}$$

$$\begin{aligned} \text{Spacer Disc Hole Opens:} &= (9.055) (460-70) (7.88 \times 10^{-6}) \\ &= .028 \text{ "} \end{aligned}$$

$$\begin{aligned} \text{New Spacer Disc Hole} &= 9.055 + 0.028 \\ &= 9.083 \text{ "} \end{aligned}$$

$$\begin{aligned} \text{G.S. expands:} &= (9.04) (600-70) (10.38 \times 10^{-6}) \\ &= .0497 \text{ "} \end{aligned}$$

$$\begin{aligned} \text{New Spacer Disc Hole} &= 9.045 + 0.0497 \\ &= 9.0897 \text{ "} \end{aligned}$$

$$\begin{aligned} 9.083 \text{ "} &< 9.0897 \text{ "} \\ .007 \text{ "} &\text{interference} \end{aligned}$$

Without Thermal Growth:

$$9.055 - 9.04 = .015$$

Fixing fabrication. Tolerance issue will fix thermal expansion interference of .007"

SPACER DISC MINIMUM HOLE SIZE

$$\begin{array}{rclcl} 9.1 & - & 0.015 & - & 2(.015) & = & 9.055 \\ \text{nominal} & & \text{Fabrication} & & \text{Aluminum Spray} & & \\ \text{size} & & \text{tolerance} & & \text{coating} & & \end{array}$$

GUIDE SLEEVE MAXIMUM SIZE

$$\begin{array}{rclcl} 8.7 & + & 0.12 & + & 2(.105 + .005) & = & 9.04 \\ \text{Inner Dim.} & & \text{Fabrication} & & \text{Wall Thickness} & & \\ & & \text{Tolerance} & & \text{and Tolerance} & & \end{array}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS
SUBJECT: 4.0 ANALYSIS
DATE: 01/13/99
BY: AJS CK SR SHT: 22 OF 25
PAGE: 227

Guidesleeve Deflection vs. End Plate Offset

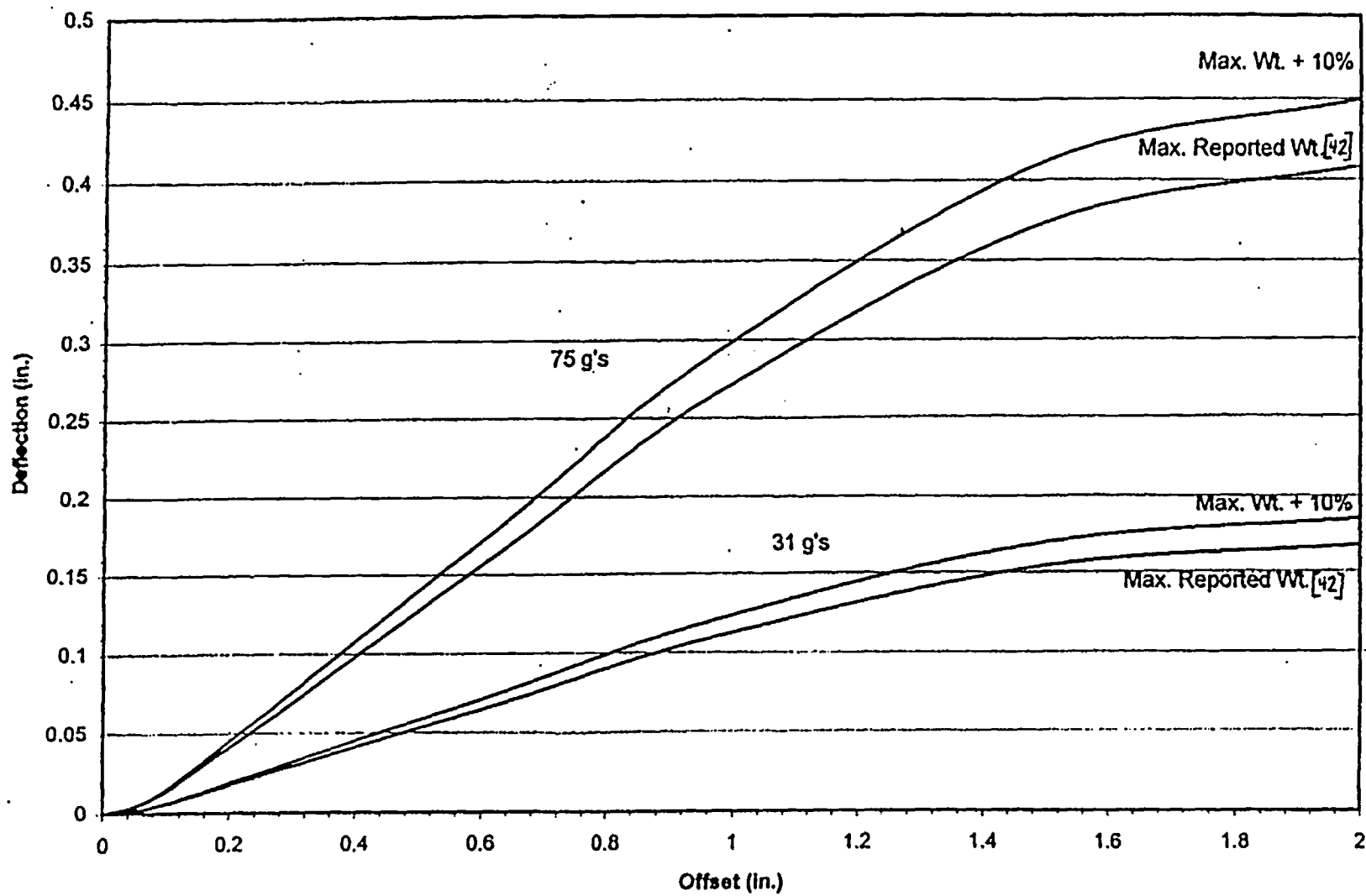


Figure 4.5.4

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

PAGE: 228

SUBJECT: 4.0 ANALYSIS

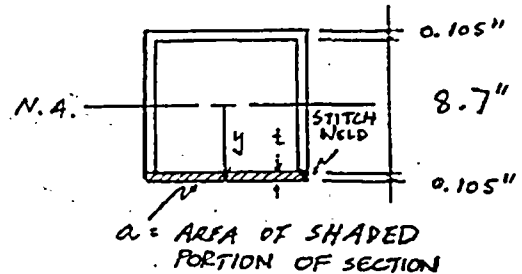
BY: AJS

CK: SR

SHT: 23 OF 25

CHECK HORIZONTAL SHEAR AT WELD LOCATION:

$$\tau = \frac{Vay}{It} \quad [\text{REF 34}]$$



$$V = \frac{wL}{2} = 730 \text{ lbs}$$

$$a = (8.91)(0.105) = 0.94 \text{ in}^2$$

$$y = \frac{8.91}{2} - \frac{0.105}{2} = 4.4''$$

$$I = \frac{(8.91)^4 - (8.7)^4}{12} = 47.8 \text{ in}^4$$

$$t = 0.105 \text{ in}$$

$$\Rightarrow \tau = \frac{(730)(0.94)(4.4)}{47.8 \cdot 0.105} = 601 \text{ psi} \left(\begin{array}{l} \text{USE } \tau/2 \\ \text{@ ED. EDGE} \end{array} \right)$$

SINCE THE STITCH WELD ARE 2" @ 6" USE 3 TIMES $\tau/2$ FOR DISTRIBUTION OF STRESS.

$$\text{SHEAR STRESS} = \frac{3}{2} \tau = 902 \text{ psi}$$

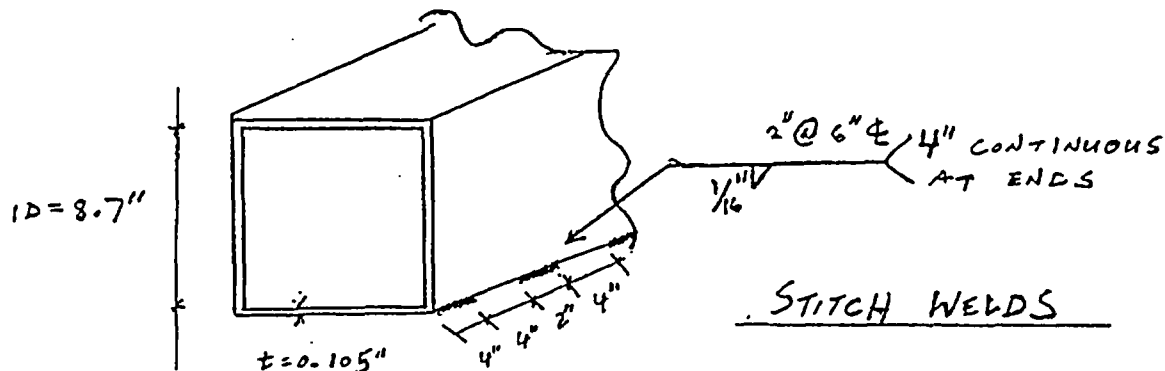
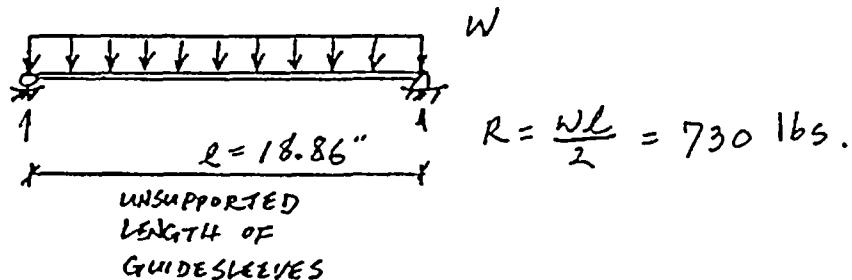
CHECK AGAINST LEVEL A ALLOWABLE STRESS

FOR WELDS, $0.5 S_m = 8 \text{ ksi}$

$$0.902 \text{ ksi} < 8 \text{ ksi}$$

ok

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/13/99PAGE: 229SUBJECT: 4.0 ANALYSISBY: ASS CK: SR SHT: 24 OF 25• CHECK SHEAR FOR GUIDE SLEEVESCHECK VERTICAL SHEAR STRESS:[CRITICAL CONDITION OCCURS AT 75 g HORIZONTAL
DROP.]

$$W = 1.034 \text{ \#/in} \times 75 \text{ g} = 77.55 \text{ \#/in}$$

$$\sigma_v = \frac{3}{2} \frac{R}{A} = \frac{3(730)}{2(8.91)(0.105)(2)} = 0.59 \text{ ksi}$$

[ASME AD-132.2
PURE SHEAR, REF. 19]

$$< 0.6 S_m = 9.6 \text{ ksi}$$

OK ✓

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

PAGE: 230

SUBJECT: 4.0 ANALYSIS

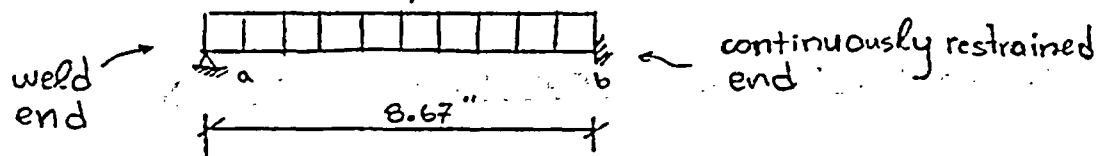
BY: AJS CK: SR SHT: 25 OF 25

CHECK WELD FOR MISALIGNMENT CONDITION

Worst case is when fuel end plate impacts at weld, thus one weld takes entire load

At 31g

$$W = \frac{73.77 \times 31g}{8.67"} = 264 \frac{lb}{in}$$



$$R_a = \frac{3}{8} W L = .375 (264) (8.67) = 858.3 \text{ lbs}$$

Weld Capacity is, weld area x allowable stress

$$\frac{1}{16} (.707) (2") (1.2 S_m)$$

Level D allowable for fillet weld

$$\text{Capacity} = \frac{1}{16} (.707) (2") (1.2 \times 16,000)$$

.0881

$S_m @ 700^\circ F$

$$= 1697 \text{ lbs} > 858.3 \text{ lbs}$$

O.K.

At 75g

$$R_a = 858.3 \left(\frac{75}{31} \right) = 2077 \text{ lbs} > 1697 \text{ lbs} \quad \text{N.G.}$$

As a function of ultimate stress,

$$\frac{2077}{.0884 (63,500)} = 0.37 S_u \leftarrow \begin{array}{l} \text{Exceeds allowable} \\ \text{but will not fail} \\ \therefore \text{operable} \end{array}$$

$S_u @ 700^\circ F$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/13/99 PAGE: 231
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 1 OF 14

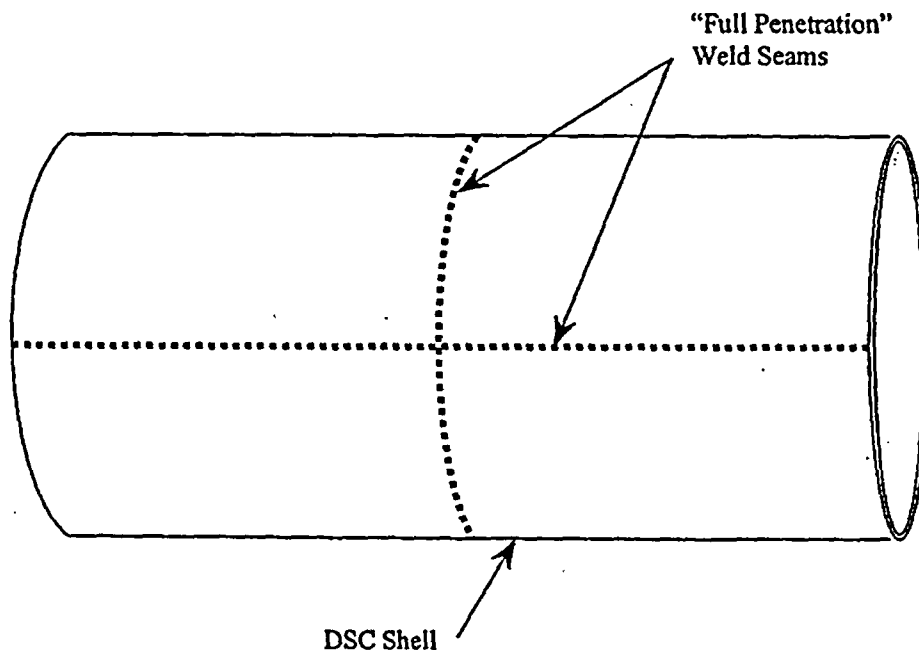
4.6 WELDS ANALYSIS

This section evaluates the DSC Shell and Cover Plate welds and evaluates the Spacer Plate to Support Rod welds. For the Guide Sleeve weld evaluation, see Section 4.5.

An efficiency factor of 50% for the welds was used by the allowable stress criteria. According to Reference 4, Table UW-12, this efficiency factor used is very conservative and satisfies the welds design criteria per the Topical Report [Ref. 1].

4.6.1 DSC SHELL AND COVER PLATE WELDS EVALUATIONDSC SHELL WELDS:

The DSC shell is manufactured from pieces of cylindrical plates. These shell pieces are welded together by Full Penetration weld seams both longitudinally and circumferentially. By definition, Full Penetration welds are as strong as the base metal material. Therefore, the DSC shell is treated as a single piece of element, and no weld analysis is done for these welds.



CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

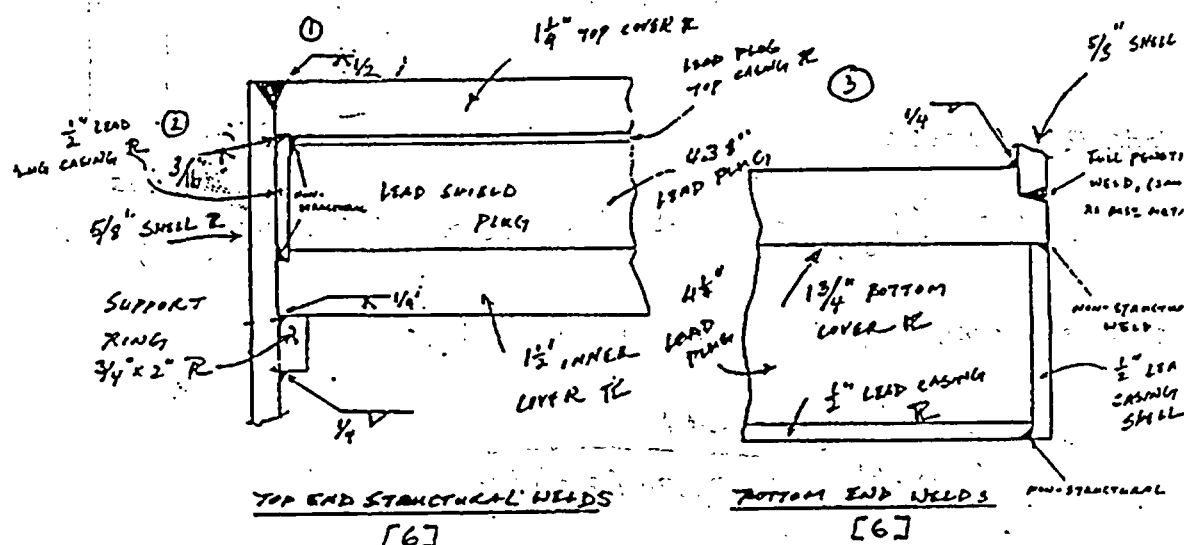
PAGE: 232

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 2 OF 14

TOP AND BOTTOM COVER PLATE WELDS:

THE FOLLOWING IS AN EVALUATION FOR THE COVER PLATES TO SHELL WELDS. THE SECTIONS BELOW SHOW THE TOP AND BOTTOM END COVER PLATE TO SHELL WELDS.



1. TOP DETAIL WELDS:

SUPPORT RING WELDS

THE SUPPORT RING IS WELDED TO THE DSC SHELL BY A $\frac{1}{4}$ " GROOVE WELD AT THE TOP AND A $\frac{1}{4}$ " FILLET WELD AT THE BOTTOM.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

PAGE: 233

SUBJECT: 4.0 ANALYSIS

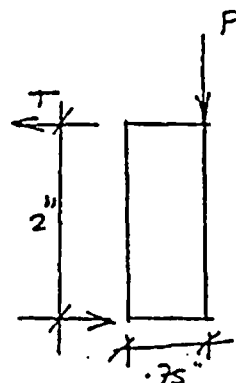
BY: AJS CK: SR SHT: 3 OF 14

THE SUPPORT RING SUPPORTS THE WEIGHT OF THE TOP LEAD SHIELD PLUG ASSEMBLY, ABOUT 8000 LBS.

THE SUPPORT RING SELF-WEIGHT IS AN ADDITIONAL 300 LBS. THE CRITICAL LOADING CONDITION OCCURS DURING A 75g VERTICAL DROP.

$$P = 75g \times 8300 \text{ lbs} = 622.5 \text{ kips}$$

$$T = 622.5 \times (.75/2) = 233.44 \text{ kips}$$



SHEAR STRESS:

$$\sigma = \frac{P}{A_{\text{weld}}} = 622.5 / (2\pi 32.75) \left(\frac{1}{4} + .707 \left(\frac{1}{4} \right) \right) = 7.09 \text{ ksi}$$

TENSILE STRESS (Fillet weld is critical)

$$\sigma = \frac{T}{A_{\text{weld}}} = \frac{233.44}{2\pi 32.75 (.707) \left(\frac{1}{4} \right)} = 6.42 \text{ ksi}$$

$$\sigma_1 = \sqrt{7.09^2 + 6.42^2} = 9.56 \text{ ksi}$$

THE TOTAL WELD STRESS INTENSITY IS WELL BELOW THE WELD STRESS ALLOWABLE (21.6 ksi).

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/13/99 PAGE: 234A of B
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 4A OF 14

• LEAD SHIELD PLUG WELDS

CHECK $\frac{5}{16}$ " WELD APPLIED FOR WELDING TOP PLUG ASSEMBLY ROUND BAR TO THE INNER COVER PLATE.

THE FOUR TOP PLUG POST BARS ARE LOADED ONLY DURING PRELIMINARY LIFTING OF THE TOP SHIELD PLUG ASSEMBLY. IN ALL OTHER LOAD CASES, THE WELD WILL SEE COMPRESSION. THE WEIGHT OF THE TOP SHIELD PLUG ASSEMBLY IS ABOUT 8000 LBS. ASSUME, CONSERVATIVELY, THAT ONLY TWO PLUGS CARRY THE LOAD. THE STRESS ON THE WELD IS WELL BELOW THE ALLOWABLE, $0.5 S_m = 9.7 \text{ KSI}$:

$$\sigma = \frac{P}{A_{\text{weld}}} = 4000 / \pi 1.5 \left(\frac{5}{16} \right) (.707) = 3.84 \text{ KSI}$$

THEREFORE, THE WELD IS ACCEPTABLE.

• TOP END STRUCTURAL WELD

THE PRIMARY STRESS AT THE TOP STRUCTURAL WELD IS OBTAINED FROM ANSYS ANALYSIS [SECTION 4.1].

$$\sigma = \underline{13.5 \text{ KSI}} \quad (\text{LEVEL D, ACCIDENT PRESSURE})$$

THE STRESS IS WELL BELOW THE ALLOWABLE.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 4/5/99 PAGE: 234 B of C
SUBJECT: 4.0 ANALYSIS BY: MR CK: MR SHT: 40 OF 14

In order to calculate the stress with a $\frac{1}{2}$ " weld
it is ratioed from the ANSYS ANALYSIS [sec. 4.1]

$$\sigma = 13.5 \left(\frac{.625}{.5} \right) = 16.9 \text{ ksi} < 21.6 \quad \text{OK}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/13/99

PAGE: 235

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SR SHT: 5 OF 14

2. BOTTOM DETAIL WELDS :• BOTTOM END STRUCTURAL WELD

THE PRIMARY STRESS AT THE BOTTOM STRUCTURAL WELD IS OBTAINED FROM ANSYS ANALYSIS [SECTION 4.1].

$$\sigma = 2.64 \text{ ksi (LEVEL D. ACCIDENT PRESSURE)}$$

THE STRESS IS WELL BELOW THE ALLOWABLE.

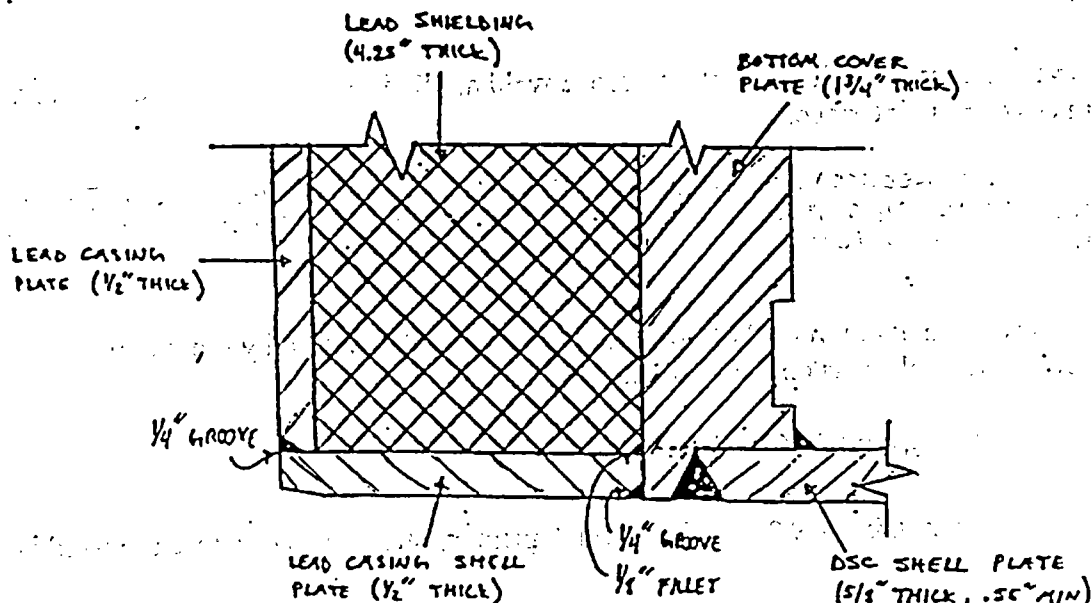
Bottom lead casing plate welds

- The bottom lead casing plate is welded to the lead casing shell plate by a $\frac{1}{4}$ " groove weld. The shearing load on this weld is equal to the dead weight of the bottom shield plug and bottom casing plate, say conservatively 7500 lbs., when the DSC is lifted into the transfer cask. The weld shearing stress

$$\sigma = P / A_{\text{WELD}} = 7500 / (.25)(2\pi 33) = 0.14 \text{ ksi}$$

is well within the allowable.

- The lead casing shell is welded to the bottom cover plate by a $\frac{1}{4}$ " groove weld on the outside, and a $\frac{1}{8}$ " fillet weld on the inside. These welds carry virtually the same loads as the $\frac{1}{4}$ " groove weld between the lead casing plate and lead casing shell and are O.K. by inspection.
- $5/16$ " bottom weld applied to the plug post and bottom cover plate interface (not pictured) is a non-structural weld and need not be analyzed.



CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/13/99 PAGE: 236
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 6 OF 14

NOTE: FOR EVALUATION OF CASING PLATE WELDS
FOR LEAD THERMAL EXPANSION, SEE SECTION
4.1.4.

3. GRAPPLE RING ASSEMBLY WELDS

- The grapple ring is welded to the grapple ring shell by a full penetration groove weld. Full penetration welds need not be evaluated.
- The grapple ring plate is welded to the grapple ring shell on the inside by a 3/8" groove weld with a 1/8" fillet weld cover, and on the outside by a 1/4" fillet weld. These welds carry some of the lead shield during a vertical lift. Since the 1/4" groove weld around the bottom lead cover plate is adequate under this loading condition (see previous sheet), this weld is adequate by inspection.
- The grapple ring shell is welded to the inner cover plate by a full penetration weld with a 1/8" fillet cover weld. Full penetration welds need not be evaluated.

- a. 1/8" cover fillet over a full penetration groove weld applied to grapple shell ring plate and bottom cover plate interface.

NO ANALYSIS NECESSARY. THIS IS A BACK-UP WELD. STRUCTURAL INTEGRITY FOR GRAPPLE SHELL RING PLATE IS MAINTAINED BY THE APPLIED GROOVE WELD. CHECK GROOVE WELD.

This weld sees a maximum load of 80 kips as the DSC is pulled by the grapple assembly. The total stress on the weld is:

$$\sigma = P / A_{\text{WELD}} = 80 / (\pi 16) (3/4) = 2.1 \text{ ksi}$$

which is less than $0.5S_m = 9.35 \text{ ksi}$ for Level A primary stresses. Therefore the weld is acceptable.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/13/99PAGE: 237SUBJECT: 4.0 ANALYSISBY: AJS CK: GR SHT: 7 OF 14

- b. 1/8" cover fillet over 3/8" groove weld applied to outside of grapple shell ring plate and lead casing plate interface.

NO ANALYSIS NECESSARY. THIS IS A BACK-UP WELD. STRUCTURAL INTEGRITY FOR GRAPPLE SHELL RING PLATE IS MAINTAINED BY THE APPLIED 3/8" GROOVE WELD. CHECK GROOVE WELD.

This weld sees a maximum load of 80 kips as the DSC is pushed by the grapple assembly ram. The total stress on the weld is:

$$\sigma = P / A_{\text{WELD}} = 80 / (\pi 14.5) (3/8) = 4.7 \text{ ksi}$$

which is less than $0.5S_m = 9.35 \text{ ksi}$ for Level A primary stresses. Therefore the weld is acceptable. 1

4. VENT AND SIPHON PORT COVER PLATE WELDS

The vent and siphon port cover plates form part of the pressure boundary. The plates are 1.95" in diameter and are welded to the drain and fill port by 3/16" groove welds [6]. Under worst case conditions the plates will carry a pressure of 50 psi.

$$\text{weld stress: } \sigma = P / A_{\text{WELD}} = (50 \text{ psi})(\pi 1.95^2/4) / (3/16)(\pi 1.95) = 0.13 \text{ ksi}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/13/99PAGE: 238SUBJECT: 4.0 ANALYSISBY: AJS CK: SRSHT: 8 OF 145. VENT/SIPHON BLOCK PRESSURE BOUNDARY

The vent/siphon block makes up part of the pressure boundary. The vent/siphon port is welded to the DSC shell by 3/16" groove welds in two places and 5/16" fillet welds in four places, and to the support ring by 3/16" groove welds in two places.

Conservatively the vent/siphon block is 15" x 5". Therefore the welds see a maximum pressure loading of:

$$P = (50 \text{ psi})(15 \times 5) = 3750 \text{ lbs.}$$

Assuming that the 1/4" groove weld between the block and the shell takes all the load, the maximum shearing stress is approximately:

$$\sigma = P / A_{\text{WELD}} = 3750 / (3/16)(15) = 1.33 \text{ ksi.}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/13/99 PAGE: 239
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 9 OF 14

4.6.2 SPACER PLATE TO SUPPORT ROD WELD EVALUATION

During a vertical drop of the Dry Shielded Canister (DSC), the welds between the Support Rod and the Spacer Plate will experience loading from the selfweight of the Spacer Plates. The following calculation will evaluate the weld using a combination of hand calculations and using the moment acting on the Support Rod/Spacer Plate weld calculated previously by means of an ANSYS finite element model (see Section 4.4.8).

ANALYSIS APPROACH

The stresses in the welds will be calculated first by finding the loads acting on the Support Rod based on a 75g drop acceleration. The loads (axial and bending) transmitted from the Spacer Plate to the Support Rod will then be used to evaluate the weld stresses and compared to the allowable stresses.

RESULTS SUMMARY

The welds between the Support Rods and the Spacer Plates have been evaluated and are found to be adequate. The maximum weld stress is 13.4 ksi, which is within the allowable stress of 21.6 ksi.

SYSTEM DESCRIPTION

The welds being evaluated are located within the DSC Basket Assembly. The DSC Basket Assembly is composed of nine (9) Spacer Plates, four (4) Support Rods, and twenty-four (24) Guide Sleeves. Geometries for the above components are from the drawings [6].

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/13/99 PAGE: 240
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 10 OF 14

ASSUMPTIONS AND REQUIREMENTS

All assumptions are stated in the calculation portion of this section.

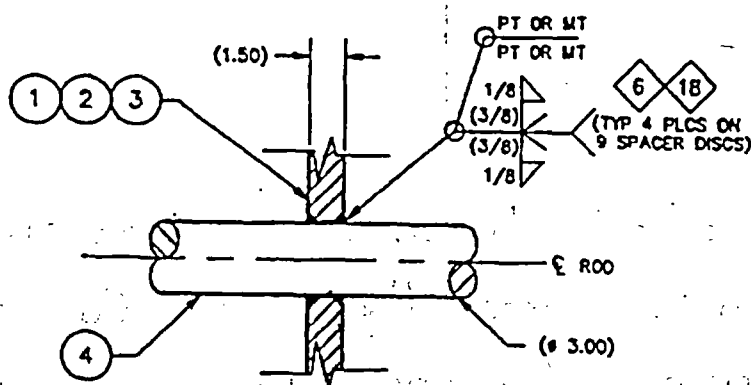
CALCULATION METHOD

A combination of computer models and hand calculations will be used to evaluate the welds. Hand calculations will be used to check weld stresses. Hand calculations and a computer model will be used to check weld strain.

ANALYSIS CRITERIA

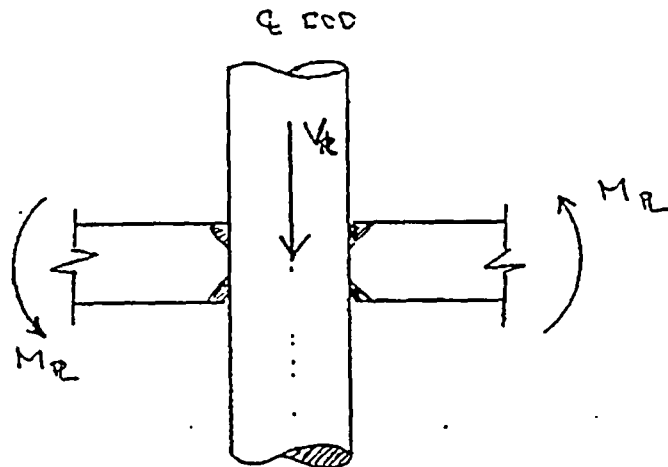
- Loading: The DSC Basket Assembly will be subjected to vertical accelerations of 75g's.
- Allowable Stresses: Allowable stresses are taken from Section 3.3.

CALCULATION SHEET

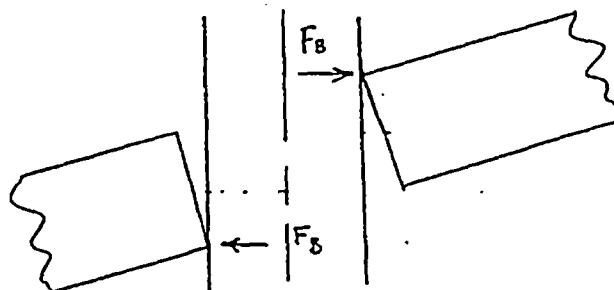
TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/13/99PAGE: 241SUBJECT: 4.0 ANALYSISBY: AJS CK: SR SHT: 11 OF 14

SUPPORT ROD / SPACER PLATE WELD CONFIGURATION [6]

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/13/99PAGE: 242SUBJECT: 4.0 ANALYSISBY: AJS CK: SLSHT: 12 OF 14

In the connection between the rod and the spacer disk it can be assumed that the weld needs to transfer only the shear, V_R , load. While bending is transferred through bearing between rod and spacer disk. Even if the welds did not exist, bending resistance would be present



still, we will evaluate weld considering bending load transfer through weld.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

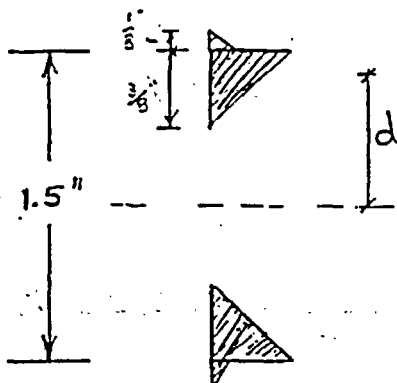
DATE: 01/13/99

PAGE: 243

SUBJECT: 4.0 ANALYSIS

BY: AJS CK: SK SHT: 13 OF 14

Weld dimensions,



$$\text{Effective Throat} = \sqrt{.125^2 + .375^2} = .395 \text{ in}$$

$$\text{Area} = 2\pi R_m t$$

$$R_m = \frac{3 + 3.25}{4} = 1.5625 \text{ in}$$

Weld centroid,

$$\text{Area} = 2\pi (1.5625) (.395) = 3.88 \text{ in}^2 / \text{per weld}$$

$$d = \frac{(\frac{.375 \times .375}{2})(.75 - \frac{.375}{2}) + (\frac{.125 \times .125}{2})(.75 + \frac{.125}{2})}{(\frac{.375 \times .375}{2}) + (\frac{.125 \times .125}{2})}$$

$$d = 0.642 \text{ in}$$

Loads,

$$\text{Axial} = \left[\frac{5300.4}{9} \right] \times 75g \times \frac{1}{4} = 11.04 \text{ Kips}$$

\uparrow SPACER DISK \uparrow 4 RODS

Moment is found from Section 4.4.8 :

$$M = 66.4 \text{ Kip-in}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 1/13/99 PAGE: 244
SUBJECT: 4.0 ANALYSIS BY: AJS CK: SR SHT: 14 OF 14

CALCULATE STRESS IN WELD;

$$\sigma_A = \frac{\text{axial}}{2 \times \text{area}} = \frac{11.04}{2 \times 3.88} = 1.42 \text{ ksi}$$

2 welds

$$\sigma_B = \frac{M}{2 \times d \times \text{area}} = \frac{66.4}{2 \times .642 \times 3.88} = 13.33 \text{ ksi}$$

$$\sigma_{TOT} = \sqrt{13.33^2 + 1.42^2}$$

← Limit D Allow.

$$= 13.41 \text{ ksi} < 0.7 (.7 \times 64.0) = 31.4 \text{ ksi}$$

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/14/99 PAGE: 245
 SUBJECT: 5.0 CONCLUSIONS BY: AJS CK: SR SHT: 1 OF 5

5.0 CONCLUSIONS

The governing stress intensities for each DSC component are summarized in Table 5.1 below:

Table 5.1 – Maximum Stress Intensity

Component	Stress Type	GOVERNING STRESS INTENSITY SUMMARY (KSI)										
		Dead Weight (DW)	Pressure					Thermal	Handling		Drop	Seismic
			Normal A	Hydro A	Blowdown B	Accident C	Accident D		Normal	Off-Normal		
DSC Shell	P _M	0.13	0.61	1.28	2.4	3.1	3.1	-	1.0	1.8	9.63	0.8
	P _L	6.65	0.74	1.73	3.0	3.7	27.5	-	1.0	1.8	12.0	11.3
	P _L +P _B	6.88	1.23	3.30	4.9	6.2	36.2	-	2.5	12.9	16.5	16.9
	Q	-	-	-	-	-	-	30.0	-	-	-	-
Top Pressure Plate	P _M	0.13	0.34	0.99	-	1.7	15.8	-	1.0	-	9.5	0.22
	P _L +P _B	0.19	1.07	1.69	-	5.35	48.4	-	1.0	-	14.6	0.48
	Q	-	-	-	-	-	-	19.9	-	-	-	-
Top Structural Plate	P _M	0.19	0.35	-	1.4	1.8	-	-	1.0	-	14.0	0.32
	P _L +P _B	0.35	1.49	-	5.96	7.45	-	-	1.0	-	26.1	0.7
	Q	-	-	-	-	-	-	22.2	-	-	-	-
Top Lead Liner	P _M	-	0.10	-	0.40	0.50	-	-	1.0	-	-	-
	P _L +P _B	0.30	0.63	-	2.5	3.2	-	-	1.0	-	22.8	0.30
	Q	-	-	-	-	-	-	47.0	-	-	-	-
Bottom Cover Plate	P _M	0.13	0.10	0.13	0.40	0.50	1.07	-	1.0	-	9.5	0.22
	P _L +P _B	0.33	1.25	0.89	5.0	6.25	6.25	-	3.2	6.5	25.0	0.65
	Q	-	-	-	-	-	-	14.0	-	-	-	-
Bottom Lead Liner	P _M	-	0.26	-	-	-	-	-	1.0	-	-	-
	P _L +P _B	0.33	0.58	-	-	-	-	-	1.0	-	25.0	0.33
	Q	-	-	-	-	-	-	42.5	-	-	-	-
Spacer Disk	P _M	0.57	-	-	-	-	-	-	1.14	-	41.1	1.43
	P _L +P _B	1.24	-	-	-	-	-	-	2.48	-	41.1	3.63
	Q	-	-	-	-	-	-	31.8	-	-	-	-
Support Rod	P _M	0.23	-	-	-	-	-	-	0.46	-	17.0	(1)
	P _L +P _B	-	-	-	-	-	-	-	-	-	42.0	
	Q	-	-	-	-	-	-	-	-	-	-	
Guide Sleeve	P _M	-	-	-	-	-	-	-	-	-	13.5	
	P _L +P _B	-	-	-	-	-	-	-	-	-	-	
	Q	-	-	-	-	-	-	-	-	-	-	

1. Handling loads envelope seismic loads, use handling loads for seismic load combinations.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSISDATE: 01/14/99PAGE: 246SUBJECT: 5.0 CONCLUSIONSBY: AJS CK: SR SHT: 2 OF 5

The maximum stress combinations for ASME Service Levels A, B, C, and D are added algebraically and shown in the tables below. The calculated component stress intensities have the capability to withstand all the design loading combinations, in compliance with the requirements of ASME B + PV Code, Section III, Subsection NB.

Table 5.2 – Load Combinations Level A

Component	Stress Type	Load Combinations Level A (ksi) (I)			
		A2	A3	A4	Allowable S.I.
		DW + T + P _a	DW + T + P _N + L _N	DW + T + P _N + L _N	
DSC Shell	P _M	1.41	1.74	3.53	18.7
	P _L	8.38	8.39	10.7	28.0
	P _L + P _B	10.2	10.6	14.3	28.0
	Q	40.2	40.6	44.3	56.1
Top Pressure Plate	P _M	1.12	1.47	1.13	18.7
	P _L + P _B	1.88	2.26	1.19	28.0
	Q	21.8	22.2	21.1	56.1
Top Structural Plate	P _M	0.19	1.54	2.59	18.7
	P _L + P _B	0.35	2.84	7.31	28.0
	Q	22.6	25.0	29.5	56.1
Top Lead Liner	P _M	-	1.10	1.40	18.7
	P _L + P _B	0.30	1.93	3.80	28.0
	Q	47.3	48.9	50.8	56.1
Bottom Cover Plate	P _M	0.26	1.23	1.53	18.7
	P _L + P _B	1.22	4.78	8.53	28.0
	Q	15.2	18.8	22.5	56.1
Bottom Lead Liner	P _M	-	1.26	1.0	18.7
	P _L + P _B	0.33	1.91	1.33	28.0
	Q	42.8	44.4	43.8	56.1
Spacer Disk	P _M	0.57	1.71	1.71	21.7
	P _L + P _B	1.24	3.72	3.72	32.6
	Q	33.0	35.5	35.5	67.5
Support Rod	P _M	0.23	0.69	0.69	18.7
	P _L + P _B	-	-	-	28.0
	Q	-	-	-	56.1

1. Load combination A1 from Table 3.1 is bounded by load combinations A2, A3, and A4.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/14/99

PAGE: 247

SUBJECT: 5.0 CONCLUSIONS

BY: AJS CK: SR SHT: 3 OF 5

Table 5.3 – Load Combinations Level B

Component	Stress Type	Load Combinations Level B (ksi) (1)		
		B1	B2	Allowable S.I.
		DW + T + P _N + L _o	DW + T + P _b + L _o	
DSC Shell	P _M	2.54	4.33	18.7
	P _L	9.19	11.5	28.0
	P _L +P _B	21.0	24.7	28.0
	Q	51.0	54.7	56.1
Top Pressure Plate	P _M	0.47	0.13	18.7
	P _L +P _B	1.26	0.19	28.0
	Q	21.2	20.1	56.1
Top Structural Plate	P _M	0.54	1.59	18.7
	P _L +P _B	1.84	6.31	28.0
	Q	24.0	28.5	56.1
Top Lead Liner	P _M	0.10	0.40	18.7
	P _L +P _B	0.93	2.8	28.0
	Q	47.9	49.8	56.1
Bottom Cover Plate	P _M	0.23	0.53	18.7
	P _L +P _B	8.08	11.8	28.0
	Q	22.1	25.8	56.1
Bottom Lead Liner	P _M	0.26	-	18.7
	P _L +P _B	0.91	0.33	28.0
	Q	43.4	42.8	56.1
Spacer Disk	P _M	0.57	0.57	21.7
	P _L +P _B	1.24	1.24	32.6
	Q	33.0	33.0	65.1
Support Rod	P _M	0.23	0.23	18.7
	P _L +P _B	-	-	28.0
	Q	-	-	56.1

1. Load combinations B3 and B4 from Table 3.1 are bounded by load combination B2.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/14/99 PAGE: 248
 SUBJECT: 5.0 CONCLUSIONS BY: AJS CK: SR SHT: 4 OF 5

Table 5.4 – Load Combinations Level C

Component	Stress Type	Load Combinations Level C (ksi) (1)			Allowable S.I.
		C1	C2	C3	
		DW + T + P _M + E	DW + T + P _M + L _N	DW + T + P _M + L _o	
DSC Shell	P _M	4.03	4.23	5.03	21.6
	P _L	21.7	11.4	12.2	32.4
	P _L +P _B	30.0	15.6	26.0	32.4
Top Pressure Plate	P _M	2.05	2.83	1.84	21.6
	P _L +P _B	6.02	6.54	5.54	32.4
Top Structural Plate	P _M	2.31	2.99	1.99	21.6
	P _L +P _B	8.5	8.80	7.80	32.4
Top Lead Liner	P _M	0.50	1.50	0.50	21.6
	P _L +P _B	3.8	4.50	3.50	32.4
Bottom Cover Plate	P _M	0.85	1.63	0.63	21.6
	P _L +P _B	7.23	9.78	13.1	32.4
Bottom Lead Liner	P _M	-	1.0	-	21.6
	P _L +P _B	0.66	1.33	0.33	32.4
Spacer Disk	P _M	2.0	1.71	0.57	31.5
	P _L +P _B	4.87	3.72	1.24	47.3
Support Rod	P _M	0.69	0.69	0.23	21.6
	P _L +P _B	-	-	-	32.4

1. Load combinations C3, C4, and C6 from Table 3.1 are bounded by load combination C5.
2. "Q" loads do not contribute to Level C stresses [4].

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS

DATE: 01/14/99

PAGE: 249

SUBJECT: 5.0 CONCLUSIONS

BY: AJS

CK: SR

SHT: 5 OF 5

Table 5.5 – Load Combinations Level D

Component	Stress Type (3)	Load Combinations Level D (ksi) (1)	
		D2	Allowable S.I.
		DW + T + P _{st} + DL	
DSC Shell	P _M P _L P _L +P _B	12.9 46.2 59.6	43.2 64 64
Top Pressure Plate	P _M P _L +P _B	25.4 63.2	43.2 64
Top Structural Plate	P _M P _L +P _B	14.2 26.5	43.2 64
Top Lead Liner	P _M P _L +P _B	23.1	43.2 64
Bottom Cover Plate	P _M P _L +P _B	10.7 31.6	43.2 64
Bottom Lead Liner	P _M P _L +P _B	25.3	43.2 64
Spacer Disk (2)	P _M P _L +P _B	41.1 41.1	49 70
Support Rods (2)	P _M P _L +P _B	17.0 42.0	43.2 64
Guide Sleeve	P _M P _L +P _B	13.5	39.9 @ 600 °F

1. Load combination D1 from Table 3.1 is bounded by load combination D2.
2. Drop load for spacer disc and support rod includes dead weight.
3. "Q" loads do not contribute to Level D stresses [4].

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 250
SUBJECT: 6.0 REFERENCES BY: AJS CK: SR SHT: 1 OF 5

6.0 REFERENCES

1. Nutech Document, "Topical Report for the Nutech Horizontal Modular Storage System for Irradiated Nuclear Fuel", Nutech Document No. NUH-002, Revision 1A.
2. USAR, "Updated Safety Analysis Report", Calvert Cliffs Nuclear Power Plant ISFSI, Rev. 4.
3. Nutech Calculation Package, "Dry Shielded Canister (DSC) Structural Analysis", Nutech File No. BGE001.0203.
4. American Society of Mechanical Engineers, "ASME Boiler and Pressure Vessel Code", Section III, Division 1, Subsections NB, NC, and Appendices, 1983 Edition.
5. American Society of Mechanical Engineers, "ASME Boiler and Pressure Vessel Code", Section II, Part D, Subpart 2, 1992 Edition.
6. Transnuclear West Drawing # ECN-98-0516, Shts. 7 thru 14, Preliminary, 11/18/98.
7. ANSYS Inc, ANSYS Version 5.2, Houston, PA 1996.
8. CRC Handbook of Tables for Applied Engineering Science, 2nd Edition, 1973.
9. Simitses, G. J., "An Introduction to the Elastic Stability of Structures", Prentice-Hall, Inc., 1976.
10. Not Used
11. Not Used

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 251
SUBJECT: 6.0 REFERENCES BY: AJS CK: SR SHT: 2 OF 5

12. Not Used

13. Not Used

14. BGE CMTR Material Properties Data, e-mail from Ingles to H&A, 10:43 AM, 12/17/97.

15. Roark, R. J. and Young, W. C., "Formula's for Stress and Strain", McGraw-Hill Book Company, Inc., 5th Edition, 1975.

16. Not Used

17. Nutech Calculation Package, "HEATING6 Data Reduction", Nutech File No. BGE001.0404.

18. Bednar, "Pressure Vessel Design Handbook", Van Nostrand Reinhold Company Inc., 1986.

19. American Society of Mechanical Engineers, "ASME Boiler and Pressure Vessel Code", Section VIII, Division 2: Alternative Rules, 1992 Edition.

20. Not Used

21. SER, "Safety Evaluation Report", BGE001.002412, November 1992.

22. Fax, J. Remeniuk to P. Hasrouni, "Dimensional Tolerances", January 22, 1998.

23. American Society for Testing and Materials, Annual Book of ASTM Standards, Volume 1.03, 1984.

24. E-mail, Usama Farradj of Transnuclear to Hopper and Associates, January 27, 1998.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 252
SUBJECT: 6.0 REFERENCES BY: AJS CK: SR SHT: 3 OF 5

25. BGE Letter from R. H. Beall to M. J. Gahan, Subject: DSC Guide Sleeve to Fuel Assembly Gap Size, January 23, 1998. (NFM 98-026)
26. Baumeister, Avallone & Baumeister, "Marks' Standard Handbook for Mechanical Engineers", Eighth Edition, McGraw-Hill Book Company, Inc., 1978.
27. Not Used
28. Not Used
29. Not Used
30. Nutech Calculation Package, "Supplemental Dry Shielded Canister Structural Analysis", Nutech File No. BGE001.0203A.
31. Not Used
32. Nutech Calculation Package, "Preliminary Weight Calculation for NUHOMS-24P DSC / Transfer Cask System", Nutech File No. BGE001.0201, Rev. 0.
33. AISC, "Manual of Steel Construction", Ninth Edition, 1989.
34. Blodgett, "Design of Welded Structures", 1966.
35. Fax, Baltimore Gas & Electric Company to P. Hasrouni, "ISFSI Dry Shielded Canister Internal Pressure Loads", February 12, 1998.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 253
SUBJECT: 6.0 REFERENCES BY: AJS CK: SR SHT: 4 OF 5

36. American Society of Mechanical Engineers, "ASME Boiler and Pressure Vessel Code", Section VIII, Division 1, 1992 Edition.
37. Research Engineering, Inc., "STAAD-III Structural Analysis and Design Software", Release 22.0 w, 1996.
38. Juvinall, "Fundamentals of Machine Component Design", John Wiley & Sons, 1983.
39. Hopper and Associates Memorandum to the Staff, "Verified Computer Programs", 10/3/98.
40. American Society of Mechanical Engineers, "ASME Boiler and Pressure Vessel Code", Section II, Materials, Part C, 1992 Edition.
41. Email Penney File (BGE) to Hopper and Associates; data from John E. Baum (CE), 3/10/98.
42. Email Penney File (BGE) to Hopper and Associates; data from John E. Baum (CE), 3/13/98.
43. Fax Penney File (BGE) to Dave Hopper (H&A), 3/19/98.
44. Email, W. Bak (T.N.) to W. Brown (H & A); re: Canister Bottom Cover Plate Thickness, Feb. 18, 1998.
45. VECTRA Calculation Package: "BG&E DSC Evaluation for Reflood Event Pressure", BGE 001.0225, Rev. 0.
46. Fax, W.Bak (T.N.) to P. Hasrouni (H & A), 2/3/98.
47. Fax, W.Bak (T.N.) to P. Hasrouni (H & A), "Spacer Disc Drop Orientation", 2/27/98.

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 12/08/98 PAGE: 254
SUBJECT: 6.0 REFERENCES BY: AJS CK: SR SHT: 5 OF 5

48. Hopper and Associates Calculation Package, "Final Weight Calculation of NUHOMS - 24 DSC/Transfer Cask System", May 1998.
49. Issue Report Nos. IR3-007-609 & 611, re: Misalignment of fuel spacer grids to DSC spacer discs, dated 3/10/98 & 3/24/98 respectively.
50. Hopper and Associates Calculation Package, "Modified Guidesleeve Extraction Stop Evaluation", HATNW-08/98-014, Revision 1, August 1998.
51. Fax, U. Farradj (T.N.) to D. Hopper / P. Hasrouni (H & A), 8/5/98.
52. Timoshenko and Gere, "Theory of Elastic Stability", McGraw-Hill Book Company, Inc., 2nd Edition, 1961.
53. Dowling, "Mechanical Behavior of Materials", Prentice Hall, Inc., 1993.
54. Hopper and Associates letter from Kenneth L. Saunders to J. Todd Conner,
Subject: New DSC Design Review Comments Response, March 22, 1999.
(HABGE-03/99-0766).
55. BGE memo from J. T. Conner, Subject: Final Comments on ISFSI ECN 98-0516,
March 4, 1999
56. TNW letter (BGE02-99-023) from Usama Farradj to Robert Beall, Subject:
Resolution of Guidesleeve/Spacer Disc Thermal Growth Issue, March 23, 1999.
57. TNW Fabrication Specification for NUHOMS-24P System, January 1999. (BGE-02-107).

58. TRANSNUCLEAR WGS7, "INDEPENDENT TECHNICAL REVIEW OF BALTIMORE GAS AND ELECTRIC CALVERT CLIFFS NUHOMS PROJECT", REPORT NO. 0113-92003-R-001, REV. 1, 03/01/98.

HOPPER AND ASSOCIATES
ENGINEERS**CALCULATION SHEET**

TITLE: NEW DSC STRUCTURAL ANALYSIS **DATE:** 01/14/99 **PAGE:** A1
SUBJECT: APPENDIX A **BY:** AS **CK:** SR **SHT:** 1 **OF:** 41

APPENDIX A**ANSYS PLATE AND ROD ANALYSIS**

```

/COM ANSYS PLATE AND ROD COUPLED MODEL FOR PLATE VERTICAL DROP ANALYSIS
/COM,ANSYS REVISION 5.2      UP020996      16:08:16      01/14/1999
/PREP7
/NOPR
/TITLE,
ANTYPE, 0
*IF, _CDRDOFF,EQ,1,THEN      !if solid model was read in
  _CDRDOFF=                  !reset flag, numoffs already performed
*ELSE                        !offset database for the following FE model
NUMOFF,NODE, 2233
NUMOFF,ELEM, 3307
NUMOFF,MAT, 2
NUMOFF,REAL, 1
NUMOFF,TYPE, 4
*ENDIF
ET, 1, 63
ET, 2, 4
ET, 3, 21
KEYOP, 3, 3, 2
ET, 4, 45
KEYOP, 4, 1, 1
KEYOP, 4, 6, 3
DOF,UX,UY,UZ,ROTX,ROTY,ROTZ,
R,R5,0,1,LOC,1,1.50000000
TYPE, 4
REAL, 2
N,R5.1,LOC,1,0,23.9500000,13.6700000,1.09500000
N,R5.1,LOC,2,0,23.9500000,13.6700000,2.19000000
N,R5.1,LOC,3,0,23.9500000,13.6700000,3.28500000
N,R5.1,LOC,4,0,23.9500000,13.6700000,4.38000000
N,R5.1,LOC,5,0,23.9500000,13.6700000,5.37461538
N,R5.1,LOC,6,0,23.9500000,13.6700000,6.36923077
N,R5.1,LOC,7,0,23.9500000,13.6700000,7.36384615
N,R5.1,LOC,8,0,23.9500000,13.6700000,8.35846154
N,R5.1,LOC,9,0,23.9500000,13.6700000,9.35307692
N,R5.1,LOC,10,0,23.9500000,13.6700000,10.3476923
N,R5.1,LOC,11,0,23.9500000,13.6700000,11.3423077
N,R5.1,LOC,12,0,23.9500000,13.6700000,12.3369231
N,R5.1,LOC,13,0,23.9500000,13.6700000,13.3315385
N,R5.1,LOC,14,0,.000000000,.750000000,4.38000000
N,R5.1,LOC,15,0,.750000000,.750000000,4.38000000
N,R5.1,LOC,16,0,.750000000,.000000000,4.38000000
N,R5.1,LOC,17,0,.000000000,.000000000,4.38000000
N,R5.1,LOC,18,0,.000000000,.000000000,4.38000000
N,R5.1,LOC,19,0,9.85000000,.750000000,4.38000000
N,R5.1,LOC,20,0,1.66000000,.750000000,4.38000000
N,R5.1,LOC,21,0,2.57000000,.750000000,4.38000000
N,R5.1,LOC,22,0,3.48000000,.750000000,4.38000000
N,R5.1,LOC,23,0,4.39000000,.750000000,4.38000000
N,R5.1,LOC,24,0,5.30000000,.750000000,4.38000000
N,R5.1,LOC,25,0,6.21000000,.750000000,4.38000000
N,R5.1,LOC,26,0,7.12000000,.750000000,4.38000000
N,R5.1,LOC,27,0,8.03000000,.750000000,4.38000000
N,R5.1,LOC,28,0,8.94000000,.750000000,4.38000000
N,R5.1,LOC,29,0,9.85000000,.000000000,4.38000000
N,R5.1,LOC,30,0,1.66000000,.000000000,4.38000000
N,R5.1,LOC,31,0,2.57000000,.000000000,4.38000000
N,R5.1,LOC,32,0,3.48000000,.000000000,4.38000000
N,R5.1,LOC,33,0,4.39000000,.000000000,4.38000000
N,R5.1,LOC,34,0,5.30000000,.000000000,4.38000000
N,R5.1,LOC,35,0,6.21000000,.000000000,4.38000000
N,R5.1,LOC,36,0,7.12000000,.000000000,4.38000000
N,R5.1,LOC,37,0,8.03000000,.000000000,4.38000000
N,R5.1,LOC,38,0,8.94000000,.000000000,4.38000000
N,R5.1,LOC,39,0,11.1000000,.750000000,4.38000000
N,R5.1,LOC,40,0,10.4750000,.750000000,4.38000000
N,R5.1,LOC,41,0,11.1000000,.000000000,4.38000000
N,R5.1,LOC,42,0,10.4750000,.000000000,4.38000000
N,R5.1,LOC,43,0,20.2000000,.750000000,4.38000000
N,R5.1,LOC,44,0,12.0100000,.750000000,4.38000000
N,R5.1,LOC,45,0,12.9200000,.750000000,4.38000000
N,R5.1,LOC,46,0,13.8300000,.750000000,4.38000000
N,R5.1,LOC,47,0,14.7400000,.750000000,4.38000000
N,R5.1,LOC,48,0,15.6500000,.750000000,4.38000000

```

N,R5.1,LOC,	49,	0,	16.5600000	, .750000000	, 4.38000000
N,R5.1,LOC,	50,	0,	17.4700000	, .750000000	, 4.38000000
N,R5.1,LOC,	51,	0,	18.3800000	, .750000000	, 4.38000000
N,R5.1,LOC,	52,	0,	19.2900000	, .750000000	, 4.38000000
N,R5.1,LOC,	53,	0,	20.2000000	, .000000000	, 4.38000000
N,R5.1,LOC,	54,	0,	12.0100000	, .000000000	, 4.38000000
N,R5.1,LOC,	55,	0,	12.9200000	, .000000000	, 4.38000000
N,R5.1,LOC,	56,	0,	13.8300000	, .000000000	, 4.38000000
N,R5.1,LOC,	57,	0,	14.7400000	, .000000000	, 4.38000000
N,R5.1,LOC,	58,	0,	15.6500000	, .000000000	, 4.38000000
N,R5.1,LOC,	59,	0,	16.5600000	, .000000000	, 4.38000000
N,R5.1,LOC,	60,	0,	17.4700000	, .000000000	, 4.38000000
N,R5.1,LOC,	61,	0,	18.3800000	, .000000000	, 4.38000000
N,R5.1,LOC,	62,	0,	19.2900000	, .000000000	, 4.38000000
N,R5.1,LOC,	63,	0,	21.2000000	, .750000000	, 4.38000000
N,R5.1,LOC,	64,	0,	21.2000000	, .000000000	, 4.38000000
N,R5.1,LOC,	65,	0,	30.3000000	, .750000000	, 4.38000000
N,R5.1,LOC,	66,	0,	22.1100000	, .750000000	, 4.38000000
N,R5.1,LOC,	67,	0,	23.0200000	, .750000000	, 4.38000000
N,R5.1,LOC,	68,	0,	23.9300000	, .750000000	, 4.38000000
N,R5.1,LOC,	69,	0,	24.8400000	, .750000000	, 4.38000000
N,R5.1,LOC,	70,	0,	25.7500000	, .750000000	, 4.38000000
N,R5.1,LOC,	71,	0,	26.6600000	, .750000000	, 4.38000000
N,R5.1,LOC,	72,	0,	27.5700000	, .750000000	, 4.38000000
N,R5.1,LOC,	73,	0,	28.4800000	, .750000000	, 4.38000000
N,R5.1,LOC,	74,	0,	29.3900000	, .750000000	, 4.38000000
N,R5.1,LOC,	75,	0,	30.3000000	, .000000000	, 4.38000000
N,R5.1,LOC,	76,	0,	22.1100000	, .000000000	, 4.38000000
N,R5.1,LOC,	77,	0,	23.0200000	, .000000000	, 4.38000000
N,R5.1,LOC,	78,	0,	23.9300000	, .000000000	, 4.38000000
N,R5.1,LOC,	79,	0,	24.8400000	, .000000000	, 4.38000000
N,R5.1,LOC,	80,	0,	25.7500000	, .000000000	, 4.38000000
N,R5.1,LOC,	81,	0,	26.6600000	, .000000000	, 4.38000000
N,R5.1,LOC,	82,	0,	27.5700000	, .000000000	, 4.38000000
N,R5.1,LOC,	83,	0,	28.4800000	, .000000000	, 4.38000000
N,R5.1,LOC,	84,	0,	29.3900000	, .000000000	, 4.38000000
N,R5.1,LOC,	85,	0,	.000000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	86,	0,	.750000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	87,	0,	.750000000	, 1.66000000	, 4.38000000
N,R5.1,LOC,	88,	0,	.750000000	, 2.57000000	, 4.38000000
N,R5.1,LOC,	89,	0,	.750000000	, 3.48000000	, 4.38000000
N,R5.1,LOC,	90,	0,	.750000000	, 4.39000000	, 4.38000000
N,R5.1,LOC,	91,	0,	.750000000	, 5.30000000	, 4.38000000
N,R5.1,LOC,	92,	0,	.750000000	, 6.21000000	, 4.38000000
N,R5.1,LOC,	93,	0,	.750000000	, 7.12000000	, 4.38000000
N,R5.1,LOC,	94,	0,	.750000000	, 8.03000000	, 4.38000000
N,R5.1,LOC,	95,	0,	.750000000	, 8.94000000	, 4.38000000
N,R5.1,LOC,	96,	0,	.000000000	, 1.66000000	, 4.38000000
N,R5.1,LOC,	97,	0,	.000000000	, 2.57000000	, 4.38000000
N,R5.1,LOC,	98,	0,	.000000000	, 3.48000000	, 4.38000000
N,R5.1,LOC,	99,	0,	.000000000	, 4.39000000	, 4.38000000
N,R5.1,LOC,	100,	0,	.000000000	, 5.30000000	, 4.38000000
N,R5.1,LOC,	101,	0,	.000000000	, 6.21000000	, 4.38000000
N,R5.1,LOC,	102,	0,	.000000000	, 7.12000000	, 4.38000000
N,R5.1,LOC,	103,	0,	.000000000	, 8.03000000	, 4.38000000
N,R5.1,LOC,	104,	0,	.000000000	, 8.94000000	, 4.38000000
N,R5.1,LOC,	105,	0,	9.85000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	106,	0,	11.1000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	107,	0,	10.4750000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	108,	0,	11.1000000	, 1.66000000	, 4.38000000
N,R5.1,LOC,	109,	0,	11.1000000	, 2.57000000	, 4.38000000
N,R5.1,LOC,	110,	0,	11.1000000	, 3.48000000	, 4.38000000
N,R5.1,LOC,	111,	0,	11.1000000	, 4.39000000	, 4.38000000
N,R5.1,LOC,	112,	0,	11.1000000	, 5.30000000	, 4.38000000
N,R5.1,LOC,	113,	0,	11.1000000	, 6.21000000	, 4.38000000
N,R5.1,LOC,	114,	0,	11.1000000	, 7.12000000	, 4.38000000
N,R5.1,LOC,	115,	0,	11.1000000	, 8.03000000	, 4.38000000
N,R5.1,LOC,	116,	0,	11.1000000	, 8.94000000	, 4.38000000
N,R5.1,LOC,	117,	0,	9.85000000	, 1.66000000	, 4.38000000
N,R5.1,LOC,	118,	0,	9.85000000	, 2.57000000	, 4.38000000
N,R5.1,LOC,	119,	0,	9.85000000	, 3.48000000	, 4.38000000
N,R5.1,LOC,	120,	0,	9.85000000	, 4.39000000	, 4.38000000
N,R5.1,LOC,	121,	0,	9.85000000	, 5.30000000	, 4.38000000
N,R5.1,LOC,	122,	0,	9.85000000	, 6.21000000	, 4.38000000

N,R5.1,LOC,	123,	0,	9.85000000	, 7.12000000	, 4.38000000
N,R5.1,LOC,	124,	0,	9.85000000	, 8.03000000	, 4.38000000
N,R5.1,LOC,	125,	0,	9.85000000	, 8.94000000	, 4.38000000
N,R5.1,LOC,	126,	0,	10.47500000	, 8.94000000	, 4.38000000
N,R5.1,LOC,	127,	0,	10.47500000	, 8.03000000	, 4.38000000
N,R5.1,LOC,	128,	0,	10.47500000	, 7.12000000	, 4.38000000
N,R5.1,LOC,	129,	0,	10.47500000	, 6.21000000	, 4.38000000
N,R5.1,LOC,	130,	0,	10.47500000	, 5.30000000	, 4.38000000
N,R5.1,LOC,	131,	0,	10.47500000	, 4.39000000	, 4.38000000
N,R5.1,LOC,	132,	0,	10.47500000	, 3.48000000	, 4.38000000
N,R5.1,LOC,	133,	0,	10.47500000	, 2.57000000	, 4.38000000
N,R5.1,LOC,	134,	0,	10.47500000	, 1.66000000	, 4.38000000
N,R5.1,LOC,	135,	0,	20.20000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	136,	0,	21.20000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	137,	0,	21.20000000	, 1.66000000	, 4.38000000
N,R5.1,LOC,	138,	0,	21.20000000	, 2.57000000	, 4.38000000
N,R5.1,LOC,	139,	0,	21.20000000	, 3.48000000	, 4.38000000
N,R5.1,LOC,	140,	0,	21.20000000	, 4.39000000	, 4.38000000
N,R5.1,LOC,	141,	0,	21.20000000	, 5.30000000	, 4.38000000
N,R5.1,LOC,	142,	0,	21.20000000	, 6.21000000	, 4.38000000
N,R5.1,LOC,	143,	0,	21.20000000	, 7.12000000	, 4.38000000
N,R5.1,LOC,	144,	0,	21.20000000	, 8.03000000	, 4.38000000
N,R5.1,LOC,	145,	0,	21.20000000	, 8.94000000	, 4.38000000
N,R5.1,LOC,	146,	0,	20.20000000	, 1.66000000	, 4.38000000
N,R5.1,LOC,	147,	0,	20.20000000	, 2.57000000	, 4.38000000
N,R5.1,LOC,	148,	0,	20.20000000	, 3.48000000	, 4.38000000
N,R5.1,LOC,	149,	0,	20.20000000	, 4.39000000	, 4.38000000
N,R5.1,LOC,	150,	0,	20.20000000	, 5.30000000	, 4.38000000
N,R5.1,LOC,	151,	0,	20.20000000	, 6.21000000	, 4.38000000
N,R5.1,LOC,	152,	0,	20.20000000	, 7.12000000	, 4.38000000
N,R5.1,LOC,	153,	0,	20.20000000	, 8.03000000	, 4.38000000
N,R5.1,LOC,	154,	0,	20.20000000	, 8.94000000	, 4.38000000
N,R5.1,LOC,	155,	0,	.0000000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	156,	0,	.7500000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	157,	0,	.7500000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	158,	0,	.0000000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	159,	0,	9.8500000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	160,	0,	1.6600000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	161,	0,	2.5700000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	162,	0,	3.4800000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	163,	0,	4.3900000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	164,	0,	5.3000000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	165,	0,	6.2100000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	166,	0,	7.1200000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	167,	0,	8.0300000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	168,	0,	8.9400000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	169,	0,	9.8500000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	170,	0,	1.6600000000	, 9.8500000000	, 4.38000000
N,R5.1,LOC,	171,	0,	2.5700000000	, 9.8500000000	, 4.38000000
N,R5.1,LOC,	172,	0,	3.4800000000	, 9.8500000000	, 4.38000000
N,R5.1,LOC,	173,	0,	4.3900000000	, 9.8500000000	, 4.38000000
N,R5.1,LOC,	174,	0,	5.3000000000	, 9.8500000000	, 4.38000000
N,R5.1,LOC,	175,	0,	6.2100000000	, 9.8500000000	, 4.38000000
N,R5.1,LOC,	176,	0,	7.1200000000	, 9.8500000000	, 4.38000000
N,R5.1,LOC,	177,	0,	8.0300000000	, 9.8500000000	, 4.38000000
N,R5.1,LOC,	178,	0,	8.9400000000	, 9.8500000000	, 4.38000000
N,R5.1,LOC,	179,	0,	1.6600000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	180,	0,	2.5700000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	181,	0,	3.4800000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	182,	0,	4.3900000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	183,	0,	5.3000000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	184,	0,	6.2100000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	185,	0,	7.1200000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	186,	0,	8.0300000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	187,	0,	8.9400000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	188,	0,	11.10000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	189,	0,	10.47500000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	190,	0,	11.10000000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	191,	0,	10.47500000	, 10.47500000	, 4.38000000
N,R5.1,LOC,	192,	0,	20.20000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	193,	0,	12.01000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	194,	0,	12.92000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	195,	0,	13.83000000	, 11.10000000	, 4.38000000
N,R5.1,LOC,	196,	0,	14.74000000	, 11.10000000	, 4.38000000

N,R5.1,LOC,	197,	0,	15.6500000	, 11.1000000	, 4.38000000
N,R5.1,LOC,	198,	0,	16.5600000	, 11.1000000	, 4.38000000
N,R5.1,LOC,	199,	0,	17.4700000	, 11.1000000	, 4.38000000
N,R5.1,LOC,	200,	0,	18.3800000	, 11.1000000	, 4.38000000
N,R5.1,LOC,	201,	0,	19.2900000	, 11.1000000	, 4.38000000
N,R5.1,LOC,	202,	0,	20.2000000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	203,	0,	12.0100000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	204,	0,	12.9200000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	205,	0,	13.8300000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	206,	0,	14.7400000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	207,	0,	15.6500000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	208,	0,	16.5600000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	209,	0,	17.4700000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	210,	0,	18.3800000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	211,	0,	19.2900000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	212,	0,	12.0100000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	213,	0,	12.9200000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	214,	0,	13.8300000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	215,	0,	14.7400000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	216,	0,	15.6500000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	217,	0,	16.5600000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	218,	0,	17.4700000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	219,	0,	18.3800000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	220,	0,	19.2900000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	221,	0,	.000000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	222,	0,	.750000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	223,	0,	.750000000	, 12.0100000	, 4.38000000
N,R5.1,LOC,	224,	0,	.750000000	, 12.9200000	, 4.38000000
N,R5.1,LOC,	225,	0,	.750000000	, 13.8300000	, 4.38000000
N,R5.1,LOC,	226,	0,	.750000000	, 14.7400000	, 4.38000000
N,R5.1,LOC,	227,	0,	.750000000	, 15.6500000	, 4.38000000
N,R5.1,LOC,	228,	0,	.750000000	, 16.5600000	, 4.38000000
N,R5.1,LOC,	229,	0,	.750000000	, 17.4700000	, 4.38000000
N,R5.1,LOC,	230,	0,	.750000000	, 18.3800000	, 4.38000000
N,R5.1,LOC,	231,	0,	.750000000	, 19.2900000	, 4.38000000
N,R5.1,LOC,	232,	0,	.000000000	, 12.0100000	, 4.38000000
N,R5.1,LOC,	233,	0,	.000000000	, 12.9200000	, 4.38000000
N,R5.1,LOC,	234,	0,	.000000000	, 13.8300000	, 4.38000000
N,R5.1,LOC,	235,	0,	.000000000	, 14.7400000	, 4.38000000
N,R5.1,LOC,	236,	0,	.000000000	, 15.6500000	, 4.38000000
N,R5.1,LOC,	237,	0,	.000000000	, 16.5600000	, 4.38000000
N,R5.1,LOC,	238,	0,	.000000000	, 17.4700000	, 4.38000000
N,R5.1,LOC,	239,	0,	.000000000	, 18.3800000	, 4.38000000
N,R5.1,LOC,	240,	0,	.000000000	, 19.2900000	, 4.38000000
N,R5.1,LOC,	241,	0,	9.85000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	242,	0,	11.1000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	243,	0,	10.4750000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	244,	0,	11.1000000	, 12.0100000	, 4.38000000
N,R5.1,LOC,	245,	0,	11.1000000	, 12.9200000	, 4.38000000
N,R5.1,LOC,	246,	0,	11.1000000	, 13.8300000	, 4.38000000
N,R5.1,LOC,	247,	0,	11.1000000	, 14.7400000	, 4.38000000
N,R5.1,LOC,	248,	0,	11.1000000	, 15.6500000	, 4.38000000
N,R5.1,LOC,	249,	0,	11.1000000	, 16.5600000	, 4.38000000
N,R5.1,LOC,	250,	0,	11.1000000	, 17.4700000	, 4.38000000
N,R5.1,LOC,	251,	0,	11.1000000	, 18.3800000	, 4.38000000
N,R5.1,LOC,	252,	0,	11.1000000	, 19.2900000	, 4.38000000
N,R5.1,LOC,	253,	0,	9.85000000	, 12.0100000	, 4.38000000
N,R5.1,LOC,	254,	0,	9.85000000	, 12.9200000	, 4.38000000
N,R5.1,LOC,	255,	0,	9.85000000	, 13.8300000	, 4.38000000
N,R5.1,LOC,	256,	0,	9.85000000	, 14.7400000	, 4.38000000
N,R5.1,LOC,	257,	0,	9.85000000	, 15.6500000	, 4.38000000
N,R5.1,LOC,	258,	0,	9.85000000	, 16.5600000	, 4.38000000
N,R5.1,LOC,	259,	0,	9.85000000	, 17.4700000	, 4.38000000
N,R5.1,LOC,	260,	0,	9.85000000	, 18.3800000	, 4.38000000
N,R5.1,LOC,	261,	0,	9.85000000	, 19.2900000	, 4.38000000
N,R5.1,LOC,	262,	0,	10.4750000	, 19.2900000	, 4.38000000
N,R5.1,LOC,	263,	0,	10.4750000	, 18.3800000	, 4.38000000
N,R5.1,LOC,	264,	0,	10.4750000	, 17.4700000	, 4.38000000
N,R5.1,LOC,	265,	0,	10.4750000	, 16.5600000	, 4.38000000
N,R5.1,LOC,	266,	0,	10.4750000	, 15.6500000	, 4.38000000
N,R5.1,LOC,	267,	0,	10.4750000	, 14.7400000	, 4.38000000
N,R5.1,LOC,	268,	0,	10.4750000	, 13.8300000	, 4.38000000
N,R5.1,LOC,	269,	0,	10.4750000	, 12.9200000	, 4.38000000
N,R5.1,LOC,	270,	0,	10.4750000	, 12.0100000	, 4.38000000

N,R5.1,LOC,	271,	0,	.000000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	272,	0,	.750000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	273,	0,	9.85000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	274,	0,	1.66000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	275,	0,	2.57000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	276,	0,	3.48000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	277,	0,	4.39000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	278,	0,	5.30000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	279,	0,	6.21000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	280,	0,	7.12000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	281,	0,	8.03000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	282,	0,	8.94000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	283,	0,	1.66000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	284,	0,	2.57000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	285,	0,	3.48000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	286,	0,	4.39000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	287,	0,	5.30000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	288,	0,	6.21000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	289,	0,	7.12000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	290,	0,	8.03000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	291,	0,	8.94000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	292,	0,	.000000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	293,	0,	.750000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	294,	0,	.750000000	, 22.1100000	, 4.38000000
N,R5.1,LOC,	295,	0,	.750000000	, 23.0200000	, 4.38000000
N,R5.1,LOC,	296,	0,	.750000000	, 23.9300000	, 4.38000000
N,R5.1,LOC,	297,	0,	.750000000	, 24.8400000	, 4.38000000
N,R5.1,LOC,	298,	0,	.750000000	, 25.7500000	, 4.38000000
N,R5.1,LOC,	299,	0,	.750000000	, 26.6600000	, 4.38000000
N,R5.1,LOC,	300,	0,	.750000000	, 27.5700000	, 4.38000000
N,R5.1,LOC,	301,	0,	.750000000	, 28.4800000	, 4.38000000
N,R5.1,LOC,	302,	0,	.750000000	, 29.3900000	, 4.38000000
N,R5.1,LOC,	303,	0,	.000000000	, 22.1100000	, 4.38000000
N,R5.1,LOC,	304,	0,	.000000000	, 23.0200000	, 4.38000000
N,R5.1,LOC,	305,	0,	.000000000	, 23.9300000	, 4.38000000
N,R5.1,LOC,	306,	0,	.000000000	, 24.8400000	, 4.38000000
N,R5.1,LOC,	307,	0,	.000000000	, 25.7500000	, 4.38000000
N,R5.1,LOC,	308,	0,	.000000000	, 26.6600000	, 4.38000000
N,R5.1,LOC,	309,	0,	.000000000	, 27.5700000	, 4.38000000
N,R5.1,LOC,	310,	0,	.000000000	, 28.4800000	, 4.38000000
N,R5.1,LOC,	311,	0,	.000000000	, 29.3900000	, 4.38000000
N,R5.1,LOC,	312,	0,	30.3000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	313,	0,	31.1471009	, 10.1203066	, 4.38000000
N,R5.1,LOC,	314,	0,	32.7500000	, .000000000	, 4.38000000
N,R5.1,LOC,	315,	0,	32.7170229	, 1.46932319	, 4.38000000
N,R5.1,LOC,	316,	0,	32.6181581	, 2.93568737	, 4.38000000
N,R5.1,LOC,	317,	0,	32.4536047	, 4.39613946	, 4.38000000
N,R5.1,LOC,	318,	0,	32.2236940	, 5.84773830	, 4.38000000
N,R5.1,LOC,	319,	0,	31.9288891	, 7.28756059	, 4.38000000
N,R5.1,LOC,	320,	0,	31.5697837	, 8.71270669	, 4.38000000
N,R5.1,LOC,	321,	0,	31.5250000	, .000000000	, 4.38000000
N,R5.1,LOC,	322,	0,	30.3000000	, 2.05000000	, 4.38000000
N,R5.1,LOC,	323,	0,	30.3000000	, 3.35000000	, 4.38000000
N,R5.1,LOC,	324,	0,	30.3000000	, 4.65000000	, 4.38000000
N,R5.1,LOC,	325,	0,	30.3000000	, 5.95000000	, 4.38000000
N,R5.1,LOC,	326,	0,	30.3000000	, 7.25000000	, 4.38000000
N,R5.1,LOC,	327,	0,	30.3000000	, 8.55000000	, 4.38000000
N,R5.1,LOC,	328,	0,	31.3063468	, 4.71601566	, 4.38000000
N,R5.1,LOC,	329,	0,	31.4995417	, 1.22819008	, 4.38000000
N,R5.1,LOC,	330,	0,	31.3801874	, 3.76137073	, 4.38000000
N,R5.1,LOC,	331,	0,	31.4494718	, 2.49381204	, 4.38000000
N,R5.1,LOC,	332,	0,	27.7735751	, 17.3548559	, 4.38000000
N,R5.1,LOC,	333,	0,	24.9058938	, 14.5912140	, 4.38000000
N,R5.1,LOC,	334,	0,	25.8617876	, 15.5124280	, 4.38000000
N,R5.1,LOC,	335,	0,	26.8176814	, 16.4336419	, 4.38000000
N,R5.1,LOC,	336,	0,	30.7092472	, 11.3800104	, 4.38000000
N,R5.1,LOC,	337,	0,	30.2204701	, 12.6208435	, 4.38000000
N,R5.1,LOC,	338,	0,	29.6815800	, 13.8407481	, 4.38000000
N,R5.1,LOC,	339,	0,	29.0934707	, 15.0377013	, 4.38000000
N,R5.1,LOC,	340,	0,	28.4571173	, 16.2097185	, 4.38000000
N,R5.1,LOC,	341,	0,	22.5000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	342,	0,	23.8000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	343,	0,	25.1000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	344,	0,	26.4000000	, 9.85000000	, 4.38000000

N,R5.1,LOC,	345,	0,	27.7000000	9.85000000	4.38000000
N,R5.1,LOC,	346,	0,	29.0000000	9.85000000	4.38000000
N,R5.1,LOC,	347,	0,	21.1375000	11.7425000	4.38000000
N,R5.1,LOC,	348,	0,	22.0750000	12.3850000	4.38000000
N,R5.1,LOC,	349,	0,	22.9000000	12.9000000	4.38000000
N,R5.1,LOC,	350,	0,	25.3000000	13.3000000	4.38000000
N,R5.1,LOC,	351,	0,	26.1304893	12.2868476	4.38000000
N,R5.1,LOC,	352,	0,	27.0656162	14.6074215	4.38000000
N,R5.1,LOC,	353,	0,	24.7166325	11.9598889	4.38000000
N,R5.1,LOC,	354,	0,	27.8995479	13.2153703	4.38000000
N,R5.1,LOC,	355,	0,	28.7205059	12.1264640	4.38000000
N,R5.1,LOC,	356,	0,	29.4817044	11.0474058	4.38000000
N,R5.1,LOC,	357,	0,	28.3594653	10.7436817	4.38000000
N,R5.1,LOC,	358,	0,	26.7169450	10.7491909	4.38000000
N,R5.1,LOC,	359,	0,	25.4902215	10.9975280	4.38000000
N,R5.1,LOC,	360,	0,	24.1872297	11.0854271	4.38000000
N,R5.1,LOC,	361,	0,	22.8093959	11.3414773	4.38000000
N,R5.1,LOC,	362,	0,	21.3486566	10.8685435	4.38000000
N,R5.1,LOC,	363,	0,	24.1000000	12.4000000	4.38000000
N,R5.1,LOC,	364,	0,	27.4665129	11.4855410	4.38000000
N,R5.1,LOC,	365,	0,	27.5921368	10.4476242	4.38000000
N,R5.1,LOC,	366,	0,	27.4468050	15.7502606	4.38000000
N,R5.1,LOC,	367,	0,	20.2000000	20.2000000	4.38000000
N,R5.1,LOC,	368,	0,	23.1577471	23.1577471	4.38000000
N,R5.1,LOC,	369,	0,	21.1859157	21.1859157	4.38000000
N,R5.1,LOC,	370,	0,	22.1718314	22.1718314	4.38000000
N,R5.1,LOC,	371,	0,	26.9577161	18.5968827	4.38000000
N,R5.1,LOC,	372,	0,	26.0863548	19.8006210	4.38000000
N,R5.1,LOC,	373,	0,	25.1612854	20.9635927	4.38000000
N,R5.1,LOC,	374,	0,	24.1844124	22.0834032	4.38000000
N,R5.1,LOC,	375,	0,	20.2000000	12.4000000	4.38000000
N,R5.1,LOC,	376,	0,	20.2000000	13.7000000	4.38000000
N,R5.1,LOC,	377,	0,	20.2000000	15.0000000	4.38000000
N,R5.1,LOC,	378,	0,	20.2000000	16.3000000	4.38000000
N,R5.1,LOC,	379,	0,	20.2000000	17.6000000	4.38000000
N,R5.1,LOC,	380,	0,	20.2000000	18.9000000	4.38000000
N,R5.1,LOC,	381,	0,	21.2580731	19.6667001	4.38000000
N,R5.1,LOC,	382,	0,	22.0477497	20.2087350	4.38000000
N,R5.1,LOC,	383,	0,	23.1055065	21.0234845	4.38000000
N,R5.1,LOC,	384,	0,	23.9576568	19.6879108	4.38000000
N,R5.1,LOC,	385,	0,	24.7633127	17.9707728	4.38000000
N,R5.1,LOC,	386,	0,	21.4139156	18.7235910	4.38000000
N,R5.1,LOC,	387,	0,	22.6415033	18.9588397	4.38000000
N,R5.1,LOC,	388,	0,	25.9982865	17.2509116	4.38000000
N,R5.1,LOC,	389,	0,	24.5287911	15.9874191	4.38000000
N,R5.1,LOC,	390,	0,	23.3000000	14.9000000	4.38000000
N,R5.1,LOC,	391,	0,	22.3100000	13.9500000	4.38000000
N,R5.1,LOC,	392,	0,	20.9561953	13.8439703	4.38000000
N,R5.1,LOC,	393,	0,	21.2623220	14.6314627	4.38000000
N,R5.1,LOC,	394,	0,	21.5241135	15.8786416	4.38000000
N,R5.1,LOC,	395,	0,	21.5560861	17.3688242	4.38000000
N,R5.1,LOC,	396,	0,	23.0341374	17.3473476	4.38000000
N,R5.1,LOC,	397,	0,	25.4359817	16.2324518	4.38000000
N,R5.1,LOC,	398,	0,	21.4062640	13.2004482	4.38000000
N,R5.1,LOC,	399,	0,	9.85000000	30.3000000	4.38000000
N,R5.1,LOC,	400,	0,	10.1203066	31.1471009	4.38000000
N,R5.1,LOC,	401,	0,	22.1447280	24.1282723	4.38000000
N,R5.1,LOC,	402,	0,	21.0910738	25.0545226	4.38000000
N,R5.1,LOC,	403,	0,	19.9987181	25.9347986	4.38000000
N,R5.1,LOC,	404,	0,	18.8696651	26.7674847	4.38000000
N,R5.1,LOC,	405,	0,	17.7059868	27.5510532	4.38000000
N,R5.1,LOC,	406,	0,	16.5098184	28.2840661	4.38000000
N,R5.1,LOC,	407,	0,	15.2833548	28.9651785	4.38000000
N,R5.1,LOC,	408,	0,	14.0288467	29.5931404	4.38000000
N,R5.1,LOC,	409,	0,	12.7485960	30.1667996	4.38000000
N,R5.1,LOC,	410,	0,	11.4449519	30.6851035	4.38000000
N,R5.1,LOC,	411,	0,	12.4000000	20.2000000	4.38000000
N,R5.1,LOC,	412,	0,	13.7000000	20.2000000	4.38000000
N,R5.1,LOC,	413,	0,	15.0000000	20.2000000	4.38000000
N,R5.1,LOC,	414,	0,	16.3000000	20.2000000	4.38000000
N,R5.1,LOC,	415,	0,	17.6000000	20.2000000	4.38000000
N,R5.1,LOC,	416,	0,	18.9000000	20.2000000	4.38000000
N,R5.1,LOC,	417,	0,	9.85000000	22.5000000	4.38000000
N,R5.1,LOC,	418,	0,	9.85000000	23.8000000	4.38000000

N,R5.1,LOC,	419,	0,	9.85000000	, 25.1000000	, 4.38000000
N,R5.1,LOC,	420,	0,	9.85000000	, 26.4000000	, 4.38000000
N,R5.1,LOC,	421,	0,	9.85000000	, 27.7000000	, 4.38000000
N,R5.1,LOC,	422,	0,	9.85000000	, 29.0000000	, 4.38000000
N,R5.1,LOC,	423,	0,	11.2454691	, 29.5295806	, 4.38000000
N,R5.1,LOC,	424,	0,	12.6985468	, 28.7661821	, 4.38000000
N,R5.1,LOC,	425,	0,	13.7460390	, 28.7852963	, 4.38000000
N,R5.1,LOC,	426,	0,	14.6330072	, 28.1460988	, 4.38000000
N,R5.1,LOC,	427,	0,	15.6728082	, 27.3153541	, 4.38000000
N,R5.1,LOC,	428,	0,	17.8883250	, 25.6518117	, 4.38000000
N,R5.1,LOC,	429,	0,	18.9441343	, 24.7920463	, 4.38000000
N,R5.1,LOC,	430,	0,	19.1499428	, 22.9756886	, 4.38000000
N,R5.1,LOC,	431,	0,	21.1034301	, 23.0988946	, 4.38000000
N,R5.1,LOC,	432,	0,	19.3092331	, 21.4014830	, 4.38000000
N,R5.1,LOC,	433,	0,	18.2461489	, 22.0582367	, 4.38000000
N,R5.1,LOC,	434,	0,	17.7592655	, 21.1331148	, 4.38000000
N,R5.1,LOC,	435,	0,	16.5309806	, 21.3409347	, 4.38000000
N,R5.1,LOC,	436,	0,	15.2131961	, 21.3368414	, 4.38000000
N,R5.1,LOC,	437,	0,	13.9734353	, 21.3099780	, 4.38000000
N,R5.1,LOC,	438,	0,	17.9493295	, 23.7363105	, 4.38000000
N,R5.1,LOC,	439,	0,	16.8401616	, 22.6285162	, 4.38000000
N,R5.1,LOC,	440,	0,	15.3992910	, 22.3452315	, 4.38000000
N,R5.1,LOC,	441,	0,	14.2823314	, 22.4254694	, 4.38000000
N,R5.1,LOC,	442,	0,	11.9603487	, 22.5979528	, 4.38000000
N,R5.1,LOC,	443,	0,	11.6718796	, 21.3658332	, 4.38000000
N,R5.1,LOC,	444,	0,	10.7506150	, 21.3742676	, 4.38000000
N,R5.1,LOC,	445,	0,	10.9455668	, 22.5758916	, 4.38000000
N,R5.1,LOC,	446,	0,	10.9599131	, 23.8455506	, 4.38000000
N,R5.1,LOC,	447,	0,	10.9873879	, 25.1360674	, 4.38000000
N,R5.1,LOC,	448,	0,	11.7936743	, 26.3959436	, 4.38000000
N,R5.1,LOC,	449,	0,	11.5072594	, 27.2236580	, 4.38000000
N,R5.1,LOC,	450,	0,	11.9508588	, 27.8093243	, 4.38000000
N,R5.1,LOC,	451,	0,	13.7119196	, 27.5191099	, 4.38000000
N,R5.1,LOC,	452,	0,	14.7156245	, 26.3904951	, 4.38000000
N,R5.1,LOC,	453,	0,	15.8700403	, 25.4252827	, 4.38000000
N,R5.1,LOC,	454,	0,	16.9359984	, 24.5948903	, 4.38000000
N,R5.1,LOC,	455,	0,	16.0440966	, 23.6389908	, 4.38000000
N,R5.1,LOC,	456,	0,	14.5165804	, 23.3850138	, 4.38000000
N,R5.1,LOC,	457,	0,	12.0952338	, 23.8598050	, 4.38000000
N,R5.1,LOC,	458,	0,	13.3215594	, 23.7140831	, 4.38000000
N,R5.1,LOC,	459,	0,	12.1197123	, 25.1337982	, 4.38000000
N,R5.1,LOC,	460,	0,	12.7503083	, 26.7138615	, 4.38000000
N,R5.1,LOC,	461,	0,	13.6077297	, 25.3022337	, 4.38000000
N,R5.1,LOC,	462,	0,	15.0207850	, 24.4072743	, 4.38000000
N,R5.1,LOC,	463,	0,	20.0800730	, 23.9523476	, 4.38000000
N,R5.1,LOC,	464,	0,	18.6599325	, 20.9332880	, 4.38000000
N,R5.1,LOC,	465,	0,	10.8491313	, 26.3757367	, 4.38000000
N,R5.1,LOC,	466,	0,	10.7772451	, 27.4657063	, 4.38000000
N,R5.1,LOC,	467,	0,	10.9663040	, 28.4153503	, 4.38000000
N,R5.1,LOC,	468,	0,	20.1903366	, 22.1794820	, 4.38000000
N,R5.1,LOC,	469,	0,	15.3199893	, 23.1230787	, 4.38000000
N,R5.1,LOC,	470,	0,	12.7627273	, 21.3435422	, 4.38000000
N,R5.1,LOC,	471,	0,	13.0860245	, 22.5388111	, 4.38000000
N,R5.1,LOC,	472,	0,	16.8035021	, 26.4528254	, 4.38000000
N,R5.1,LOC,	473,	0,	.000000000	, 32.7500000	, 4.38000000
N,R5.1,LOC,	474,	0,	.000000000	, 31.5250000	, 4.38000000
N,R5.1,LOC,	475,	0,	8.71270669	, 31.5697837	, 4.38000000
N,R5.1,LOC,	476,	0,	7.28756059	, 31.9288891	, 4.38000000
N,R5.1,LOC,	477,	0,	5.84773830	, 32.2236940	, 4.38000000
N,R5.1,LOC,	478,	0,	4.39613946	, 32.4536047	, 4.38000000
N,R5.1,LOC,	479,	0,	2.93568737	, 32.6181581	, 4.38000000
N,R5.1,LOC,	480,	0,	1.46932319	, 32.7170229	, 4.38000000
N,R5.1,LOC,	481,	0,	2.05000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	482,	0,	3.35000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	483,	0,	4.65000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	484,	0,	5.95000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	485,	0,	7.25000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	486,	0,	8.55000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	487,	0,	1.20402319	, 31.5050881	, 4.38000000
N,R5.1,LOC,	488,	0,	2.49396470	, 31.4474730	, 4.38000000
N,R5.1,LOC,	489,	0,	4.76129552	, 31.2967799	, 4.38000000
N,R5.1,LOC,	490,	0,	3.71686914	, 31.4245539	, 4.38000000
N,R5.1,LOC,	2003,	0,	23.9500000	, 13.6700000	, 17.3100000
N,R5.1,LOC,	2005,	0,	23.6015372	, 14.3293988	, 4.38000000

N,R5.1,LOC,	2006,	0,	23.1373704	, 13.8087416	, 4.38000000
N,R5.1,LOC,	2008,	0,	23.3000000	, 14.9000000	, 17.3100000
N,R5.1,LOC,	2009,	0,	23.6015372	, 14.3293988	, 17.3100000
N,R5.1,LOC,	2010,	0,	23.1373704	, 13.8087416	, 17.3100000
N,R5.1,LOC,	2011,	0,	22.3100000	, 13.9500000	, 17.3100000
N,R5.1,LOC,	2012,	0,	23.6015372	, 14.3293988	, 5.37461538
N,R5.1,LOC,	2013,	0,	23.6015372	, 14.3293988	, 6.36923077
N,R5.1,LOC,	2014,	0,	23.6015372	, 14.3293988	, 7.36384615
N,R5.1,LOC,	2015,	0,	23.6015372	, 14.3293988	, 8.35846154
N,R5.1,LOC,	2016,	0,	23.6015372	, 14.3293988	, 9.35307692
N,R5.1,LOC,	2017,	0,	23.6015372	, 14.3293988	, 10.3476923
N,R5.1,LOC,	2018,	0,	23.6015372	, 14.3293988	, 11.3423077
N,R5.1,LOC,	2019,	0,	23.6015372	, 14.3293988	, 12.3369231
N,R5.1,LOC,	2020,	0,	23.6015372	, 14.3293988	, 13.3315385
N,R5.1,LOC,	2021,	0,	23.6015372	, 14.3293988	, 14.3261538
N,R5.1,LOC,	2022,	0,	23.6015372	, 14.3293988	, 15.3207692
N,R5.1,LOC,	2023,	0,	23.6015372	, 14.3293988	, 16.3153846
N,R5.1,LOC,	2024,	0,	23.3000000	, 14.9000000	, 5.37461538
N,R5.1,LOC,	2025,	0,	23.3000000	, 14.9000000	, 6.36923077
N,R5.1,LOC,	2026,	0,	23.3000000	, 14.9000000	, 7.36384615
N,R5.1,LOC,	2027,	0,	23.3000000	, 14.9000000	, 8.35846154
N,R5.1,LOC,	2028,	0,	23.3000000	, 14.9000000	, 9.35307692
N,R5.1,LOC,	2029,	0,	23.3000000	, 14.9000000	, 10.3476923
N,R5.1,LOC,	2030,	0,	23.3000000	, 14.9000000	, 11.3423077
N,R5.1,LOC,	2031,	0,	23.3000000	, 14.9000000	, 12.3369231
N,R5.1,LOC,	2032,	0,	23.3000000	, 14.9000000	, 13.3315385
N,R5.1,LOC,	2033,	0,	23.3000000	, 14.9000000	, 14.3261538
N,R5.1,LOC,	2034,	0,	23.3000000	, 14.9000000	, 15.3207692
N,R5.1,LOC,	2035,	0,	23.3000000	, 14.9000000	, 16.3153846
N,R5.1,LOC,	2036,	0,	23.1373704	, 13.8087416	, 5.37461538
N,R5.1,LOC,	2037,	0,	23.1373704	, 13.8087416	, 6.36923077
N,R5.1,LOC,	2038,	0,	23.1373704	, 13.8087416	, 7.36384615
N,R5.1,LOC,	2039,	0,	23.1373704	, 13.8087416	, 8.35846154
N,R5.1,LOC,	2040,	0,	23.1373704	, 13.8087416	, 9.35307692
N,R5.1,LOC,	2041,	0,	23.1373704	, 13.8087416	, 10.3476923
N,R5.1,LOC,	2042,	0,	23.1373704	, 13.8087416	, 11.3423077
N,R5.1,LOC,	2043,	0,	23.1373704	, 13.8087416	, 12.3369231
N,R5.1,LOC,	2044,	0,	23.1373704	, 13.8087416	, 13.3315385
N,R5.1,LOC,	2045,	0,	23.1373704	, 13.8087416	, 14.3261538
N,R5.1,LOC,	2046,	0,	23.1373704	, 13.8087416	, 15.3207692
N,R5.1,LOC,	2047,	0,	23.1373704	, 13.8087416	, 16.3153846
N,R5.1,LOC,	2048,	0,	22.3100000	, 13.9500000	, 5.37461538
N,R5.1,LOC,	2049,	0,	22.3100000	, 13.9500000	, 6.36923077
N,R5.1,LOC,	2050,	0,	22.3100000	, 13.9500000	, 7.36384615
N,R5.1,LOC,	2051,	0,	22.3100000	, 13.9500000	, 8.35846154
N,R5.1,LOC,	2052,	0,	22.3100000	, 13.9500000	, 9.35307692
N,R5.1,LOC,	2053,	0,	22.3100000	, 13.9500000	, 10.3476923
N,R5.1,LOC,	2054,	0,	22.3100000	, 13.9500000	, 11.3423077
N,R5.1,LOC,	2055,	0,	22.3100000	, 13.9500000	, 12.3369231
N,R5.1,LOC,	2056,	0,	22.3100000	, 13.9500000	, 13.3315385
N,R5.1,LOC,	2057,	0,	22.3100000	, 13.9500000	, 14.3261538
N,R5.1,LOC,	2058,	0,	22.3100000	, 13.9500000	, 15.3207692
N,R5.1,LOC,	2059,	0,	22.3100000	, 13.9500000	, 16.3153846
N,R5.1,LOC,	2060,	0,	24.4696284	, 14.1707763	, 4.38000000
N,R5.1,LOC,	2062,	0,	24.4696284	, 14.1707763	, 17.3100000
N,R5.1,LOC,	2063,	0,	24.9058938	, 14.5912140	, 17.3100000
N,R5.1,LOC,	2064,	0,	24.4696284	, 14.1707763	, 5.37461538
N,R5.1,LOC,	2065,	0,	24.4696284	, 14.1707763	, 6.36923077
N,R5.1,LOC,	2066,	0,	24.4696284	, 14.1707763	, 7.36384615
N,R5.1,LOC,	2067,	0,	24.4696284	, 14.1707763	, 8.35846154
N,R5.1,LOC,	2068,	0,	24.4696284	, 14.1707763	, 9.35307692
N,R5.1,LOC,	2069,	0,	24.4696284	, 14.1707763	, 10.3476923
N,R5.1,LOC,	2070,	0,	24.4696284	, 14.1707763	, 11.3423077
N,R5.1,LOC,	2071,	0,	24.4696284	, 14.1707763	, 12.3369231
N,R5.1,LOC,	2072,	0,	24.4696284	, 14.1707763	, 13.3315385
N,R5.1,LOC,	2073,	0,	24.4696284	, 14.1707763	, 14.3261538
N,R5.1,LOC,	2074,	0,	24.4696284	, 14.1707763	, 15.3207692
N,R5.1,LOC,	2075,	0,	24.4696284	, 14.1707763	, 16.3153846
N,R5.1,LOC,	2076,	0,	24.9058938	, 14.5912140	, 5.37461538
N,R5.1,LOC,	2077,	0,	24.9058938	, 14.5912140	, 6.36923077
N,R5.1,LOC,	2078,	0,	24.9058938	, 14.5912140	, 7.36384615
N,R5.1,LOC,	2079,	0,	24.9058938	, 14.5912140	, 8.35846154
N,R5.1,LOC,	2080,	0,	24.9058938	, 14.5912140	, 9.35307692
N,R5.1,LOC,	2081,	0,	24.9058938	, 14.5912140	, 10.3476923

N,R5.1,LOC,	2082,	0,	24.9058938	, 14.5912140	, 11.3423077
N,R5.1,LOC,	2083,	0,	24.9058938	, 14.5912140	, 12.3369231
N,R5.1,LOC,	2084,	0,	24.9058938	, 14.5912140	, 13.3315385
N,R5.1,LOC,	2085,	0,	24.9058938	, 14.5912140	, 14.3261538
N,R5.1,LOC,	2086,	0,	24.9058938	, 14.5912140	, 15.3207692
N,R5.1,LOC,	2087,	0,	24.9058938	, 14.5912140	, 16.3153846
N,R5.1,LOC,	2089,	0,	24.6672232	, 13.4734277	, 4.38000000
N,R5.1,LOC,	2090,	0,	25.3000000	, 13.3000000	, 17.3100000
N,R5.1,LOC,	2091,	0,	24.6672232	, 13.4734277	, 17.3100000
N,R5.1,LOC,	2092,	0,	25.3000000	, 13.3000000	, 5.37461538
N,R5.1,LOC,	2093,	0,	25.3000000	, 13.3000000	, 6.36923077
N,R5.1,LOC,	2094,	0,	25.3000000	, 13.3000000	, 7.36384615
N,R5.1,LOC,	2095,	0,	25.3000000	, 13.3000000	, 8.35846154
N,R5.1,LOC,	2096,	0,	25.3000000	, 13.3000000	, 9.35307692
N,R5.1,LOC,	2097,	0,	25.3000000	, 13.3000000	, 10.3476923
N,R5.1,LOC,	2098,	0,	25.3000000	, 13.3000000	, 11.3423077
N,R5.1,LOC,	2099,	0,	25.3000000	, 13.3000000	, 12.3369231
N,R5.1,LOC,	2100,	0,	25.3000000	, 13.3000000	, 13.3315385
N,R5.1,LOC,	2101,	0,	25.3000000	, 13.3000000	, 14.3261538
N,R5.1,LOC,	2102,	0,	25.3000000	, 13.3000000	, 15.3207692
N,R5.1,LOC,	2103,	0,	25.3000000	, 13.3000000	, 16.3153846
N,R5.1,LOC,	2104,	0,	24.6672232	, 13.4734277	, 5.37461538
N,R5.1,LOC,	2105,	0,	24.6672232	, 13.4734277	, 6.36923077
N,R5.1,LOC,	2106,	0,	24.6672232	, 13.4734277	, 7.36384615
N,R5.1,LOC,	2107,	0,	24.6672232	, 13.4734277	, 8.35846154
N,R5.1,LOC,	2108,	0,	24.6672232	, 13.4734277	, 9.35307692
N,R5.1,LOC,	2109,	0,	24.6672232	, 13.4734277	, 10.3476923
N,R5.1,LOC,	2110,	0,	24.6672232	, 13.4734277	, 11.3423077
N,R5.1,LOC,	2111,	0,	24.6672232	, 13.4734277	, 12.3369231
N,R5.1,LOC,	2112,	0,	24.6672232	, 13.4734277	, 13.3315385
N,R5.1,LOC,	2113,	0,	24.6672232	, 13.4734277	, 14.3261538
N,R5.1,LOC,	2114,	0,	24.6672232	, 13.4734277	, 15.3207692
N,R5.1,LOC,	2115,	0,	24.6672232	, 13.4734277	, 16.3153846
N,R5.1,LOC,	2116,	0,	24.0232967	, 13.0494213	, 4.38000000
N,R5.1,LOC,	2118,	0,	24.0232967	, 13.0494213	, 17.3100000
N,R5.1,LOC,	2119,	0,	24.1000000	, 12.4000000	, 17.3100000
N,R5.1,LOC,	2120,	0,	24.0232967	, 13.0494213	, 5.37461538
N,R5.1,LOC,	2121,	0,	24.0232967	, 13.0494213	, 6.36923077
N,R5.1,LOC,	2122,	0,	24.0232967	, 13.0494213	, 7.36384615
N,R5.1,LOC,	2123,	0,	24.0232967	, 13.0494213	, 8.35846154
N,R5.1,LOC,	2124,	0,	24.0232967	, 13.0494213	, 9.35307692
N,R5.1,LOC,	2125,	0,	24.0232967	, 13.0494213	, 10.3476923
N,R5.1,LOC,	2126,	0,	24.0232967	, 13.0494213	, 11.3423077
N,R5.1,LOC,	2127,	0,	24.0232967	, 13.0494213	, 12.3369231
N,R5.1,LOC,	2128,	0,	24.0232967	, 13.0494213	, 13.3315385
N,R5.1,LOC,	2129,	0,	24.0232967	, 13.0494213	, 14.3261538
N,R5.1,LOC,	2130,	0,	24.0232967	, 13.0494213	, 15.3207692
N,R5.1,LOC,	2131,	0,	24.0232967	, 13.0494213	, 16.3153846
N,R5.1,LOC,	2132,	0,	24.1000000	, 12.4000000	, 5.37461538
N,R5.1,LOC,	2133,	0,	24.1000000	, 12.4000000	, 6.36923077
N,R5.1,LOC,	2134,	0,	24.1000000	, 12.4000000	, 7.36384615
N,R5.1,LOC,	2135,	0,	24.1000000	, 12.4000000	, 8.35846154
N,R5.1,LOC,	2136,	0,	24.1000000	, 12.4000000	, 9.35307692
N,R5.1,LOC,	2137,	0,	24.1000000	, 12.4000000	, 10.3476923
N,R5.1,LOC,	2138,	0,	24.1000000	, 12.4000000	, 11.3423077
N,R5.1,LOC,	2139,	0,	24.1000000	, 12.4000000	, 12.3369231
N,R5.1,LOC,	2140,	0,	24.1000000	, 12.4000000	, 13.3315385
N,R5.1,LOC,	2141,	0,	24.1000000	, 12.4000000	, 14.3261538
N,R5.1,LOC,	2142,	0,	24.1000000	, 12.4000000	, 15.3207692
N,R5.1,LOC,	2143,	0,	24.1000000	, 12.4000000	, 16.3153846
N,R5.1,LOC,	2145,	0,	23.3500000	, 13.2100000	, 4.38000000
N,R5.1,LOC,	2146,	0,	22.9000000	, 12.9000000	, 17.3100000
N,R5.1,LOC,	2147,	0,	23.3500000	, 13.2100000	, 17.3100000
N,R5.1,LOC,	2148,	0,	23.3500000	, 13.2100000	, 5.37461538
N,R5.1,LOC,	2149,	0,	23.3500000	, 13.2100000	, 6.36923077
N,R5.1,LOC,	2150,	0,	23.3500000	, 13.2100000	, 7.36384615
N,R5.1,LOC,	2151,	0,	23.3500000	, 13.2100000	, 8.35846154
N,R5.1,LOC,	2152,	0,	23.3500000	, 13.2100000	, 9.35307692
N,R5.1,LOC,	2153,	0,	23.3500000	, 13.2100000	, 10.3476923
N,R5.1,LOC,	2154,	0,	23.3500000	, 13.2100000	, 11.3423077
N,R5.1,LOC,	2155,	0,	23.3500000	, 13.2100000	, 12.3369231
N,R5.1,LOC,	2156,	0,	23.3500000	, 13.2100000	, 13.3315385
N,R5.1,LOC,	2157,	0,	23.3500000	, 13.2100000	, 14.3261538
N,R5.1,LOC,	2158,	0,	23.3500000	, 13.2100000	, 15.3207692

N,R5.1,LOC,	2159,	0,	23.3500000	13.2100000	16.3153846
N,R5.1,LOC,	2160,	0,	22.9000000	12.9000000	5.37461538
N,R5.1,LOC,	2161,	0,	22.9000000	12.9000000	6.36923077
N,R5.1,LOC,	2162,	0,	22.9000000	12.9000000	7.36384615
N,R5.1,LOC,	2163,	0,	22.9000000	12.9000000	8.35846154
N,R5.1,LOC,	2164,	0,	22.9000000	12.9000000	9.35307692
N,R5.1,LOC,	2165,	0,	22.9000000	12.9000000	10.3476923
N,R5.1,LOC,	2166,	0,	22.9000000	12.9000000	11.3423077
N,R5.1,LOC,	2167,	0,	22.9000000	12.9000000	12.3369231
N,R5.1,LOC,	2168,	0,	22.9000000	12.9000000	13.3315385
N,R5.1,LOC,	2169,	0,	22.9000000	12.9000000	14.3261538
N,R5.1,LOC,	2170,	0,	22.9000000	12.9000000	15.3207692
N,R5.1,LOC,	2171,	0,	22.9000000	12.9000000	16.3153846
N,R5.1,LOC,	2183,	0,	23.9500000	13.6700000	14.3261538
N,R5.1,LOC,	2184,	0,	23.9500000	13.6700000	15.3207692
N,R5.1,LOC,	2185,	0,	23.9500000	13.6700000	16.3153846
N,R5.1,LOC,	2186,	0,	23.3000000	14.9000000	
N,R5.1,LOC,	2187,	0,	23.6015372	14.3293988	
N,R5.1,LOC,	2188,	0,	23.1373704	13.8087416	
N,R5.1,LOC,	2189,	0,	22.3100000	13.9500000	
N,R5.1,LOC,	2190,	0,	23.6015372	14.3293988	3.28500000
N,R5.1,LOC,	2191,	0,	23.6015372	14.3293988	2.19000000
N,R5.1,LOC,	2192,	0,	23.6015372	14.3293988	1.09500000
N,R5.1,LOC,	2193,	0,	23.3000000	14.9000000	3.28500000
N,R5.1,LOC,	2194,	0,	23.3000000	14.9000000	2.19000000
N,R5.1,LOC,	2195,	0,	23.3000000	14.9000000	1.09500000
N,R5.1,LOC,	2196,	0,	23.1373704	13.8087416	3.28500000
N,R5.1,LOC,	2197,	0,	23.1373704	13.8087416	2.19000000
N,R5.1,LOC,	2198,	0,	23.1373704	13.8087416	1.09500000
N,R5.1,LOC,	2199,	0,	22.3100000	13.9500000	3.28500000
N,R5.1,LOC,	2200,	0,	22.3100000	13.9500000	2.19000000
N,R5.1,LOC,	2201,	0,	22.3100000	13.9500000	1.09500000
N,R5.1,LOC,	2202,	0,	24.4696284	14.1707763	
N,R5.1,LOC,	2203,	0,	24.9058938	14.5912140	
N,R5.1,LOC,	2204,	0,	24.4696284	14.1707763	3.28500000
N,R5.1,LOC,	2205,	0,	24.4696284	14.1707763	2.19000000
N,R5.1,LOC,	2206,	0,	24.4696284	14.1707763	1.09500000
N,R5.1,LOC,	2207,	0,	24.9058938	14.5912140	3.28500000
N,R5.1,LOC,	2208,	0,	24.9058938	14.5912140	2.19000000
N,R5.1,LOC,	2209,	0,	24.9058938	14.5912140	1.09500000
N,R5.1,LOC,	2210,	0,	25.3000000	13.3000000	
N,R5.1,LOC,	2211,	0,	24.6672232	13.4734277	
N,R5.1,LOC,	2212,	0,	25.3000000	13.3000000	3.28500000
N,R5.1,LOC,	2213,	0,	25.3000000	13.3000000	2.19000000
N,R5.1,LOC,	2214,	0,	25.3000000	13.3000000	1.09500000
N,R5.1,LOC,	2215,	0,	24.6672232	13.4734277	3.28500000
N,R5.1,LOC,	2216,	0,	24.6672232	13.4734277	2.19000000
N,R5.1,LOC,	2217,	0,	24.6672232	13.4734277	1.09500000
N,R5.1,LOC,	2218,	0,	24.0232967	13.0494213	
N,R5.1,LOC,	2219,	0,	24.1000000	12.4000000	
N,R5.1,LOC,	2220,	0,	24.0232967	13.0494213	3.28500000
N,R5.1,LOC,	2221,	0,	24.0232967	13.0494213	2.19000000
N,R5.1,LOC,	2222,	0,	24.0232967	13.0494213	1.09500000
N,R5.1,LOC,	2223,	0,	24.1000000	12.4000000	3.28500000
N,R5.1,LOC,	2224,	0,	24.1000000	12.4000000	2.19000000
N,R5.1,LOC,	2225,	0,	24.1000000	12.4000000	1.09500000
N,R5.1,LOC,	2226,	0,	22.9000000	12.9000000	
N,R5.1,LOC,	2227,	0,	23.3500000	13.2100000	
N,R5.1,LOC,	2228,	0,	23.3500000	13.2100000	3.28500000
N,R5.1,LOC,	2229,	0,	23.3500000	13.2100000	2.19000000
N,R5.1,LOC,	2230,	0,	23.3500000	13.2100000	1.09500000
N,R5.1,LOC,	2231,	0,	22.9000000	12.9000000	3.28500000
N,R5.1,LOC,	2232,	0,	22.9000000	12.9000000	2.19000000
N,R5.1,LOC,	2233,	0,	22.9000000	12.9000000	1.09500000
N,R5.1,LOC,	-1,				
EN,R5.1,ATTR,	4,	1,	1,	1, 159,	0, 0, 0, 0
EN,R5.1,NODE,	15,	16,	17,	18,	
EN,R5.1,ATTR,	4,	1,	1,	1, 160,	0, 0, 0, 0
EN,R5.1,NODE,	16,	20,	30,	17,	
EN,R5.1,ATTR,	4,	1,	1,	1, 161,	0, 0, 0, 0
EN,R5.1,NODE,	20,	21,	31,	30,	
EN,R5.1,ATTR,	4,	1,	1,	1, 162,	0, 0, 0, 0
EN,R5.1,NODE,	21,	22,	32,	31,	
EN,R5.1,ATTR,	4,	1,	1,	1, 163,	0, 0, 0, 0

EN, R5.1, NODE,	22,	23,	33,	32,			
EN, R5.1, ATTR,	4,	1,	1,	1,	164,	0,	0, 0, 0
EN, R5.1, NODE,	23,	24,	34,	33,			
EN, R5.1, ATTR,	4,	1,	1,	1,	165,	0,	0, 0, 0
EN, R5.1, NODE,	24,	25,	35,	34,			
EN, R5.1, ATTR,	4,	1,	1,	1,	166,	0,	0, 0, 0
EN, R5.1, NODE,	25,	26,	36,	35,			
EN, R5.1, ATTR,	4,	1,	1,	1,	167,	0,	0, 0, 0
EN, R5.1, NODE,	26,	27,	37,	36,			
EN, R5.1, ATTR,	4,	1,	1,	1,	168,	0,	0, 0, 0
EN, R5.1, NODE,	27,	28,	38,	37,			
EN, R5.1, ATTR,	4,	1,	1,	1,	169,	0,	0, 0, 0
EN, R5.1, NODE,	28,	19,	29,	38,			
EN, R5.1, ATTR,	4,	1,	1,	1,	170,	0,	0, 0, 0
EN, R5.1, NODE,	19,	40,	42,	29,			
EN, R5.1, ATTR,	4,	1,	1,	1,	171,	0,	0, 0, 0
EN, R5.1, NODE,	40,	39,	41,	42,			
EN, R5.1, ATTR,	4,	1,	1,	1,	172,	0,	0, 0, 0
EN, R5.1, NODE,	39,	44,	54,	41,			
EN, R5.1, ATTR,	4,	1,	1,	1,	173,	0,	0, 0, 0
EN, R5.1, NODE,	44,	45,	55,	54,			
EN, R5.1, ATTR,	4,	1,	1,	1,	174,	0,	0, 0, 0
EN, R5.1, NODE,	45,	46,	56,	55,			
EN, R5.1, ATTR,	4,	1,	1,	1,	175,	0,	0, 0, 0
EN, R5.1, NODE,	46,	47,	57,	56,			
EN, R5.1, ATTR,	4,	1,	1,	1,	176,	0,	0, 0, 0
EN, R5.1, NODE,	47,	48,	58,	57,			
EN, R5.1, ATTR,	4,	1,	1,	1,	177,	0,	0, 0, 0
EN, R5.1, NODE,	48,	49,	59,	58,			
EN, R5.1, ATTR,	4,	1,	1,	1,	178,	0,	0, 0, 0
EN, R5.1, NODE,	49,	50,	60,	59,			
EN, R5.1, ATTR,	4,	1,	1,	1,	179,	0,	0, 0, 0
EN, R5.1, NODE,	50,	51,	61,	60,			
EN, R5.1, ATTR,	4,	1,	1,	1,	180,	0,	0, 0, 0
EN, R5.1, NODE,	51,	52,	62,	61,			
EN, R5.1, ATTR,	4,	1,	1,	1,	181,	0,	0, 0, 0
EN, R5.1, NODE,	52,	43,	53,	62,			
EN, R5.1, ATTR,	4,	1,	1,	1,	182,	0,	0, 0, 0
EN, R5.1, NODE,	43,	63,	64,	53,			
EN, R5.1, ATTR,	4,	1,	1,	1,	183,	0,	0, 0, 0
EN, R5.1, NODE,	63,	66,	76,	64,			
EN, R5.1, ATTR,	4,	1,	1,	1,	184,	0,	0, 0, 0
EN, R5.1, NODE,	66,	67,	77,	76,			
EN, R5.1, ATTR,	4,	1,	1,	1,	185,	0,	0, 0, 0
EN, R5.1, NODE,	67,	68,	78,	77,			
EN, R5.1, ATTR,	4,	1,	1,	1,	186,	0,	0, 0, 0
EN, R5.1, NODE,	68,	69,	79,	78,			
EN, R5.1, ATTR,	4,	1,	1,	1,	187,	0,	0, 0, 0
EN, R5.1, NODE,	69,	70,	80,	79,			
EN, R5.1, ATTR,	4,	1,	1,	1,	188,	0,	0, 0, 0
EN, R5.1, NODE,	70,	71,	81,	80,			
EN, R5.1, ATTR,	4,	1,	1,	1,	189,	0,	0, 0, 0
EN, R5.1, NODE,	71,	72,	82,	81,			
EN, R5.1, ATTR,	4,	1,	1,	1,	190,	0,	0, 0, 0
EN, R5.1, NODE,	72,	73,	83,	82,			
EN, R5.1, ATTR,	4,	1,	1,	1,	191,	0,	0, 0, 0
EN, R5.1, NODE,	73,	74,	84,	83,			
EN, R5.1, ATTR,	4,	1,	1,	1,	192,	0,	0, 0, 0
EN, R5.1, NODE,	74,	65,	75,	84,			
EN, R5.1, ATTR,	4,	1,	1,	1,	193,	0,	0, 0, 0
EN, R5.1, NODE,	85,	86,	95,	104,			
EN, R5.1, ATTR,	4,	1,	1,	1,	194,	0,	0, 0, 0
EN, R5.1, NODE,	104,	95,	94,	103,			
EN, R5.1, ATTR,	4,	1,	1,	1,	195,	0,	0, 0, 0
EN, R5.1, NODE,	103,	94,	93,	102,			
EN, R5.1, ATTR,	4,	1,	1,	1,	196,	0,	0, 0, 0
EN, R5.1, NODE,	102,	93,	92,	101,			
EN, R5.1, ATTR,	4,	1,	1,	1,	197,	0,	0, 0, 0
EN, R5.1, NODE,	101,	92,	91,	100,			
EN, R5.1, ATTR,	4,	1,	1,	1,	198,	0,	0, 0, 0
EN, R5.1, NODE,	100,	91,	90,	99,			
EN, R5.1, ATTR,	4,	1,	1,	1,	199,	0,	0, 0, 0
EN, R5.1, NODE,	99,	90,	89,	98,			
EN, R5.1, ATTR,	4,	1,	1,	1,	200,	0,	0, 0, 0

EN,R5.1,NODE,	98,	89,	88,	97,				
EN,R5.1,ATTR,	4,	1,	1,	1,	201,	0,	0,	0, 0
EN,R5.1,NODE,	97,	88,	87,	96,				
EN,R5.1,ATTR,	4,	1,	1,	1,	202,	0,	0,	0, 0
EN,R5.1,NODE,	96,	87,	16,	15,				
EN,R5.1,ATTR,	4,	1,	1,	1,	203,	0,	0,	0, 0
EN,R5.1,NODE,	105,	107,	126,	125,				
EN,R5.1,ATTR,	4,	1,	1,	1,	204,	0,	0,	0, 0
EN,R5.1,NODE,	107,	106,	116,	126,				
EN,R5.1,ATTR,	4,	1,	1,	1,	205,	0,	0,	0, 0
EN,R5.1,NODE,	125,	126,	127,	124,				
EN,R5.1,ATTR,	4,	1,	1,	1,	206,	0,	0,	0, 0
EN,R5.1,NODE,	126,	116,	115,	127,				
EN,R5.1,ATTR,	4,	1,	1,	1,	207,	0,	0,	0, 0
EN,R5.1,NODE,	124,	127,	128,	123,				
EN,R5.1,ATTR,	4,	1,	1,	1,	208,	0,	0,	0, 0
EN,R5.1,NODE,	127,	115,	114,	128,				
EN,R5.1,ATTR,	4,	1,	1,	1,	209,	0,	0,	0, 0
EN,R5.1,NODE,	123,	128,	129,	122,				
EN,R5.1,ATTR,	4,	1,	1,	1,	210,	0,	0,	0, 0
EN,R5.1,NODE,	128,	114,	113,	129,				
EN,R5.1,ATTR,	4,	1,	1,	1,	211,	0,	0,	0, 0
EN,R5.1,NODE,	122,	129,	130,	121,				
EN,R5.1,ATTR,	4,	1,	1,	1,	212,	0,	0,	0, 0
EN,R5.1,NODE,	129,	113,	112,	130,				
EN,R5.1,ATTR,	4,	1,	1,	1,	213,	0,	0,	0, 0
EN,R5.1,NODE,	121,	130,	131,	120,				
EN,R5.1,ATTR,	4,	1,	1,	1,	214,	0,	0,	0, 0
EN,R5.1,NODE,	130,	112,	111,	131,				
EN,R5.1,ATTR,	4,	1,	1,	1,	215,	0,	0,	0, 0
EN,R5.1,NODE,	120,	131,	132,	119,				
EN,R5.1,ATTR,	4,	1,	1,	1,	216,	0,	0,	0, 0
EN,R5.1,NODE,	131,	111,	110,	132,				
EN,R5.1,ATTR,	4,	1,	1,	1,	217,	0,	0,	0, 0
EN,R5.1,NODE,	119,	132,	133,	118,				
EN,R5.1,ATTR,	4,	1,	1,	1,	218,	0,	0,	0, 0
EN,R5.1,NODE,	132,	110,	109,	133,				
EN,R5.1,ATTR,	4,	1,	1,	1,	219,	0,	0,	0, 0
EN,R5.1,NODE,	118,	133,	134,	117,				
EN,R5.1,ATTR,	4,	1,	1,	1,	220,	0,	0,	0, 0
EN,R5.1,NODE,	133,	109,	108,	134,				
EN,R5.1,ATTR,	4,	1,	1,	1,	221,	0,	0,	0, 0
EN,R5.1,NODE,	117,	134,	40,	19,				
EN,R5.1,ATTR,	4,	1,	1,	1,	222,	0,	0,	0, 0
EN,R5.1,NODE,	134,	108,	39,	40,				
EN,R5.1,ATTR,	4,	1,	1,	1,	223,	0,	0,	0, 0
EN,R5.1,NODE,	135,	136,	145,	154,				
EN,R5.1,ATTR,	4,	1,	1,	1,	224,	0,	0,	0, 0
EN,R5.1,NODE,	154,	145,	144,	153,				
EN,R5.1,ATTR,	4,	1,	1,	1,	225,	0,	0,	0, 0
EN,R5.1,NODE,	153,	144,	143,	152,				
EN,R5.1,ATTR,	4,	1,	1,	1,	226,	0,	0,	0, 0
EN,R5.1,NODE,	152,	143,	142,	151,				
EN,R5.1,ATTR,	4,	1,	1,	1,	227,	0,	0,	0, 0
EN,R5.1,NODE,	151,	142,	141,	150,				
EN,R5.1,ATTR,	4,	1,	1,	1,	228,	0,	0,	0, 0
EN,R5.1,NODE,	150,	141,	140,	149,				
EN,R5.1,ATTR,	4,	1,	1,	1,	229,	0,	0,	0, 0
EN,R5.1,NODE,	149,	140,	139,	148,				
EN,R5.1,ATTR,	4,	1,	1,	1,	230,	0,	0,	0, 0
EN,R5.1,NODE,	148,	139,	138,	147,				
EN,R5.1,ATTR,	4,	1,	1,	1,	231,	0,	0,	0, 0
EN,R5.1,NODE,	147,	138,	137,	146,				
EN,R5.1,ATTR,	4,	1,	1,	1,	232,	0,	0,	0, 0
EN,R5.1,NODE,	146,	137,	63,	43,				
EN,R5.1,ATTR,	4,	1,	1,	1,	233,	0,	0,	0, 0
EN,R5.1,NODE,	155,	156,	157,	158,				
EN,R5.1,ATTR,	4,	1,	1,	1,	234,	0,	0,	0, 0
EN,R5.1,NODE,	158,	157,	86,	85,				
EN,R5.1,ATTR,	4,	1,	1,	1,	235,	0,	0,	0, 0
EN,R5.1,NODE,	156,	160,	179,	157,				
EN,R5.1,ATTR,	4,	1,	1,	1,	236,	0,	0,	0, 0
EN,R5.1,NODE,	160,	161,	180,	179,				
EN,R5.1,ATTR,	4,	1,	1,	1,	237,	0,	0,	0, 0

EN, R5.1, NODE,	161,	162,	181,	180,		
EN, R5.1, ATTR,	4,	1,	1,	1,	238,	0, 0, 0, 0
EN, R5.1, NODE,	162,	163,	182,	181,		
EN, R5.1, ATTR,	4,	1,	1,	1,	239,	0, 0, 0, 0
EN, R5.1, NODE,	163,	164,	183,	182,		
EN, R5.1, ATTR,	4,	1,	1,	1,	240,	0, 0, 0, 0
EN, R5.1, NODE,	164,	165,	184,	183,		
EN, R5.1, ATTR,	4,	1,	1,	1,	241,	0, 0, 0, 0
EN, R5.1, NODE,	165,	166,	185,	184,		
EN, R5.1, ATTR,	4,	1,	1,	1,	242,	0, 0, 0, 0
EN, R5.1, NODE,	166,	167,	186,	185,		
EN, R5.1, ATTR,	4,	1,	1,	1,	243,	0, 0, 0, 0
EN, R5.1, NODE,	167,	168,	187,	186,		
EN, R5.1, ATTR,	4,	1,	1,	1,	244,	0, 0, 0, 0
EN, R5.1, NODE,	168,	159,	169,	187,		
EN, R5.1, ATTR,	4,	1,	1,	1,	245,	0, 0, 0, 0
EN, R5.1, NODE,	157,	179,	170,	86,		
EN, R5.1, ATTR,	4,	1,	1,	1,	246,	0, 0, 0, 0
EN, R5.1, NODE,	179,	180,	171,	170,		
EN, R5.1, ATTR,	4,	1,	1,	1,	247,	0, 0, 0, 0
EN, R5.1, NODE,	180,	181,	172,	171,		
EN, R5.1, ATTR,	4,	1,	1,	1,	248,	0, 0, 0, 0
EN, R5.1, NODE,	181,	182,	173,	172,		
EN, R5.1, ATTR,	4,	1,	1,	1,	249,	0, 0, 0, 0
EN, R5.1, NODE,	182,	183,	174,	173,		
EN, R5.1, ATTR,	4,	1,	1,	1,	250,	0, 0, 0, 0
EN, R5.1, NODE,	183,	184,	175,	174,		
EN, R5.1, ATTR,	4,	1,	1,	1,	251,	0, 0, 0, 0
EN, R5.1, NODE,	184,	185,	176,	175,		
EN, R5.1, ATTR,	4,	1,	1,	1,	252,	0, 0, 0, 0
EN, R5.1, NODE,	185,	186,	177,	176,		
EN, R5.1, ATTR,	4,	1,	1,	1,	253,	0, 0, 0, 0
EN, R5.1, NODE,	186,	187,	178,	177,		
EN, R5.1, ATTR,	4,	1,	1,	1,	254,	0, 0, 0, 0
EN, R5.1, NODE,	187,	169,	105,	178,		
EN, R5.1, ATTR,	4,	1,	1,	1,	255,	0, 0, 0, 0
EN, R5.1, NODE,	159,	189,	191,	169,		
EN, R5.1, ATTR,	4,	1,	1,	1,	256,	0, 0, 0, 0
EN, R5.1, NODE,	189,	188,	190,	191,		
EN, R5.1, ATTR,	4,	1,	1,	1,	257,	0, 0, 0, 0
EN, R5.1, NODE,	169,	191,	107,	105,		
EN, R5.1, ATTR,	4,	1,	1,	1,	258,	0, 0, 0, 0
EN, R5.1, NODE,	191,	190,	106,	107,		
EN, R5.1, ATTR,	4,	1,	1,	1,	259,	0, 0, 0, 0
EN, R5.1, NODE,	188,	193,	212,	190,		
EN, R5.1, ATTR,	4,	1,	1,	1,	260,	0, 0, 0, 0
EN, R5.1, NODE,	193,	194,	213,	212,		
EN, R5.1, ATTR,	4,	1,	1,	1,	261,	0, 0, 0, 0
EN, R5.1, NODE,	194,	195,	214,	213,		
EN, R5.1, ATTR,	4,	1,	1,	1,	262,	0, 0, 0, 0
EN, R5.1, NODE,	195,	196,	215,	214,		
EN, R5.1, ATTR,	4,	1,	1,	1,	263,	0, 0, 0, 0
EN, R5.1, NODE,	196,	197,	216,	215,		
EN, R5.1, ATTR,	4,	1,	1,	1,	264,	0, 0, 0, 0
EN, R5.1, NODE,	197,	198,	217,	216,		
EN, R5.1, ATTR,	4,	1,	1,	1,	265,	0, 0, 0, 0
EN, R5.1, NODE,	198,	199,	218,	217,		
EN, R5.1, ATTR,	4,	1,	1,	1,	266,	0, 0, 0, 0
EN, R5.1, NODE,	199,	200,	219,	218,		
EN, R5.1, ATTR,	4,	1,	1,	1,	267,	0, 0, 0, 0
EN, R5.1, NODE,	200,	201,	220,	219,		
EN, R5.1, ATTR,	4,	1,	1,	1,	268,	0, 0, 0, 0
EN, R5.1, NODE,	201,	192,	202,	220,		
EN, R5.1, ATTR,	4,	1,	1,	1,	269,	0, 0, 0, 0
EN, R5.1, NODE,	190,	212,	203,	106,		
EN, R5.1, ATTR,	4,	1,	1,	1,	270,	0, 0, 0, 0
EN, R5.1, NODE,	212,	213,	204,	203,		
EN, R5.1, ATTR,	4,	1,	1,	1,	271,	0, 0, 0, 0
EN, R5.1, NODE,	213,	214,	205,	204,		
EN, R5.1, ATTR,	4,	1,	1,	1,	272,	0, 0, 0, 0
EN, R5.1, NODE,	214,	215,	206,	205,		
EN, R5.1, ATTR,	4,	1,	1,	1,	273,	0, 0, 0, 0
EN, R5.1, NODE,	215,	216,	207,	206,		
EN, R5.1, ATTR,	4,	1,	1,	1,	274,	0, 0, 0, 0

EN, R5.1, NODE,	216,	217,	208,	207,			
EN, R5.1, ATTR,	4,	1,	1,	1,	275,	0,	0, 0, 0
EN, R5.1, NODE,	217,	218,	209,	208,			
EN, R5.1, ATTR,	4,	1,	1,	1,	276,	0,	0, 0, 0
EN, R5.1, NODE,	218,	219,	210,	209,			
EN, R5.1, ATTR,	4,	1,	1,	1,	277,	0,	0, 0, 0
EN, R5.1, NODE,	219,	220,	211,	210,			
EN, R5.1, ATTR,	4,	1,	1,	1,	278,	0,	0, 0, 0
EN, R5.1, NODE,	220,	202,	135,	211,			
EN, R5.1, ATTR,	4,	1,	1,	1,	279,	0,	0, 0, 0
EN, R5.1, NODE,	221,	222,	231,	240,			
EN, R5.1, ATTR,	4,	1,	1,	1,	280,	0,	0, 0, 0
EN, R5.1, NODE,	240,	231,	230,	239,			
EN, R5.1, ATTR,	4,	1,	1,	1,	281,	0,	0, 0, 0
EN, R5.1, NODE,	239,	230,	229,	238,			
EN, R5.1, ATTR,	4,	1,	1,	1,	282,	0,	0, 0, 0
EN, R5.1, NODE,	238,	229,	228,	237,			
EN, R5.1, ATTR,	4,	1,	1,	1,	283,	0,	0, 0, 0
EN, R5.1, NODE,	237,	228,	227,	236,			
EN, R5.1, ATTR,	4,	1,	1,	1,	284,	0,	0, 0, 0
EN, R5.1, NODE,	236,	227,	226,	235,			
EN, R5.1, ATTR,	4,	1,	1,	1,	285,	0,	0, 0, 0
EN, R5.1, NODE,	235,	226,	225,	234,			
EN, R5.1, ATTR,	4,	1,	1,	1,	286,	0,	0, 0, 0
EN, R5.1, NODE,	234,	225,	224,	233,			
EN, R5.1, ATTR,	4,	1,	1,	1,	287,	0,	0, 0, 0
EN, R5.1, NODE,	233,	224,	223,	232,			
EN, R5.1, ATTR,	4,	1,	1,	1,	288,	0,	0, 0, 0
EN, R5.1, NODE,	232,	223,	156,	155,			
EN, R5.1, ATTR,	4,	1,	1,	1,	289,	0,	0, 0, 0
EN, R5.1, NODE,	241,	243,	262,	261,			
EN, R5.1, ATTR,	4,	1,	1,	1,	290,	0,	0, 0, 0
EN, R5.1, NODE,	243,	242,	252,	262,			
EN, R5.1, ATTR,	4,	1,	1,	1,	291,	0,	0, 0, 0
EN, R5.1, NODE,	261,	262,	263,	260,			
EN, R5.1, ATTR,	4,	1,	1,	1,	292,	0,	0, 0, 0
EN, R5.1, NODE,	262,	252,	251,	263,			
EN, R5.1, ATTR,	4,	1,	1,	1,	293,	0,	0, 0, 0
EN, R5.1, NODE,	260,	263,	264,	259,			
EN, R5.1, ATTR,	4,	1,	1,	1,	294,	0,	0, 0, 0
EN, R5.1, NODE,	263,	251,	250,	264,			
EN, R5.1, ATTR,	4,	1,	1,	1,	295,	0,	0, 0, 0
EN, R5.1, NODE,	259,	264,	265,	258,			
EN, R5.1, ATTR,	4,	1,	1,	1,	296,	0,	0, 0, 0
EN, R5.1, NODE,	264,	250,	249,	265,			
EN, R5.1, ATTR,	4,	1,	1,	1,	297,	0,	0, 0, 0
EN, R5.1, NODE,	258,	265,	266,	257,			
EN, R5.1, ATTR,	4,	1,	1,	1,	298,	0,	0, 0, 0
EN, R5.1, NODE,	265,	249,	248,	266,			
EN, R5.1, ATTR,	4,	1,	1,	1,	299,	0,	0, 0, 0
EN, R5.1, NODE,	257,	266,	267,	256,			
EN, R5.1, ATTR,	4,	1,	1,	1,	300,	0,	0, 0, 0
EN, R5.1, NODE,	266,	248,	247,	267,			
EN, R5.1, ATTR,	4,	1,	1,	1,	301,	0,	0, 0, 0
EN, R5.1, NODE,	256,	267,	268,	255,			
EN, R5.1, ATTR,	4,	1,	1,	1,	302,	0,	0, 0, 0
EN, R5.1, NODE,	267,	247,	246,	268,			
EN, R5.1, ATTR,	4,	1,	1,	1,	303,	0,	0, 0, 0
EN, R5.1, NODE,	255,	268,	269,	254,			
EN, R5.1, ATTR,	4,	1,	1,	1,	304,	0,	0, 0, 0
EN, R5.1, NODE,	268,	246,	245,	269,			
EN, R5.1, ATTR,	4,	1,	1,	1,	305,	0,	0, 0, 0
EN, R5.1, NODE,	254,	269,	270,	253,			
EN, R5.1, ATTR,	4,	1,	1,	1,	306,	0,	0, 0, 0
EN, R5.1, NODE,	269,	245,	244,	270,			
EN, R5.1, ATTR,	4,	1,	1,	1,	307,	0,	0, 0, 0
EN, R5.1, NODE,	253,	270,	189,	159,			
EN, R5.1, ATTR,	4,	1,	1,	1,	308,	0,	0, 0, 0
EN, R5.1, NODE,	270,	244,	188,	189,			
EN, R5.1, ATTR,	4,	1,	1,	1,	309,	0,	0, 0, 0
EN, R5.1, NODE,	271,	272,	222,	221,			
EN, R5.1, ATTR,	4,	1,	1,	1,	310,	0,	0, 0, 0
EN, R5.1, NODE,	272,	274,	283,	222,			
EN, R5.1, ATTR,	4,	1,	1,	1,	311,	0,	0, 0, 0

EN,R5.1,NODE,	274,	275,	284,	283,		
EN,R5.1,ATTR,	4,	1,	1,	1,	312,	0, 0, 0, 0
EN,R5.1,NODE,	275,	276,	285,	284,		
EN,R5.1,ATTR,	4,	1,	1,	1,	313,	0, 0, 0, 0
EN,R5.1,NODE,	276,	277,	286,	285,		
EN,R5.1,ATTR,	4,	1,	1,	1,	314,	0, 0, 0, 0
EN,R5.1,NODE,	277,	278,	287,	286,		
EN,R5.1,ATTR,	4,	1,	1,	1,	315,	0, 0, 0, 0
EN,R5.1,NODE,	278,	279,	288,	287,		
EN,R5.1,ATTR,	4,	1,	1,	1,	316,	0, 0, 0, 0
EN,R5.1,NODE,	279,	280,	289,	288,		
EN,R5.1,ATTR,	4,	1,	1,	1,	317,	0, 0, 0, 0
EN,R5.1,NODE,	280,	281,	290,	289,		
EN,R5.1,ATTR,	4,	1,	1,	1,	318,	0, 0, 0, 0
EN,R5.1,NODE,	281,	282,	291,	290,		
EN,R5.1,ATTR,	4,	1,	1,	1,	319,	0, 0, 0, 0
EN,R5.1,NODE,	282,	273,	241,	291,		
EN,R5.1,ATTR,	4,	1,	1,	1,	320,	0, 0, 0, 0
EN,R5.1,NODE,	292,	293,	302,	311,		
EN,R5.1,ATTR,	4,	1,	1,	1,	321,	0, 0, 0, 0
EN,R5.1,NODE,	311,	302,	301,	310,		
EN,R5.1,ATTR,	4,	1,	1,	1,	322,	0, 0, 0, 0
EN,R5.1,NODE,	310,	301,	300,	309,		
EN,R5.1,ATTR,	4,	1,	1,	1,	323,	0, 0, 0, 0
EN,R5.1,NODE,	309,	300,	299,	308,		
EN,R5.1,ATTR,	4,	1,	1,	1,	324,	0, 0, 0, 0
EN,R5.1,NODE,	308,	299,	298,	307,		
EN,R5.1,ATTR,	4,	1,	1,	1,	325,	0, 0, 0, 0
EN,R5.1,NODE,	307,	298,	297,	306,		
EN,R5.1,ATTR,	4,	1,	1,	1,	326,	0, 0, 0, 0
EN,R5.1,NODE,	306,	297,	296,	305,		
EN,R5.1,ATTR,	4,	1,	1,	1,	327,	0, 0, 0, 0
EN,R5.1,NODE,	305,	296,	295,	304,		
EN,R5.1,ATTR,	4,	1,	1,	1,	328,	0, 0, 0, 0
EN,R5.1,NODE,	304,	295,	294,	303,		
EN,R5.1,ATTR,	4,	1,	1,	1,	329,	0, 0, 0, 0
EN,R5.1,NODE,	303,	294,	272,	271,		
EN,R5.1,ATTR,	4,	1,	1,	1,	330,	0, 0, 0, 0
EN,R5.1,NODE,	312,	313,	320,	327,		
EN,R5.1,ATTR,	4,	1,	1,	1,	331,	0, 0, 0, 0
EN,R5.1,NODE,	327,	320,	319,	326,		
EN,R5.1,ATTR,	4,	1,	1,	1,	332,	0, 0, 0, 0
EN,R5.1,NODE,	326,	319,	318,	325,		
EN,R5.1,ATTR,	4,	1,	1,	1,	333,	0, 0, 0, 0
EN,R5.1,NODE,	328,	324,	325,	318,		
EN,R5.1,ATTR,	4,	1,	1,	1,	334,	0, 0, 0, 0
EN,R5.1,NODE,	330,	328,	318,	317,		
EN,R5.1,ATTR,	4,	1,	1,	1,	335,	0, 0, 0, 0
EN,R5.1,NODE,	331,	330,	317,	316,		
EN,R5.1,ATTR,	4,	1,	1,	1,	336,	0, 0, 0, 0
EN,R5.1,NODE,	329,	331,	316,	315,		
EN,R5.1,ATTR,	4,	1,	1,	1,	337,	0, 0, 0, 0
EN,R5.1,NODE,	330,	331,	322,	323,		
EN,R5.1,ATTR,	4,	1,	1,	1,	338,	0, 0, 0, 0
EN,R5.1,NODE,	329,	65,	322,	331,		
EN,R5.1,ATTR,	4,	1,	1,	1,	339,	0, 0, 0, 0
EN,R5.1,NODE,	75,	65,	329,	321,		
EN,R5.1,ATTR,	4,	1,	1,	1,	340,	0, 0, 0, 0
EN,R5.1,NODE,	321,	329,	315,	314,		
EN,R5.1,ATTR,	4,	1,	1,	1,	341,	0, 0, 0, 0
EN,R5.1,NODE,	323,	324,	328,	330,		
EN,R5.1,ATTR,	4,	1,	1,	1,	343,	0, 0, 0, 0
EN,R5.1,NODE,	354,	351,	350,	352,		
EN,R5.1,ATTR,	4,	1,	1,	1,	344,	0, 0, 0, 0
EN,R5.1,NODE,	333,	334,	352,	350,		
EN,R5.1,ATTR,	4,	1,	1,	1,	345,	0, 0, 0, 0
EN,R5.1,NODE,	334,	335,	366,	352,		
EN,R5.1,ATTR,	4,	1,	1,	1,	347,	0, 0, 0, 0
EN,R5.1,NODE,	351,	353,	363,	350,		
EN,R5.1,ATTR,	4,	1,	1,	1,	348,	0, 0, 0, 0
EN,R5.1,NODE,	340,	366,	335,	332,		
EN,R5.1,ATTR,	4,	1,	1,	1,	349,	0, 0, 0, 0
EN,R5.1,NODE,	352,	366,	340,	339,		
EN,R5.1,ATTR,	4,	1,	1,	1,	350,	0, 0, 0, 0

EN, R5.1, NODE,	339,	338,	354,	352,			
EN, R5.1, ATTR,	4,	1,	1,	1,	351,	0,	0, 0, 0
EN, R5.1, NODE,	337,	355,	354,	338,			
EN, R5.1, ATTR,	4,	1,	1,	1,	352,	0,	0, 0, 0
EN, R5.1, NODE,	336,	356,	355,	337,			
EN, R5.1, ATTR,	4,	1,	1,	1,	353,	0,	0, 0, 0
EN, R5.1, NODE,	357,	365,	358,	364,			
EN, R5.1, ATTR,	4,	1,	1,	1,	354,	0,	0, 0, 0
EN, R5.1, NODE,	313,	312,	356,	336,			
EN, R5.1, ATTR,	4,	1,	1,	1,	355,	0,	0, 0, 0
EN, R5.1, NODE,	346,	345,	365,	357,			
EN, R5.1, ATTR,	4,	1,	1,	1,	356,	0,	0, 0, 0
EN, R5.1, NODE,	312,	346,	357,	356,			
EN, R5.1, ATTR,	4,	1,	1,	1,	357,	0,	0, 0, 0
EN, R5.1, NODE,	358,	365,	345,	344,			
EN, R5.1, ATTR,	4,	1,	1,	1,	358,	0,	0, 0, 0
EN, R5.1, NODE,	359,	358,	344,	343,			
EN, R5.1, ATTR,	4,	1,	1,	1,	359,	0,	0, 0, 0
EN, R5.1, NODE,	342,	360,	359,	343,			
EN, R5.1, ATTR,	4,	1,	1,	1,	360,	0,	0, 0, 0
EN, R5.1, NODE,	361,	360,	342,	341,			
EN, R5.1, ATTR,	4,	1,	1,	1,	361,	0,	0, 0, 0
EN, R5.1, NODE,	136,	362,	361,	341,			
EN, R5.1, ATTR,	4,	1,	1,	1,	362,	0,	0, 0, 0
EN, R5.1, NODE,	135,	202,	362,	136,			
EN, R5.1, ATTR,	4,	1,	1,	1,	363,	0,	0, 0, 0
EN, R5.1, NODE,	202,	192,	347,	362,			
EN, R5.1, ATTR,	4,	1,	1,	1,	364,	0,	0, 0, 0
EN, R5.1, NODE,	351,	359,	360,	353,			
EN, R5.1, ATTR,	4,	1,	1,	1,	365,	0,	0, 0, 0
EN, R5.1, NODE,	362,	347,	348,	361,			
EN, R5.1, ATTR,	4,	1,	1,	1,	366,	0,	0, 0, 0
EN, R5.1, NODE,	348,	349,	363,	361,			
EN, R5.1, ATTR,	4,	1,	1,	1,	367,	0,	0, 0, 0
EN, R5.1, NODE,	355,	364,	351,	354,			
EN, R5.1, ATTR,	4,	1,	1,	1,	368,	0,	0, 0, 0
EN, R5.1, NODE,	356,	357,	364,	355,			
EN, R5.1, ATTR,	4,	1,	1,	1,	369,	0,	0, 0, 0
EN, R5.1, NODE,	358,	359,	351,	364,			
EN, R5.1, ATTR,	4,	1,	1,	1,	370,	0,	0, 0, 0
EN, R5.1, NODE,	361,	363,	353,	360,			
EN, R5.1, ATTR,	4,	1,	1,	1,	371,	0,	0, 0, 0
EN, R5.1, NODE,	381,	367,	369,	382,			
EN, R5.1, ATTR,	4,	1,	1,	1,	372,	0,	0, 0, 0
EN, R5.1, NODE,	369,	370,	383,	382,			
EN, R5.1, ATTR,	4,	1,	1,	1,	373,	0,	0, 0, 0
EN, R5.1, NODE,	383,	370,	368,	374,			
EN, R5.1, ATTR,	4,	1,	1,	1,	374,	0,	0, 0, 0
EN, R5.1, NODE,	380,	367,	381,	386,			
EN, R5.1, ATTR,	4,	1,	1,	1,	375,	0,	0, 0, 0
EN, R5.1, NODE,	384,	383,	374,	373,			
EN, R5.1, ATTR,	4,	1,	1,	1,	376,	0,	0, 0, 0
EN, R5.1, NODE,	385,	384,	373,	372,			
EN, R5.1, ATTR,	4,	1,	1,	1,	377,	0,	0, 0, 0
EN, R5.1, NODE,	388,	385,	372,	371,			
EN, R5.1, ATTR,	4,	1,	1,	1,	378,	0,	0, 0, 0
EN, R5.1, NODE,	332,	335,	388,	371,			
EN, R5.1, ATTR,	4,	1,	1,	1,	379,	0,	0, 0, 0
EN, R5.1, NODE,	382,	383,	384,	387,			
EN, R5.1, ATTR,	4,	1,	1,	1,	380,	0,	0, 0, 0
EN, R5.1, NODE,	386,	381,	382,	387,			
EN, R5.1, ATTR,	4,	1,	1,	1,	381,	0,	0, 0, 0
EN, R5.1, NODE,	388,	335,	334,	397,			
EN, R5.1, ATTR,	4,	1,	1,	1,	382,	0,	0, 0, 0
EN, R5.1, NODE,	397,	334,	333,	389,			
EN, R5.1, ATTR,	4,	1,	1,	1,	385,	0,	0, 0, 0
EN, R5.1, NODE,	349,	348,	398,	391,			
EN, R5.1, ATTR,	4,	1,	1,	1,	386,	0,	0, 0, 0
EN, R5.1, NODE,	398,	348,	347,	375,			
EN, R5.1, ATTR,	4,	1,	1,	1,	387,	0,	0, 0, 0
EN, R5.1, NODE,	375,	347,	192,	192,			
EN, R5.1, ATTR,	4,	1,	1,	1,	388,	0,	0, 0, 0
EN, R5.1, NODE,	398,	375,	376,	392,			
EN, R5.1, ATTR,	4,	1,	1,	1,	389,	0,	0, 0, 0

EN,R5.1,NODE,	393,	392,	376,	377,			
EN,R5.1,ATTR,	4,	1,	1,	1,	390,	0,	0, 0, 0
EN,R5.1,NODE,	393,	377,	378,	394,			
EN,R5.1,ATTR,	4,	1,	1,	1,	391,	0,	0, 0, 0
EN,R5.1,NODE,	394,	378,	379,	395,			
EN,R5.1,ATTR,	4,	1,	1,	1,	392,	0,	0, 0, 0
EN,R5.1,NODE,	379,	380,	386,	395,			
EN,R5.1,ATTR,	4,	1,	1,	1,	393,	0,	0, 0, 0
EN,R5.1,NODE,	398,	392,	393,	391,			
EN,R5.1,ATTR,	4,	1,	1,	1,	394,	0,	0, 0, 0
EN,R5.1,NODE,	388,	397,	389,	385,			
EN,R5.1,ATTR,	4,	1,	1,	1,	395,	0,	0, 0, 0
EN,R5.1,NODE,	396,	387,	384,	385,			
EN,R5.1,ATTR,	4,	1,	1,	1,	396,	0,	0, 0, 0
EN,R5.1,NODE,	389,	390,	396,	385,			
EN,R5.1,ATTR,	4,	1,	1,	1,	397,	0,	0, 0, 0
EN,R5.1,NODE,	393,	394,	390,	391,			
EN,R5.1,ATTR,	4,	1,	1,	1,	398,	0,	0, 0, 0
EN,R5.1,NODE,	390,	394,	395,	396,			
EN,R5.1,ATTR,	4,	1,	1,	1,	399,	0,	0, 0, 0
EN,R5.1,NODE,	386,	387,	396,	395,			
EN,R5.1,ATTR,	4,	1,	1,	1,	400,	0,	0, 0, 0
EN,R5.1,NODE,	399,	400,	410,	423,			
EN,R5.1,ATTR,	4,	1,	1,	1,	401,	0,	0, 0, 0
EN,R5.1,NODE,	423,	467,	422,	399,			
EN,R5.1,ATTR,	4,	1,	1,	1,	402,	0,	0, 0, 0
EN,R5.1,NODE,	423,	410,	409,	424,			
EN,R5.1,ATTR,	4,	1,	1,	1,	403,	0,	0, 0, 0
EN,R5.1,NODE,	409,	408,	425,	424,			
EN,R5.1,ATTR,	4,	1,	1,	1,	404,	0,	0, 0, 0
EN,R5.1,NODE,	451,	424,	425,	426,			
EN,R5.1,ATTR,	4,	1,	1,	1,	405,	0,	0, 0, 0
EN,R5.1,NODE,	425,	408,	407,	426,			
EN,R5.1,ATTR,	4,	1,	1,	1,	406,	0,	0, 0, 0
EN,R5.1,NODE,	426,	407,	406,	427,			
EN,R5.1,ATTR,	4,	1,	1,	1,	407,	0,	0, 0, 0
EN,R5.1,NODE,	427,	406,	405,	472,			
EN,R5.1,ATTR,	4,	1,	1,	1,	408,	0,	0, 0, 0
EN,R5.1,NODE,	472,	405,	404,	428,			
EN,R5.1,ATTR,	4,	1,	1,	1,	409,	0,	0, 0, 0
EN,R5.1,NODE,	427,	472,	453,	452,			
EN,R5.1,ATTR,	4,	1,	1,	1,	410,	0,	0, 0, 0
EN,R5.1,NODE,	403,	429,	428,	404,			
EN,R5.1,ATTR,	4,	1,	1,	1,	411,	0,	0, 0, 0
EN,R5.1,NODE,	455,	439,	440,	469,			
EN,R5.1,ATTR,	4,	1,	1,	1,	412,	0,	0, 0, 0
EN,R5.1,NODE,	402,	463,	429,	403,			
EN,R5.1,ATTR,	4,	1,	1,	1,	413,	0,	0, 0, 0
EN,R5.1,NODE,	466,	421,	422,	467,			
EN,R5.1,ATTR,	4,	1,	1,	1,	414,	0,	0, 0, 0
EN,R5.1,NODE,	370,	431,	401,	368,			
EN,R5.1,ATTR,	4,	1,	1,	1,	415,	0,	0, 0, 0
EN,R5.1,NODE,	401,	431,	463,	402,			
EN,R5.1,ATTR,	4,	1,	1,	1,	416,	0,	0, 0, 0
EN,R5.1,NODE,	469,	440,	441,	456,			
EN,R5.1,ATTR,	4,	1,	1,	1,	417,	0,	0, 0, 0
EN,R5.1,NODE,	369,	468,	431,	370,			
EN,R5.1,ATTR,	4,	1,	1,	1,	418,	0,	0, 0, 0
EN,R5.1,NODE,	468,	369,	367,	432,			
EN,R5.1,ATTR,	4,	1,	1,	1,	419,	0,	0, 0, 0
EN,R5.1,NODE,	436,	440,	439,	435,			
EN,R5.1,ATTR,	4,	1,	1,	1,	420,	0,	0, 0, 0
EN,R5.1,NODE,	367,	416,	464,	432,			
EN,R5.1,ATTR,	4,	1,	1,	1,	421,	0,	0, 0, 0
EN,R5.1,NODE,	431,	468,	430,	463,			
EN,R5.1,ATTR,	4,	1,	1,	1,	422,	0,	0, 0, 0
EN,R5.1,NODE,	432,	433,	430,	468,			
EN,R5.1,ATTR,	4,	1,	1,	1,	423,	0,	0, 0, 0
EN,R5.1,NODE,	432,	464,	434,	433,			
EN,R5.1,ATTR,	4,	1,	1,	1,	424,	0,	0, 0, 0
EN,R5.1,NODE,	464,	416,	415,	434,			
EN,R5.1,ATTR,	4,	1,	1,	1,	425,	0,	0, 0, 0
EN,R5.1,NODE,	412,	411,	470,	437,			
EN,R5.1,ATTR,	4,	1,	1,	1,	426,	0,	0, 0, 0

EN,R5.1,NODE,	415,	414,	435,	434,				
EN,R5.1,ATTR,	4,	1,	1,	1,	427,	0,	0,	0, 0
EN,R5.1,NODE,	414,	413,	436,	435,				
EN,R5.1,ATTR,	4,	1,	1,	1,	428,	0,	0,	0, 0
EN,R5.1,NODE,	470,	411,	242,	443,				
EN,R5.1,ATTR,	4,	1,	1,	1,	429,	0,	0,	0, 0
EN,R5.1,NODE,	436,	413,	412,	437,				
EN,R5.1,ATTR,	4,	1,	1,	1,	430,	0,	0,	0, 0
EN,R5.1,NODE,	471,	441,	437,	470,				
EN,R5.1,ATTR,	4,	1,	1,	1,	431,	0,	0,	0, 0
EN,R5.1,NODE,	442,	457,	458,	471,				
EN,R5.1,ATTR,	4,	1,	1,	1,	432,	0,	0,	0, 0
EN,R5.1,NODE,	451,	426,	427,	452,				
EN,R5.1,ATTR,	4,	1,	1,	1,	433,	0,	0,	0, 0
EN,R5.1,NODE,	435,	439,	433,	434,				
EN,R5.1,ATTR,	4,	1,	1,	1,	434,	0,	0,	0, 0
EN,R5.1,NODE,	440,	436,	437,	441,				
EN,R5.1,ATTR,	4,	1,	1,	1,	435,	0,	0,	0, 0
EN,R5.1,NODE,	438,	454,	428,	429,				
EN,R5.1,ATTR,	4,	1,	1,	1,	436,	0,	0,	0, 0
EN,R5.1,NODE,	470,	443,	442,	471,				
EN,R5.1,ATTR,	4,	1,	1,	1,	437,	0,	0,	0, 0
EN,R5.1,NODE,	242,	243,	444,	443,				
EN,R5.1,ATTR,	4,	1,	1,	1,	438,	0,	0,	0, 0
EN,R5.1,NODE,	466,	467,	450,	449,				
EN,R5.1,ATTR,	4,	1,	1,	1,	439,	0,	0,	0, 0
EN,R5.1,NODE,	243,	241,	273,	444,				
EN,R5.1,ATTR,	4,	1,	1,	1,	440,	0,	0,	0, 0
EN,R5.1,NODE,	450,	467,	423,	424,				
EN,R5.1,ATTR,	4,	1,	1,	1,	441,	0,	0,	0, 0
EN,R5.1,NODE,	444,	273,	417,	445,				
EN,R5.1,ATTR,	4,	1,	1,	1,	442,	0,	0,	0, 0
EN,R5.1,NODE,	445,	417,	418,	446,				
EN,R5.1,ATTR,	4,	1,	1,	1,	443,	0,	0,	0, 0
EN,R5.1,NODE,	446,	418,	419,	447,				
EN,R5.1,ATTR,	4,	1,	1,	1,	444,	0,	0,	0, 0
EN,R5.1,NODE,	419,	420,	465,	447,				
EN,R5.1,ATTR,	4,	1,	1,	1,	445,	0,	0,	0, 0
EN,R5.1,NODE,	465,	466,	449,	448,				
EN,R5.1,ATTR,	4,	1,	1,	1,	446,	0,	0,	0, 0
EN,R5.1,NODE,	466,	465,	420,	421,				
EN,R5.1,ATTR,	4,	1,	1,	1,	447,	0,	0,	0, 0
EN,R5.1,NODE,	451,	460,	450,	424,				
EN,R5.1,ATTR,	4,	1,	1,	1,	448,	0,	0,	0, 0
EN,R5.1,NODE,	453,	472,	428,	454,				
EN,R5.1,ATTR,	4,	1,	1,	1,	449,	0,	0,	0, 0
EN,R5.1,NODE,	429,	463,	430,	438,				
EN,R5.1,ATTR,	4,	1,	1,	1,	450,	0,	0,	0, 0
EN,R5.1,NODE,	430,	433,	439,	438,				
EN,R5.1,ATTR,	4,	1,	1,	1,	451,	0,	0,	0, 0
EN,R5.1,NODE,	439,	455,	454,	438,				
EN,R5.1,ATTR,	4,	1,	1,	1,	452,	0,	0,	0, 0
EN,R5.1,NODE,	456,	462,	455,	469,				
EN,R5.1,ATTR,	4,	1,	1,	1,	453,	0,	0,	0, 0
EN,R5.1,NODE,	471,	458,	456,	441,				
EN,R5.1,ATTR,	4,	1,	1,	1,	454,	0,	0,	0, 0
EN,R5.1,NODE,	457,	459,	461,	458,				
EN,R5.1,ATTR,	4,	1,	1,	1,	455,	0,	0,	0, 0
EN,R5.1,NODE,	446,	447,	459,	457,				
EN,R5.1,ATTR,	4,	1,	1,	1,	456,	0,	0,	0, 0
EN,R5.1,NODE,	443,	444,	445,	442,				
EN,R5.1,ATTR,	4,	1,	1,	1,	457,	0,	0,	0, 0
EN,R5.1,NODE,	442,	445,	446,	457,				
EN,R5.1,ATTR,	4,	1,	1,	1,	458,	0,	0,	0, 0
EN,R5.1,NODE,	447,	465,	448,	459,				
EN,R5.1,ATTR,	4,	1,	1,	1,	459,	0,	0,	0, 0
EN,R5.1,NODE,	448,	449,	450,	460,				
EN,R5.1,ATTR,	4,	1,	1,	1,	460,	0,	0,	0, 0
EN,R5.1,NODE,	452,	461,	460,	451,				
EN,R5.1,ATTR,	4,	1,	1,	1,	461,	0,	0,	0, 0
EN,R5.1,NODE,	460,	461,	459,	448,				
EN,R5.1,ATTR,	4,	1,	1,	1,	462,	0,	0,	0, 0
EN,R5.1,NODE,	462,	461,	452,	453,				
EN,R5.1,ATTR,	4,	1,	1,	1,	463,	0,	0,	0, 0

EN,R5.1,NODE,	455,	462,	453,	454,				
EN,R5.1,ATTR,	4,	1,	1,	1,	464,	0,	0,	0, 0
EN,R5.1,NODE,	458,	461,	462,	456,				
EN,R5.1,ATTR,	4,	1,	1,	1,	465,	0,	0,	0, 0
EN,R5.1,NODE,	293,	292,	474,	487,				
EN,R5.1,ATTR,	4,	1,	1,	1,	466,	0,	0,	0, 0
EN,R5.1,NODE,	474,	473,	480,	487,				
EN,R5.1,ATTR,	4,	1,	1,	1,	467,	0,	0,	0, 0
EN,R5.1,NODE,	479,	488,	487,	480,				
EN,R5.1,ATTR,	4,	1,	1,	1,	468,	0,	0,	0, 0
EN,R5.1,NODE,	479,	478,	490,	488,				
EN,R5.1,ATTR,	4,	1,	1,	1,	469,	0,	0,	0, 0
EN,R5.1,NODE,	488,	490,	482,	481,				
EN,R5.1,ATTR,	4,	1,	1,	1,	470,	0,	0,	0, 0
EN,R5.1,NODE,	487,	488,	481,	293,				
EN,R5.1,ATTR,	4,	1,	1,	1,	471,	0,	0,	0, 0
EN,R5.1,NODE,	482,	490,	489,	483,				
EN,R5.1,ATTR,	4,	1,	1,	1,	472,	0,	0,	0, 0
EN,R5.1,NODE,	489,	490,	478,	477,				
EN,R5.1,ATTR,	4,	1,	1,	1,	473,	0,	0,	0, 0
EN,R5.1,NODE,	483,	489,	477,	484,				
EN,R5.1,ATTR,	4,	1,	1,	1,	474,	0,	0,	0, 0
EN,R5.1,NODE,	476,	485,	484,	477,				
EN,R5.1,ATTR,	4,	1,	1,	1,	475,	0,	0,	0, 0
EN,R5.1,NODE,	475,	486,	485,	476,				
EN,R5.1,ATTR,	4,	1,	1,	1,	476,	0,	0,	0, 0
EN,R5.1,NODE,	400,	399,	486,	475,				
EN,R5.1,ATTR,	4,	1,	1,	1,	3120,	0,	0,	0, 0
EN,R5.1,NODE,	333,	390,	389,	389,				
EN,R5.1,ATTR,	8,	2,	4,	2,	3155,	0,	0,	0, 0
EN,R5.1,NODE,	390,	391,	2006,	2005,	2024,	2048,	2036,	2012
EN,R5.1,ATTR,	8,	2,	4,	2,	3156,	0,	0,	0, 0
EN,R5.1,NODE,	2024,	2048,	2036,	2012,	2025,	2049,	2037,	2013
EN,R5.1,ATTR,	8,	2,	4,	2,	3157,	0,	0,	0, 0
EN,R5.1,NODE,	2025,	2049,	2037,	2013,	2026,	2050,	2038,	2014
EN,R5.1,ATTR,	8,	2,	4,	2,	3158,	0,	0,	0, 0
EN,R5.1,NODE,	2026,	2050,	2038,	2014,	2027,	2051,	2039,	2015
EN,R5.1,ATTR,	8,	2,	4,	2,	3159,	0,	0,	0, 0
EN,R5.1,NODE,	2027,	2051,	2039,	2015,	2028,	2052,	2040,	2016
EN,R5.1,ATTR,	8,	2,	4,	2,	3160,	0,	0,	0, 0
EN,R5.1,NODE,	2028,	2052,	2040,	2016,	2029,	2053,	2041,	2017
EN,R5.1,ATTR,	8,	2,	4,	2,	3161,	0,	0,	0, 0
EN,R5.1,NODE,	2029,	2053,	2041,	2017,	2030,	2054,	2042,	2018
EN,R5.1,ATTR,	8,	2,	4,	2,	3162,	0,	0,	0, 0
EN,R5.1,NODE,	2030,	2054,	2042,	2018,	2031,	2055,	2043,	2019
EN,R5.1,ATTR,	8,	2,	4,	2,	3163,	0,	0,	0, 0
EN,R5.1,NODE,	2031,	2055,	2043,	2019,	2032,	2056,	2044,	2020
EN,R5.1,ATTR,	8,	2,	4,	2,	3164,	0,	0,	0, 0
EN,R5.1,NODE,	2032,	2056,	2044,	2020,	2033,	2057,	2045,	2021
EN,R5.1,ATTR,	8,	2,	4,	2,	3165,	0,	0,	0, 0
EN,R5.1,NODE,	2033,	2057,	2045,	2021,	2034,	2058,	2046,	2022
EN,R5.1,ATTR,	8,	2,	4,	2,	3166,	0,	0,	0, 0
EN,R5.1,NODE,	2034,	2058,	2046,	2022,	2035,	2059,	2047,	2023
EN,R5.1,ATTR,	8,	2,	4,	2,	3167,	0,	0,	0, 0
EN,R5.1,NODE,	2035,	2059,	2047,	2023,	2008,	2011,	2010,	2009
EN,R5.1,ATTR,	8,	2,	4,	2,	3168,	0,	0,	0, 0
EN,R5.1,NODE,	390,	2005,	2060,	333,	2024,	2012,	2064,	2076
EN,R5.1,ATTR,	8,	2,	4,	2,	3169,	0,	0,	0, 0
EN,R5.1,NODE,	2024,	2012,	2064,	2076,	2025,	2013,	2065,	2077
EN,R5.1,ATTR,	8,	2,	4,	2,	3170,	0,	0,	0, 0
EN,R5.1,NODE,	2025,	2013,	2065,	2077,	2026,	2014,	2066,	2078
EN,R5.1,ATTR,	8,	2,	4,	2,	3171,	0,	0,	0, 0
EN,R5.1,NODE,	2026,	2014,	2066,	2078,	2027,	2015,	2067,	2079
EN,R5.1,ATTR,	8,	2,	4,	2,	3172,	0,	0,	0, 0
EN,R5.1,NODE,	2027,	2015,	2067,	2079,	2028,	2016,	2068,	2080
EN,R5.1,ATTR,	8,	2,	4,	2,	3173,	0,	0,	0, 0
EN,R5.1,NODE,	2028,	2016,	2068,	2080,	2029,	2017,	2069,	2081
EN,R5.1,ATTR,	8,	2,	4,	2,	3174,	0,	0,	0, 0
EN,R5.1,NODE,	2029,	2017,	2069,	2081,	2030,	2018,	2070,	2082
EN,R5.1,ATTR,	8,	2,	4,	2,	3175,	0,	0,	0, 0
EN,R5.1,NODE,	2030,	2018,	2070,	2082,	2031,	2019,	2071,	2083
EN,R5.1,ATTR,	8,	2,	4,	2,	3176,	0,	0,	0, 0
EN,R5.1,NODE,	2031,	2019,	2071,	2083,	2032,	2020,	2072,	2084
EN,R5.1,ATTR,	8,	2,	4,	2,	3177,	0,	0,	0, 0

EN,R5.1,NODE,	2032,	2020,	2072,	2084,	2033,	2021,	2073,	2085
EN,R5.1,ATTR,	8,	2,	4,	2,	3178,	0,	0,	0
EN,R5.1,NODE,	2033,	2021,	2073,	2085,	2034,	2022,	2074,	2086
EN,R5.1,ATTR,	8,	2,	4,	2,	3179,	0,	0,	0
EN,R5.1,NODE,	2034,	2022,	2074,	2086,	2035,	2023,	2075,	2087
EN,R5.1,ATTR,	8,	2,	4,	2,	3180,	0,	0,	0
EN,R5.1,NODE,	2035,	2023,	2075,	2087,	2008,	2009,	2062,	2063
EN,R5.1,ATTR,	8,	2,	4,	2,	3181,	0,	0,	0
EN,R5.1,NODE,	2060,	2089,	350,	333,	2064,	2104,	2092,	2076
EN,R5.1,ATTR,	8,	2,	4,	2,	3182,	0,	0,	0
EN,R5.1,NODE,	2064,	2104,	2092,	2076,	2065,	2105,	2093,	2077
EN,R5.1,ATTR,	8,	2,	4,	2,	3183,	0,	0,	0
EN,R5.1,NODE,	2065,	2105,	2093,	2077,	2066,	2106,	2094,	2078
EN,R5.1,ATTR,	8,	2,	4,	2,	3184,	0,	0,	0
EN,R5.1,NODE,	2066,	2106,	2094,	2078,	2067,	2107,	2095,	2079
EN,R5.1,ATTR,	8,	2,	4,	2,	3185,	0,	0,	0
EN,R5.1,NODE,	2067,	2107,	2095,	2079,	2068,	2108,	2096,	2080
EN,R5.1,ATTR,	8,	2,	4,	2,	3186,	0,	0,	0
EN,R5.1,NODE,	2068,	2108,	2096,	2080,	2069,	2109,	2097,	2081
EN,R5.1,ATTR,	8,	2,	4,	2,	3187,	0,	0,	0
EN,R5.1,NODE,	2069,	2109,	2097,	2081,	2070,	2110,	2098,	2082
EN,R5.1,ATTR,	8,	2,	4,	2,	3188,	0,	0,	0
EN,R5.1,NODE,	2070,	2110,	2098,	2082,	2071,	2111,	2099,	2083
EN,R5.1,ATTR,	8,	2,	4,	2,	3189,	0,	0,	0
EN,R5.1,NODE,	2071,	2111,	2099,	2083,	2072,	2112,	2100,	2084
EN,R5.1,ATTR,	8,	2,	4,	2,	3190,	0,	0,	0
EN,R5.1,NODE,	2072,	2112,	2100,	2084,	2073,	2113,	2101,	2085
EN,R5.1,ATTR,	8,	2,	4,	2,	3191,	0,	0,	0
EN,R5.1,NODE,	2073,	2113,	2101,	2085,	2074,	2114,	2102,	2086
EN,R5.1,ATTR,	8,	2,	4,	2,	3192,	0,	0,	0
EN,R5.1,NODE,	2074,	2114,	2102,	2086,	2075,	2115,	2103,	2087
EN,R5.1,ATTR,	8,	2,	4,	2,	3193,	0,	0,	0
EN,R5.1,NODE,	2075,	2115,	2103,	2087,	2062,	2091,	2090,	2063
EN,R5.1,ATTR,	8,	2,	4,	2,	3194,	0,	0,	0
EN,R5.1,NODE,	2116,	363,	350,	2089,	2120,	2132,	2092,	2104
EN,R5.1,ATTR,	8,	2,	4,	2,	3195,	0,	0,	0
EN,R5.1,NODE,	2120,	2132,	2092,	2104,	2121,	2133,	2093,	2105
EN,R5.1,ATTR,	8,	2,	4,	2,	3196,	0,	0,	0
EN,R5.1,NODE,	2121,	2133,	2093,	2105,	2122,	2134,	2094,	2106
EN,R5.1,ATTR,	8,	2,	4,	2,	3197,	0,	0,	0
EN,R5.1,NODE,	2122,	2134,	2094,	2106,	2123,	2135,	2095,	2107
EN,R5.1,ATTR,	8,	2,	4,	2,	3198,	0,	0,	0
EN,R5.1,NODE,	2123,	2135,	2095,	2107,	2124,	2136,	2096,	2108
EN,R5.1,ATTR,	8,	2,	4,	2,	3199,	0,	0,	0
EN,R5.1,NODE,	2124,	2136,	2096,	2108,	2125,	2137,	2097,	2109
EN,R5.1,ATTR,	8,	2,	4,	2,	3200,	0,	0,	0
EN,R5.1,NODE,	2125,	2137,	2097,	2109,	2126,	2138,	2098,	2110
EN,R5.1,ATTR,	8,	2,	4,	2,	3201,	0,	0,	0
EN,R5.1,NODE,	2126,	2138,	2098,	2110,	2127,	2139,	2099,	2111
EN,R5.1,ATTR,	8,	2,	4,	2,	3202,	0,	0,	0
EN,R5.1,NODE,	2127,	2139,	2099,	2111,	2128,	2140,	2100,	2112
EN,R5.1,ATTR,	8,	2,	4,	2,	3203,	0,	0,	0
EN,R5.1,NODE,	2128,	2140,	2100,	2112,	2129,	2141,	2101,	2113
EN,R5.1,ATTR,	8,	2,	4,	2,	3204,	0,	0,	0
EN,R5.1,NODE,	2129,	2141,	2101,	2113,	2130,	2142,	2102,	2114
EN,R5.1,ATTR,	8,	2,	4,	2,	3205,	0,	0,	0
EN,R5.1,NODE,	2130,	2142,	2102,	2114,	2131,	2143,	2103,	2115
EN,R5.1,ATTR,	8,	2,	4,	2,	3206,	0,	0,	0
EN,R5.1,NODE,	2131,	2143,	2103,	2115,	2118,	2119,	2090,	2091
EN,R5.1,ATTR,	8,	2,	4,	2,	3207,	0,	0,	0
EN,R5.1,NODE,	349,	363,	2116,	2145,	2160,	2132,	2120,	2148
EN,R5.1,ATTR,	8,	2,	4,	2,	3208,	0,	0,	0
EN,R5.1,NODE,	2160,	2132,	2120,	2148,	2161,	2133,	2121,	2149
EN,R5.1,ATTR,	8,	2,	4,	2,	3209,	0,	0,	0
EN,R5.1,NODE,	2161,	2133,	2121,	2149,	2162,	2134,	2122,	2150
EN,R5.1,ATTR,	8,	2,	4,	2,	3210,	0,	0,	0
EN,R5.1,NODE,	2162,	2134,	2122,	2150,	2163,	2135,	2123,	2151
EN,R5.1,ATTR,	8,	2,	4,	2,	3211,	0,	0,	0
EN,R5.1,NODE,	2163,	2135,	2123,	2151,	2164,	2136,	2124,	2152
EN,R5.1,ATTR,	8,	2,	4,	2,	3212,	0,	0,	0
EN,R5.1,NODE,	2164,	2136,	2124,	2152,	2165,	2137,	2125,	2153
EN,R5.1,ATTR,	8,	2,	4,	2,	3213,	0,	0,	0
EN,R5.1,NODE,	2165,	2137,	2125,	2153,	2166,	2138,	2126,	2154
EN,R5.1,ATTR,	8,	2,	4,	2,	3214,	0,	0,	0

EN,R5.1,NODE,	2166,	2138,	2126,	2154,	2167,	2139,	2127,	2155
EN,R5.1,ATTR,	8,	2,	4,	2,	3215,	0,	0,	0
EN,R5.1,NODE,	2167,	2139,	2127,	2155,	2168,	2140,	2128,	2156
EN,R5.1,ATTR,	8,	2,	4,	2,	3216,	0,	0,	0
EN,R5.1,NODE,	2168,	2140,	2128,	2156,	2169,	2141,	2129,	2157
EN,R5.1,ATTR,	8,	2,	4,	2,	3217,	0,	0,	0
EN,R5.1,NODE,	2169,	2141,	2129,	2157,	2170,	2142,	2130,	2158
EN,R5.1,ATTR,	8,	2,	4,	2,	3218,	0,	0,	0
EN,R5.1,NODE,	2170,	2142,	2130,	2158,	2171,	2143,	2131,	2159
EN,R5.1,ATTR,	8,	2,	4,	2,	3219,	0,	0,	0
EN,R5.1,NODE,	2171,	2143,	2131,	2159,	2146,	2119,	2118,	2147
EN,R5.1,ATTR,	8,	2,	4,	2,	3220,	0,	0,	0
EN,R5.1,NODE,	391,	349,	2145,	2006,	2048,	2160,	2148,	2036
EN,R5.1,ATTR,	8,	2,	4,	2,	3221,	0,	0,	0
EN,R5.1,NODE,	2048,	2160,	2148,	2036,	2049,	2161,	2149,	2037
EN,R5.1,ATTR,	8,	2,	4,	2,	3222,	0,	0,	0
EN,R5.1,NODE,	2049,	2161,	2149,	2037,	2050,	2162,	2150,	2038
EN,R5.1,ATTR,	8,	2,	4,	2,	3223,	0,	0,	0
EN,R5.1,NODE,	2050,	2162,	2150,	2038,	2051,	2163,	2151,	2039
EN,R5.1,ATTR,	8,	2,	4,	2,	3224,	0,	0,	0
EN,R5.1,NODE,	2051,	2163,	2151,	2039,	2052,	2164,	2152,	2040
EN,R5.1,ATTR,	8,	2,	4,	2,	3225,	0,	0,	0
EN,R5.1,NODE,	2052,	2164,	2152,	2040,	2053,	2165,	2153,	2041
EN,R5.1,ATTR,	8,	2,	4,	2,	3226,	0,	0,	0
EN,R5.1,NODE,	2053,	2165,	2153,	2041,	2054,	2166,	2154,	2042
EN,R5.1,ATTR,	8,	2,	4,	2,	3227,	0,	0,	0
EN,R5.1,NODE,	2054,	2166,	2154,	2042,	2055,	2167,	2155,	2043
EN,R5.1,ATTR,	8,	2,	4,	2,	3228,	0,	0,	0
EN,R5.1,NODE,	2055,	2167,	2155,	2043,	2056,	2168,	2156,	2044
EN,R5.1,ATTR,	8,	2,	4,	2,	3229,	0,	0,	0
EN,R5.1,NODE,	2056,	2168,	2156,	2044,	2057,	2169,	2157,	2045
EN,R5.1,ATTR,	8,	2,	4,	2,	3230,	0,	0,	0
EN,R5.1,NODE,	2057,	2169,	2157,	2045,	2058,	2170,	2158,	2046
EN,R5.1,ATTR,	8,	2,	4,	2,	3231,	0,	0,	0
EN,R5.1,NODE,	2058,	2170,	2158,	2046,	2059,	2171,	2159,	2047
EN,R5.1,ATTR,	8,	2,	4,	2,	3232,	0,	0,	0
EN,R5.1,NODE,	2059,	2171,	2159,	2047,	2011,	2146,	2147,	2010
EN,R5.1,ATTR,	8,	2,	4,	2,	3233,	0,	0,	0
EN,R5.1,NODE,	2006,	5,	2060,	2005,	2036,	6,	2064,	2012
EN,R5.1,ATTR,	8,	2,	4,	2,	3234,	0,	0,	0
EN,R5.1,NODE,	2036,	6,	2064,	2012,	2037,	7,	2065,	2013
EN,R5.1,ATTR,	8,	2,	4,	2,	3235,	0,	0,	0
EN,R5.1,NODE,	2037,	7,	2065,	2013,	2038,	8,	2066,	2014
EN,R5.1,ATTR,	8,	2,	4,	2,	3236,	0,	0,	0
EN,R5.1,NODE,	2038,	8,	2066,	2014,	2039,	9,	2067,	2015
EN,R5.1,ATTR,	8,	2,	4,	2,	3237,	0,	0,	0
EN,R5.1,NODE,	2039,	9,	2067,	2015,	2040,	10,	2068,	2016
EN,R5.1,ATTR,	8,	2,	4,	2,	3238,	0,	0,	0
EN,R5.1,NODE,	2040,	10,	2068,	2016,	2041,	11,	2069,	2017
EN,R5.1,ATTR,	8,	2,	4,	2,	3239,	0,	0,	0
EN,R5.1,NODE,	2041,	11,	2069,	2017,	2042,	12,	2070,	2018
EN,R5.1,ATTR,	8,	2,	4,	2,	3240,	0,	0,	0
EN,R5.1,NODE,	2042,	12,	2070,	2018,	2043,	13,	2071,	2019
EN,R5.1,ATTR,	8,	2,	4,	2,	3241,	0,	0,	0
EN,R5.1,NODE,	2043,	13,	2071,	2019,	2044,	14,	2072,	2020
EN,R5.1,ATTR,	8,	2,	4,	2,	3242,	0,	0,	0
EN,R5.1,NODE,	2044,	14,	2072,	2020,	2045,	2183,	2073,	2021
EN,R5.1,ATTR,	8,	2,	4,	2,	3243,	0,	0,	0
EN,R5.1,NODE,	2045,	2183,	2073,	2021,	2046,	2184,	2074,	2022
EN,R5.1,ATTR,	8,	2,	4,	2,	3244,	0,	0,	0
EN,R5.1,NODE,	2046,	2184,	2074,	2022,	2047,	2185,	2075,	2023
EN,R5.1,ATTR,	8,	2,	4,	2,	3245,	0,	0,	0
EN,R5.1,NODE,	2047,	2185,	2075,	2023,	2010,	2003,	2062,	2009
EN,R5.1,ATTR,	8,	2,	4,	2,	3246,	0,	0,	0
EN,R5.1,NODE,	2006,	2145,	2116,	5,	2036,	2148,	2120,	6
EN,R5.1,ATTR,	8,	2,	4,	2,	3247,	0,	0,	0
EN,R5.1,NODE,	2036,	2148,	2120,	6,	2037,	2149,	2121,	7
EN,R5.1,ATTR,	8,	2,	4,	2,	3248,	0,	0,	0
EN,R5.1,NODE,	2037,	2149,	2121,	7,	2038,	2150,	2122,	8
EN,R5.1,ATTR,	8,	2,	4,	2,	3249,	0,	0,	0
EN,R5.1,NODE,	2038,	2150,	2122,	8,	2039,	2151,	2123,	9
EN,R5.1,ATTR,	8,	2,	4,	2,	3250,	0,	0,	0
EN,R5.1,NODE,	2039,	2151,	2123,	9,	2040,	2152,	2124,	10
EN,R5.1,ATTR,	8,	2,	4,	2,	3251,	0,	0,	0

EN, R5.1, NODE,	2040,	2152,	2124,	10,	2041,	2153,	2125,	11
EN, R5.1, ATTR,	8,	2,	4,	2,	3252,	0,	0,	0
EN, R5.1, NODE,	2041,	2153,	2125,	11,	2042,	2154,	2126,	12
EN, R5.1, ATTR,	8,	2,	4,	2,	3253,	0,	0,	0
EN, R5.1, NODE,	2042,	2154,	2126,	12,	2043,	2155,	2127,	13
EN, R5.1, ATTR,	8,	2,	4,	2,	3254,	0,	0,	0
EN, R5.1, NODE,	2043,	2155,	2127,	13,	2044,	2156,	2128,	14
EN, R5.1, ATTR,	8,	2,	4,	2,	3255,	0,	0,	0
EN, R5.1, NODE,	2044,	2156,	2128,	14,	2045,	2157,	2129,	2183
EN, R5.1, ATTR,	8,	2,	4,	2,	3256,	0,	0,	0
EN, R5.1, NODE,	2045,	2157,	2129,	2183,	2046,	2158,	2130,	2184
EN, R5.1, ATTR,	8,	2,	4,	2,	3257,	0,	0,	0
EN, R5.1, NODE,	2046,	2158,	2130,	2184,	2047,	2159,	2131,	2185
EN, R5.1, ATTR,	8,	2,	4,	2,	3258,	0,	0,	0
EN, R5.1, NODE,	2047,	2159,	2131,	2185,	2010,	2147,	2118,	2003
EN, R5.1, ATTR,	8,	2,	4,	2,	3259,	0,	0,	0
EN, R5.1, NODE,	5,	2116,	2089,	2060,	6,	2120,	2104,	2064
EN, R5.1, ATTR,	8,	2,	4,	2,	3260,	0,	0,	0
EN, R5.1, NODE,	6,	2120,	2104,	2064,	7,	2121,	2105,	2065
EN, R5.1, ATTR,	8,	2,	4,	2,	3261,	0,	0,	0
EN, R5.1, NODE,	7,	2121,	2105,	2065,	8,	2122,	2106,	2066
EN, R5.1, ATTR,	8,	2,	4,	2,	3262,	0,	0,	0
EN, R5.1, NODE,	8,	2122,	2106,	2066,	9,	2123,	2107,	2067
EN, R5.1, ATTR,	8,	2,	4,	2,	3263,	0,	0,	0
EN, R5.1, NODE,	9,	2123,	2107,	2067,	10,	2124,	2108,	2068
EN, R5.1, ATTR,	8,	2,	4,	2,	3264,	0,	0,	0
EN, R5.1, NODE,	10,	2124,	2108,	2068,	11,	2125,	2109,	2069
EN, R5.1, ATTR,	8,	2,	4,	2,	3265,	0,	0,	0
EN, R5.1, NODE,	11,	2125,	2109,	2069,	12,	2126,	2110,	2070
EN, R5.1, ATTR,	8,	2,	4,	2,	3266,	0,	0,	0
EN, R5.1, NODE,	12,	2126,	2110,	2070,	13,	2127,	2111,	2071
EN, R5.1, ATTR,	8,	2,	4,	2,	3267,	0,	0,	0
EN, R5.1, NODE,	13,	2127,	2111,	2071,	14,	2128,	2112,	2072
EN, R5.1, ATTR,	8,	2,	4,	2,	3268,	0,	0,	0
EN, R5.1, NODE,	14,	2128,	2112,	2072,	2183,	2129,	2113,	2073
EN, R5.1, ATTR,	8,	2,	4,	2,	3269,	0,	0,	0
EN, R5.1, NODE,	2183,	2129,	2113,	2073,	2184,	2130,	2114,	2074
EN, R5.1, ATTR,	8,	2,	4,	2,	3270,	0,	0,	0
EN, R5.1, NODE,	2184,	2130,	2114,	2074,	2185,	2131,	2115,	2075
EN, R5.1, ATTR,	8,	2,	4,	2,	3271,	0,	0,	0
EN, R5.1, NODE,	2185,	2131,	2115,	2075,	2003,	2118,	2091,	2062
EN, R5.1, ATTR,	8,	2,	4,	2,	3272,	0,	0,	0
EN, R5.1, NODE,	390,	2005,	2006,	391,	2193,	2190,	2196,	2199
EN, R5.1, ATTR,	8,	2,	4,	2,	3273,	0,	0,	0
EN, R5.1, NODE,	2193,	2190,	2196,	2199,	2194,	2191,	2197,	2200
EN, R5.1, ATTR,	8,	2,	4,	2,	3274,	0,	0,	0
EN, R5.1, NODE,	2194,	2191,	2197,	2200,	2195,	2192,	2198,	2201
EN, R5.1, ATTR,	8,	2,	4,	2,	3275,	0,	0,	0
EN, R5.1, NODE,	2195,	2192,	2198,	2201,	2186,	2187,	2188,	2189
EN, R5.1, ATTR,	8,	2,	4,	2,	3276,	0,	0,	0
EN, R5.1, NODE,	390,	333,	2060,	2005,	2193,	2207,	2204,	2190
EN, R5.1, ATTR,	8,	2,	4,	2,	3277,	0,	0,	0
EN, R5.1, NODE,	2193,	2207,	2204,	2190,	2194,	2208,	2205,	2191
EN, R5.1, ATTR,	8,	2,	4,	2,	3278,	0,	0,	0
EN, R5.1, NODE,	2194,	2208,	2205,	2191,	2195,	2209,	2206,	2192
EN, R5.1, ATTR,	8,	2,	4,	2,	3279,	0,	0,	0
EN, R5.1, NODE,	2195,	2209,	2206,	2192,	2186,	2203,	2202,	2187
EN, R5.1, ATTR,	8,	2,	4,	2,	3280,	0,	0,	0
EN, R5.1, NODE,	2060,	333,	350,	2089,	2204,	2207,	2212,	2215
EN, R5.1, ATTR,	8,	2,	4,	2,	3281,	0,	0,	0
EN, R5.1, NODE,	2204,	2207,	2212,	2215,	2205,	2208,	2213,	2216
EN, R5.1, ATTR,	8,	2,	4,	2,	3282,	0,	0,	0
EN, R5.1, NODE,	2205,	2208,	2213,	2216,	2206,	2209,	2214,	2217
EN, R5.1, ATTR,	8,	2,	4,	2,	3283,	0,	0,	0
EN, R5.1, NODE,	2206,	2209,	2214,	2217,	2202,	2203,	2210,	2211
EN, R5.1, ATTR,	8,	2,	4,	2,	3284,	0,	0,	0
EN, R5.1, NODE,	2116,	2089,	350,	363,	2220,	2215,	2212,	2223
EN, R5.1, ATTR,	8,	2,	4,	2,	3285,	0,	0,	0
EN, R5.1, NODE,	2220,	2215,	2212,	2223,	2221,	2216,	2213,	2224
EN, R5.1, ATTR,	8,	2,	4,	2,	3286,	0,	0,	0
EN, R5.1, NODE,	2221,	2216,	2213,	2224,	2222,	2217,	2214,	2225
EN, R5.1, ATTR,	8,	2,	4,	2,	3287,	0,	0,	0
EN, R5.1, NODE,	2222,	2217,	2214,	2225,	2218,	2211,	2210,	2219
EN, R5.1, ATTR,	8,	2,	4,	2,	3288,	0,	0,	0

```

EN,R5.1,NODE, 349, 2145, 2116, 363, 2231, 2228, 2220, 2223
EN,R5.1,ATTR, 8, 2, 4, 2, 3289, 0, 0, 0
EN,R5.1,NODE, 2231, 2228, 2220, 2223, 2232, 2229, 2221, 2224
EN,R5.1,ATTR, 8, 2, 4, 2, 3290, 0, 0, 0
EN,R5.1,NODE, 2232, 2229, 2221, 2224, 2233, 2230, 2222, 2225
EN,R5.1,ATTR, 8, 2, 4, 2, 3291, 0, 0, 0
EN,R5.1,NODE, 2233, 2230, 2222, 2225, 2226, 2227, 2218, 2219
EN,R5.1,ATTR, 8, 2, 4, 2, 3292, 0, 0, 0
EN,R5.1,NODE, 391, 2006, 2145, 349, 2199, 2196, 2228, 2231
EN,R5.1,ATTR, 8, 2, 4, 2, 3293, 0, 0, 0
EN,R5.1,NODE, 2199, 2196, 2228, 2231, 2200, 2197, 2229, 2232
EN,R5.1,ATTR, 8, 2, 4, 2, 3294, 0, 0, 0
EN,R5.1,NODE, 2200, 2197, 2229, 2232, 2201, 2198, 2230, 2233
EN,R5.1,ATTR, 8, 2, 4, 2, 3295, 0, 0, 0
EN,R5.1,NODE, 2201, 2198, 2230, 2233, 2189, 2188, 2227, 2226
EN,R5.1,ATTR, 8, 2, 4, 2, 3296, 0, 0, 0
EN,R5.1,NODE, 2006, 2005, 2060, 5, 2196, 2190, 2204, 4
EN,R5.1,ATTR, 8, 2, 4, 2, 3297, 0, 0, 0
EN,R5.1,NODE, 2196, 2190, 2204, 4, 2197, 2191, 2205, 3
EN,R5.1,ATTR, 8, 2, 4, 2, 3298, 0, 0, 0
EN,R5.1,NODE, 2197, 2191, 2205, 3, 2198, 2192, 2206, 2
EN,R5.1,ATTR, 8, 2, 4, 2, 3299, 0, 0, 0
EN,R5.1,NODE, 2198, 2192, 2206, 2, 2188, 2187, 2202, 1
EN,R5.1,ATTR, 8, 2, 4, 2, 3300, 0, 0, 0
EN,R5.1,NODE, 2006, 5, 2116, 2145, 2196, 4, 2220, 2228
EN,R5.1,ATTR, 8, 2, 4, 2, 3301, 0, 0, 0
EN,R5.1,NODE, 2196, 4, 2220, 2228, 2197, 3, 2221, 2229
EN,R5.1,ATTR, 8, 2, 4, 2, 3302, 0, 0, 0
EN,R5.1,NODE, 2197, 3, 2221, 2229, 2198, 2, 2222, 2230
EN,R5.1,ATTR, 8, 2, 4, 2, 3303, 0, 0, 0
EN,R5.1,NODE, 2198, 2, 2222, 2230, 2188, 1, 2218, 2227
EN,R5.1,ATTR, 8, 2, 4, 2, 3304, 0, 0, 0
EN,R5.1,NODE, 5, 2060, 2089, 2116, 4, 2204, 2215, 2220
EN,R5.1,ATTR, 8, 2, 4, 2, 3305, 0, 0, 0
EN,R5.1,NODE, 4, 2204, 2215, 2220, 3, 2205, 2216, 2221
EN,R5.1,ATTR, 8, 2, 4, 2, 3306, 0, 0, 0
EN,R5.1,NODE, 3, 2205, 2216, 2221, 2, 2206, 2217, 2222
EN,R5.1,ATTR, 8, 2, 4, 2, 3307, 0, 0, 0
EN,R5.1,NODE, 2, 2206, 2217, 2222, 1, 2202, 2211, 2218
EN,R5.1,ATTR, -1,
CM,_CDWNODE,NODE ! get list of users selected nodes
CM,_CDWELEM,ELEM ! get list of users selected elements
NSEL,S,NODE,, 1, 1,1
NSEL,A,NODE,, 5, 5,1
CM,RODNODES,NODE ! users node component definition
CMSEL,S,_CDWNODE ! restore users selected nodes
CMSEL,S,_CDWELEM ! restore users selected elements
CMDELE,_CDWNODE ! remove temporary node component definition
CMDELE,_CDWELEM ! remove temporary element component definition
MPTEMP,R5.0, 6, 1, 70.0000000 , 200.000000 , 300.000000
MPTEMP,R5.0, 6, 4, 400.000000 , 500.000000 , 600.000000
MPDATA,R5.0, 6,EX , 1, 1, 27500000.0 , 27500000.0 , 27500000.0
MPDATA,R5.0, 6,EX , 1, 4, 27500000.0 , 27500000.0 , 27500000.0
MPTEMP,R5.0, 6, 1, 70.0000000 , 200.000000 , 300.000000
MPTEMP,R5.0, 6, 4, 400.000000 , 500.000000 , 600.000000
MPDATA,R5.0, 6,NUXY, 1, 1, .300000000 , .300000000 , .300000000
MPDATA,R5.0, 6,NUXY, 1, 4, .300000000 , .300000000 , .300000000
MPTEMP,R5.0, 6, 1, 70.0000000 , 200.000000 , 300.000000
MPTEMP,R5.0, 6, 4, 400.000000 , 500.000000 , 600.000000
MPDATA,R5.0, 6,DENS, 1, 1, .279000000 , .279000000 , .279000000
MPDATA,R5.0, 6,DENS, 1, 4, .279000000 , .279000000 , .279000000
MPTEMP,R5.0, 6, 1, 70.0000000 , 200.000000 , 300.000000
MPTEMP,R5.0, 6, 4, 400.000000 , 500.000000 , 600.000000
MPDATA,R5.0, 6,EX , 2, 1, 26500000.0 , 26500000.0 , 26500000.0
MPDATA,R5.0, 6,EX , 2, 4, 26500000.0 , 26500000.0 , 26500000.0
MPTEMP,R5.0, 6, 1, 70.0000000 , 200.000000 , 300.000000
MPTEMP,R5.0, 6, 4, 400.000000 , 500.000000 , 600.000000
MPDATA,R5.0, 6,NUXY, 2, 1, .290000000 , .290000000 , .290000000
MPDATA,R5.0, 6,NUXY, 2, 4, .290000000 , .290000000 , .290000000
MPTEMP,R5.0, 6, 1, 70.0000000 , 200.000000 , 300.000000
MPTEMP,R5.0, 6, 4, 400.000000 , 500.000000 , 600.000000
MPDATA,R5.0, 6,DENS, 2, 1, .285300000 , .285300000 , .285300000
MPDATA,R5.0, 6,DENS, 2, 4, .285300000 , .285300000 , .285300000
BFUNIF,TEMP, 450.000000

```

AUTOTS, OFF
NSUBST, 1, 1, 1, OFF
KBC, 0
KUSE, 0
TIME, 1.00000000
TREE, 450.000000

D,	42,UY	,.000000000	,.000000000
D,	42,ROTX,	.000000000	,.000000000
D,	42,ROTZ,	.000000000	,.000000000
D,	53,UY	,.000000000	,.000000000
D,	53,ROTX,	.000000000	,.000000000
D,	53,ROTZ,	.000000000	,.000000000
D,	54,UY	,.000000000	,.000000000
D,	54,ROTX,	.000000000	,.000000000
D,	54,ROTZ,	.000000000	,.000000000
D,	55,UY	,.000000000	,.000000000
D,	55,ROTX,	.000000000	,.000000000
D,	55,ROTZ,	.000000000	,.000000000
D,	56,UY	,.000000000	,.000000000
D,	56,ROTX,	.000000000	,.000000000
D,	56,ROTZ,	.000000000	,.000000000
D,	57,UY	,.000000000	,.000000000
D,	57,ROTX,	.000000000	,.000000000
D,	57,ROTZ,	.000000000	,.000000000
D,	58,UY	,.000000000	,.000000000
D,	58,ROTX,	.000000000	,.000000000
D,	58,ROTZ,	.000000000	,.000000000
D,	59,UY	,.000000000	,.000000000
D,	59,ROTX,	.000000000	,.000000000
D,	59,ROTZ,	.000000000	,.000000000
D,	60,UY	,.000000000	,.000000000
D,	60,ROTX,	.000000000	,.000000000
D,	60,ROTZ,	.000000000	,.000000000
D,	61,UY	,.000000000	,.000000000
D,	61,ROTX,	.000000000	,.000000000
D,	61,ROTZ,	.000000000	,.000000000
D,	62,UY	,.000000000	,.000000000
D,	62,ROTX,	.000000000	,.000000000
D,	62,ROTZ,	.000000000	,.000000000
D,	64,UY	,.000000000	,.000000000
D,	64,ROTX,	.000000000	,.000000000
D,	64,ROTZ,	.000000000	,.000000000
D,	75,UY	,.000000000	,.000000000
D,	75,ROTX,	.000000000	,.000000000
D,	75,ROTZ,	.000000000	,.000000000
D,	76,UY	,.000000000	,.000000000
D,	76,ROTX,	.000000000	,.000000000
D,	76,ROTZ,	.000000000	,.000000000
D,	77,UY	,.000000000	,.000000000
D,	77,ROTX,	.000000000	,.000000000
D,	77,ROTZ,	.000000000	,.000000000
D,	78,UY	,.000000000	,.000000000
D,	78,ROTX,	.000000000	,.000000000
D,	78,ROTZ,	.000000000	,.000000000
D,	79,UY	,.000000000	,.000000000
D,	79,ROTX,	.000000000	,.000000000
D,	79,ROTZ,	.000000000	,.000000000
D,	80,UY	,.000000000	,.000000000
D,	80,ROTX,	.000000000	,.000000000
D,	80,ROTZ,	.000000000	,.000000000
D,	81,UY	,.000000000	,.000000000
D,	81,ROTX,	.000000000	,.000000000
D,	81,ROTZ,	.000000000	,.000000000
D,	82,UY	,.000000000	,.000000000
D,	82,ROTX,	.000000000	,.000000000
D,	82,ROTZ,	.000000000	,.000000000
D,	83,UY	,.000000000	,.000000000
D,	83,ROTX,	.000000000	,.000000000
D,	83,ROTZ,	.000000000	,.000000000
D,	84,UY	,.000000000	,.000000000
D,	84,ROTX,	.000000000	,.000000000
D,	84,ROTZ,	.000000000	,.000000000
D,	85,UX	,.000000000	,.000000000
D,	85,ROTY,	.000000000	,.000000000
D,	85,ROTZ,	.000000000	,.000000000
D,	96,UX	,.000000000	,.000000000
D,	96,ROTY,	.000000000	,.000000000
D,	96,ROTZ,	.000000000	,.000000000
D,	97,UX	,.000000000	,.000000000
D,	97,ROTY,	.000000000	,.000000000

D,	97, ROTZ,	.000000000	, .000000000
D,	98, UX ,	.000000000	, .000000000
D,	98, ROTY,	.000000000	, .000000000
D,	98, ROTZ,	.000000000	, .000000000
D,	99, UX ,	.000000000	, .000000000
D,	99, ROTY,	.000000000	, .000000000
D,	99, ROTZ,	.000000000	, .000000000
D,	100, UX ,	.000000000	, .000000000
D,	100, ROTY,	.000000000	, .000000000
D,	100, ROTZ,	.000000000	, .000000000
D,	101, UX ,	.000000000	, .000000000
D,	101, ROTY,	.000000000	, .000000000
D,	101, ROTZ,	.000000000	, .000000000
D,	102, UX ,	.000000000	, .000000000
D,	102, ROTY,	.000000000	, .000000000
D,	102, ROTZ,	.000000000	, .000000000
D,	103, UX ,	.000000000	, .000000000
D,	103, ROTY,	.000000000	, .000000000
D,	103, ROTZ,	.000000000	, .000000000
D,	104, UX ,	.000000000	, .000000000
D,	104, ROTY,	.000000000	, .000000000
D,	104, ROTZ,	.000000000	, .000000000
D,	155, UX ,	.000000000	, .000000000
D,	155, ROTY,	.000000000	, .000000000
D,	155, ROTZ,	.000000000	, .000000000
D,	158, UX ,	.000000000	, .000000000
D,	158, ROTY,	.000000000	, .000000000
D,	158, ROTZ,	.000000000	, .000000000
D,	221, UX ,	.000000000	, .000000000
D,	221, ROTY,	.000000000	, .000000000
D,	221, ROTZ,	.000000000	, .000000000
D,	232, UX ,	.000000000	, .000000000
D,	232, ROTY,	.000000000	, .000000000
D,	232, ROTZ,	.000000000	, .000000000
D,	233, UX ,	.000000000	, .000000000
D,	233, ROTY,	.000000000	, .000000000
D,	233, ROTZ,	.000000000	, .000000000
D,	234, UX ,	.000000000	, .000000000
D,	234, ROTY,	.000000000	, .000000000
D,	234, ROTZ,	.000000000	, .000000000
D,	235, UX ,	.000000000	, .000000000
D,	235, ROTY,	.000000000	, .000000000
D,	235, ROTZ,	.000000000	, .000000000
D,	236, UX ,	.000000000	, .000000000
D,	236, ROTY,	.000000000	, .000000000
D,	236, ROTZ,	.000000000	, .000000000
D,	237, UX ,	.000000000	, .000000000
D,	237, ROTY,	.000000000	, .000000000
D,	237, ROTZ,	.000000000	, .000000000
D,	238, UX ,	.000000000	, .000000000
D,	238, ROTY,	.000000000	, .000000000
D,	238, ROTZ,	.000000000	, .000000000
D,	239, UX ,	.000000000	, .000000000
D,	239, ROTY,	.000000000	, .000000000
D,	239, ROTZ,	.000000000	, .000000000
D,	240, UX ,	.000000000	, .000000000
D,	240, ROTY,	.000000000	, .000000000
D,	240, ROTZ,	.000000000	, .000000000
D,	271, UX ,	.000000000	, .000000000
D,	271, ROTY,	.000000000	, .000000000
D,	271, ROTZ,	.000000000	, .000000000
D,	292, UX ,	.000000000	, .000000000
D,	292, ROTY,	.000000000	, .000000000
D,	292, ROTZ,	.000000000	, .000000000
D,	303, UX ,	.000000000	, .000000000
D,	303, ROTY,	.000000000	, .000000000
D,	303, ROTZ,	.000000000	, .000000000
D,	304, UX ,	.000000000	, .000000000
D,	304, ROTY,	.000000000	, .000000000
D,	304, ROTZ,	.000000000	, .000000000
D,	305, UX ,	.000000000	, .000000000
D,	305, ROTY,	.000000000	, .000000000
D,	305, ROTZ,	.000000000	, .000000000
D,	306, UX ,	.000000000	, .000000000

D,	306, ROTY,	.000000000	, .000000000
D,	306, ROTZ,	.000000000	, .000000000
D,	307, UX,	.000000000	, .000000000
D,	307, ROTY,	.000000000	, .000000000
D,	307, ROTZ,	.000000000	, .000000000
D,	308, UX,	.000000000	, .000000000
D,	308, ROTY,	.000000000	, .000000000
D,	308, ROTZ,	.000000000	, .000000000
D,	309, UX,	.000000000	, .000000000
D,	309, ROTY,	.000000000	, .000000000
D,	309, ROTZ,	.000000000	, .000000000
D,	310, UX,	.000000000	, .000000000
D,	310, ROTY,	.000000000	, .000000000
D,	310, ROTZ,	.000000000	, .000000000
D,	311, UX,	.000000000	, .000000000
D,	311, ROTY,	.000000000	, .000000000
D,	311, ROTZ,	.000000000	, .000000000
D,	314, UY,	.000000000	, .000000000
D,	314, ROTX,	.000000000	, .000000000
D,	314, ROTZ,	.000000000	, .000000000
D,	321, UY,	.000000000	, .000000000
D,	321, ROTX,	.000000000	, .000000000
D,	321, ROTZ,	.000000000	, .000000000
D,	473, UX,	.000000000	, .000000000
D,	473, ROTY,	.000000000	, .000000000
D,	473, ROTZ,	.000000000	, .000000000
D,	474, UX,	.000000000	, .000000000
D,	474, ROTY,	.000000000	, .000000000
D,	474, ROTZ,	.000000000	, .000000000
D,	2003, UX,	.000000000	, .000000000
D,	2003, UY,	.000000000	, .000000000
D,	2003, UZ,	.000000000	, .000000000
D,	2003, ROTX,	.000000000	, .000000000
D,	2003, ROTY,	.000000000	, .000000000
D,	2003, ROTZ,	.000000000	, .000000000
D,	2008, UX,	.000000000	, .000000000
D,	2008, UY,	.000000000	, .000000000
D,	2008, UZ,	.000000000	, .000000000
D,	2008, ROTX,	.000000000	, .000000000
D,	2008, ROTY,	.000000000	, .000000000
D,	2008, ROTZ,	.000000000	, .000000000
D,	2009, UX,	.000000000	, .000000000
D,	2009, UY,	.000000000	, .000000000
D,	2009, UZ,	.000000000	, .000000000
D,	2009, ROTX,	.000000000	, .000000000
D,	2009, ROTY,	.000000000	, .000000000
D,	2009, ROTZ,	.000000000	, .000000000
D,	2010, UX,	.000000000	, .000000000
D,	2010, UY,	.000000000	, .000000000
D,	2010, UZ,	.000000000	, .000000000
D,	2010, ROTX,	.000000000	, .000000000
D,	2010, ROTY,	.000000000	, .000000000
D,	2010, ROTZ,	.000000000	, .000000000
D,	2011, UX,	.000000000	, .000000000
D,	2011, UY,	.000000000	, .000000000
D,	2011, UZ,	.000000000	, .000000000
D,	2011, ROTX,	.000000000	, .000000000
D,	2011, ROTY,	.000000000	, .000000000
D,	2011, ROTZ,	.000000000	, .000000000
D,	2062, UX,	.000000000	, .000000000
D,	2062, UY,	.000000000	, .000000000
D,	2062, UZ,	.000000000	, .000000000
D,	2062, ROTX,	.000000000	, .000000000
D,	2062, ROTY,	.000000000	, .000000000
D,	2062, ROTZ,	.000000000	, .000000000
D,	2063, UX,	.000000000	, .000000000
D,	2063, UY,	.000000000	, .000000000
D,	2063, UZ,	.000000000	, .000000000
D,	2063, ROTX,	.000000000	, .000000000
D,	2063, ROTY,	.000000000	, .000000000
D,	2063, ROTZ,	.000000000	, .000000000
D,	2090, UX,	.000000000	, .000000000
D,	2090, UY,	.000000000	, .000000000
D,	2090, UZ,	.000000000	, .000000000

D,	2090,ROTX,	.000000000	,	.000000000
D,	2090,ROTY,	.000000000	,	.000000000
D,	2090,ROTZ,	.000000000	,	.000000000
D,	2091,UX	.000000000	,	.000000000
D,	2091,UY	.000000000	,	.000000000
D,	2091,UZ	.000000000	,	.000000000
D,	2091,ROTX,	.000000000	,	.000000000
D,	2091,ROTY,	.000000000	,	.000000000
D,	2091,ROTZ,	.000000000	,	.000000000
D,	2118,UX	.000000000	,	.000000000
D,	2118,UY	.000000000	,	.000000000
D,	2118,UZ	.000000000	,	.000000000
D,	2118,ROTX,	.000000000	,	.000000000
D,	2118,ROTY,	.000000000	,	.000000000
D,	2118,ROTZ,	.000000000	,	.000000000
D,	2119,UX	.000000000	,	.000000000
D,	2119,UY	.000000000	,	.000000000
D,	2119,UZ	.000000000	,	.000000000
D,	2119,ROTX,	.000000000	,	.000000000
D,	2119,ROTY,	.000000000	,	.000000000
D,	2119,ROTZ,	.000000000	,	.000000000
D,	2146,UX	.000000000	,	.000000000
D,	2146,UY	.000000000	,	.000000000
D,	2146,UZ	.000000000	,	.000000000
D,	2146,ROTX,	.000000000	,	.000000000
D,	2146,ROTY,	.000000000	,	.000000000
D,	2146,ROTZ,	.000000000	,	.000000000
D,	2147,UX	.000000000	,	.000000000
D,	2147,UY	.000000000	,	.000000000
D,	2147,UZ	.000000000	,	.000000000
D,	2147,ROTX,	.000000000	,	.000000000
D,	2147,ROTY,	.000000000	,	.000000000
D,	2147,ROTZ,	.000000000	,	.000000000

/GO
FINISH

STRESS OUTPUT - SPACER DISC AND ROD MODEL AT 75g's

PRINT S NODAL SOLUTION PER NODE

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
1	19.587	2.8592	-7.1779	26.765	23.419
2	-.46518	-10.721	-33.743	33.278	29.518
3	136.86	-99.222	-122.93	259.79	248.78
4	850.34	-48.928	-327.33	1177.7	1066.1
5	624.57	-38.049	-744.22	1368.8	1185.6
6	1606.1	-598.75	-2026.1	3632.3	3169.6
7	2064.2	-565.04	-1894.3	3958.6	3489.3
8	1718.4	-600.93	-1865.2	3583.6	3148.0
9	1534.0	-566.58	-2013.3	3547.2	3089.3
10	1351.0	-467.16	-2203.4	3554.4	3078.5
11	1170.4	-354.56	-2419.6	3590.0	3120.7
12	995.49	-232.04	-2650.8	3646.3	3213.5
13	831.11	-110.69	-2891.7	3722.8	3352.6
14	689.40	-1.2707	-3131.5	3820.9	3526.7
15	2868.7	.00000	-7607.5	10476.	9376.9
16	3544.2	.00000	-12102.	15646.	14209.
17	2892.7	.00000	-11593.	14486.	13278.
18	1185.6	.00000	-8796.3	9981.9	9445.1
19	1550.6	.00000	-6820.4	8370.9	7713.4
20	.00000	-288.56	-15030.	15030.	14888.
21	207.93	.00000	-14995.	15203.	15101.
22	42.377	.00000	-14511.	14554.	14532.
23	.00000	-.58920	-13868.	13868.	13867.
24	.00000	-8.5273	-13160.	13160.	13156.
25	.00000	-6.1890	-12390.	12390.	12387.
26	12.859	.00000	-11548.	11561.	11554.
27	75.678	.00000	-10591.	10667.	10629.
28	.00000	-271.77	-9332.6	9332.6	9199.8
29	1252.7	.00000	-6058.8	7311.4	6772.6
30	1402.4	.00000	-16441.	17843.	17185.
31	94.308	.00000	-15268.	15362.	15315.
32	.00000	-9.3159	-14527.	14527.	14522.
33	.00000	-17.040	-13858.	13858.	13849.
34	.00000	-15.553	-13150.	13150.	13142.
35	.00000	-15.950	-12379.	12379.	12371.
36	.00000	-9.9413	-11557.	11557.	11552.
37	46.759	.00000	-10719.	10766.	10743.
38	629.69	.00000	-9989.9	10620.	10319.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
39	1164.7	.00000	-1369.2	2533.9	2196.8
40	1481.6	.00000	-2771.3	4252.9	3739.1
41	537.67	.00000	-2076.7	2614.3	2391.3
42	539.01	.00000	-3332.5	3871.5	3632.1
43	6146.6	.00000	-3946.2	10093.	8809.6
44	.00000	-25.428	-1131.8	1131.8	1119.3
45	86.401	.00000	-374.46	460.87	424.31
46	645.14	.00000	-70.027	715.17	682.85
47	1513.2	.00000	-44.493	1557.7	1535.9
48	2484.2	.00000	-36.759	2520.9	2502.7
49	3532.2	.00000	-44.509	3576.7	3554.7
50	4674.3	.00000	-86.047	4760.3	4717.9
51	5786.0	.00000	-299.12	6085.1	5941.2
52	6967.8	.00000	-53.892	7021.7	6994.9
53	4884.6	.00000	-2451.0	7335.6	6468.3
54	.00000	-53.145	-1032.9	1032.9	1007.3
55	.00000	-7.9038	-249.93	249.93	246.07

56	575.95	.00000	-12.734	588.69	582.42
57	1492.8	.00000	-16.434	1509.2	1501.0
58	2469.6	.00000	-14.234	2483.8	2476.7
59	3522.3	.00000	-13.581	3535.8	3529.1
60	4663.3	.00000	-13.457	4676.8	4670.0
61	6060.1	.00000	-97.194	6157.3	6109.3
62	8107.2	.00000	-1563.9	9671.1	8991.7
63	5190.3	.00000	-2841.6	8031.9	7054.3
64	4529.5	.00000	-1664.4	6194.0	5552.1
65	1110.6	.00000	-670.16	1780.7	1557.8
66	6054.6	.00000	-99.746	6154.4	6105.1
67	5274.4	.00000	-265.67	5540.1	5412.2
68	4679.0	.00000	-63.860	4742.9	4711.3
69	4033.5	.00000	-30.395	4063.9	4048.8
70	3484.8	.00000	-19.413	3504.2	3494.5
71	3008.8	.00000	-16.563	3025.4	3017.1
72	2591.3	.00000	-23.049	2614.3	2602.9
73	2288.8	.00000	-7.5845	2296.4	2292.6
74	1894.4	104.21	.00000	1894.4	1844.5
75	1247.6	.00000	-665.97	1913.6	1682.6
76	6987.3	.00000	-1394.3	8381.6	7778.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
77	5564.6	.00000	-86.255	5650.8	5608.2
78	4666.5	.00000	-8.6848	4675.2	4670.9
79	4037.4	.00000	-14.033	4051.4	4044.4
80	3486.8	.00000	-13.928	3500.7	3493.8
81	3010.6	.00000	-13.509	3024.1	3017.3
82	2616.1	.00000	-21.442	2637.5	2626.9
83	2241.0	.00000	-16.027	2257.0	2249.0
84	2030.7	.00000	-15.874	2046.6	2038.7
85	3482.7	.00000	-8869.4	12352.	11031.
86	3651.5	.00000	-14369.	18021.	16501.
87	6212.5	.00000	-842.92	7055.5	6674.0
88	5056.0	.00000	-636.05	5692.0	5402.1
89	4903.0	.00000	-138.70	5041.7	4973.8
90	4766.2	.00000	-37.924	4804.2	4785.3
91	4733.7	.00000	-21.981	4755.7	4744.7
92	4794.5	.00000	-38.326	4832.8	4813.7
93	4951.4	.00000	-153.09	5104.5	5029.7
94	5175.2	.00000	-683.46	5858.7	5548.6
95	6500.2	.00000	-942.28	7442.5	7019.0
96	7346.6	.00000	-2623.6	9970.3	8951.6
97	5466.8	.00000	-122.37	5589.1	5529.0
98	4926.2	.00000	-8.2622	4934.5	4930.3
99	4765.8	.00000	-7.1422	4772.9	4769.3
100	4735.5	.00000	-11.018	4746.5	4741.0
101	4790.7	.00000	-5.3223	4796.0	4793.3
102	4991.4	.00000	-11.407	5002.8	4997.1
103	5548.5	.00000	-122.16	5670.6	5610.6
104	7569.5	.00000	-2655.1	10225.	9189.4
105	6858.3	.00000	-6422.4	13281.	11504.
106	5014.0	.00000	-7950.3	12964.	11323.
107	6507.5	.00000	-5265.9	11773.	10215.
108	3091.0	.00000	-839.04	3930.1	3585.0
109	3700.5	.00000	-908.14	4608.7	4228.4
110	4111.3	.00000	-813.68	4924.9	4572.7
111	4519.8	.00000	-746.65	5266.5	4935.7
112	4995.4	.00000	-687.24	5682.7	5372.1
113	5553.8	.00000	-630.89	6184.7	5894.6
114	6195.6	.00000	-624.33	6819.9	6530.2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
115	6960.4	.00000	-836.14	7796.6	7414.0
116	8267.3	.00000	-807.35	9074.7	8699.2
117	3950.8	.00000	-1259.4	5210.2	4708.5
118	3297.4	.00000	-1035.7	4333.1	3919.3
119	3701.2	.00000	-735.73	4436.9	4118.6
120	4215.4	.00000	-618.04	4833.5	4556.0
121	4828.6	.00000	-530.51	5359.1	5114.5
122	5535.4	.00000	-457.34	5992.8	5777.7
123	6309.0	.00000	-419.77	6728.7	6529.0
124	7147.0	.00000	-504.84	7651.8	7412.3
125	7779.9	186.40	.00000	7779.9	7688.4
126	8903.3	.00000	-1319.9	10223.	9631.3
127	7179.0	.00000	-428.72	7607.7	7402.7
128	6268.4	.00000	-468.69	6737.1	6515.4
129	5535.8	.00000	-533.34	6069.2	5820.8
130	4914.9	.00000	-605.21	5520.1	5243.7
131	4368.2	.00000	-677.39	5045.6	4743.3
132	3908.0	.00000	-749.58	4657.6	4331.7
133	3581.8	.00000	-807.92	4389.7	4046.7
134	3498.2	.00000	-1222.0	4720.1	4243.2
135	12684.	7909.8	.00000	12684.	11096.
136	15514.	6585.4	.00000	15514.	13487.
137	390.40	.00000	-4803.8	5194.2	5010.5
138	42.438	.00000	-2466.3	2508.8	2487.8
139	157.18	.00000	-717.81	874.99	807.95
140	1395.2	.00000	-92.820	1488.0	1443.9
141	3277.2	.00000	-43.604	3320.8	3299.2
142	5258.8	.00000	-33.317	5292.1	5275.5
143	7292.9	.23269	.00000	7292.9	7292.8
144	9205.8	4.5288	.00000	9205.8	9203.6
145	9962.6	512.31	.00000	9962.6	9716.6
146	366.55	.00000	-6129.7	6496.3	6321.0
147	313.62	.00000	-3460.8	3774.5	3627.8
148	552.71	.00000	-1664.7	2217.4	1999.2
149	1568.3	.00000	-607.47	2175.8	1944.5
150	3386.7	.00000	-293.87	3680.6	3542.8
151	5478.8	.00000	-193.05	5671.8	5577.8
152	7667.8	.00000	-121.22	7789.0	7729.1

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
153	9731.4	.00000	-83.448	9814.8	9773.4
154	10316.	451.31	.00000	10316.	10098.
155	4830.5	.00000	-9608.1	14439.	12730.
156	5659.7	.00000	-14908.	20567.	18402.
157	3916.1	.00000	-14699.	18615.	16999.
158	2224.2	.00000	-9880.7	12105.	11160.
159	6409.7	.00000	-8437.8	14847.	12898.
160	.00000	-313.62	-19486.	19486.	19331.
161	304.91	.00000	-19085.	19389.	19239.
162	93.691	.00000	-18301.	18395.	18348.
163	69.335	.00000	-17368.	17437.	17403.
164	69.746	.00000	-16387.	16456.	16421.
165	80.110	.00000	-15350.	15430.	15390.
166	116.06	.00000	-14253.	14369.	14311.
167	312.45	.00000	-13052.	13364.	13211.
168	.00000	-306.14	-11670.	11670.	11520.
169	4789.0	.00000	-8370.2	13159.	11536.
170	.00000	-202.62	-18855.	18855.	18754.
171	232.22	.00000	-18842.	19074.	18959.
172	55.380	.00000	-18144.	18200.	18172.
173	29.989	.00000	-17265.	17295.	17280.
174	25.568	.00000	-16330.	16356.	16343.
175	29.980	.00000	-15340.	15370.	15355.
176	66.511	.00000	-14292.	14359.	14326.
177	313.38	.00000	-13162.	13476.	13322.
178	97.086	.00000	-12106.	12203.	12155.
179	1455.1	.00000	-20935.	22390.	21699.

180	92.933	.00000	-19245.	19338.	19292.
181	23.138	.00000	-18211.	18234.	18223.
182	37.026	.00000	-17305.	17342.	17324.
183	42.048	.00000	-16351.	16393.	16372.
184	41.967	.00000	-15328.	15370.	15349.
185	36.074	.00000	-14264.	14301.	14283.
186	70.686	.00000	-13286.	13356.	13321.
187	1168.9	.00000	-12984.	14153.	13606.
188	9803.4	.00000	-6340.8	16144.	14088.
189	8189.6	.00000	-5492.4	13682.	11925.
190	5513.6	.00000	-6981.8	12495.	10846.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
191	5210.6	.00000	-5544.3	10755.	9315.5
192	21355.	3436.3	.00000	21355.	19861.
193	1575.5	.00000	-9321.3	10897.	10201.
194	1878.1	.00000	-5861.9	7739.9	6992.7
195	2405.8	.00000	-3662.0	6067.9	5292.3
196	4013.5	.00000	-2170.2	6183.7	5434.0
197	6394.5	.00000	-1378.4	7772.9	7183.6
198	9216.9	.00000	-968.73	10186.	9737.5
199	12275.	.00000	-698.11	12973.	12639.
200	15409.	.00000	-259.30	15668.	15540.
201	17281.	616.57	.00000	17281.	16981.
202	16027.	4224.8	.00000	16027.	14388.
203	37.801	.00000	-7178.6	7216.4	7197.5
204	729.88	.00000	-4787.6	5517.5	5191.1
205	1212.5	.00000	-2412.7	3625.2	3196.3
206	2966.1	.00000	-990.25	3956.3	3565.9
207	5740.8	.00000	-512.18	6252.9	6013.2
208	8869.5	.00000	-329.63	9199.2	9038.9
209	12150.	.00000	-224.16	12374.	12264.
210	15442.	34.312	.00000	15442.	15425.
211	17736.	.00000	-1159.5	18896.	18343.
212	1853.1	.00000	-9094.2	10947.	10148.
213	988.16	.00000	-5519.6	6507.8	6074.3
214	1773.6	.00000	-3043.7	4817.2	4219.9
215	3479.5	.00000	-1570.2	5049.7	4476.1
216	6034.5	.00000	-910.50	6945.0	6537.5
217	9021.7	.00000	-617.92	9639.6	9346.0
218	12194.	.00000	-474.73	12668.	12438.
219	15406.	.00000	-429.20	15835.	15625.
220	18173.	84.736	.00000	18173.	18131.
221	1824.6	.00000	-7827.1	9651.7	8881.1
222	3754.8	.00000	-13214.	16969.	15438.
223	8902.5	.00000	-692.31	9594.8	9268.1
224	7611.5	.00000	-724.70	8336.2	7998.5
225	7151.3	.00000	-168.06	7319.3	7236.7
226	6733.7	.00000	-42.013	6775.7	6754.8
227	6412.2	.00000	-23.512	6435.7	6424.0
228	6185.6	.00000	-39.566	6225.1	6205.4

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
229	6057.0	.00000	-148.02	6205.0	6132.4
230	5926.1	.00000	-663.97	6590.0	6284.4
231	6966.7	.00000	-500.78	7467.5	7230.1
232	10492.	.00000	-3015.2	13507.	12281.
233	8049.0	.00000	-150.96	8200.0	8125.6
234	7198.6	.00000	-14.445	7213.0	7205.8
235	6728.8	.00000	-4.8242	6733.6	6731.2
236	6412.9	.00000	-10.790	6423.7	6418.3
237	6184.2	.00000	-6.2651	6190.4	6187.3

238	6096.5	.00000	-12.828	6109.3	6102.9
239	6392.0	.00000	-141.26	6533.2	6463.8
240	8104.3	.00000	-3013.9	11118.	9959.4
241	4952.4	.00000	-7218.6	12171.	10601.
242	8126.1	.00000	-4389.7	12516.	10999.
243	6388.3	.00000	-4228.8	10617.	9257.8
244	10660.	399.98	.00000	10660.	10466.
245	10617.	.00000	-254.71	10872.	10747.
246	10408.	.00000	-61.734	10470.	10439.
247	10272.	.00000	-25.987	10298.	10285.
248	10208.	.00000	-24.897	10233.	10221.
249	10230.	.00000	-27.380	10257.	10244.
250	10330.	.00000	-61.965	10392.	10361.
251	10493.	.00000	-219.34	10713.	10605.
252	10543.	302.04	.00000	10543.	10395.
253	11534.	.00000	-44.227	11578.	11556.
254	11066.	.00000	-334.61	11401.	11237.
255	10669.	.00000	-76.515	10746.	10708.
256	10337.	.00000	-31.043	10368.	10352.
257	10076.	.00000	-28.299	10105.	10091.
258	9901.1	.00000	-29.797	9930.9	9916.1
259	9798.1	.00000	-58.841	9856.9	9827.7
260	9722.9	.00000	-277.66	10001.	9864.7
261	9731.5	226.46	.00000	9731.5	9620.3
262	11284.	.00000	-1191.3	12476.	11925.
263	10286.	.00000	-43.925	10330.	10308.
264	10075.	.00000	-14.416	10089.	10082.
265	10062.	.00000	-19.809	10082.	10072.
266	10147.	.00000	-24.152	10171.	10159.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
267	10298.	.00000	-17.942	10316.	10307.
268	10556.	.00000	-12.986	10569.	10563.
269	11023.	.00000	-45.778	11069.	11046.
270	12456.	.00000	-1283.2	13740.	13145.
271	507.60	.00000	-7117.6	7625.2	7384.5
272	1666.2	.00000	-12814.	14480.	13723.
273	5136.2	.00000	-7432.1	12568.	10945.
274	454.22	.00000	-19348.	19802.	19579.
275	46.947	.00000	-18731.	18778.	18754.
276	65.089	.00000	-18111.	18176.	18143.
277	58.260	.00000	-17448.	17507.	17478.
278	59.695	.00000	-16718.	16778.	16748.
279	62.604	.00000	-15921.	15983.	15952.
280	59.068	.00000	-15062.	15121.	15092.
281	100.02	.00000	-14185.	14285.	14235.
282	.00000	-12.431	-13768.	13768.	13762.
283	.00000	-236.68	-19197.	19197.	19080.
284	97.005	.00000	-18522.	18619.	18571.
285	76.722	.00000	-17962.	18039.	18000.
286	88.930	.00000	-17334.	17423.	17379.
287	94.622	.00000	-16640.	16735.	16688.
288	102.79	.00000	-15879.	15982.	15931.
289	115.17	.00000	-15056.	15171.	15114.
290	137.76	.00000	-14221.	14359.	14291.
291	458.11	.00000	-13688.	14146.	13923.
292	.00000	-220.51	-7249.5	7249.5	7141.8
293	942.72	.00000	-11401.	12344.	11900.
294	4053.1	.00000	-1195.2	5248.3	4764.5
295	1979.2	.00000	-684.52	2663.7	2395.9
296	1712.3	.00000	-146.54	1858.9	1790.1
297	1522.2	.00000	-37.620	1559.8	1541.4
298	1434.4	.00000	-21.872	1456.2	1445.4
299	1439.5	.00000	-40.096	1479.6	1460.0
300	1561.3	.00000	-148.57	1709.9	1640.7
301	1724.9	.00000	-747.87	2472.8	2196.5
302	3628.7	.00000	-1628.2	5256.8	4661.1
303	4194.3	.00000	-2662.3	6856.6	5987.2

304 2303.6 .00000 -109.66 2413.3 2360.4

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0
SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
305	1739.3	.00000	-11.909	1751.2	1745.3
306	1519.5	.00000	-6.4906	1526.0	1522.7
307	1436.4	.00000	-10.983	1447.4	1441.9
308	1439.5	.00000	-7.3729	1446.9	1443.2
309	1571.0	.00000	-5.5416	1576.6	1573.8
310	2128.8	.00000	-131.56	2260.4	2197.6
311	4064.8	.00000	-2848.9	6913.7	6018.3
312	7580.6	.00000	-367.68	7948.3	7771.0
313	3491.4	.00000	-148.50	3639.9	3568.0
314	1293.7	63.285	.00000	1293.7	1263.3
315	1218.3	40.715	.00000	1218.3	1198.4
316	1202.6	35.629	.00000	1202.6	1185.1
317	1465.5	48.169	.00000	1465.5	1442.0
318	1768.8	.00000	-.98432	1769.8	1769.3
319	2841.8	.00000	-78.415	2920.2	2881.8
320	4764.0	.00000	-792.44	5556.4	5205.7
321	390.38	294.88	.00000	390.38	352.47
322	76.374	.00000	-894.83	971.20	935.36
323	271.35	.00000	-452.53	723.88	633.41
324	666.69	.00000	-115.50	782.19	731.31
325	1784.4	.00000	-106.38	1890.8	1839.9
326	3054.1	49.829	.00000	3054.1	3029.5
327	5189.0	407.41	.00000	5189.0	4997.8
328	1090.6	.00000	-269.84	1360.4	1247.6
329	384.51	179.61	.00000	384.51	333.24
330	708.28	.00000	-79.362	787.64	751.11
331	456.50	.00000	-31.446	487.94	473.01
332	10428.	.00000	-166.86	10595.	10512.
333	7521.7	2114.9	-3361.8	10884.	9425.5
334	11022.	.00000	-1430.1	12452.	11802.
335	11037.	.00000	-597.81	11635.	11347.
336	3294.1	.00000	-430.38	3724.5	3529.0
337	3211.0	.00000	-94.819	3305.8	3259.5
338	4121.0	.00000	-181.88	4302.9	4214.9
339	5109.4	.00000	-178.20	5287.6	5200.8
340	8158.6	.00000	-927.94	9086.5	8659.9
341	8648.5	.00000	-411.43	9059.9	8861.3
342	5489.3	1114.4	.00000	5489.3	5025.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0
SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
343	1830.4	716.90	.00000	1830.4	1597.5
344	1246.6	.00000	-581.46	1828.1	1617.7
345	1905.1	.00000	-1308.8	3213.9	2799.2
346	2031.2	.00000	-2622.5	4653.6	4041.0
347	9069.0	6179.4	.00000	9069.0	8024.4
348	12076.	7592.7	.00000	12076.	10573.
349	5166.4	-330.85	-3073.6	8239.9	7267.7
350	11213.	3706.2	-931.90	12145.	10615.
351	1987.1	.00000	-1374.4	3361.5	2927.2
352	9362.5	.00000	-492.16	9854.7	9618.0
353	.00000	-524.94	-2569.7	2569.7	2351.6
354	3639.7	315.47	.00000	3639.7	3492.7
355	2982.2	.00000	-277.17	3259.4	3130.0
356	3565.1	.00000	-173.23	3738.3	3654.8
357	2522.7	.00000	-1315.6	3838.3	3378.4
358	1031.0	.00000	-885.84	1916.9	1661.6
359	1099.0	251.36	.00000	1099.0	997.36
360	4024.5	203.80	.00000	4024.5	3926.6
361	10324.	2986.4	.00000	10324.	9201.6

362	12281.	4908.0	.00000	12281.	10707.
363	6922.5	4444.5	-1034.5	7957.1	7052.5
364	2408.1	.00000	-1215.3	3623.4	3194.1
365	1360.3	.00000	-1563.9	2924.2	2534.5
366	9915.3	1139.6	.00000	9915.3	9397.5
367	21841.	1343.5	.00000	21841.	21201.
368	10951.	.00000	-448.41	11399.	11181.
369	11590.	.00000	-1444.4	13034.	12376.
370	11220.	.00000	-422.03	11642.	11437.
371	11865.	.00000	-453.22	12318.	12098.
372	12630.	.00000	-509.01	13139.	12892.
373	12871.	.00000	-575.44	13446.	13168.
374	12122.	.00000	-470.94	12593.	12364.
375	15135.	.00000	-227.69	15362.	15250.
376	23490.	.00000	-849.21	24340.	23926.
377	21969.	1315.5	.00000	21969.	21342.
378	19598.	704.30	.00000	19598.	19255.
379	17645.	.00000	-821.14	18466.	18069.
380	15769.	.00000	-6837.8	22607.	20081.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
381	16058.	2225.5	.00000	16058.	15069.
382	14192.	.00000	-918.48	15110.	14673.
383	12807.	.00000	-509.20	13316.	13069.
384	13559.	325.87	.00000	13559.	13399.
385	14396.	339.66	.00000	14396.	14230.
386	14229.	.00000	-1027.2	15256.	14769.
387	14033.	242.76	.00000	14033.	13913.
388	12869.	.00000	-641.32	13510.	13201.
389	18972.	1469.7	.00000	18972.	18282.
390	11294.	5474.3	-9771.0	21065.	18841.
→ 391	12572.	5596.0	-11775.	24346.	21716.
392	22633.	3865.8	.00000	22633.	20970.
393	22615.	1727.9	.00000	22615.	21802.
394	17293.	7026.2	.00000	17293.	15064.
395	15093.	2547.6	.00000	15093.	13994.
396	13207.	1039.7	.00000	13207.	12719.
397	14629.	.00000	-1222.6	15852.	15277.
398	20797.	4215.1	.00000	20797.	19042.
399	262.67	.00000	-16462.	16725.	16595.
400	286.75	.00000	-11946.	12233.	12092.
401	9207.7	.00000	-246.18	9453.9	9333.2
402	7063.3	76.633	.00000	7063.3	7025.3
403	4960.6	149.80	.00000	4960.6	4887.5
404	3156.4	93.943	.00000	3156.4	3110.5
405	1903.1	.00000	-265.49	2168.5	2048.7
406	1250.2	.00000	-923.16	2173.4	1889.3
407	950.07	.00000	-1781.0	2731.0	2401.4
408	639.16	.00000	-2806.9	3446.1	3175.1
409	291.26	.00000	-4557.8	4849.1	4710.2
410	495.19	.00000	-7487.4	7982.6	7746.9
411	1301.2	.00000	-5001.7	6302.9	5763.5
412	1823.6	.00000	-2506.7	4330.3	3765.7
413	1987.4	.00000	-1099.5	3086.9	2709.9
414	2908.2	.00000	-209.76	3117.9	3018.5
415	5250.7	538.27	.00000	5250.7	5003.3
416	8822.3	.00000	-1004.1	9826.4	9364.8
417	4205.5	.00000	-96.334	4301.9	4254.5
418	2198.1	.00000	-501.66	2699.8	2487.2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
419	1452.2	.00000	-391.88	1844.1	1682.7

420	1295.1	.00000	-805.15	2100.3	1835.3
421	1846.4	.00000	-1888.1	3734.5	3234.2
422	4672.8	.00000	-2200.3	6873.1	6079.3
423	.00000	-78.417	-5243.3	5243.3	5204.5
424	749.02	.00000	-2930.1	3679.2	3367.7
425	765.40	.00000	-2512.2	3277.6	2969.8
426	785.52	.00000	-1720.1	2505.6	2219.7
427	992.99	.00000	-864.69	1857.7	1610.1
428	2467.0	469.85	.00000	2467.0	2268.9
429	4313.8	607.50	.00000	4313.8	4044.4
430	6295.6	955.67	.00000	6295.6	5876.4
431	9423.6	.00000	-229.69	9653.3	9540.5
432	9929.1	359.36	.00000	9929.1	9754.4
433	5098.4	764.31	.00000	5098.4	4762.5
434	4918.9	296.37	.00000	4918.9	4777.6
435	2660.7	597.72	.00000	2660.7	2417.9
436	1705.5	.00000	-412.32	2117.8	1944.8
437	1583.7	.00000	-1672.9	3256.6	2820.7
438	3600.9	1120.8	.00000	3600.9	3191.6
439	2309.8	1081.6	.00000	2309.8	2001.7
440	1463.3	179.00	.00000	1463.3	1382.6
441	1591.8	.00000	-887.32	2479.1	2175.7
442	2568.2	.00000	-1729.7	4297.9	3745.6
443	3444.9	.00000	-2477.9	5922.8	5152.1
444	3435.0	.00000	-3426.8	6861.8	5942.5
445	3637.6	.00000	-1576.4	5214.0	4631.6
446	2257.0	.00000	-730.54	2987.5	2697.5
447	1640.1	.00000	-735.52	2375.6	2106.5
448	1277.5	.00000	-1466.5	2744.0	2378.3
449	1293.1	.00000	-1918.8	3212.0	2799.2
450	981.09	.00000	-2625.3	3606.4	3229.6
451	925.01	.00000	-1820.9	2745.9	2419.9
452	1047.6	.00000	-948.73	1996.3	1729.6
453	1161.3	86.704	.00000	1161.3	1120.5
454	1682.7	956.54	.00000	1682.7	1461.8
455	1031.2	774.05	.00000	1031.2	929.73
456	1421.8	.00000	-555.46	1977.2	1766.3

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
457	2002.8	.00000	-1169.5	3172.4	2778.7
458	1743.2	.00000	-1093.5	2836.7	2478.0
459	1580.1	.00000	-1145.7	2725.8	2370.6
460	1018.4	.00000	-1785.4	2803.7	2458.2
461	1294.0	.00000	-1099.0	2393.0	2074.7
462	1217.1	.00000	-234.79	1451.9	1349.9
463	6742.4	448.64	.00000	6742.4	6529.6
464	5743.0	.00000	-816.15	6559.2	6191.6
465	1444.6	.00000	-1005.6	2450.2	2133.2
466	1667.7	.00000	-1650.5	3318.2	2873.6
467	1983.9	.00000	-3422.8	5406.7	4737.3
468	10394.	387.19	.00000	10394.	10206.
469	1045.3	.00000	-220.95	1266.2	1171.5
470	2250.9	.00000	-2937.2	5188.1	4506.1
471	2035.6	.00000	-1592.4	3628.1	3149.8
472	1424.5	.00000	-12.307	1436.8	1430.7
473	149.74	.00000	-11896.	12046.	11972.
474	.00000	-694.38	-10906.	10906.	10576.
475	1403.1	.00000	-16975.	18378.	17718.
476	310.56	.00000	-14378.	14688.	14536.
477	99.355	.00000	-13383.	13482.	13433.
478	54.024	.00000	-12952.	13006.	12979.
479	148.58	.00000	-12607.	12755.	12682.
480	86.116	.00000	-11972.	12058.	12015.
481	.00000	-197.36	-12532.	12532.	12435.
482	11.909	.00000	-12662.	12674.	12668.
483	.00000	-107.36	-13035.	13035.	12981.
484	.00000	-35.627	-14074.	14074.	14056.
485	.00000	-124.20	-15191.	15191.	15129.

486	.00000	-962.15	-16419.	16419.	15960.
487	580.28	.00000	-12021.	12601.	12321.
488	152.39	.00000	-12749.	12902.	12826.
489	246.50	.00000	-13022.	13268.	13147.
490	43.127	.00000	-12865.	12908.	12887.
2003	413.25	-1525.9	-5675.1	6088.3	5387.2
2005	2082.5	-2268.1	-11535.	13617.	12046.
2006	-900.77	-2725.6	-9350.6	8449.9	7701.3
2008	11951.	4328.2	2973.6	8977.6	8382.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
2009	5035.7	1206.8	-874.48	5910.2	5192.4
2010	4982.8	1204.4	-829.76	5812.6	5108.9
2011	13310.	4884.4	3533.0	9777.0	9176.2
2012	3911.0	-439.99	-10980.	14891.	13262.
2013	1975.8	-1511.6	-13547.	15523.	14106.
2014	1814.7	-1271.5	-11480.	13295.	12052.
2015	1523.2	-1007.9	-9961.4	11485.	10452.
2016	1223.8	-757.56	-8492.1	9715.8	8892.3
2017	922.40	-492.78	-7023.4	7945.8	7341.3
2018	626.18	-217.62	-5571.2	6197.4	5821.5
2019	354.02	64.096	-4148.1	4502.1	4364.4
2020	487.16	1.4244	-2790.1	3277.3	3063.4
2021	963.77	-263.92	-1596.2	2560.0	2217.6
2022	1857.5	-191.40	-789.00	2646.5	2404.1
2023	2417.6	-131.70	-1453.2	3870.8	3407.9
2024	-1476.8	-5423.3	-31757.	30281.	28513.
2025	-1899.2	-4238.9	-25716.	23817.	22737.
2026	-1207.0	-3430.8	-22099.	20892.	19874.
2027	-1104.1	-2902.1	-18845.	17741.	16914.
2028	-852.71	-2274.8	-15519.	14666.	14010.
2029	-640.80	-1663.2	-12222.	11581.	11105.
2030	-417.67	-1032.1	-8924.4	8506.7	8216.8
2031	-197.78	-372.85	-5661.4	5463.7	5378.3
2032	412.30	27.403	-2513.7	2926.0	2753.8
2033	1910.0	224.32	-101.26	2011.3	1869.9
2034	4812.4	1034.7	564.03	4248.3	4033.6
2035	7318.2	1297.5	-67.643	7385.8	6806.7
2036	1259.5	-2073.8	-12150.	13410.	12093.
2037	10.990	-1947.9	-14421.	14432.	13560.
2038	-125.83	-1940.3	-12787.	12661.	11858.
2039	-41.303	-1533.5	-11008.	10966.	10302.
2040	-7.9987	-1223.2	-9355.3	9347.3	8802.8
2041	42.520	-896.97	-7691.2	7733.8	7309.4
2042	108.54	-574.45	-6045.3	6153.8	5842.3
2043	217.95	-262.67	-4427.6	4645.5	4424.8
2044	444.42	-8.0523	-2886.4	3330.8	3129.2
2045	919.45	206.88	-1525.6	2445.1	2178.0
2046	1908.3	531.86	-598.57	2506.9	2174.5

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
2047	2645.3	561.70	-775.26	3420.6	2985.8
2048	-2224.2	-4833.1	-33100.	30876.	29658.
2049	-2749.7	-4181.1	-28849.	26100.	25414.
2050	-2115.5	-3472.8	-25025.	22910.	22262.
2051	-1861.8	-2963.6	-21367.	19505.	18978.
2052	-1469.3	-2351.4	-17576.	16107.	15685.
2053	-1102.6	-1757.4	-13806.	12703.	12389.
2054	-726.78	-1155.2	-10035.	9308.2	9101.5
2055	-345.70	-551.68	-6282.1	5936.4	5836.1
2056	168.64	-5.1768	-2585.2	2753.8	2671.2
2057	1714.1	447.71	130.87	1583.2	1451.0

2058	5312.1	1190.3	808.46	4503.6	4325.4
2059	8304.9	1221.5	224.78	8080.1	7630.7
2060	1942.7	431.43	-800.95	2743.7	2380.2
2062	35.238	-1779.5	-6171.6	6206.9	5527.6
2063	-1020.9	-2230.3	-6669.9	5649.1	5151.9
2064	2603.5	199.76	-1944.0	4547.5	3940.4
2065	2782.5	386.35	-803.21	3585.7	3163.4
2066	2302.2	128.98	-984.54	3286.8	2895.3
2067	1917.0	-37.271	-1126.9	3043.9	2671.3
2068	1631.8	-91.222	-1385.3	3017.1	2621.7
2069	1358.0	-90.717	-1719.8	3077.8	2667.0
2070	1106.0	-62.196	-2105.9	3211.9	2815.8
2071	875.78	-24.047	-2524.1	3399.9	3051.2
2072	675.88	3.4656	-2961.1	3636.9	3351.7
2073	523.00	-3.9129	-3424.9	3947.9	3712.6
2074	482.09	-78.333	-3933.7	4415.8	4164.0
2075	705.87	62.086	-4033.2	4739.1	4452.2
2076	5349.4	2156.1	-761.40	6110.8	5293.9
2077	3742.2	1144.2	-792.34	4534.5	3940.9
2078	2885.8	702.89	-950.44	3836.2	3332.8
2079	2351.4	417.56	-917.91	3269.4	2847.1
2080	1906.3	177.18	-1023.4	2929.7	2550.9
2081	1514.2	45.043	-1282.7	2796.9	2423.2
2082	1169.8	6.0336	-1699.6	2869.3	2499.6
2083	877.78	15.430	-2215.0	3092.8	2764.4
2084	641.65	12.023	-2797.1	3438.7	3171.2
2085	530.50	-26.846	-3400.3	3930.8	3683.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
2086	545.17	-208.50	-3947.7	4492.9	4167.5
2087	801.89	-6.0725	-3922.1	4724.0	4376.3
2089	9885.4	2408.9	-34.450	9919.9	8951.9
2090	-6287.7	-7769.9	-20505.	14217.	13537.
2091	-2890.2	-4290.6	-11905.	9014.9	8402.7
2092	29163.	5198.4	1435.0	27728.	26051.
2093	24777.	4722.3	2128.0	22649.	21470.
2094	20933.	3980.7	1594.8	19338.	18262.
2095	17057.	3351.3	1412.8	15644.	14770.
2096	13124.	2654.4	1101.2	12023.	11326.
2097	9228.9	1981.6	828.22	8400.7	7887.5
2098	5339.7	1293.4	542.61	4797.1	4469.2
2099	1579.3	531.62	216.62	1362.7	1235.7
2100	42.173	-6.2030	-2600.9	2643.0	2619.2
2101	-228.93	-642.40	-6445.9	6217.0	6020.9
2102	-696.16	-1374.3	-10337.	9640.9	9320.4
2103	446.76	-1189.6	-13270.	13717.	12976.
2104	11014.	1207.2	-2805.6	13820.	12314.
2105	12559.	1984.9	-1289.8	13849.	12536.
2106	10123.	1726.6	-1175.3	11298.	10163.
2107	8027.8	1384.3	-1005.9	9033.6	8107.3
2108	5974.1	1099.6	-829.50	6803.6	6073.4
2109	3934.7	796.27	-673.58	4608.3	4077.2
2110	1997.0	468.99	-591.55	2588.5	2253.9
2111	621.06	123.90	-1053.6	1674.6	1489.6
2112	218.85	5.6350	-2718.4	2937.2	2836.7
2113	304.82	-267.44	-4684.8	4989.6	4729.5
2114	357.73	-560.84	-7010.4	7368.1	6954.5
2115	1447.2	-368.39	-7870.8	9318.0	8555.9
2116	5175.5	1814.1	664.29	4511.2	4060.3
2118	-1860.3	-3367.7	-9752.4	7892.1	7256.8
2119	-4723.3	-6066.0	-16194.	11471.	10862.
2120	7315.8	1571.0	-1476.0	8791.8	7732.5
2121	8135.0	1434.6	-549.59	8684.5	7882.1
2122	6836.4	1300.3	-355.06	7191.4	6523.2
2123	5357.1	919.67	-325.46	5682.6	5173.6
2124	3974.7	563.24	-283.16	4257.9	3904.1
2125	2693.9	145.41	-310.78	3004.7	2804.5

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
2126	1654.6	-50.485	-797.43	2452.1	2176.9
2127	937.25	-39.011	-1814.4	2751.7	2416.3
2128	464.07	-9.3305	-3086.5	3550.6	3339.2
2129	166.35	-55.310	-4484.6	4651.0	4544.2
2130	113.31	-294.60	-6102.9	6216.3	6022.7
2131	848.59	-252.47	-6649.7	7498.3	7012.9
2132	17315.	2235.8	-229.32	17544.	16451.
2133	16887.	2754.6	966.39	15920.	15106.
2134	14575.	2445.3	848.40	13727.	13002.
2135	11750.	2026.8	765.61	10984.	10411.
2136	8866.4	1541.7	584.51	8281.9	7847.2
2137	6050.7	1048.5	432.41	5618.3	5337.0
2138	3342.4	446.08	271.40	3071.0	2987.5
2139	1211.8	125.58	-740.20	1952.0	1694.1
2140	241.55	-43.934	-3103.7	3345.2	3212.0
2141	-152.57	-293.93	-5831.3	5678.7	5609.4
2142	-428.97	-809.17	-8591.9	8163.0	7979.7
2143	641.72	-538.38	-10401.	11042.	10502.
2145	-45.370	-624.33	-2035.9	1990.6	1773.4
2146	1525.4	-344.03	-2711.7	4237.1	3677.9
2147	1148.8	-985.15	-4545.9	5694.7	4983.1
2148	2462.5	-536.11	-2834.6	5297.1	4600.8
2149	2098.2	-231.53	-3674.8	5772.9	5030.4
2150	1887.1	-189.25	-3794.7	5681.8	4979.6
2151	1564.0	-98.094	-3713.8	5277.8	4673.9
2152	1299.9	.74379	-3605.9	4905.8	4402.4
2153	1036.8	89.540	-3504.4	4541.3	4149.5
2154	801.56	153.99	-3406.1	4207.7	3924.2
2155	641.28	145.49	-3310.3	3951.6	3728.5
2156	612.13	4.5602	-3218.4	3830.5	3565.7
2157	676.13	-214.95	-3133.6	3809.7	3451.6
2158	782.78	-444.23	-3035.0	3817.8	3375.9
2159	862.66	-638.81	-2967.2	3829.9	3342.4
2160	1200.9	-748.49	-4966.4	6167.3	5460.2
2161	425.12	-928.14	-6471.4	6896.5	6329.3
2162	379.39	-937.26	-6525.7	6905.1	6350.0
2163	299.69	-769.46	-5991.1	6290.8	5830.2
2164	295.96	-566.16	-5391.0	5687.0	5308.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
2165	288.75	-379.28	-4826.4	5115.1	4816.0
2166	304.80	-209.72	-4272.5	4577.3	4342.9
2167	368.55	-79.256	-3728.6	4097.1	3892.6
2168	499.17	-7.2374	-3201.2	3700.4	3475.0
2169	702.65	34.754	-2685.2	3387.9	3108.2
2170	939.57	57.607	-2169.5	3109.1	2775.3
2171	786.86	61.023	-1215.9	2002.8	1756.2
2183	573.19	34.430	-3418.8	3992.0	3751.7
2184	688.90	66.852	-3707.2	4396.1	4120.5
2185	824.46	92.030	-3753.4	4577.8	4259.1
2186	21.090	14.008	-11.741	32.831	29.925
2187	-.83227	-16.960	-37.886	37.054	32.179
2188	-3.9261	-26.087	-41.428	37.502	32.656
2189	23.844	6.0497	-3.6919	27.536	24.184
2190	-508.07	-963.01	-2443.5	1935.4	1752.8
2191	338.18	7.0825	-47.136	385.32	361.27
2192	25.796	16.224	-7.5396	33.336	29.729
2193	3873.4	1453.5	999.78	2873.6	2675.8
2194	222.20	77.293	16.932	205.27	182.73
2195	-41.728	-52.513	-82.162	40.434	36.265
2196	253.20	-791.74	-2787.6	3040.8	2676.0

2197	-83.393	-211.91	-231.84	148.45	139.55
2198	57.261	41.442	25.953	31.309	27.115
2199	1659.3	1307.0	615.77	1043.5	919.48
2200	-29.545	-65.094	-247.83	218.28	202.86
2201	-37.000	-51.528	-88.226	51.226	45.727
2202	15.532	5.3142	-9.8600	25.392	22.129
2203	8.5332	3.2277	-9.1036	17.637	15.673
2204	790.08	282.51	-45.897	-835.98	729.50
2205	1.8104	-79.013	-276.12	277.93	247.62
2206	-4.1197	-21.389	-40.387	36.268	31.421
2207	-392.00	-655.01	-2133.1	1741.1	1625.6
2208	-46.799	-132.56	-267.42	220.62	192.63
2209	25.117	8.1757	-13.217	38.335	33.273
2210	-16.063	-26.695	-47.394	31.331	27.597
2211	20.556	16.103	4.5713	15.985	14.288
2212	-314.97	-813.16	-1550.7	1235.8	1076.9
2213	111.38	53.672	-60.571	171.95	151.57

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

NODE	S1	S2	S3	SINT	SEQV
2214	20.614	2.6496	-38.937	59.550	52.907
2215	2126.2	706.38	167.19	1959.0	1752.8
2216	106.56	23.283	-209.53	316.09	283.77
2217	-19.673	-39.183	-58.587	38.914	33.700
2218	17.775	8.0253	1.1989	16.576	14.430
2219	-20.269	-30.543	-63.870	43.601	39.479
2220	1733.4	448.63	-12.070	1745.5	1566.8
2221	259.54	137.00	31.742	227.80	197.47
2222	-11.503	-43.816	-54.623	43.120	38.861
2223	1943.0	522.21	214.92	1728.1	1596.8
2224	468.83	226.64	120.54	348.29	309.21
2225	11.254	-14.226	-62.195	73.449	64.595
2226	34.602	18.789	10.740	23.862	21.027
2227	12.408	.51976	-4.3977	16.806	14.966
2228	704.38	13.399	-996.98	1701.4	1482.0
2229	-10.547	-137.92	-298.99	288.44	250.36
2230	.25600	-12.300	-30.300	30.556	26.602
2231	-63.580	-457.90	-2029.6	1966.1	1801.6
2232	-83.452	-183.16	-522.15	438.70	398.32
2233	8.4187	-11.490	-18.829	27.247	24.420

MINIMUM VALUES

NODE	2090	2090	2048	2211	2211
VALUE	-6287.7	-7769.9	-33100.	15.985	14.288

MAXIMUM VALUES

NODE	2092	135	2011	2048	2048
VALUE	29163.	7909.8	3533.0	30876.	29658.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0
 SHELL NODAL RESULTS ARE AT TOP

***** ESTIMATED BOUNDS CONSIDERING THE EFFECT OF DISCRETIZATION ERROR *****

MINIMUM VALUES

NODE	2024	2024	2048	1	1
VALUE	-26368.	-30314.	-56887.	.00000	.00000

MAXIMUM VALUES

NODE	2092	391	2076	2024	2048
VALUE	49497.	32092.	22092.	55171.	53445.

HOPPER AND ASSOCIATES
ENGINEERS

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/14/99 PAGE: B1
SUBJECT: APPENDIX B BY: AJS CK: SR SHT: 1 OF 162

APPENDIX B

ANSYS PRESSURE ANALYSIS

```
/filnam,pres2B
/PREP7
/TITLE,DSC STRUCTURAL ANALYSIS MODEL
KAN,0
ET,1,42,,,1
C*** STAINLESS STEEL
EX,1,26.5E6
NUXY,1,0.3
DENS,1,0.283
ALPX,1,9.8E-6
C*** CHEMICAL LEAD
EX,2,3.0E6
NUXY,2,0.4
DENS,2,0.411
ALPX,2,16.4E-6
c*** KTEMP,-1 *****
C*** NODAL INPUT
C*** BOTTOM DETAIL
N,1,0.0,0.0
N,7,6.0,0.0
FILL
N,8,6.625,0.0
N,9,7.25,0.0
N,10,8.0,0.0
N,35,33.0,0.0
FILL
N,36,33.275,0.0
N,37,33.55,0.0
NGEN,3,37,1,37,1,0.0,0.5
NGEN,2,37,75,109,1,0.0,0.75
N,147,33.125,1.75
N,148,33.55,1.75
NGEN,2,37,112,145
N,183,33.125,1.75
NGEN,2,35,149,157,1,0.0,1.0
N,193,7.25,2.75
N,194,8.0,2.75
NGEN,2,37,158,183,1,0.0,1.0
N,221,33.125,2.75
N,222,33.55,2.75
NGEN,3,39,184,222,1,0.0,1.0
NGEN,2,39,262,270,1,0.0,1.0
N,310,8.0,6.0
N,335,33.125,6.0
FILL
NGEN,2,35,301,335,1,0.0,0.0
N,371,33.55,6.0
NGEN,2,36,336,344,1,0.0,0.75
NGEN,2,36,345,371,1,0.0,0.5
N,408,7.25,7.75
N,409,8.0,7.75
N,410,5.0,9.0
N,411,6.125,9.0
N,412,7.25,9.0
N,413,8.0,9.0
NGEN,2,4,410,413,1,0.0,1.0
```


C*** ELEMENT GENERATION

C*** BOTTOM DETAIL

E, 1, 2, 39, 38
EGEN, 36, 1, -1
E, 38, 39, 76, 75
EGEN, 36, 1, -1
E, 75, 76, 113, 112
EGEN, 36, 1, -1
MAT, 2
E, 149, 150, 185, 184
EGEN, 8, 1, -1
MAT, 1
E, 120, 121, 194, 193
MAT, 2
E, 158, 159, 196, 195
EGEN, 24, 1, -1
E, 182, 183, 220, 219
MAT, 1
E, 147, 148, 222, 221
MAT, 2
E, 184, 185, 224, 223
EGEN, 8, 1, -1
MAT, 1
E, 193, 194, 233, 232
MAT, 2
E, 195, 196, 235, 234
EGEN, 25, 1, -1
MAT, 1
E, 221, 222, 261, 260
MAT, 2
E, 223, 224, 263, 262
EGEN, 8, 1, -1
MAT, 1
E, 232, 233, 272, 271
MAT, 2
E, 234, 235, 274, 273
EGEN, 25, 1, -1
MAT, 1
E, 260, 261, 300, 299
MAT, 2
E, 262, 263, 302, 301
EGEN, 8, 1, -1
MAT, 1
E, 271, 272, 345, 344
MAT, 2
E, 273, 274, 311, 310
EGEN, 25, 1, -1
MAT, 1
E, 299, 300, 371, 370
E, 336, 337, 373, 372
EGEN, 35, 1, -1
E, 380, 381, 409, 408
E, 408, 409, 413, 412
E, 412, 413, 417, 416
E, 411, 412, 416, 415
E, 410, 411, 415, 414

C*** DSC SHELL NODES

N,425,33.0,-0.75
N,426,33.275,-0.75
N,427,33.55,-0.75
NGEN,5,3,425,427,1,0.0,-1.0
N,440,33.0,-5.75
N,441,33.55,-5.75
NGEN,148,2,440,441,1,0.0,-1.0
N,736,33.0,-153.75
N,737,33.275,-153.75
N,738,33.55,-153.75
NGEN,6,3,736,738,1,0.0,-1.0

C*** DSC SHELL ELEMENTS

E,425,426,36,35
E,426,427,37,36
E,428,429,426,425
E,429,430,427,426
EGEN,4,3,291,292
E,440,438,437
E,440,441,438
E,441,439,438
E,442,443,441,440
EGEN,147,2,-1
E,736,737,734
E,737,735,734
E,736,738,735
E,739,740,737,736
E,740,741,738,737
EGEN,5,3,452,453,1

C*** BOTTOM DETAIL NODAL INPUT

LOCAL,11,0,0.0,-166,0.0
N,754,32.25,9.25
N,755,32.25,8.25
N,756,32.25,7.25
N,757,0.0,7.25
N,789,32.0,7.25
FILL
N,757,0.0,7.25
FILL,757,789
N,790,32.25,7.25
N,791,33.0,7.25
NGEN,2,35,757,789,1,0.0,-0.5
N,825,32.5,6.75
N,826,33.0,6.75
N,827,33.0,6.75
N,828,33.275,6.75
N,829,33.55,6.75
NGEN,3,38,792,829,1,0.0,-0.5
NGEN,3,38,868,901,1
NGEN,2,34,906,939,1,0.0,-1.0
N,974,32.5,4.75
N,975,33.0,4.75
N,976,33.0,4.75
N,977,33.275,4.75
N,978,33.55,4.75

NGEN,3,39,940,978,1,0.0,-1.0
NGEN,2,39,1018,1051,1,0.0,-1.5
NGEN,2,34,1057,1090,1
N,1125,33.0,1.25
N,1126,33.0,1.25
N,1127,33.275,1.25
N,1128,33.55,1.25
NGEN,2,38,1091,1128,1,0.0,-0.25
NGEN,2,38,1129,1163,1
N,1202,0.0,0.375
N,1234,32.0,0.375
FILL
N,1235,32.5,0.375
N,1236,33.0,0.375
N,1237,33.275,0.375
N,1238,33.55,0.375
NGEN,2,37,1202,1238,1,0.0,-0.625

C*** BOTTOM DETAIL ELEMENT GENERATION

E,755,748,745,754
E,756,751,748,755
E,792,793,758,757
EGEN,33,1,-1
E,825,826,791,790
E,827,828,752,751
E,828,829,753,752
E,830,831,793,792
EGEN,34,1,-1
E,865,866,828,827
E,866,867,829,828
E,868,869,831,830
EGEN,34,1,-1
E,903,904,866,865
E,904,905,867,866
MAT,2
E,940,941,907,906
EGEN,33,1,-1
MAT,1
E,974,975,902,901
E,976,977,904,903
E,977,978,905,904
MAT,2
E,979,980,941,940
EGEN,33,1,-1
MAT,1
E,1013,1014,975,974
E,1015,1016,977,976
E,1016,1017,978,977
MAT,2
E,1018,1019,980,979
EGEN,33,1,-1
MAT,1
E,1052,1053,1014,1013
E,1054,1055,1016,1015
E,1055,1056,1017,1016
MAT,2
E,1057,1058,1019,1018

```
EGEN,33,1,-1
MAT,1
E,1124,1125,1053,1052
E,1126,1127,1055,1054
E,1127,1128,1056,1055
E,1129,1130,1092,1091
EGEN,34,1,-1
E,1164,1165,1127,1126
E,1165,1166,1128,1127
E,1202,1203,1168,1167
EGEN,34,1,-1
E,1236,1237,1165,1164
E,1237,1238,1166,1165
E,1239,1240,1203,1202
EGEN,36,1,-1
WSORT,Y
C*** AXISYMETRIC BOUNDARY CONDITIONS
c*** SYMBC,,,0.0 *****
csys,0
nsel,s,loc,x,0
dsym,symm,x,0
c*** SYMBC,11,,0.0 *****
c***csys,11
c***nsel,s,loc,y,0
c***dsym,symm,x,11
allsel
C*** CONSTANT COUPLED NODES
CP,1,UX,120,157
CP,2,UX,121,158
CP,3,UX,192,193
CP,4,UX,194,195
CP,5,UX,231,232
CP,6,UX,233,234
CP,7,UX,270,271
CP,8,UX,272,273
CP,9,UX,309,344
CP,10,UX,310,345
CP,12,UX,183,147
CP,13,UX,220,221
CP,14,UX,259,260
CP,15,UX,298,299
CP,16,UX,335,370
CP,17,UX,751,791
CP,18,UX,826,827
CP,19,UX,864,865
CP,20,UX,902,903
CP,21,UX,901,939
CP,22,UX,973,974
CP,23,UX,975,976
CP,24,UX,1012,1013
CP,25,UX,1014,1015
CP,26,UX,1051,1052
CP,27,UX,1053,1054
CP,28,UX,1090,1124
CP,29,UX,1125,1126
CP,30,UX,1164,1201
C*** LOADING CONDITIONS
```

CP, 31, UY, 112, 149
CPSGEN, 34, 1, -1
CP, 65, UY, 147, 183
CP, 66, UY, 868, 906
CPSGEN, 34, 1, -1
CP, 100, UY, 1057, 1091
CPSGEN, 34, 1, -1
CP, 134, UY, 1129, 1167
CPSGEN, 34, 1, -1
CP, 168, UY, 301, 336
CPSGEN, 35, 1, -1
C*** BOUNDARY CONDITIONS
D, 37, UX
D, 1275, UY
C***
C***PRESSURE LOADING
ESEL, S, ELEM, , 1, 34, 1
SFE, ALL, 1, PRES, , 1.0
ALLSEL
ESEL, S, ELEM, , 289, 297, 2
SFE, ALL, 4, PRES, , 1.0
ALLSEL
SFE, 299, 4, PRES, , 1.0
ESEL, S, ELEM, , 302, 448, 1
SFE, ALL, 4, PRES, , 1.0
ALLSEL
SFE, 449, 4, PRES, , 1.0
ESEL, S, ELEM, , 452, 460, 2
SFE, ALL, 4, PRES, , 1.0
ALLSEL
SFE, 462, 3, PRES, , 1.0
SFE, 462, 4, PRES, , 1.0
SFE, 463, 4, PRES, , 1.0
ESEL, S, ELEM, , 464, 496, 1
SFE, ALL, 3, PRES, , 1.0
ALLSEL
SAVE
/SOLU
ANTYPE, STATIC
SOLVE
SAVE
FINI
/POST1
ALLSEL
/OUT, PRESTR2B, OUT
PRNSTR, ALL
/OUT
/title, DSC PRESSURE ANALYSIS (INNER BOUNDARY) - 0.55" SHELL THICKNESS
PLNSOL, S, INT

PRINT S NODAL SOLUTION PER NODE

*** WARNING *** CP= 5233.350 TIME= 10:19:15
The selected element set contains mixed materials.
This could invalidate error estimation.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1	-18.899 18.480	-.41945	-18.899	.00000	.00000	.00000	-.41945	-18.899	-18.899	18.480
2	-18.797 17.401	-1.5069	-18.775	1.1886	.00000	.00000	-1.4256	-18.775	-18.878	17.452
3	-18.178 17.620	-.91354	-18.303	1.8473	.00000	.00000	-.71810	-18.303	-18.374	17.656
4	-17.767 17.066	-1.0010	-18.125	1.1598	.00000	.00000	-.92112	-17.846	-18.125	17.204
5	-17.679 16.825	-1.0850	-17.987	.91598	.00000	.00000	-1.0346	-17.729	-17.987	16.952
6	-17.551 16.805	-.94762	-17.861	.70626	.00000	.00000	-.91763	-17.581	-17.861	16.943
7	-17.657 16.814	-.97035	-17.805	.76607	.00000	.00000	-.93526	-17.692	-17.805	16.869
8	-21.326 18.069	-2.8579	-19.460	2.3390	.00000	.00000	-2.5662	-19.460	-21.618	19.051
9	-31.438 27.063	-2.4712	-22.856	4.7711	.00000	.00000	-1.7056	-22.856	-32.204	30.498
10	-47.984 42.479	-.38577	-28.864	5.2708	.00000	.00000	.19090	-28.864	-48.561	48.752
11	-61.945 54.693	.56044	-36.487	3.0257	.00000	.00000	.70656	-36.487	-62.091	62.798
12	-65.658 57.122	-.44609	-41.498	.84330	.00000	.00000	-.43519	-41.498	-65.669	65.233
13	-62.867 54.756	-1.0864	-43.614	.20163	.00000	.00000	-1.0857	-43.614	-62.868	61.782
14	-58.233 51.813	-.79409	-44.010	-.45338E-01	.00000	.00000	-.79405	-44.010	-58.233	57.434
15	-53.368 48.352	-.96779	-43.847	-.32303	.00000	.00000	-.96580	-43.847	-53.370	52.404
16	-48.024	-.95066	-42.939	-.48168	.00000	.00000	-.94574	-42.939	-48.029	47.084

17	44.589 41.145	-.96462	-41.584	-.61057	.00000	.00000	-.95567	-41.584	-42.598	41.643
18	-37.072 37.599	-.96074	-39.852	-.72647	.00000	.00000	-.94613	-37.086	-39.852	38.906

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0.

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
19	-31.454 34.149	-.95882	-37.806	-.83862	.00000	.00000	-.93578	-31.477	-37.806	36.870
20	-25.697 30.864	-.95601	-35.480	-.94988	.00000	.00000	-.91960	-25.734	-35.480	34.560
21	-19.767 27.869	-.95409	-32.896	-1.0607	.00000	.00000	-.89448	-19.827	-32.896	32.002
22	-13.636 25.370	-.95286	-30.073	-1.1705	.00000	.00000	-.84574	-13.743	-30.073	29.227
23	-7.2863 23.655	-.95237	-27.022	-1.2785	.00000	.00000	-.70403	-7.5346	-27.022	26.318
24	-7.70797 23.053	-.95262	-23.757	-1.3838	.00000	.00000	.55891	-2.2195	-23.757	24.316
25	6.1008 23.804	-.95341	-20.288	-1.4855	.00000	.00000	6.4008	-1.2535	-20.288	26.689
26	13.136 25.933	-.95454	-16.627	-1.5830	.00000	.00000	13.311	-1.1302	-16.627	29.938
27	20.392 29.266	-.95524	-12.782	-1.6773	.00000	.00000	20.523	-1.0862	-12.782	33.305
28	27.878 33.563	-.95053	-8.7571	-1.7731	.00000	.00000	27.986	-1.0592	-8.7571	36.743
29	35.617 38.631	-.94766	-4.5523	-1.8766	.00000	.00000	35.714	-1.0437	-4.5523	40.266
30	43.756 44.418	-.91807	-.11914	-2.0162	.00000	.00000	43.847	-.11914	-1.0089	44.856
31	52.349 50.855	-.85606	4.5655	-2.1966	.00000	.00000	52.440	4.5655	-.94659	53.386
32	62.992 59.443	-.94671	9.9266	-2.7290	.00000	.00000	63.108	9.9266	-1.0630	64.171
33	70.649 64.424	.22504	14.958	-1.9516	.00000	.00000	70.703	14.958	.17100	70.532
34	92.860 90.361	-7.8162	21.593	-6.4621	.00000	.00000	93.273	21.593	-8.2293	101.50

35	76.111 36.277	62.616	41.269	-9.5394	.00000	.00000	82.909	58.132	41.269	41.640
36	64.726 47.213	14.517	22.974	-4.5136	.00000	.00000	65.129	22.974	14.114	51.015

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
37	68.562 94.132	-39.908	8.4007	-.67536	.00000	.00000	68.566	8.4007	-39.913	108.48
38	-11.331 10.744	-.58760	-11.331	.00000	.00000	.00000	-.58760	-11.331	-11.331	10.744
39	-11.329 10.034	-1.2818	-11.247	-.43072	.00000	.00000	-1.2634	-11.247	-11.347	10.084
40	-11.051 10.192	-.91611	-11.047	-.63625	.00000	.00000	-.87632	-11.047	-11.090	10.214
41	-10.918 10.013	-.99121	-11.033	-.43388	.00000	.00000	-.97228	-10.937	-11.033	10.061
42	-10.796 9.7965	-1.1093	-10.993	-.25481	.00000	.00000	-1.1026	-10.802	-10.993	9.8907
43	-11.070 9.9830	-1.0546	-11.002	-.96410E-01	.00000	.00000	-1.0537	-11.002	-11.071	10.017
44	-11.326 10.458	-.75032	-11.084	.53429E-01	.00000	.00000	-.75005	-11.084	-11.327	10.577
45	-11.469 8.6061	-3.6151	-11.955	1.6657	.00000	.00000	-3.2764	-11.808	-11.955	8.6787
46	-14.809 12.926	-5.5526	-13.458	5.5401	.00000	.00000	-2.9619	-13.458	-17.400	14.438
47	-19.560 20.993	.35251	-13.649	6.5060	.00000	.00000	2.2898	-13.649	-21.497	23.787
48	-22.754 22.450	2.0436	-15.113	2.5948	.00000	.00000	2.3122	-15.113	-23.022	25.335
49	-23.823 20.452	-.94491	-17.438	-.24155	.00000	.00000	-.94236	-17.438	-23.826	22.885
50	-22.601 19.950	-.70810	-17.657	-.91398	.00000	.00000	-.67001	-17.657	-22.639	21.969
51	-21.376 19.266	-.72232	-17.806	-1.3650	.00000	.00000	-.63250	-17.806	-21.466	20.834
52	-19.368 17.876	-.86958	-17.527	-1.6371	.00000	.00000	-.72582	-17.527	-19.511	18.786
53	-17.294	-.88484	-17.014	-1.7860	.00000	.00000	-.69269	-17.014	-17.486	16.793

16.5
54 -15.094 -15.195 -.90149 -16.317 -1.8814 .00000 .00000 -.65632 -15.339 -16.317 15.661

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
55	-12.836 13.873	-.90287	-15.478	-1.9626	.00000	.00000	-.58837	-13.151	-15.478	14.890
56	-10.513 12.627	-.90224	-14.520	-2.0425	.00000	.00000	-.48617	-10.929	-14.520	14.034
57	-8.1164 11.517	-.90051	-13.454	-2.1258	.00000	.00000	-.32080	-8.6961	-13.454	13.134
58	-5.6341 10.626	-.89927	-12.289	-2.2129	.00000	.00000	-.26087E-01	-6.5073	-12.289	12.263
59	-3.0572 10.066	-.89874	-11.029	-2.3025	.00000	.00000	.56490	-4.5209	-11.029	11.594
60	-.37979 9.9551	-.89905	-9.6794	-2.3931	.00000	.00000	1.7677	-3.0466	-9.6794	11.447
61	2.4010 10.371	-.90027	-8.2436	-2.4830	.00000	.00000	3.7320	-2.2312	-8.2436	11.976
62	5.2850 11.316	-.90235	-6.7255	-2.5705	.00000	.00000	6.2135	-1.8309	-6.7255	12.939
63	8.2704 12.725	-.90469	-5.1286	-2.6546	.00000	.00000	8.9831	-1.6174	-5.1286	14.112
64	11.355 14.512	-.90692	-3.4562	-2.7367	.00000	.00000	11.938	-1.4900	-3.4562	15.395
65	14.541 16.597	-.90018	-1.7075	-2.8227	.00000	.00000	15.041	-1.4000	-1.7075	16.749
66	17.862 18.962	-.89706	.12220	-2.9287	.00000	.00000	18.309	.12220	-1.3437	19.653
67	21.298 21.512	-.83745	2.0448	-3.0701	.00000	.00000	21.716	2.0448	-1.2554	22.972
68	25.271 24.725	-.86373	4.1423	-3.3716	.00000	.00000	25.699	4.1423	-1.2917	26.991
69	28.614 27.064	-.35191	6.2734	-3.7157	.00000	.00000	29.083	6.2734	-.82095	29.904
70	36.606 34.579	-1.2039	9.3858	-4.2577	.00000	.00000	37.080	9.3858	-1.6774	38.757
71	35.142 34.991	-2.9158	9.7612	-5.7081	.00000	.00000	35.979	9.7612	-3.7535	39.731

HABCE-01/99-0745, Revision 2

84

72 18.2964 21.370 12.546 1.7271 .0000 .00000 22.126 17.423 12.546 9.5794

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
73	19.252 -7.3353	16.301	5.7333	7.7705	.00000	.00000	19.516	5.7333	-2.4812	21.997
74	19.140 -8.8103	-25.922	-9.8971	5.5060	.00000	.00000	-7.1918	-9.8971	-27.540	20.349
75	3.1567 -3.9152	-7.5844	-3.9152	.00000	.00000	.00000	-7.5844	-3.9152	-3.9152	3.1567
76	3.1108 -3.9512	-9.0050	-3.8912	-4.2801	.00000	.00000	-8.4158	-3.8912	-4.0101	3.1685
77	3.3102 -3.9508	-8.6660	-3.9129	-7.2122	.00000	.00000	-7.0629	-3.9129	-4.1111	3.4049
78	3.1543 -3.9835	-9.8480	-3.9914	-5.5791	.00000	.00000	-8.8437	-3.9914	-4.0840	3.1996
79	2.9179 -3.9958	-1.1612	-4.0351	-3.4925	.00000	.00000	-1.1188	-4.0351	-4.0382	2.9195
80	2.9458 -4.0816	-1.1199	-4.0472	-4.7696E-01	.00000	.00000	-1.1191	-4.0472	-4.0824	2.9633
81	3.3206 -4.6578	-1.1672	-4.2528	.17470	.00000	.00000	-1.1585	-4.2528	-4.6665	3.5080
82	1.9251 -1.6782	-2.1084	-3.7799	.50901E-01	.00000	.00000	-1.6722	-2.1143	-3.7799	2.1076
83	17.877 6.7673	-12.844	-3.6967	3.1992	.00000	.00000	7.2760	-3.6967	-13.353	20.629
84	8.5836 9.5991	4.2291	3.7032	3.7300	.00000	.00000	11.510	3.7032	2.3182	9.1919
85	10.600 13.018	1.3253	4.3412	.77717	.00000	.00000	13.069	4.3412	1.2739	11.795
86	16.400 18.366	-.45221	7.1967	-.29004	.00000	.00000	18.371	7.1967	-.45668	18.821
87	14.623 16.354	-.37319	7.7906	-1.1437	.00000	.00000	16.432	7.7906	-.45102	16.881
88	14.153 15.395	-.54877	8.3387	-1.7141	.00000	.00000	15.577	8.3387	-.73098	16.308
89	13.592 14.319	-.72121	8.6254	-1.9790	.00000	.00000	14.575	8.6254	-.97727	15.552
90	13.284	-.77795	8.7894	-2.1319	.00000	.00000	13.600	8.7894	-1.0941	14.694

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
91	12.263 12.346	-.79803	8.8322	-2.2257	.00000	.00000	12.632	8.8322	-1.1669	13.799
92	11.279 11.746	-.80257	8.7842	-2.3029	.00000	.00000	11.703	8.7842	-1.2266	12.930
93	10.313 11.173	-.80046	8.6584	-2.3790	.00000	.00000	10.801	8.6584	-1.2883	12.089
94	9.3528 10.628	-.79737	8.4661	-2.4593	.00000	.00000	9.9173	8.4661	-1.3619	11.279
95	8.3893 10.110	-.79500	8.2154	-2.5442	.00000	.00000	9.0470	8.2154	-1.4527	10.500
96	7.4142 9.6180	-.79400	7.9128	-2.6324	.00000	.00000	8.1859	7.9128	-1.5657	9.7516
97	6.4218 9.1569	-.79455	7.5634	-2.7222	.00000	.00000	7.5634	7.3335	-1.7063	9.2697
98	5.4084 8.7332	-.79680	7.1714	-2.8116	.00000	.00000	7.1714	6.4928	-1.8812	9.0527
99	4.3718 8.3562	-.80066	6.7404	-2.8988	.00000	.00000	6.7404	5.6704	-2.0993	8.8397
100	3.3109 8.0382	-.80549	6.2737	-2.9829	.00000	.00000	6.2737	4.8768	-2.3714	8.6451
101	2.2251 7.7943	-.80820	5.7748	-3.0650	.00000	.00000	5.7748	4.1281	-2.7113	8.4861
102	1.1132 7.6479	-.80365	5.2472	-3.1518	.00000	.00000	5.2472	3.4491	-3.1395	8.3868
103	-.46736E-01 7.6376	-.77474	4.6911	-3.2612	.00000	.00000	4.6911	2.8707	-3.6922	8.3833
104	-1.1811 7.8135	-.73476	4.1248	-3.4189	.00000	.00000	4.1248	2.4683	-4.3842	8.5085
105	-2.7184 8.4152	-.59934	3.4505	-3.7123	.00000	.00000	3.4505	2.2016	-5.5194	8.9691
106	-3.5982 9.0863	-.94330E-01	3.0370	-4.0623	.00000	.00000	3.0370	2.5777	-6.2703	9.307
107	-6.1788 11.456	-1.3409	1.6283	-5.3124	.00000	.00000	2.0773	1.6283	-9.5971	11.674
108	-5.8794 11.000	1.7792	2.2401	-4.4200	.00000	.00000	3.7980	2.2401	-7.8981	11.695

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
109	7.0489 7.6395	6.1135	7.1229	4.3747	.00000	.00000	10.981	7.1229	2.1816	8.7992
110	7.7622 20.967	4.2194	6.8351	11.965	.00000	.00000	18.087	6.8351	-6.1049	24.191
111	-3.9876 26.117	24.287	10.405	8.6159	.00000	.00000	26.997	10.405	-3.1085	30.105
112	7.3462 8.1073	-.76114	7.3462	.00000	.00000	.00000	7.3462	7.3462	-.76114	8.1073
113	7.1774 7.9500	-.71716	7.2852	-.70954E-01	.00000	.00000	7.2852	7.1780	-.71780	8.0030
114	6.8044 7.7128	-.81214	6.9933	-.23384E-01	.00000	.00000	6.9933	6.8045	-.81221	7.8055
115	6.3812 7.5137	-.97748	6.6814	.43640E-01	.00000	.00000	6.6814	6.3815	-.97774	7.6591
116	6.1210 7.4854	-1.2147	6.4101	.69979E-01	.00000	.00000	6.4101	6.1217	-1.2153	7.6255
117	6.5258 7.5855	-1.0605	6.4939	.27621	.00000	.00000	6.5359	6.4939	-1.0705	7.6064
118	7.8003 9.2600	-1.8769	6.7489	.62393	.00000	.00000	7.8404	6.7489	-1.9170	9.7574
119	5.5409 6.3736	.33700	6.7685	-1.3720	.00000	.00000	6.7685	5.8804	-.25670E-02	6.7710
120	10.476 27.934	-18.999	2.6629	-5.1897	.00000	.00000	11.363	2.6629	-19.886	31.248
121	41.428 30.091	8.1318	21.022	-4.4673	.00000	.00000	42.016	21.022	7.5428	34.474
122	86.794 75.307	-.85835E-01	40.204	.14325	.00000	.00000	86.794	40.204	-.86071E-01	86.880
123	78.574 67.739	.51943	43.212	1.3926	.00000	.00000	78.599	43.212	.49460	78.104
124	75.815 66.434	-.26726	46.228	.42281	.00000	.00000	75.818	46.228	-.26961	76.087
125	70.776 62.860	-.36600	47.674	-.87766E-01	.00000	.00000	70.777	47.674	-.36611	71.141
126	65.118 59.048	-.59410	47.998	-.38331	.00000	.00000	65.120	47.998	-.59634	65.711

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SEQV	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
127	59.288		-.67824	47.606	-.58741	.00000	.00000	59.294	47.606	-.68399	59.978
	55.072										
128	53.440		-.70935	46.666	-.75240	.00000	.00000	53.450	46.666	-.71980	54.170
	51.117										
129	47.575		-.72011	45.282	-.89988	.00000	.00000	47.592	45.282	-.73688	48.329
	47.216										
130	41.668		-.72120	43.526	-1.0437	.00000	.00000	43.526	41.694	-.74688	44.272
	43.386										
131	35.668		-.72007	41.443	-1.1872	.00000	.00000	41.443	35.707	-.75877	42.201
	39.646										
132	29.532		-.71917	39.065	-1.3308	.00000	.00000	39.065	29.590	-.77761	39.843
	36.052										
133	23.225		-.71949	36.417	-1.4737	.00000	.00000	36.417	23.315	-.80984	37.227
	32.707										
134	16.724		-.72141	33.517	-1.6145	.00000	.00000	33.517	16.872	-.86957	34.387
	29.785										
135	10.015		-.72526	30.381	-1.7521	.00000	.00000	30.381	10.293	-1.0039	31.385
	27.534										
136	3.0921		-.73088	27.025	-1.8851	.00000	.00000	27.025	3.8653	-1.5041	28.529
	26.259										
137	-4.0440		-.73810	23.461	-2.0131	.00000	.00000	23.461	.21370	-4.9958	28.457
	26.243										
138	-11.391		-.74070	19.703	-2.1370	.00000	.00000	19.703	-.32792	-11.804	31.507
	27.619										
139	-18.961		-.74100	15.757	-2.2624	.00000	.00000	15.757	-.46427	-19.237	34.994
	30.332										
140	-26.778		-.68782	11.635	-2.4001	.00000	.00000	11.635	-.46887	-26.997	38.633
	34.225										
141	-35.046		-.69297	7.2514	-2.5982	.00000	.00000	7.2514	-.49758	-35.241	42.493
	39.197										
142	-43.628		-.32494	2.7638	-2.7890	.00000	.00000	2.7638	-.14605	-43.807	46.571
	45.186										
143	-53.862		-.36025	-2.4461	-3.3519	.00000	.00000	-.15107	-2.4461	-54.071	53.921
	52.810										
144	-65.400		-.17108	-8.1731	-4.0399	.00000	.00000	.78180E-01	-8.1731	-65.649	65.721
	62.014										

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
145	-78.643 74.240	1.9756	-13.986	-3.8463	.00000	.00000	2.1587	-13.986	-78.826	80.984
146	-94.311 88.709	3.9044	-20.937	-3.9082	.00000	.00000	4.0597	-20.937	-94.466	98.526
147	-41.873 33.199	-8.6224	-9.2606	-2.4058	.00000	.00000	-8.4492	-9.2606	-42.046	33.597
148	-11.255 39.246	32.832	12.178	-5.1837	.00000	.00000	33.433	12.178	-11.856	45.289
149	-1.4839 1.0147	-.46919	-1.4839	.00000	.00000	.00000	-.46919	-1.4839	-1.4839	1.0147
150	-1.4201 .84571	-.60578	-1.4767	-.30368E-01	.00000	.00000	-.60465	-1.4213	-1.4767	.87208
151	-1.2350 .54796	-.77911	-1.3756	-.53310E-01	.00000	.00000	-.77295	-1.2411	-1.3756	.60269
152	-.96147 .34835	-.90300	-1.2151	-.11370	.00000	.00000	-.81483	-1.0496	-1.2151	.40025
153	-.55029 .65032	-1.1113	-1.0066	-.22802	.00000	.00000	-.46931	-1.0066	-1.1923	.72297
154	.14130 1.4378	-1.3107	-.63188	-.40155	.00000	.00000	.24494	-.63188	-1.4144	1.6593
155	1.5173 2.7065	-1.1486	.20637	-.81538	.00000	.00000	1.7469	.20637	-1.3782	3.1251
156	3.7230 4.9399	-1.1241	1.3853	-1.5027	.00000	.00000	4.1510	1.3853	-1.5521	5.7032
157	5.1516 3.4720	3.3654	4.0474	-1.7905	.00000	.00000	6.2594	4.0474	2.2577	4.0017
158	-30.915 24.861	-2.8184	-12.814	-1.7860	.00000	.00000	-2.7053	-12.814	-31.028	28.323
159	-27.574 24.725	.89092	-12.848	-1.0687	.00000	.00000	.93099	-12.848	-27.614	28.545
160	-22.467 19.940	.46085	-12.728	-.34762	.00000	.00000	.46612	-12.728	-22.472	22.938
161	-19.847 17.576	.14103	-12.888	-.17659	.00000	.00000	.14259	-12.888	-19.848	19.991
162	-17.975 15.824	-.27121	-13.023	-.20041	.00000	.00000	-.26894	-13.023	-17.977	17.707

HABGE-01/99-0745, Revision 2 B16

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SKY	SYZ	SXZ	S1	S2	S3	SINT
163	-16.231 14.376	-.47773	-12.869	-.23622	.00000	.00000	-.47418	-12.869	-16.234	15.760
164	-14.577 13.110	-.57177	-12.524	-.29776	.00000	.00000	-.56545	-12.524	-14.583	14.017
165	-12.941 11.923	-.60297	-12.025	-.37117	.00000	.00000	-.59182	-12.025	-12.952	12.360
166	-11.285 10.763	-.60804	-11.401	-.44802	.00000	.00000	-.58927	-11.304	-11.401	10.812
167	-9.5880 9.6144	-.60374	-10.670	-.52442	.00000	.00000	-.57323	-9.6185	-10.670	10.097
168	-7.8379 8.4887	-.59785	-9.8451	-.59943	.00000	.00000	-.54855	-7.8872	-9.8451	9.2965
169	-6.0270 7.4248	-.59341	-8.9340	-.67287	.00000	.00000	-.51132	-6.1091	-8.9340	8.4226
170	-4.1495 6.4969	-.59135	-7.9426	-.74486	.00000	.00000	-.44172	-4.2992	-7.9426	7.5009
171	-2.2013 5.8271	-.59198	-6.8754	-.81563	.00000	.00000	-.25090	-2.5424	-6.8754	6.6245
172	-.17896 5.5757	-.59547	-5.7358	-.88542	.00000	.00000	.52237	-1.2968	-5.7358	6.2581
173	1.9204 5.8645	-.60179	-4.5260	-.95445	.00000	.00000	2.2409	-.92226	-4.5260	6.7669
174	4.0987 6.6850	-.60962	-3.2479	-1.0227	.00000	.00000	4.3113	-.82218	-3.2479	7.5592
175	6.3574 7.9247	-.61468	-1.9014	-1.0901	.00000	.00000	6.5239	-.78114	-1.9014	8.4253
176	8.6959 9.4559	-.60584	-.48447	-1.1556	.00000	.00000	8.8373	-.48447	-.74726	9.5846
177	11.118 11.182	-.56535	1.0093	-1.2206	.00000	.00000	11.244	1.0093	-.69153	11.935
178	13.613 13.014	-.46006	2.5873	-1.2787	.00000	.00000	13.728	2.5873	-.57530	14.304
179	16.201 14.911	-.26158	4.2651	-1.3374	.00000	.00000	16.309	4.2651	-.36951	16.676
180	18.776 16.719	.67270E-01	6.0151	-1.3432	.00000	.00000	18.872	6.0151	-.28677E-01	18.901

HABGE-01/99-0745, Revision 2 13/7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

TIME= 0.00 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
181	22.156 18.862	.95227	8.3164	-1.6446	.00000	.00000	22.282	8.3164	.82547	21.457
182	29.356 25.668	.58541	11.724	-3.0279	.00000	.00000	29.671	11.724	.27020	29.401
183	34.597 26.167	5.7117	16.801	-3.9885	.00000	.00000	35.137	16.801	5.1711	29.966
184	.43703 .84171	-.40468	.43703	.00000	.00000	.00000	.43703	.43703	-.40468	.84171
185	.47023 .98155	-.50639	.43584	-.11842	.00000	.00000	.48438	.43584	-.52054	1.0049
186	.56996 1.2724	-.64967	.46083	-.29023	.00000	.00000	.63550	.46083	-.71521	1.3507
187	.73213 1.6325	-.79029	.53803	-.44918	.00000	.00000	.85478	.53803	-.91293	1.7677
188	.97700 2.0609	-1.0090	.65097	-.53053	.00000	.00000	1.1098	.65097	-1.1418	2.2517
189	1.2097 2.4653	-1.1713	.80113	-.63621	.00000	.00000	1.3691	.80113	-1.3306	2.6997
190	1.1042 2.4943	-1.0168	.92581	-.83061	.00000	.00000	1.3908	.92581	-1.3033	2.6941
191	.26884 1.9340	-.36293	.85139	-.93696	.00000	.00000	.94173	.85139	-1.0358	1.9775
192	-.46154 1.9953	.84742	.90463	-.85437	.00000	.00000	1.2692	.90463	-.88330	2.1525
193	-13.443 16.628	-1.7126	1.7693	-5.3522	.00000	.00000	1.7693	.36243	-15.518	17.287
194	-13.196 13.010	-7.9810	-1.7423	-4.8515	.00000	.00000	-1.7423	-5.0808	-16.097	14.354
195	-10.877 8.8611	-1.4585	-4.3871	-1.7148	.00000	.00000	-1.1560	-4.3871	-11.179	10.023
196	-10.687 10.176	.62372	-4.4822	-1.5598	.00000	.00000	.83487	-4.4822	-10.898	11.733
197	-10.818 10.251	.69406	-5.4236	-1.3618	.00000	.00000	.85296	-5.4236	-10.976	11.829
198	-9.6531 8.7773	.12359	-5.8087	-1.1920	.00000	.00000	.26682	-5.8087	-9.7964	10.063

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
199	-8.5089 7.5798	-.22878	-5.8781	-1.1189	.00000	.00000	-.80234E-01	-5.8781	-8.6574	8.5772
200	-7.5653 6.7321	-.41448	-5.8167	-1.1005	.00000	.00000	-.24895	-5.8167	-7.7309	7.4819
201	-6.6973 6.0730	-.49553	-5.6458	-1.1308	.00000	.00000	-.29579	-5.6458	-6.8970	6.6012
202	-5.8462 5.5044	-.52538	-5.3900	-1.1841	.00000	.00000	-.27379	-5.3900	-6.0978	5.8240
203	-4.9816 4.9832	-.53099	-5.0637	-1.2452	.00000	.00000	-.20627	-5.0637	-5.3063	5.1000
204	-4.0914 4.5025	-.52792	-4.6786	-1.3085	.00000	.00000	-.99041E-01	-4.5203	-4.6786	4.5796
205	-3.1698 4.0795	-.52320	-4.2424	-1.3722	.00000	.00000	.59800E-01	-3.7528	-4.2424	4.3022
206	-2.2137 3.7504	-.51968	-3.7601	-1.4358	.00000	.00000	.30034	-3.0337	-3.7601	4.0605
207	-1.2210 3.5656	-.51822	-3.2353	-1.4996	.00000	.00000	.67057	-2.4098	-3.2353	3.9059
208	-.18989 3.5750	-.51913	-2.6704	-1.5638	.00000	.00000	1.2179	-1.9269	-2.6704	3.8883
209	.88163 3.8058	-.52262	-2.0671	-1.6287	.00000	.00000	1.9531	-1.5941	-2.0671	4.0202
210	1.9956 4.2496	-.52869	-1.4263	-1.6947	.00000	.00000	2.8465	-1.3796	-1.4263	4.2728
211	3.1542 4.8742	-.53625	-.74832	-1.7617	.00000	.00000	3.8601	-.74832	-1.2422	5.1023
212	4.3588 5.6402	-.54150	-.32146E-01	-1.8289	.00000	.00000	4.9662	-.32146E-01	-1.1488	6.1150
213	5.6096 6.5088	-.53432	.72522	-1.8945	.00000	.00000	6.1469	.72522	-1.0715	7.2184
214	6.9002 7.4385	-.49783	1.5268	-1.9562	.00000	.00000	7.3856	1.5268	-.98323	8.3688
215	8.2292 8.3800	-.39455	2.3850	-2.0083	.00000	.00000	8.6739	2.3850	-.83929	9.5132
216	9.5556 9.2812	-.22243	3.2828	-2.0428	.00000	.00000	9.9652	3.2828	-.63204	10.597

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

HABGE-01/99-0745, Revision 2
B19

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
217	10.870 10.007	.12852	4.2549	-2.0041	.00000	.00000	11.232	4.2549	-.23322	11.465
218	11.678 10.310	.56722	5.0665	-2.0482	.00000	.00000	12.044	5.0665	.20166	11.842
219	9.5884 7.7053	1.8924	5.0380	-2.1953	.00000	.00000	10.171	5.0380	1.3103	8.8603
220	7.0802 5.5815	2.4007	4.3819	-2.2061	.00000	.00000	7.9563	4.3819	1.5246	6.4317
221	10.874 17.336	28.098	16.616	-4.8236	.00000	.00000	29.357	16.616	9.6152	19.742
222	11.040 25.926	-16.474	3.3104	-4.7628	.00000	.00000	11.841	3.3104	-17.275	29.116
223	2.2638 2.5323	-.26852	2.2638	.00000	.00000	.00000	2.2638	2.2638	-.26852	2.5323
224	2.2611 2.5484	-.27214	2.2609	-.16064	.00000	.00000	2.2713	2.2609	-.28228	2.5535
225	2.2534 2.6563	-.36252	2.1789	-.36629	.00000	.00000	2.3037	2.1789	-.41284	2.7165
226	2.2272 2.8763	-.51201	2.1303	-.58467	.00000	.00000	2.3468	2.1303	-.63158	2.9784
227	2.2431 3.1608	-.72430	2.1083	-.72274	.00000	.00000	2.4098	2.1083	-.89097	3.3007
228	2.1689 3.3499	-.95693	2.0431	-.78075	.00000	.00000	2.3530	2.0431	-1.1411	3.4941
229	1.7643 2.9579	-.93007	1.9166	-.59329	.00000	.00000	1.9166	1.8892	-1.0549	2.9716
230	1.2840 2.1094	-.46263	1.8491	-.17558	.00000	.00000	1.8491	1.3015	-.48010	2.3292
231	1.1392 2.2728	-.90091	1.5448	.61906E-01	.00000	.00000	1.5448	1.1411	-.90279	2.4476
232	2.1381 14.166	1.0317	13.606	4.2912	.00000	.00000	13.606	5.9116	-2.7419	16.348
233	3.4372 19.015	-10.637	9.3817	3.8513	.00000	.00000	9.3817	4.4222	-11.622	21.003
234	.58166 1.6189	1.3337	2.0834	-.55661	.00000	.00000	2.0834	1.6294	.28597	1.7974

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

HABGE-01/99-0745, Revision 2

B 20

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
235	.68337 2.2954	.94920	1.7623	-1.2001	.00000	.00000	2.0238	1.7623	-.39119	2.4149
236	.63605 3.2429	.65690	1.4886	-1.8080	.00000	.00000	2.4545	1.4886	-1.1616	3.6161
237	.69418 3.0779	.60392E-01	1.1780	-1.6863	.00000	.00000	2.0931	1.1780	-1.3385	3.4317
238	.85139 2.8908	-.17791	1.1063	-1.5242	.00000	.00000	1.9455	1.1063	-1.2720	3.2176
239	.92500 2.8987	-.28441	1.0723	-1.4989	.00000	.00000	1.9366	1.0723	-1.2960	3.2325
240	.99264 3.0164	-.33607	1.0676	-1.5522	.00000	.00000	2.0167	1.0676	-1.3601	3.3768
241	1.0706 3.1777	-.35624	1.0865	-1.6370	.00000	.00000	2.1429	1.0865	-1.4285	3.5713
242	1.1567 3.3530	-.35978	1.1205	-1.7317	.00000	.00000	2.2889	1.1205	-1.4920	3.7809
243	1.2496 3.5332	-.35713	1.1639	-1.8287	.00000	.00000	2.4437	1.1639	-1.5511	3.9948
244	1.3488 3.7157	-.35350	1.2138	-1.9253	.00000	.00000	2.6027	1.2138	-1.6074	4.2101
245	1.4535 3.9002	-.35085	1.2688	-2.0211	.00000	.00000	2.7647	1.2688	-1.6620	4.4267
246	1.5632 4.0871	-.34978	1.3282	-2.1166	.00000	.00000	2.9294	1.3282	-1.7159	4.6453
247	1.6778 4.2777	-.35045	1.3915	-2.2124	.00000	.00000	3.0974	1.3915	-1.7701	4.8674
248	1.7975 4.4732	-.35306	1.4586	-2.3093	.00000	.00000	3.2696	1.4586	-1.8251	5.0947
249	1.9232 4.6750	-.35767	1.5298	-2.4081	.00000	.00000	3.4472	1.5298	-1.8817	5.3289
250	2.0560 4.8839	-.36366	1.6056	-2.5090	.00000	.00000	3.6316	1.6056	-1.9393	5.5708
251	2.1975 5.0977	-.36838	1.6877	-2.6110	.00000	.00000	3.8237	1.6877	-1.9946	5.8183
252	2.3477 5.3083	-.36507	1.7787	-2.7104	.00000	.00000	4.0222	1.7787	-2.0395	6.0617

HABGE-01/99-0745, Revision 2

B21

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
253	2.5020 5.4945	-.33816	1.8827	-2.7987	.00000	.00000	4.2203	1.8827	-2.0565	6.2767
254	2.6465 5.6257	-.25985	2.0044	-2.8668	.00000	.00000	4.4073	2.0044	-2.0207	6.4281
255	2.7772 5.6563	-.10094	2.1516	-2.8936	.00000	.00000	4.5698	2.1516	-1.8936	6.4634
256	2.8649 5.4983	.11351	2.3015	-2.8222	.00000	.00000	4.6288	2.3015	-1.6504	6.2792
257	2.2806 4.4584	.29518	2.1666	-2.3201	.00000	.00000	3.8115	2.1666	-1.2357	5.0472
258	.91272 1.7537	1.3730	2.0242	-.84458	.00000	.00000	2.0242	2.0183	.26750	1.7567
259	.16695 1.0593	.16797	1.1826	.17464	.00000	.00000	1.1826	.34210	-.71781E-02	1.1898
260	-1.7882 23.083	21.527	15.027	5.7313	.00000	.00000	22.860	15.027	-3.1209	25.980
261	-1.6642 16.532	-9.9302	5.4287	5.6584	.00000	.00000	5.4287	1.2099	-12.804	18.233
262	4.1608 4.3187	-.15786	4.1608	.00000	.00000	.00000	4.1608	4.1608	-.15786	4.3187
263	4.1279 4.1885	-.37233E-01	4.1650	-.11461	.00000	.00000	4.1650	4.1311	-.40385E-01	4.2054
264	4.0037 4.0938	-.75559E-01	3.9688	-.29423	.00000	.00000	4.0248	3.9688	-.96673E-01	4.1215
265	3.7445 4.0632	-.21457	3.7767	-.48550	.00000	.00000	3.8032	3.7767	-.27324	4.0764
266	3.4828 4.0777	-.40925	3.5851	-.59763	.00000	.00000	3.5851	3.5725	-.49895	4.0840
267	3.3289 4.2631	-.77713	3.3578	-.63117	.00000	.00000	3.4237	3.3578	-.87196	4.2957
268	3.6752 4.7427	-1.1500	3.3615	-.45672	.00000	.00000	3.7180	3.3615	-1.1928	4.9109
269	4.5834 5.6761	-1.4754	3.6919	-.19600	.00000	.00000	4.5898	3.6919	-1.4818	6.0716
270	5.2538 5.2182	-.27027	4.5724	-.69542E-01	.00000	.00000	5.2547	4.5724	-.27114	5.5258

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
------	----	----	----	-----	-----	-----	----	----	----	------

271	6.2717 32.378	-17.219	19.705	-.41999	.00000	.00000	19.705	6.2792	-17.227	36.931
272	7.9384 18.375	6.0085	25.271	-.13853	.00000	.00000	25.271	7.9483	5.9986	19.272
273	11.048 7.1748	3.1266	7.9927	-1.0941	.00000	.00000	11.197	7.9927	2.9783	8.2185
274	11.074 8.1779	2.2312	8.0871	-1.4352	.00000	.00000	11.301	8.0871	2.0041	9.2966
275	11.665 10.460	.30678	8.0773	-1.6607	.00000	.00000	11.903	8.0773	.68937E-01	11.834
276	11.062 10.270	-.39108E-01	8.1639	-1.4155	.00000	.00000	11.240	8.1639	-.21676	11.457
277	10.104 9.6092	-.10960	8.0526	-1.2593	.00000	.00000	10.257	8.0526	-.26259	10.520
278	9.3207 9.1017	-.13904	7.9194	-1.2445	.00000	.00000	9.4817	7.9194	-.30003	9.7817
279	8.6236 8.6753	-.16421	7.7487	-1.2857	.00000	.00000	8.8078	7.7487	-.34845	9.1562
280	7.9486 8.2607	-.17387	7.5379	-1.3456	.00000	.00000	8.1657	7.5379	-.39099	8.5567
281	7.2676 7.8422	-.17518	7.2839	-1.4122	.00000	.00000	7.5265	7.2839	-.43411	7.9607
282	6.5704 7.4192	-.17333	6.9885	-1.4802	.00000	.00000	6.9885	6.8809	-.48391	7.4724
283	5.8511 6.9952	-.17117	6.6539	-1.5477	.00000	.00000	6.6539	6.2255	-.54563	7.1995
284	5.1063 6.5763	-.16965	6.2828	-1.6146	.00000	.00000	6.2828	5.5612	-.62452	6.9074
285	4.3337 6.1717	-.16902	5.8775	-1.6813	.00000	.00000	5.8775	4.8922	-.72753	6.6050
286	3.5315 5.7942	-.16935	5.4397	-1.7486	.00000	.00000	5.4397	4.2270	-.86484	6.3045
287	2.6981 5.4610	-.17074	4.9707	-1.8173	.00000	.00000	4.9707	3.5789	-1.0515	6.0222
288	1.8323 5.1939	-.17331	4.4716	-1.8881	.00000	.00000	4.4716	2.9674	-1.3084	5.7800

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
------	------------	----	----	-----	-----	-----	----	----	----	------

289	5.0177	-1.17686	3.9434	-1.9615	.0000	.00000	3.9434	2.4167	-1.6604	5.6037
290	1.1027E-02	-1.18018	3.3875	-2.0370	.00000	.00000	3.3875	1.9495	-2.1286	5.5160
291	4.9561	-1.18029	2.8069	-2.1110	.00000	.00000	2.8069	1.5758	-2.7180	5.5249
292	5.0238	-1.19505	2.2080	-2.1745	.00000	.00000	2.2080	1.2908	-3.4092	5.6173
293	5.2194	-1.29704	1.5958	-2.2099	.00000	.00000	1.5958	1.0792	-4.1764	5.7722
294	5.5320	-4.0185	4.45372E-02	.99481	-2.2099	.00000	.99481	.98128	-4.9952	5.9900
295	5.9833	-5.0518	.11865	.37905	-2.1321	.00000	.88443	.37905	-5.8176	6.7020
296	6.4641	-5.2581	.86334E-02	-.67069E-02	-1.6832	.00000	.50059	-.67069E-02	-5.7501	6.2507
297	6.0131	-3.3372	-1.1782	.85169E-01	-.68758	.00000	.85169E-01	-.97785	-3.5376	3.6228
298	3.2254	-1.5342	1.2875	1.6554	.44191E-01	.00000	1.6554	1.2882	-1.5349	3.1903
299	3.0235	-4.2333	-16.975	9.3426	.32314	.00000	9.3426	-4.2251	-16.983	26.325
300	22.802	-4.0403	28.408	22.681	.31811	.00000	28.411	22.681	-4.0434	32.455
301	30.003	6.2631	-.11886	6.2631	.00000	.00000	6.2631	6.2631	-.11886	6.3820
302	6.3820	6.2168	.58476E-01	6.2714	-.32939E-01	.00000	6.2714	6.2170	.58300E-01	6.2131
303	6.1861	6.0399	.51429E-01	6.0214	.38394	.00000	6.0644	6.0214	.26914E-01	6.0375
304	6.0161	5.6483	-.79362E-01	5.7548	.61864	.00000	5.7548	5.7144	-.14542	5.9002
305	5.8801	5.0421	-.25973	5.3897	.24634	.00000	5.3897	5.0535	-.27115	5.6609
306	5.5005	4.1178	-.63539	4.7396	-.20831E-01	.00000	4.7396	4.1179	-.63548	5.3751
	5.0928									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
307	2.8632	-1.3093	3.7950	-.20189	.00000	.00000	3.7950	2.8730	-1.3191	5.1141

308	4.7771 1.3897	-1.6589	2.9209	-.32483	.00000	.00000	2.9209	1.4239	-1.6931	4.6140
309	4.0771 .50299	-.46744	2.7913	-.33216	.00000	.00000	2.7913	.60579	-.57024	3.3615
310	2.9546 32.719	3.3131	17.090	-.30307	.00000	.00000	32.722	17.090	3.3100	29.412
311	25.488 30.479	2.8932	18.401	-.39131	.00000	.00000	30.484	18.401	2.8877	27.596
312	23.961 26.105	.30982	17.146	-.30782	.00000	.00000	26.109	17.146	.30615	25.803
313	22.690 23.277	-.86926E-01	16.870	-.33479E-01	.00000	.00000	23.277	16.870	-.86974E-01	23.364
314	20.910 21.446	-.47184E-01	16.822	-.93998E-02	.00000	.00000	21.446	16.822	-.47188E-01	21.493
315	19.595 19.826	-.55584E-01	16.610	-.85458E-01	.00000	.00000	19.827	16.610	-.55952E-01	19.883
316	18.485 18.243	-.70958E-01	16.242	-.18654	.00000	.00000	18.245	16.242	-.72858E-01	18.318
317	17.403 16.642	-.78944E-01	15.740	-.29100	.00000	.00000	16.647	15.740	-.84007E-01	16.731
318	16.297 15.002	-.81000E-01	15.121	-.39524	.00000	.00000	15.121	15.013	-.91350E-01	15.212
319	15.158 13.308	-.81070E-01	14.394	-.49650	.00000	.00000	14.394	13.327	-.99456E-01	14.493
320	13.990 11.553	-.80764E-01	13.569	-.59392	.00000	.00000	13.569	11.583	-.11101	13.680
321	12.803 9.7319	-.80669E-01	12.655	-.68775	.00000	.00000	12.655	9.7799	-.12864	12.784
322	11.616 7.8415	-.80921E-01	11.659	-.77872	.00000	.00000	11.659	7.9174	-.15674	11.815
323	10.459 5.8785	-.81579E-01	10.584	-.86768	.00000	.00000	10.584	6.0023	-.20533	10.789
324	9.3788 3.8389	-.82740E-01	9.4333	-.95549	.00000	.00000	9.4333	4.0593	-.30315	9.7364
	8.4471									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
325	1.7178	-.84534E-01	8.2094	-1.0430	.00000	.00000	8.2094	2.1950	-.56179	8.7712
	1.7688									

326	-4.4713	-.86929E-01	6.9126	-1.1310	.00000	.00000	6.9126	.86015	-1.4377	8.3503
327	-2.7922	-.89500E-01	5.5427	-1.2196	.00000	.00000	5.5427	.37948	-3.2612	8.8039
328	-5.1898	-.90622E-01	4.1007	-1.3064	.00000	.00000	4.1007	.22461	-5.5050	9.6058
329	-7.6755	-.87462E-01	2.5924	-1.3846	.00000	.00000	2.5924	.15729	-7.9202	10.513
330	-10.199	-.60849E-01	1.0467	-1.4334	.00000	.00000	1.0467	.13793	-10.398	11.444
331	-12.709	.26606E-01	-.49738	-1.4533	.00000	.00000	.19034	-.49738	-12.872	13.063
332	-15.106	.20065	-1.9910	-1.4253	.00000	.00000	.33224	-1.9910	-15.238	15.570
333	-17.709	-.36462	-3.8758	-1.3730	.00000	.00000	-.25660	-3.8758	-17.817	17.560
334	-21.306	-2.1205	-6.6335	-1.3620	.00000	.00000	-2.0243	-6.6335	-21.402	19.378
335	-23.449	1.6645	-6.6806	-1.0734	.00000	.00000	1.7103	-6.6806	-23.495	25.205
336	29.800	.33864	29.800	.00000	.00000	.00000	29.800	29.800	.33864	29.462
337	29.488	-.37894	29.586	.35654E-02	.00000	.00000	29.586	29.488	-.37894	29.965
338	29.287	1.2679	29.259	-2.7514	.00000	.00000	29.555	29.259	1.0003	28.555
339	29.243	-.23383	28.723	-4.5665	.00000	.00000	29.934	28.723	-.92507	30.859
340	29.877	-.58178E-01	29.247	-3.5137	.00000	.00000	30.284	29.247	-.46507	30.749
341	32.678	-.29836	30.325	-3.3151	.00000	.00000	33.008	30.325	-.62833	33.636
342	39.099	-1.0082	32.953	-3.7544	.00000	.00000	39.447	32.953	-1.3567	40.804

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
343	48.731	.71134	37.388	-4.4561	.00000	.00000	49.141	37.388	.30133	48.834
344	32.455	-12.539	30.531	-1.2401	.00000	.00000	32.490	30.531	-12.573	45.063

345	44 3.6759 22.296	8.1711	27.467	-2.4391	.00000	.00000	27.467	9.2403	2.6067	24.860
346	-15.716 24.705	-.73551	11.709	-3.8573	.00000	.00000	11.709	.19938	-16.651	28.359
347	5.1092 14.603	.23703	16.606	-.66272	.00000	.00000	16.606	5.1977	.14849	16.458
348	5.0316 13.522	-.16838	15.154	-.48403	.00000	.00000	15.154	5.0762	-.21305	15.367
349	5.2535 12.450	-.21067E-01	14.149	-.61418	.00000	.00000	14.149	5.3241	-.91638E-01	14.241
350	6.7809 12.001	-.28717E-01	13.773	-.61702	.00000	.00000	13.773	6.8364	-.84174E-01	13.857
351	8.5024 12.048	-.22451E-01	13.707	-.58504	.00000	.00000	13.707	8.5423	-.62414E-01	13.769
352	10.199 12.472	-.20502E-01	13.823	-.56109	.00000	.00000	13.823	10.230	-.51214E-01	13.874
353	11.915 13.193	-.17794E-01	14.096	-.54234	.00000	.00000	14.096	11.939	-.42394E-01	14.138
354	13.664 14.147	-.15787E-01	14.503	-.52637	.00000	.00000	14.503	13.684	-.36012E-01	14.539
355	15.450 15.282	-.14253E-01	15.025	-.51256	.00000	.00000	15.467	15.025	-.31224E-01	15.498
356	17.274 16.556	-.13095E-01	15.645	-.50083	.00000	.00000	17.289	15.645	-.27592E-01	17.317
357	19.143 17.945	-.12222E-01	16.354	-.49104	.00000	.00000	19.156	16.354	-.24801E-01	19.181
358	21.061 19.431	-.11565E-01	17.143	-.48307	.00000	.00000	21.072	17.143	-.22633E-01	21.095
359	23.035 21.005	-.11128E-01	18.006	-.47682	.00000	.00000	23.045	18.006	-.20990E-01	23.066
360	25.073 22.664	-.10837E-01	18.941	-.47236	.00000	.00000	25.081	18.941	-.19729E-01	25.101

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
361	27.185 24.409	-.11065E-01	19.945	-.46994	.00000	.00000	27.193	19.945	-.19183E-01	27.21
362	29.389 26.249	-.10739E-01	21.020	-.47002	.00000	.00000	29.397	21.020	-.18251E-01	29.41

363	28.208	-.14029E-01	22.173	-.47428	.000000	.000000	31.722	22.173	-.21117E-01	31.743
364	30.311	-.92449E-02	23.421	-.48355	.000000	.000000	34.215	23.421	-.16077E-01	34.231
365	32.600	-.32462E-01	24.757	-.49161	.000000	.000000	36.888	24.757	-.39008E-01	36.927
366	34.488	.68389E-01	26.062	-.40907	.000000	.000000	39.188	26.062	.64111E-01	39.124
367	35.596	-.24667E-01	26.968	-.28199	.000000	.000000	40.314	26.968	-.26639E-01	40.340
368	39.121	.13193	28.874	-.93471	.000000	.000000	44.659	28.874	.11231	44.547
369	58.712	-2.7876	34.772	-2.9134	.000000	.000000	64.735	34.772	-2.9133	67.648
370	31.783	-4.1746	25.316	-2.7413	.000000	.000000	29.110	25.316	-4.4003	33.510
371	17.432	13.698	22.696	-2.0258	.000000	.000000	22.696	14.069	2.6323	20.064
372	41.520	.33864	41.858	.000000	.000000	.000000	41.858	41.858	.33864	41.520
373	42.340	-.44202	41.794	.14704	.000000	.000000	41.999	41.794	-.44253	42.442
374	41.201	1.3038	42.083	2.7552	.000000	.000000	42.556	42.083	1.1198	41.436
375	42.633	-.20480	41.501	4.4775	.000000	.000000	42.399	41.501	-.67538	43.075
376	41.697	-.70152E-02	41.486	3.2142	.000000	.000000	41.486	41.394	-.25655	41.743
377	39.686	-.11375	40.442	2.0402	.000000	.000000	40.442	38.407	-.22181	40.664
378	35.945	-.92857	37.496	.76216	.000000	.000000	37.496	31.828	-.94630	38.447

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SKY	SYZ	SKZ	S1	S2	S3	SIN1
379	29.108	.91487	34.069	-.47184	.000000	.000000	34.069	22.214	.90441	33.10
380	36.668	-14.179	26.488	-1.3072	.000000	.000000	26.488	16.164	-14.236	40.72
381	36.144	11.693	38.624	-2.7520	.000000	.000000	38.624	36.450	11.388	27.23

382	26.17 58.649 52.947	.60167	45.800	-2.2079	.00000	.00000	58.733	45.800	.51780	58.215
383	39.196 39.218	.27887	39.749	.74862	.00000	.00000	39.749	39.210	.26447	39.485
384	40.307 40.301	-.16629	39.915	.77244	.00000	.00000	40.322	39.915	-.18102	40.503
385	40.865 40.544	.24960E-01	40.245	.51974	.00000	.00000	40.872	40.245	.18347E-01	40.854
386	39.950 39.968	.16522E-01	40.005	.41757	.00000	.00000	40.005	39.955	.12157E-01	39.993
387	38.714 39.150	.13613E-01	39.588	.36639	.00000	.00000	39.588	38.718	.10144E-01	39.578
388	37.409 38.267	.94872E-02	39.081	.31997	.00000	.00000	39.081	37.412	.67499E-02	39.074
389	36.015 37.308	.79056E-02	38.489	.27833	.00000	.00000	38.489	36.017	.57543E-02	38.483
390	34.531 36.281	.65854E-02	37.816	.24187	.00000	.00000	37.816	34.533	.48910E-02	37.811
391	32.969 35.197	.54748E-02	37.072	.20972	.00000	.00000	37.072	32.970	.41406E-02	37.068
392	31.332 34.064	.45439E-02	36.263	.18081	.00000	.00000	36.263	31.333	.35004E-02	36.260
393	29.625 32.888	.37745E-02	35.394	.15437	.00000	.00000	35.394	29.626	.29699E-02	35.391
394	27.845 31.677	.31462E-02	34.467	.12986	.00000	.00000	34.467	27.846	.25405E-02	34.464
395	25.992 30.435	.25901E-02	33.484	.10679	.00000	.00000	33.484	25.992	.21513E-02	33.481
396	24.059 29.169	.21462E-02	32.445	.84669E-01	.00000	.00000	32.445	24.059	.18482E-02	32.443

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
397	22.038 27.884	.14352E-02	31.349	.62860E-01	.00000	.00000	31.349	22.039	.12559E-02	31.34
398	19.916 26.586	.15497E-02	30.192	.40598E-01	.00000	.00000	30.192	19.916	.14670E-02	30.19
399	17.662 25.287	-.15297E-02	28.965	.15960E-01	.00000	.00000	28.965	17.662	-.15441E-02	28.96

400	13.23989	.39082E-02	27.657	-.12118E-01	.00000	.00000	27.657	15.233	.38986E-01	27.653
401	12.617	-.18965E-01	26.250	-.37493E-01	.00000	.00000	26.250	12.617	-.19076E-01	26.269
402	10.366	.72652E-01	24.950	.29001E-01	.00000	.00000	24.950	10.366	.72570E-01	24.877
403	9.2856	-.32828E-01	23.938	.14116	.00000	.00000	23.938	9.2877	-.34966E-01	23.973
404	5.0029	.18966	22.099	-.52857	.00000	.00000	22.099	5.0602	.13229	21.967
405	-14.959	-2.5475	14.501	-2.5160	.00000	.00000	14.501	-2.0569	-15.450	29.951
406	-16.597	.82969	13.382	-1.4426	.00000	.00000	13.382	.94829	-16.716	30.098
407	-1.5659	.85083	17.591	.82498	.00000	.00000	17.591	1.1056	-1.8207	19.412
408	-5.2891	-10.719	13.855	-1.8833	.00000	.00000	13.855	-4.6999	-11.308	25.163
409	-4.2982	10.373	17.840	-1.6565	.00000	.00000	17.840	10.558	-4.4829	22.323
410	1.1706	.58351	8.2012	-.42055E-01	.00000	.00000	8.2012	1.1736	.58052	7.6207
411	1.1578	-.27655	6.3025	-.39202E-01	.00000	.00000	6.3025	1.1588	-.27762	6.5801
412	1.4959	.22771	5.5793	.72601E-01	.00000	.00000	5.5793	1.5000	.22357	5.3557
413	2.2611	-.39613	5.1631	.15410	.00000	.00000	5.1631	2.2700	-.40504	5.5682
414	-1.1575	-.33914	-7.0857	.42055E-01	.00000	.00000	-3.3699	-1.1597	-7.0857	6.7487

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
415	-.98134	-.10855	-5.5265	.39202E-01	.00000	.00000	-.10679	-.98310	-5.5265	5.419
416	-1.2998	.68763	-4.6028	.23702	.00000	.00000	.71551	-1.3276	-4.6028	5.318
417	-1.1329	-.98035	-4.6433	.39867	.00000	.00000	-.65072	-1.4625	-4.6433	3.992
425	-15.435	96.707	24.949	-6.1944	.00000	.00000	97.048	24.949	-15.776	112.8

426	98.120 -14.120 36.392	26.911	4.0868	-4.3334	.000000	.000000	27.364	4.0868	-14.573	41.937
427	-12.935 18.384	-30.816	-12.964	-2.5024	.000000	.000000	-12.592	-12.964	-31.160	18.568
428	2.3675 46.723	55.883	24.908	-2.4028	.000000	.000000	55.991	24.908	2.2598	53.731
429	1.9977 25.888	31.302	17.197	-2.9349	.000000	.000000	31.593	17.197	1.7067	29.886
430	1.5393 8.9288	.82397	7.7750	-3.4577	.000000	.000000	7.7750	4.6578	-2.2945	10.070
431	-.53003 30.508	32.126	26.624	-2.1370	.000000	.000000	32.265	26.624	-.66928	32.935
432	-.42141 27.752	28.668	25.353	-1.7732	.000000	.000000	28.776	25.353	-.52909	29.305
433	-.32698 28.142	29.559	25.391	-1.4150	.000000	.000000	29.626	25.391	-.39383	30.019
434	-.65327 27.675	15.272	31.269	-.73081	.000000	.000000	31.269	15.306	-.68674	31.956
435	-.91532 34.136	30.471	35.371	-.88507	.000000	.000000	35.371	30.496	-.94026	36.312
436	-1.1639 41.939	42.642	38.526	-1.0366	.000000	.000000	42.667	38.526	-1.1884	43.855
437	-.87201 35.545	17.834	40.088	.82115	.000000	.000000	40.088	17.870	-.90799	40.996
438	-1.4334 38.841	28.143	42.553	.11151	.000000	.000000	42.553	28.143	-1.4338	43.986
439	-.98075 44.690	40.860	46.037	1.0183	.000000	.000000	46.037	40.885	-1.0055	47.043

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
440	1.3642 41.488	22.698	49.169	.47718	.000000	.000000	49.169	22.709	1.3536	47.81
441	.59230 47.015	39.397	52.873	.12760	.000000	.000000	52.873	39.397	.59188	52.28
442	-1.0501 46.880	10.379	50.484	.33640	.000000	.000000	50.484	10.389	-1.0600	51.54
443	-.13426 56.205	49.019	61.139	.33145	.000000	.000000	61.139	49.021	-.13650	61.27

444	-.9011	14.196	55.281	.40417	.000000	.000000	55.281	14.207	-.98817	56.269
	50.419									
445	.25636E-02	45.223	63.595	.39790	.000000	.000000	63.595	45.226	-.93731E-03	63.596
	56.689									
446	-1.0189	18.371	58.586	.38699	.000000	.000000	58.586	18.378	-1.0266	59.613
	52.664									
447	-.26111E-02	41.071	64.369	.38082	.000000	.000000	64.369	41.075	-.61418E-02	64.376
	56.456									
448	-1.0174	22.182	60.662	.32589	.000000	.000000	60.662	22.187	-1.0220	61.684
	53.962									
449	.16996E-01	37.281	64.150	.32062	.000000	.000000	64.150	37.283	.14238E-01	64.136
	55.786									
450	-1.0194	25.285	61.776	.24878	.000000	.000000	61.776	25.287	-1.0218	62.798
	54.623									
451	.20252E-01	34.195	63.406	.24470	.000000	.000000	63.406	34.197	.18500E-01	63.387
	54.951									
452	-1.0158	27.584	62.218	.17323	.000000	.000000	62.218	27.585	-1.0169	63.235
	54.846									
453	.21424E-01	31.908	62.476	.17035	.000000	.000000	62.476	31.909	.20514E-01	62.455
	54.092									
454	-1.0116	29.135	62.230	.10863	.000000	.000000	62.230	29.135	-1.0120	63.242
	54.789									
455	.19336E-01	30.366	61.568	.10679	.000000	.000000	61.568	30.366	.18960E-01	61.549
	53.305									
456	-1.0070	30.068	62.005	.58667E-01	.000000	.000000	62.005	30.068	-1.0072	63.012
	54.572									
457	.16264E-01	29.438	60.793	.57646E-01	.000000	.000000	60.793	29.438	.16151E-01	60.777
	52.643									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
	SEQV									
458	-1.0031	30.538	61.681	.23421E-01	.000000	.000000	61.681	30.538	-1.0031	62.68
	54.286									
459	.12923E-01	28.971	60.195	.22985E-01	.000000	.000000	60.195	28.971	.12904E-01	60.18
	52.132									
460	-.99994	30.690	61.345	.95765E-03	.000000	.000000	61.345	30.690	-.99994	62.34
	53.995									
461	.99178E-02	28.819	59.775	.90130E-03	.000000	.000000	59.775	28.819	.99177E-02	59.76
	51.769									
462	-.99766	30.648	61.048	-.11491E-01	.000000	.000000	61.048	30.648	-.99767	62.04

463	53.536 .74894E-02	28.861	59.507	-.11332E-01	.00000	.00000	59.507	28.861	.74850E-02	59.500
464	51.536 -.99617	30.506	60.811	-.16782E-01	.00000	.00000	60.811	30.506	-.99618	61.808
465	53.530 .57046E-02	29.003	59.359	-.16526E-01	.00000	.00000	59.359	29.003	.56952E-02	59.354
466	51.406 -.99531	30.326	60.640	-.17439E-01	.00000	.00000	60.640	30.326	-.99532	61.636
467	53.380 .45107E-02	29.181	59.297	-.17164E-01	.00000	.00000	59.297	29.181	.45006E-02	59.293
468	51.351 -.99490	30.151	60.528	-.15468E-01	.00000	.00000	60.528	30.151	-.99491	61.522
469	53.281 .38008E-02	29.355	59.290	-.15220E-01	.00000	.00000	59.290	29.355	.37929E-02	59.286
470	51.344 -.99481	30.002	60.462	-.12319E-01	.00000	.00000	60.462	30.002	-.99481	61.457
471	53.224 .34511E-02	29.503	59.314	-.12118E-01	.00000	.00000	59.314	29.503	.34462E-02	59.311
472	51.365 -.99489	29.887	60.431	-.89439E-02	.00000	.00000	60.431	29.887	-.99489	61.426
473	53.197 .33459E-02	29.618	59.353	-.87960E-02	.00000	.00000	59.353	29.618	.33433E-02	59.349
474	51.398 -.99506	29.805	60.423	-.58970E-02	.00000	.00000	60.423	29.805	-.99506	61.419
475	53.190 .33888E-02	29.699	59.393	-.57980E-02	.00000	.00000	59.393	29.699	.33876E-02	59.390
	51.433									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
476	SEQV -.99526	29.754	60.429	-.34373E-02	.00000	.00000	60.429	29.754	-.99526	61.42
	53.195									
477	.35071E-02	29.750	59.430	-.33783E-02	.00000	.00000	59.430	29.750	.35067E-02	59.42
	51.465									
478	-.99545	29.725	60.442	-.16286E-02	.00000	.00000	60.442	29.725	-.99545	61.43
	53.207									
479	.36511E-02	29.779	59.459	-.15995E-02	.00000	.00000	59.459	29.779	.36510E-02	59.45
	51.490									
480	-.99560	29.713	60.457	-.41878E-03	.00000	.00000	60.457	29.713	-.99560	61.45
	53.219									

481	.308E-02	29.791	59.481	-.40993E-03	.00000	.00000	59.481	29.791	.37898E-02	59.477
	51.509									
482	-.99571	29.712	60.471	.30075E-03	.00000	.00000	60.471	29.712	-.99571	61.466
	53.231									
483	.39071E-02	29.792	59.495	.29730E-03	.00000	.00000	59.495	29.792	.39071E-02	59.491
	51.521									
484	-.99579	29.716	60.482	.65517E-03	.00000	.00000	60.482	29.716	-.99579	61.478
	53.242									
485	.39970E-02	29.788	59.504	.64544E-03	.00000	.00000	59.504	29.788	.39970E-02	59.500
	51.528									
486	-.99584	29.724	60.491	.76194E-03	.00000	.00000	60.491	29.724	-.99584	61.487
	53.249									
487	.40598E-02	29.780	59.508	.75007E-03	.00000	.00000	59.508	29.780	.40598E-02	59.504
	51.532									
488	-.99587	29.731	60.497	.71862E-03	.00000	.00000	60.497	29.731	-.99587	61.493
	53.254									
489	.40994E-02	29.773	59.509	.70716E-03	.00000	.00000	59.509	29.773	.40993E-02	59.505
	51.533									
490	-.99588	29.738	60.501	.59876E-03	.00000	.00000	60.501	29.738	-.99588	61.496
	53.257									
491	.41209E-02	29.766	59.509	.58906E-03	.00000	.00000	59.509	29.766	.41209E-02	59.505
	51.532									
492	-.99588	29.744	60.502	.45295E-03	.00000	.00000	60.502	29.744	-.99588	61.498
	53.259									
493	.41297E-02	29.760	59.507	.44551E-03	.00000	.00000	59.507	29.760	.41296E-02	59.503
	51.531									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
494	-.99587	29.748	60.503	.31242E-03	.00000	.00000	60.503	29.748	-.99587	61.49
	53.260									
495	.41302E-02	29.756	59.505	.30721E-03	.00000	.00000	59.505	29.756	.41302E-02	59.50
	51.530									
496	-.99586	29.751	60.503	.19356E-03	.00000	.00000	60.503	29.751	-.99586	61.49
	53.260									
497	.41263E-02	29.753	59.504	.19027E-03	.00000	.00000	59.504	29.753	.41263E-02	59.50
	51.528									
498	-.99585	29.753	60.503	.10248E-03	.00000	.00000	60.503	29.753	-.99585	61.49
	53.259									
499	.41203E-02	29.751	59.502	.10069E-03	.00000	.00000	59.502	29.751	.41203E-02	59.49

500	51.525 -.99585	29.754	60.502	.38830E-04	.00000	.00000	60.502	29.754	-.99585	61.498
501	53.259 .41141E-02	29.751	59.501	.38098E-04	.00000	.00000	59.501	29.751	.41141E-02	59.497
502	51.526 -.99584	29.754	60.501	-.12753E-05	.00000	.00000	60.501	29.754	-.99584	61.497
503	53.258 .41085E-02	29.750	59.500	-.13286E-05	.00000	.00000	59.500	29.750	.41085E-02	59.496
504	51.525 -.99584	29.754	60.501	-.23101E-04	.00000	.00000	60.501	29.754	-.99584	61.497
505	53.258 .41041E-02	29.750	59.500	-.22775E-04	.00000	.00000	59.500	29.750	.41041E-02	59.496
506	51.525 -.99583	29.753	60.501	-.31982E-04	.00000	.00000	60.501	29.753	-.99583	61.496
507	53.257 .41008E-02	29.751	59.500	-.31492E-04	.00000	.00000	59.500	29.751	.41008E-02	59.496
508	51.525 -.99583	29.753	60.500	-.32577E-04	.00000	.00000	60.500	29.753	-.99583	61.496
509	53.257 .40987E-02	29.751	59.500	-.32062E-04	.00000	.00000	59.500	29.751	.40987E-02	59.496
510	51.525 -.99583	29.753	60.500	-.28547E-04	.00000	.00000	60.500	29.753	-.99583	61.496
511	53.257 .40974E-02	29.751	59.500	-.28087E-04	.00000	.00000	59.500	29.751	.40974E-02	59.496
	51.525									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
512	53.257 -.99583	29.753	60.500	-.22519E-04	.00000	.00000	60.500	29.753	-.99583	61.496
513	51.525 .40968E-02	29.752	59.500	-.22151E-04	.00000	.00000	59.500	29.752	.40968E-02	59.496
514	53.257 -.99583	29.752	60.500	-.16202E-04	.00000	.00000	60.500	29.752	-.99583	61.496
515	51.525 .40967E-02	29.752	59.500	-.15933E-04	.00000	.00000	59.500	29.752	.40967E-02	59.496
516	53.257 -.99583	29.752	60.500	-.10570E-04	.00000	.00000	60.500	29.752	-.99583	61.496
517	51.525 .40968E-02	29.752	59.500	-.10393E-04	.00000	.00000	59.500	29.752	.40968E-02	59.496

518	-.99583	29.752	60.500	-.60682E-05	.00000	.00000	60.500	29.752	-.99583	61.496
519	.40970E-02	29.752	59.500	-.59638E-05	.00000	.00000	59.500	29.752	.40970E-02	59.496
520	-.99583	29.752	60.500	-.27875E-05	.00000	.00000	60.500	29.752	-.99583	61.496
521	.40973E-02	29.752	59.500	-.27373E-05	.00000	.00000	59.500	29.752	.40973E-02	59.496
522	-.99583	29.752	60.500	-.61537E-06	.00000	.00000	60.500	29.752	-.99583	61.496
523	.40975E-02	29.752	59.500	-.60164E-06	.00000	.00000	59.500	29.752	.40975E-02	59.496
524	-.99583	29.752	60.500	.65824E-06	.00000	.00000	60.500	29.752	-.99583	61.496
525	.40977E-02	29.752	59.500	.65015E-06	.00000	.00000	59.500	29.752	.40977E-02	59.496
526	-.99583	29.752	60.500	.12688E-05	.00000	.00000	60.500	29.752	-.99583	61.496
527	.40979E-02	29.752	59.500	.12498E-05	.00000	.00000	59.500	29.752	.40979E-02	59.496
528	-.99583	29.752	60.500	.14339E-05	.00000	.00000	60.500	29.752	-.99583	61.496
529	.40980E-02	29.752	59.500	.14115E-05	.00000	.00000	59.500	29.752	.40980E-02	59.496

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
530	-.99583	29.752	60.500	.13328E-05	.00000	.00000	60.500	29.752	-.99583	61.49
531	.40981E-02	29.752	59.500	.13115E-05	.00000	.00000	59.500	29.752	.40981E-02	59.49
532	-.99583	29.752	60.500	.10991E-05	.00000	.00000	60.500	29.752	-.99583	61.49
533	.40981E-02	29.752	59.500	.10812E-05	.00000	.00000	59.500	29.752	.40981E-02	59.49
534	-.99583	29.752	60.500	.82394E-06	.00000	.00000	60.500	29.752	-.99583	61.49
535	.40981E-02	29.752	59.500	.81038E-06	.00000	.00000	59.500	29.752	.40981E-02	59.49
536	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.49

537	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
538	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
539	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
540	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
541	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
542	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
543	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
544	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
545	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
546	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
547	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
548	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
549	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
550	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
551	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
552	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
553	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
554	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									

629	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
630	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
631	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
632	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
633	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
634	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
635	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
636	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
637	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SEQV	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
638	-.99583	29.752	60.500	-.66013E-06	.00000	.00000	60.500	29.752	-.99583	61.496	
	53.257										
639	.40981E-02	29.752	59.500	-.64921E-06	.00000	.00000	59.500	29.752	.40981E-02	59.496	
	51.525										
640	-.99583	29.752	60.500	-.90969E-06	.00000	.00000	60.500	29.752	-.99583	61.496	
	53.257										
641	.40981E-02	29.752	59.500	-.89485E-06	.00000	.00000	59.500	29.752	.40981E-02	59.49	
	51.525										
642	-.99583	29.752	60.500	-.11429E-05	.00000	.00000	60.500	29.752	-.99583	61.49	
	53.257										
643	.40981E-02	29.752	59.500	-.11245E-05	.00000	.00000	59.500	29.752	.40981E-02	59.49	
	51.525										
644	-.99583	29.752	60.500	-.12895E-05	.00000	.00000	60.500	29.752	-.99583	61.49	
	53.257										
645	.40981E-02	29.752	59.500	-.12691E-05	.00000	.00000	59.500	29.752	.40981E-02	59.49	
	51.525										
646	-.99583	29.752	60.500	-.12423E-05	.00000	.00000	60.500	29.752	-.99583	61.49	
	53.257										
647	.40980E-02	29.752	59.500	-.12234E-05	.00000	.00000	59.500	29.752	.40980E-02	59.49	

555	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
556	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
557	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
558	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
559	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
560	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
561	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
562	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
563	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
564	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
565	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
566	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
567	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
568	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
569	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
570	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
571	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
572	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
573	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

574	51.525 -.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
575	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
576	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
577	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
578	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
579	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
580	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
581	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
582	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
583	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
584	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
585	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
586	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
587	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
588	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
589	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
590	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
591	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

592	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
593	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
594	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
595	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
596	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
597	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
598	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
599	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
600	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
601	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
602	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
603	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
604	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.49
605	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.49
606	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.49
607	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.49
608	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.49
609	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.49
610	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.49

611	53 .40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
612	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
613	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
614	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
615	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
616	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
617	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
618	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
619	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
620	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
621	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
622	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
623	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
624	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
625	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
626	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									
627	.40981E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
	51.525									
628	-.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
	53.257									

648	51.525 -.99583	29.752	60.500	-.85347E-06	.00000	.00000	60.500	29.752	-.99583	61.496
649	53.257 .40978E-02	29.752	59.500	-.84163E-06	.00000	.00000	59.500	29.752	.40978E-02	59.496
650	51.525 -.99583	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
651	53.257 .40977E-02	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40977E-02	59.496
652	51.525 -.99583	29.752	60.500	.17202E-05	.00000	.00000	60.500	29.752	-.99583	61.496
653	53.257 .40974E-02	29.752	59.500	.16882E-05	.00000	.00000	59.500	29.752	.40974E-02	59.496
654	51.525 -.99583	29.752	60.500	.43211E-05	.00000	.00000	60.500	29.752	-.99583	61.496
655	53.257 .40972E-02	29.752	59.500	.42459E-05	.00000	.00000	59.500	29.752	.40972E-02	59.496
	51.525									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SEQV	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
656	53.257	-.99583	29.752	60.500	.80099E-05	.00000	.00000	60.500	29.752	-.99583	61.496
657	51.525	.40970E-02	29.752	59.500	.78742E-05	.00000	.00000	59.500	29.752	.40970E-02	59.496
658	53.257	-.99583	29.752	60.500	.12782E-04	.00000	.00000	60.500	29.752	-.99583	61.496
659	51.525	.40968E-02	29.752	59.500	.12570E-04	.00000	.00000	59.500	29.752	.40968E-02	59.496
660	53.257	-.99583	29.752	60.500	.18368E-04	.00000	.00000	60.500	29.752	-.99583	61.496
661	51.525	.40969E-02	29.752	59.500	.18066E-04	.00000	.00000	59.500	29.752	.40969E-02	59.496
662	53.257	-.99583	29.753	60.500	.24073E-04	.00000	.00000	60.500	29.753	-.99583	61.496
663	51.525	.40972E-02	29.752	59.500	.23683E-04	.00000	.00000	59.500	29.752	.40972E-02	59.496
664	53.257	-.99583	29.753	60.500	.28605E-04	.00000	.00000	60.500	29.753	-.99583	61.496
665	51.525	.40981E-02	29.751	59.500	.28150E-04	.00000	.00000	59.500	29.751	.40981E-02	59.496

666	-.99583 53.257	29.753	60.500	.29895E-04	.00000	.00000	60.500	29.753	-.99583	61.496
667	.40998E-02 51.525	29.751	59.500	.29431E-04	.00000	.00000	59.500	29.751	.40998E-02	59.496
668	-.99584 53.258	29.753	60.501	.24958E-04	.00000	.00000	60.501	29.753	-.99584	61.497
669	.41023E-02 51.525	29.751	59.500	.24591E-04	.00000	.00000	59.500	29.751	.41023E-02	59.496
670	-.99584 53.258	29.754	60.501	.98719E-05	.00000	.00000	60.501	29.754	-.99584	61.497
671	.41060E-02 51.525	29.750	59.500	.97703E-05	.00000	.00000	59.500	29.750	.41060E-02	59.496
672	-.99584 53.258	29.754	60.502	-.20042E-04	.00000	.00000	60.502	29.754	-.99584	61.498
673	.41107E-02 51.526	29.751	59.501	-.19633E-04	.00000	.00000	59.501	29.751	.41107E-02	59.497

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
674	-.99585 53.259	29.753	60.502	-.69696E-04	.00000	.00000	60.502	29.753	-.99585	61.498
675	.41162E-02 51.526	29.751	59.502	-.68457E-04	.00000	.00000	59.502	29.751	.41162E-02	59.498
676	-.99586 53.259	29.752	60.503	-.14324E-03	.00000	.00000	60.503	29.752	-.99586	61.499
677	.41218E-02 51.527	29.752	59.503	-.14078E-03	.00000	.00000	59.503	29.752	.41218E-02	59.499
678	-.99586 53.260	29.750	60.503	-.24240E-03	.00000	.00000	60.503	29.750	-.99586	61.499
679	.41263E-02 51.529	29.754	59.504	-.23833E-03	.00000	.00000	59.504	29.754	.41263E-02	59.500
680	-.99587 53.259	29.746	60.503	-.36409E-03	.00000	.00000	60.503	29.746	-.99587	61.499
681	.41276E-02 51.530	29.758	59.506	-.35808E-03	.00000	.00000	59.506	29.758	.41276E-02	59.500
682	-.99587 53.258	29.742	60.501	-.49721E-03	.00000	.00000	60.501	29.742	-.99587	61.499
683	.41227E-02 51.531	29.762	59.507	-.48911E-03	.00000	.00000	59.507	29.762	.41227E-02	59.500
684	-.99587	29.736	60.499	-.61869E-03	.00000	.00000	60.499	29.736	-.99587	61.499

685	51.532 .41078E-02	29.768	59.508	-.60876E-03	.00000	.00000	59.508	29.768	.41078E-02	59.504
686	53.252 -.99585	29.729	60.494	-.68933E-03	.00000	.00000	60.494	29.729	-.99585	61.490
687	51.532 .40783E-02	29.775	59.508	-.67849E-03	.00000	.00000	59.508	29.775	.40783E-02	59.504
688	53.246 -.99582	29.722	60.487	-.65007E-03	.00000	.00000	60.487	29.722	-.99582	61.483
689	51.530 .40293E-02	29.782	59.505	-.64020E-03	.00000	.00000	59.505	29.782	.40293E-02	59.501
690	53.237 -.99575	29.716	60.477	-.42000E-03	.00000	.00000	60.477	29.716	-.99575	61.473
691	51.524 .39568E-02	29.788	59.499	-.41430E-03	.00000	.00000	59.499	29.788	.39567E-02	59.495

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
692	53.227 -.99566	29.715	60.466	.10190E-03	.00000	.00000	60.466	29.715	-.99566	61.461
693	51.515 .38589E-02	29.789	59.488	.98582E-04	.00000	.00000	59.488	29.789	.38589E-02	59.484
694	53.215 -.99553	29.722	60.452	.10286E-02	.00000	.00000	60.452	29.722	-.99553	61.448
695	51.500 .37388E-02	29.782	59.471	.10097E-02	.00000	.00000	59.471	29.782	.37387E-02	59.467
696	53.204 -.99538	29.742	60.440	.24674E-02	.00000	.00000	60.440	29.742	-.99538	61.435
697	51.479 .36074E-02	29.762	59.447	.24246E-02	.00000	.00000	59.447	29.762	.36072E-02	59.44
698	53.197 -.99520	29.781	60.431	.44892E-02	.00000	.00000	60.431	29.781	-.99520	61.42
699	51.452 .34874E-02	29.723	59.415	.44134E-02	.00000	.00000	59.415	29.723	.34868E-02	59.41
700	53.199 -.99503	29.845	60.433	.70810E-02	.00000	.00000	60.433	29.845	-.99503	61.42
701	51.421 .34176E-02	29.660	59.379	.69633E-02	.00000	.00000	59.379	29.660	.34160E-02	59.37
702	53.215 -.99492	29.938	60.453	.10080E-01	.00000	.00000	60.453	29.938	-.99492	61.44

703	.562E-02	29.567	59.343	.99148E-02	.000000	.000000	59.343	29.567	.34529E-02	59.340
	51.390									
704	-.99493	30.063	60.499	.13090E-01	.000000	.000000	60.499	30.063	-.99494	61.494
	53.257									
705	.36832E-02	29.443	59.315	.12879E-01	.000000	.000000	59.315	29.443	.36775E-02	59.311
	51.366									
706	-.99519	30.215	60.585	.15388E-01	.000000	.000000	60.585	30.215	-.99519	61.580
	53.332									
707	.41981E-02	29.292	59.309	.15143E-01	.000000	.000000	59.309	29.292	.41903E-02	59.305
	51.361									
708	-.99580	30.379	60.721	.15824E-01	.000000	.000000	60.721	30.379	-.99581	61.716
	53.451									
709	.51125E-02	29.128	59.345	.15579E-01	.000000	.000000	59.345	29.128	.51042E-02	59.340
	51.393									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
710	-.99694	30.526	60.914	.12762E-01	.000000	.000000	60.914	30.526	-.99694	61.911
	53.619									
711	.65327E-02	28.982	59.448	.12576E-01	.000000	.000000	59.448	28.982	.65272E-02	59.441
	51.483									
712	-.99874	30.605	61.165	.40679E-02	.000000	.000000	61.165	30.605	-.99874	62.164
	53.838									
713	.85271E-02	28.904	59.648	.40343E-02	.000000	.000000	59.648	28.904	.85265E-02	59.640
	51.658									
714	-1.0013	30.541	61.461	-.12776E-01	.000000	.000000	61.461	30.541	-1.0013	62.461
	54.095									
715	.11089E-01	28.967	59.977	-.12523E-01	.000000	.000000	59.977	28.967	.11083E-01	59.96
	51.943									
716	-1.0047	30.232	61.767	-.40372E-01	.000000	.000000	61.767	30.232	-1.0047	62.77
	54.362									
717	.14035E-01	29.275	60.461	-.39658E-01	.000000	.000000	60.461	29.275	.13982E-01	60.44
	52.358									
718	-1.0086	29.551	62.015	-.80844E-01	.000000	.000000	62.015	29.551	-1.0088	63.01
	54.588									
719	.17059E-01	29.952	61.109	-.79464E-01	.000000	.000000	61.109	29.952	.16848E-01	61.09
	52.911									
720	-1.0129	28.359	62.098	-.13492	.000000	.000000	62.098	28.359	-1.0135	63.11
	54.699									
721	.19136E-01	31.138	61.898	-.13267	.000000	.000000	61.898	31.138	.18570E-01	61.87

722	53.009 -1.0155 54.592	26.525	61.860	-.20063	.00000	.00000	61.860	26.526	-1.0170	62.877
723	.20285E-01 54.351	32.962	62.752	-.19732	.00000	.00000	62.752	32.963	.19104E-01	62.733
724	-1.0194 54.134	23.967	61.093	-.27151	.00000	.00000	61.093	23.970	-1.0223	62.115
725	.14591E-01 55.122	35.505	63.515	-.26709	.00000	.00000	63.515	35.507	.12581E-01	63.502
726	-1.0065 53.144	20.715	59.555	-.33459	.00000	.00000	59.555	20.720	-1.0117	60.566
727	.15998E-01 55.767	38.740	63.931	-.32923	.00000	.00000	63.931	38.742	.13200E-01	63.918

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
728	-1.0331 51.417	16.989	56.965	-.36782	.00000	.00000	56.965	16.996	-1.0406	58.006
729	-.37887E-01 56.133	42.445	63.594	-.36204	.00000	.00000	63.594	42.448	-.40972E-01	63.635
730	-.87622 48.531	13.305	53.162	-.33950	.00000	.00000	53.162	13.313	-.88434	54.047
731	.73965E-01 55.740	46.109	62.042	-.33438	.00000	.00000	62.042	46.112	.71536E-01	61.971
732	-1.3515 44.405	10.606	47.806	-.20221	.00000	.00000	47.806	10.609	-1.3549	49.161
733	-.48508 54.695	48.793	58.362	-.19952	.00000	.00000	58.362	48.794	-.48589	58.840
734	1.4296 38.017	20.883	45.224	-.54965	.00000	.00000	45.224	20.899	1.4141	43.810
735	.65274 42.015	33.828	47.895	.19842	.00000	.00000	47.895	33.830	.65155	47.24
736	-1.1100 32.954	20.408	36.828	-.84143E-01	.00000	.00000	36.828	20.408	-1.1104	37.931
737	-.94467 34.206	24.891	37.836	.41800	.00000	.00000	37.836	24.898	-.95143	38.781
738	-.58293 37.756	33.307	40.055	.96378	.00000	.00000	40.055	33.334	-.61031	40.601
739	.67325 26.151	22.108	29.741	.92446	.00000	.00000	29.741	22.148	.63346	29.101

740	- .071 30.982	29.719	31.400	1.0841	.000000	.000000	31.400	29.758	-.36977	31.770
741	-1.3489 36.809	37.376	33.033	1.2409	.000000	.000000	37.415	33.033	-1.3887	38.804
742	-5.1102 39.528	39.585	24.187	2.3065	.000000	.000000	39.703	24.187	-5.2289	44.932
743	-2.4941 29.289	29.737	21.720	2.0927	.000000	.000000	29.873	21.720	-2.6294	32.502
744	.13364 19.866	20.059	19.383	1.8817	.000000	.000000	20.235	19.383	-.42512E-01	20.278
745	8.9148 16.386	26.794	16.385	2.9781	.000000	.000000	27.277	16.385	8.4318	18.845

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
746	5.4286 14.839	22.528	13.948	.55429	.000000	.000000	22.546	13.948	5.4107	17.135
747	2.5432 13.479	17.900	11.611	-.98133	.000000	.000000	17.962	11.611	2.4808	15.482
748	-13.930 36.032	26.786	2.6924	3.6967	.000000	.000000	27.119	2.6924	-14.263	41.382
749	-12.940 27.551	16.170	-.52332	6.2967	.000000	.000000	17.474	-.52332	-14.243	31.717
750	-9.2237 10.509	-3.6554	-5.4694	5.3614	.000000	.000000	-.39837	-5.4694	-12.481	12.082
751	26.451 54.874	79.044	23.403	-5.0192	.000000	.000000	79.519	25.977	23.403	56.116
752	24.264 18.279	15.868	3.7925	-2.3395	.000000	.000000	24.872	15.260	3.7925	21.081
753	12.842 57.863	-53.959	-20.350	.67075	.000000	.000000	12.848	-20.350	-53.966	66.81
754	10.028 12.523	.14535	8.8546	4.8092	.000000	.000000	11.982	8.8546	-1.8087	13.79
755	-11.116 5.6864	-5.2363	-5.6580	.15123	.000000	.000000	-5.2324	-5.6580	-11.120	5.887
756	8.1302 19.663	-10.868	-9.0499	-4.3560	.000000	.000000	9.0813	-9.0499	-11.820	20.90
757	-61.994 62.561	.56677	-61.994	.000000	.000000	.000000	.56677	-61.994	-61.994	62.56
758	-62.272	-2.6759	-61.855	-3.7540	.000000	.000000	-2.4404	-61.855	-62.507	60.06

759	59.14 -61.321 61.363	-.65894	-61.108	-5.7255	.00000	.00000	-.12328	-61.108	-61.857	61.733
760	-60.564 60.134	-1.0065	-61.073	-3.5756	.00000	.00000	-.79256	-60.778	-61.073	60.281
761	-59.674 59.338	-.96417	-60.592	-2.5438	.00000	.00000	-.85416	-59.784	-60.592	59.737
762	-58.622 58.445	-.96253	-59.980	-1.9173	.00000	.00000	-.89884	-58.686	-59.980	59.081
763	-57.380 57.434	-.95984	-59.248	-1.4731	.00000	.00000	-.92141	-57.418	-59.248	58.327

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
764	-55.902 56.258	-.96172	-58.386	-1.1384	.00000	.00000	-.93814	-55.926	-58.386	57.448
765	-54.192 54.920	-.96227	-57.392	-.87326	.00000	.00000	-.94794	-54.206	-57.392	56.444
766	-52.257 53.425	-.96300	-56.269	-.65431	.00000	.00000	-.95465	-52.265	-56.269	55.314
767	-50.101 51.778	-.96309	-55.018	-.46737	.00000	.00000	-.95864	-50.105	-55.018	54.060
768	-47.726 49.986	-.96306	-53.641	-.30320	.00000	.00000	-.96110	-47.728	-53.641	52.680
769	-45.130 48.056	-.96295	-52.137	-.15584	.00000	.00000	-.96240	-45.131	-52.137	51.175
770	-42.313 45.998	-.96280	-50.506	-.21231E-01	.00000	.00000	-.96279	-42.313	-50.506	49.544
771	-39.273 43.823	-.96265	-48.748	.10346	.00000	.00000	-.96237	-39.273	-48.748	47.781
772	-36.007 41.550	-.96252	-46.860	.22028	.00000	.00000	-.96113	-36.009	-46.860	45.891
773	-32.516 39.204	-.96244	-44.844	.33070	.00000	.00000	-.95897	-32.519	-44.844	43.881
774	-28.797 36.817	-.96250	-42.698	.43567	.00000	.00000	-.95569	-28.804	-42.698	41.741
775	-24.853 34.439	-.96287	-40.423	.53565	.00000	.00000	-.95086	-24.865	-40.423	39.471
776	-20.687 32.133	-.96370	-38.020	.63056	.00000	.00000	-.94356	-20.708	-38.020	37.071

777	-309	-.96516	-35.493	.71988	.00000	.00000	-.93146	-16.343	-35.493	34.561
	29.989									
778	-11.733	-.96717	-32.845	.80290	.00000	.00000	-.90762	-11.793	-32.845	31.937
	28.122									
779	-6.9769	-.96917	-30.083	.87946	.00000	.00000	-.84307	-7.1030	-30.083	29.240
	26.667									
780	-2.0560	-.97006	-27.214	.95122	.00000	.00000	-.41776	-2.6083	-27.214	26.797
	25.771									
781	3.0304	-.96698	-24.239	1.0234	.00000	.00000	3.2772	-1.2138	-24.239	27.516
	25.568									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SEQV	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
782	8.3189	-.95925	-21.147	1.1058	.00000	.00000	8.4489	-1.0892	-21.147	29.596	
	26.165										
783	13.907	-.94001	-17.905	1.2130	.00000	.00000	14.006	-1.0385	-17.905	31.911	
	27.651										
784	19.959	-.92339	-14.465	1.3596	.00000	.00000	20.047	-1.0115	-14.465	34.512	
	30.129										
785	26.697	-.88059	-10.738	1.5506	.00000	.00000	26.784	-.96751	-10.738	37.522	
	33.716										
786	34.186	-.93873	-6.7267	1.7567	.00000	.00000	34.274	-1.0264	-6.7267	41.000	
	38.468										
787	43.391	-.65611	-1.9991	2.2039	.00000	.00000	43.501	-.76611	-1.9991	45.500	
	44.896										
788	52.750	-.96267	2.7674	2.1721	.00000	.00000	52.838	2.7674	-1.0504	53.888	
	52.084										
789	60.152	-2.2373	6.7707	2.1311	.00000	.00000	60.225	6.7707	-2.3100	62.53	
	58.525										
790	72.815	7.0447	13.976	2.6929	.00000	.00000	72.926	13.976	6.9347	65.99	
	62.767										
791	80.792	-8.4166	13.619	8.7858	.00000	.00000	81.649	13.619	-9.2737	90.92	
	81.912										
792	-27.257	-.15379	-27.257	.00000	.00000	.00000	-.15379	-27.257	-27.257	27.10	
	27.103										
793	-27.447	-2.0352	-27.163	1.4778	.00000	.00000	-1.9496	-27.163	-27.533	25.58	
	25.400										
794	-26.989	-.65003	-26.741	2.4191	.00000	.00000	-.42969	-26.741	-27.210	26.781	
	26.549										
795	-26.747	-.97456	-26.899	1.7319	.00000	.00000	-.85869	-26.863	-26.899	26.041	

796	25.771 -26.446	-.93935	-26.745	1.3933	.00000	.00000	-.86347	-26.522	-26.745	25.882
797	25.496 -26.108	-.92564	-26.553	1.2266	.00000	.00000	-.86604	-26.168	-26.553	25.687
798	25.162 -25.693	-.92620	-26.314	1.1509	.00000	.00000	-.87284	-25.746	-26.314	25.441
799	24.775 -25.201	-.92641	-26.029	1.1191	.00000	.00000	-.87493	-25.252	-26.029	25.154

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
800	-24.632 24.333	-.92791	-25.701	1.1121	.00000	.00000	-.87586	-24.684	-25.701	24.825
801	-23.988 23.837	-.92872	-25.328	1.1208	.00000	.00000	-.87437	-24.043	-25.328	24.453
802	-23.271 23.290	-.92891	-24.912	1.1410	.00000	.00000	-.87079	-23.329	-24.912	24.041
803	-22.479 22.693	-.92888	-24.453	1.1701	.00000	.00000	-.86553	-22.543	-24.453	23.588
804	-21.615 22.048	-.92870	-23.952	1.2063	.00000	.00000	-.85860	-21.685	-23.952	23.094
805	-20.676 21.356	-.92849	-23.409	1.2480	.00000	.00000	-.84993	-20.754	-23.409	22.559
806	-19.663 20.620	-.92825	-22.823	1.2941	.00000	.00000	-.83928	-19.752	-22.823	21.981
807	-18.574 19.844	-.92802	-22.194	1.3439	.00000	.00000	-.82625	-18.676	-22.194	21.361
808	-17.410 19.031	-.92787	-21.522	1.3967	.00000	.00000	-.81036	-17.528	-21.522	20.71
809	-16.171 18.189	-.92793	-20.807	1.4516	.00000	.00000	-.79093	-16.308	-20.807	20.01
810	-14.857 17.323	-.92843	-20.049	1.5076	.00000	.00000	-.76712	-15.018	-20.049	19.28
811	-13.469 16.445	-.92967	-19.248	1.5633	.00000	.00000	-.73770	-13.661	-19.248	18.511
812	-12.011 15.567	-.93190	-18.406	1.6171	.00000	.00000	-.70069	-12.242	-18.406	17.701
813	-10.487 14.708	-.93507	-17.525	1.6670	.00000	.00000	-.65247	-10.769	-17.525	16.871

814	-0.022 13.889	-.93843	-16.606	1.7124	.00000	.00000	-.58581	-9.2548	-16.606	16.020
815	-7.2619 13.137	-.94016	-15.650	1.7552	.00000	.00000	-.48555	-7.7165	-15.650	15.164
816	-5.5646 12.486	-.93662	-14.657	1.8021	.00000	.00000	-.31766	-6.1836	-14.657	14.339
817	-3.7955 11.977	-.92413	-13.621	1.8670	.00000	.00000	-.46171E-02	-4.7150	-13.621	13.616

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
818	-1.9244 11.666	-.89876	-12.532	1.9689	.00000	.00000	.62299	-3.4461	-12.532	13.155
819	.10918 11.627	-.86380	-11.372	2.1295	.00000	.00000	1.8071	-2.5617	-11.372	13.179
820	2.3451 11.939	-.81474	-10.122	2.3480	.00000	.00000	3.5952	-2.0649	-10.122	13.717
821	4.9890 12.782	-.85815	-8.7483	2.6328	.00000	.00000	5.9998	-1.8689	-8.7483	14.748
822	7.6145 13.930	-.59771	-7.2470	3.0434	.00000	.00000	8.6194	-1.6026	-7.2470	15.866
823	11.715 16.325	-.47789	-5.3300	3.4226	.00000	.00000	12.610	-1.3729	-5.3300	17.940
824	13.206 17.034	-2.1185	-4.5677	1.9816	.00000	.00000	13.458	-2.3706	-4.5677	18.026
825	3.0248 9.3200	4.2021	-5.3823	-1.2779	.00000	.00000	5.0204	2.2064	-5.3823	10.401
826	-7.2891 4.5212	-8.6989	-12.329	-.23158	.00000	.00000	-7.2521	-8.7360	-12.329	5.076
827	-12.996 109.48	103.86	19.532	-18.908	.00000	.00000	106.84	19.532	-15.979	122.8
828	-4.8951 41.306	25.315	-1.8097	-17.100	.00000	.00000	33.026	-1.8097	-12.606	45.63
829	3.1482 45.854	-40.031	-18.851	-15.320	.00000	.00000	8.0316	-18.851	-44.914	52.94
830	7.4109 8.6444	-1.2335	7.4109	.00000	.00000	.00000	7.4109	7.4109	-1.2335	8.644
831	7.3627 8.5920	-.89769	7.3322	1.3951	.00000	.00000	7.5919	7.3322	-1.1270	8.718
832	7.1505	-.59160	7.2640	2.4212	.00000	.00000	7.8454	7.2640	-1.2864	9.131

833	8.54 6.9966 8.5529	-.95714	7.0937	1.7424	.00000	.00000	7.3615	7.0937	-1.3221	8.6836
834	6.6987 8.0824	-.87520	6.9777	1.3868	.00000	.00000	6.9777	6.9446	-1.1211	8.0989
835	6.3381 7.7303	-.86656	6.7733	1.2281	.00000	.00000	6.7733	6.5417	-1.0702	7.8435

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
836	5.9252 7.3857	-.86315	6.5328	1.1508	.00000	.00000	6.5328	6.1150	-1.0529	7.5858
837	5.4312 7.0129	-.86408	6.2459	1.1191	.00000	.00000	6.2459	5.6243	-1.0571	7.3030
838	4.8611 6.6081	-.86681	5.9151	1.1121	.00000	.00000	5.9151	5.0695	-1.0752	6.9903
839	4.2156 6.1732	-.86794	5.5415	1.1208	.00000	.00000	5.5415	4.4517	-1.1041	6.6456
840	3.4964 5.7202	-.86835	5.1254	1.1410	.00000	.00000	5.1254	3.7767	-1.1486	6.2741
841	2.7041 5.2665	-.86828	4.6671	1.1701	.00000	.00000	4.6671	3.0533	-1.2174	5.8846
842	1.8384 4.8385	-.86802	4.1665	1.2063	.00000	.00000	4.1665	2.2980	-1.3276	5.4941
843	.89893 4.4754	-.86767	3.6234	1.2479	.00000	.00000	3.6234	1.5445	-1.5133	5.1367
844	-.11499 4.2310	-.86728	3.0376	1.2941	.00000	.00000	3.0376	.85654	-1.8388	4.8764
845	-1.2039 4.1674	-.86690	2.4090	1.3439	.00000	.00000	2.4090	.31908	-2.3898	4.798
846	-2.3681 4.3354	-.86663	1.7372	1.3967	.00000	.00000	1.7372	-.31701E-01	-3.2030	4.940
847	-3.6078 4.7518	-.86670	1.0222	1.4516	.00000	.00000	1.0222	-.24089	-4.2336	5.255
848	-4.9225 5.3971	-.86750	.26382	1.5076	.00000	.00000	.26382	-.36844	-5.4215	5.685
849	-6.3107 6.2334	-.86953	-.53747	1.5633	.00000	.00000	-.45234	-.53747	-6.7279	6.274
850	-7.7693 7.2221	-.87324	-1.3808	1.6171	.00000	.00000	-.51287	-1.3808	-8.1297	7.616

851	-937 8.3313	-.87860	-2.2645	1.6671	.00000	.00000	-.56037	-2.2645	-9.6119	9.0516
852	-10.878 9.5376	-.88450	-3.1861	1.7125	.00000	.00000	-.59919	-3.1861	-11.163	10.564
853	-12.518 10.828	-.88771	-4.1427	1.7553	.00000	.00000	-.62857	-4.1427	-12.777	12.149

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
854	-14.215 12.202	-.88290	-5.1327	1.8022	.00000	.00000	-.64358	-5.1327	-14.454	13.811
855	-15.984 13.678	-.86167	-6.1578	1.8670	.00000	.00000	-.63457	-6.1578	-16.211	15.576
856	-17.853 15.285	-.82197	-7.2271	1.9691	.00000	.00000	-.59726	-7.2271	-18.078	17.481
857	-19.893 17.091	-.75665	-8.3612	2.1274	.00000	.00000	-.52301	-8.3612	-20.127	19.604
858	-22.126 19.091	-.69235	-9.5797	2.3503	.00000	.00000	-.43764	-9.5797	-22.380	21.943
859	-24.692 21.339	-.71268	-10.951	2.6494	.00000	.00000	-.42345	-10.951	-24.981	24.557
860	-27.657 24.250	-.34766	-12.369	2.9458	.00000	.00000	-.33531E-01	-12.369	-27.972	27.938
861	-31.078 27.157	-.64604	-14.168	3.6543	.00000	.00000	-.21338	-14.168	-31.511	31.297
862	-26.423 23.800	-.47804	-13.463	4.5315	.00000	.00000	.29066	-13.463	-27.192	27.482
863	-20.952 11.037	-8.2134	-14.269	.52284E-01	.00000	.00000	-8.2132	-14.269	-20.952	12.73
864	-22.037 22.878	2.5962	-11.526	-4.6564	.00000	.00000	3.4470	-11.526	-22.888	26.33
865	-7.8502 35.373	27.230	.11214	-8.8804	.00000	.00000	29.350	.11214	-9.9701	39.32
866	-8.5012 39.256	31.020	.95416	-9.3706	.00000	.00000	33.129	.95416	-10.610	43.73
867	-9.2654 34.940	24.394	-1.3742	-9.8523	.00000	.00000	27.066	-1.3742	-11.937	39.00
868	41.833 43.426	-1.5926	41.833	.00000	.00000	.00000	41.833	41.833	-1.5926	43.4
869	42.091	-.43600	41.710	-2.1508	.00000	.00000	42.199	41.710	-.54450	42.74

870	41.658 42.516	-.48807	41.710	-3.1174	.00000	.00000	41.887	41.710	-.71741	42.605
871	40.822 42.139	-.96071	41.282	-1.8660	.00000	.00000	41.282	40.905	-1.0439	42.326

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0.

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
872	39.884 41.249	-.83296	40.809	-1.2997	.00000	.00000	40.809	39.926	-.87440	41.684
873	38.868 40.421	-.83751	40.203	-.91567	.00000	.00000	40.203	38.890	-.85862	41.061
874	37.613 39.416	-.82688	39.468	-.64319	.00000	.00000	39.468	37.624	-.83764	40.306
875	36.133 38.264	-.82939	38.603	-.42823	.00000	.00000	38.603	36.138	-.83435	39.437
876	34.420 36.952	-.83234	37.607	-.25246	.00000	.00000	37.607	34.422	-.83415	38.441
877	32.483 35.487	-.83367	36.483	-.10303	.00000	.00000	36.483	32.484	-.83399	37.317
878	30.327 33.881	-.83418	35.232	.28523E-01	.00000	.00000	35.232	30.327	-.83421	36.066
879	27.950 32.147	-.83409	33.855	.14741	.00000	.00000	33.855	27.951	-.83485	34.690
880	25.354 30.302	-.83378	32.352	.25708	.00000	.00000	32.352	25.357	-.83630	33.188
881	22.536 28.369	-.83335	30.721	.35982	.00000	.00000	30.721	22.542	-.83889	31.560
882	19.495 26.381	-.83288	28.963	.45722	.00000	.00000	28.963	19.506	-.84316	29.801
883	16.229 24.387	-.83241	27.076	.55039	.00000	.00000	27.076	16.247	-.85014	27.921
884	12.737 22.459	-.83207	25.060	.64013	.00000	.00000	25.060	12.767	-.86220	25.921
885	9.0184 20.702	-.83213	22.914	.72686	.00000	.00000	22.914	9.0718	-.88547	23.791
886	5.0741 19.263	-.83307	20.639	.81063	.00000	.00000	20.639	5.1833	-.94229	21.511
887	.90838 18.326	-.83550	18.235	.89107	.00000	.00000	18.235	1.2832	-1.2103	19.441

888	-8.699 18.083	-.83999	15.706	.96739	.00000	.00000	15.706	-.52248	-3.7875	19.493
889	-8.0469 18.667	-.84649	13.055	1.0387	.00000	.00000	13.055	-.69965	-8.1937	21.249

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
890	-12.805 20.097	-.85376	10.291	1.1046	.00000	.00000	10.291	-.75251	-12.906	23.197
891	-17.728 22.290	-.85782	7.4208	1.1667	.00000	.00000	7.4208	-.77751	-17.808	25.229
892	-22.816 25.128	-.85237	4.4476	1.2299	.00000	.00000	4.4476	-.78372	-22.885	27.332
893	-28.106 28.528	-.82720	1.3649	1.3037	.00000	.00000	1.3649	-.76503	-28.168	29.533
894	-33.696 32.483	-.77865	-1.8573	1.4036	.00000	.00000	-1.71891	-1.8573	-33.756	33.037
895	-39.731 37.055	-.70096	-5.2668	1.5380	.00000	.00000	-1.64045	-5.2668	-39.792	39.151
896	-46.469 42.404	-.62390	-8.9596	1.7313	.00000	.00000	-1.55862	-8.9596	-46.534	45.976
897	-54.108 48.591	-.63985	-13.041	1.9597	.00000	.00000	-1.56812	-13.041	-54.180	53.611
898	-62.616 56.031	-.13028	-17.339	2.1723	.00000	.00000	-1.54846E-01	-17.339	-62.691	62.637
899	-73.318 64.187	-1.3061	-22.914	2.7894	.00000	.00000	-1.1983	-22.914	-73.426	72.228
900	-93.423 85.451	2.6150	-30.030	7.0229	.00000	.00000	3.1258	-30.030	-93.934	97.060
901	-46.017 26.554	-20.765	-24.134	6.8604	.00000	.00000	-19.021	-24.134	-47.760	28.731
902	-15.358 16.715	1.2082	-8.3916	4.8940	.00000	.00000	2.5460	-8.3916	-16.695	19.24
903	-6.3981 20.277	15.827	-1.3537	1.1333	.00000	.00000	15.885	-1.3537	-6.4557	22.341
904	-4.6390 29.579	27.836	2.7115	1.2881	.00000	.00000	27.887	2.7115	-4.6900	32.57
905	-2.8864 40.814	42.010	7.4056	1.4400	.00000	.00000	42.056	7.4056	-2.9326	44.981
906	-20.352	-.71692	-20.352	.00000	.00000	.00000	-1.71692	-20.352	-20.352	19.631

1005
 907 -20.278 -20.354 .21580E-01 .00000 .00000 -.92986 -20.278 -20.354 19.424
 19.386

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
908	-20.128 18.957	-1.2446	-19.940	-1.4470	.00000	.00000	-1.1343	-19.940	-20.238	19.104
909	-19.702 19.319	-.77986	-19.542	-2.4612	.00000	.00000	-.46496	-19.542	-20.017	19.552
910	-19.352 18.897	-.76823	-19.487	-1.7525	.00000	.00000	-.60442	-19.487	-19.516	18.911
911	-18.952 18.521	-.73726	-19.284	-1.3049	.00000	.00000	-.64426	-19.045	-19.284	18.640
912	-18.481 18.100	-.73165	-19.009	-.98430	.00000	.00000	-.67723	-18.535	-19.009	18.332
913	-17.926 17.618	-.73814	-18.669	-.74199	.00000	.00000	-.70616	-17.958	-18.669	17.963
914	-17.283 17.079	-.74168	-18.264	-.54851	.00000	.00000	-.72351	-17.301	-18.264	17.540
915	-16.556 16.483	-.74380	-17.799	-.38623	.00000	.00000	-.73437	-16.566	-17.799	17.064
916	-15.745 15.828	-.74443	-17.277	-.24582	.00000	.00000	-.74040	-15.749	-17.277	16.536
917	-14.850 15.116	-.74435	-16.698	-.12127	.00000	.00000	-.74331	-14.851	-16.698	15.955
918	-13.869 14.349	-.74393	-16.063	-.85968E-02	.00000	.00000	-.74393	-13.869	-16.063	15.320
919	-12.804 13.531	-.74337	-15.374	.94946E-01	.00000	.00000	-.74263	-12.804	-15.374	14.63
920	-11.653 12.667	-.74275	-14.628	.19133	.00000	.00000	-.73940	-11.656	-14.628	13.88
921	-10.417 11.768	-.74213	-13.828	.28200	.00000	.00000	-.73392	-10.425	-13.828	13.09
922	-9.0953 10.845	-.74171	-12.972	.36804	.00000	.00000	-.72552	-9.1115	-12.972	12.24
923	-7.6884 9.9179	-.74185	-12.061	.45023	.00000	.00000	-.71279	-7.7175	-12.061	11.34
924	-6.1962 9.0167	-.74321	-11.096	.52915	.00000	.00000	-.69233	-6.2471	-11.096	10.40

925 192 -74663 -10.076 .60519 .00000 -.65426 -4.7116 -10.076 9.4220
8.1858

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
926	-2.9584 7.4910	-.75284	-9.0030	.67857	.00000	.00000	-.56079	-3.1504	-9.0030	8.4422
927	-1.2151 7.0205	-.76183	-7.8767	.74940	.00000	.00000	-.20554	-1.7714	-7.8767	7.6712
928	.60871 6.8708	-.77156	-6.6975	.81786	.00000	.00000	.98871	-1.1516	-6.6975	7.6862
929	2.5116 7.1094	-.77677	-5.4640	.88444	.00000	.00000	2.7344	-.99955	-5.4640	8.1984
930	4.4948 7.7402	-.76745	-4.1723	.95062	.00000	.00000	4.6612	-.93392	-4.1723	8.8335
931	6.5656 8.7122	-.73071	-2.8145	1.0197	.00000	.00000	6.7054	-.87054	-2.8145	9.5200
932	8.7448 9.9641	-.65399	-1.3779	1.0981	.00000	.00000	8.8714	-.78058	-1.3779	10.249
933	11.070 11.469	-.54079	.15185	1.1953	.00000	.00000	11.192	.15185	-.66255	11.854
934	13.599 13.252	-.41706	1.7895	1.3200	.00000	.00000	13.723	1.7895	-.54029	14.263
935	16.360 15.342	-.32975	3.5321	1.4552	.00000	.00000	16.486	3.5321	-.45567	16.942
936	19.320 17.698	-.30413	5.3613	1.5472	.00000	.00000	19.441	5.3613	-.42536	19.861
937	23.326 20.710	.14336	7.8071	1.8627	.00000	.00000	23.475	7.8071	-.53470E-02	23.48
938	28.207 24.219	1.0263	10.855	2.4702	.00000	.00000	28.430	10.855	.80365	27.62
939	30.614 22.550	5.6188	14.044	2.7885	.00000	.00000	30.921	14.044	5.3115	25.61
940	-11.290 10.601	-.68910	-11.290	.00000	.00000	.00000	-.68910	-11.290	-11.290	10.60
941	-11.217 10.439	-.81534	-11.281	.18196	.00000	.00000	-.81216	-11.221	-11.281	10.40
942	-11.082 10.105	-.96099	-10.931	.62507	.00000	.00000	-.92253	-10.931	-11.121	10.10
943	-10.860	-.75570	-10.740	.93553	.00000	.00000	-.66981	-10.740	-10.945	10.27

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
944	-10.663 10.091	-.69381	-10.709	.81099	.00000	.00000	-.62827	-10.709	-10.729	10.101
945	-10.445 9.9588	-.65887	-10.606	.77476	.00000	.00000	-.59791	-10.506	-10.606	10.008
946	-10.186 9.7578	-.66452	-10.467	.77572	.00000	.00000	-.60174	-10.248	-10.467	9.8652
947	-9.8741 9.5147	-.66857	-10.281	.79128	.00000	.00000	-.60105	-9.9416	-10.281	9.6797
948	-9.5195 9.2386	-.67261	-10.060	.81892	.00000	.00000	-.59744	-9.5947	-10.060	9.4624
949	-9.1181 8.9307	-.67449	-9.8045	.85538	.00000	.00000	-.58871	-9.2039	-9.8045	9.2158
950	-8.6696 8.5919	-.67513	-9.5166	.89810	.00000	.00000	-.57548	-8.7692	-9.5166	8.9411
951	-8.1735 8.2236	-.67505	-9.1968	.94534	.00000	.00000	-.55771	-8.2909	-9.1968	8.6391
952	-7.6299 7.8285	-.67465	-8.8456	.99595	.00000	.00000	-.53484	-7.7697	-8.8456	8.3108
953	-7.0387 7.4099	-.67410	-8.4633	1.0492	.00000	.00000	-.50561	-7.2072	-8.4633	7.9577
954	-6.4000 6.9731	-.67347	-8.0501	1.1044	.00000	.00000	-.46786	-6.6056	-8.0501	7.5822
955	-5.7139 6.5250	-.67285	-7.6060	1.1613	.00000	.00000	-.41819	-5.9685	-7.6060	7.1870
956	-4.9804 6.0756	-.67240	-7.1313	1.2195	.00000	.00000	-.35113	-5.3017	-7.1313	6.780
957	-4.1996 5.6385	-.67253	-6.6261	1.2789	.00000	.00000	-.25763	-4.6145	-6.6261	6.368
958	-3.3713 5.2331	-.67389	-6.0907	1.3391	.00000	.00000	-.12202	-3.9232	-6.0907	5.968
959	-2.4956 4.8861	-.67735	-5.5253	1.4000	.00000	.00000	.82803E-01	-3.2557	-5.5253	5.608
960	-1.5722 4.6319	-.68371	-4.9301	1.4612	.00000	.00000	.39934	-2.6552	-4.9301	5.324
961	-.60085 4.5103	-.69295	-4.3050	1.5226	.00000	.00000	.87636	-2.1702	-4.3050	5.181

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
962	.41853 4.5569	-.70316	-3.6491	1.5837	.00000	.00000	1.5377	-1.8224	-3.6491	5.1868
963	1.4861 4.7898	-.70871	-2.9601	1.6446	.00000	.00000	2.3659	-1.5885	-2.9601	5.3260
964	2.6018 5.2017	-.69937	-2.2342	1.7066	.00000	.00000	3.3254	-1.4230	-2.2342	5.5596
965	3.7667 5.7657	-.66002	-1.4653	1.7733	.00000	.00000	4.3895	-1.2828	-1.4653	5.8548
966	4.9842 6.4515	-.57650	-.64718	1.8531	.00000	.00000	5.5452	-.64718	-1.1375	6.6827
967	6.2677 7.2485	-.44531	.22634	1.9607	.00000	.00000	6.7985	.22634	-.97605	7.7745
968	7.6372 8.1792	-.29458	1.1524	2.1111	.00000	.00000	8.1641	1.1524	-.82145	8.9855
969	9.1248 9.2859	-.18290	2.1218	2.2902	.00000	.00000	9.6578	2.1218	-.71589	10.374
970	10.629 10.470	-.20662	3.0605	2.3768	.00000	.00000	11.127	3.0605	-.70508	11.852
971	11.092 10.633	-.17152	3.6207	2.2001	.00000	.00000	11.506	3.6207	-.58600	12.092
972	9.7847 8.3166	.95966	3.8564	1.6789	.00000	.00000	10.093	3.8564	.65104	9.4423
973	8.7446 6.6141	1.7699	3.8758	1.3359	.00000	.00000	8.9917	3.8758	1.5228	7.4688
974	15.337 22.039	-8.9037	-1.1027	2.9640	.00000	.00000	15.694	-1.1027	-9.2608	24.95
975	15.292 36.074	-25.947	-5.8563	2.9197	.00000	.00000	15.498	-5.8563	-26.153	41.65
976	3.4629 33.265	39.293	10.163	2.4452	.00000	.00000	39.460	10.163	3.2968	36.16
977	3.3838 24.063	28.615	6.8777	2.4740	.00000	.00000	28.855	6.8777	3.1435	25.71
978	3.3013 14.559	17.262	3.4260	2.5017	.00000	.00000	17.697	3.4260	2.8666	14.83
979	-2.2170 1.6763	-.54065	-2.2170	.00000	.00000	.00000	-.54065	-2.2170	-2.2170	1.676

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
980	-2.2665 1.7462	-.54926	-2.2375	.22293	.00000	.00000	-.52079	-2.2375	-2.2950	1.7742
981	-2.2598 2.2550	-.35645	-2.1870	.72926	.00000	.00000	-.10916	-2.1870	-2.5071	2.3979
982	-2.1250 2.2832	-.73812	-2.2263	1.0229	.00000	.00000	-.19580	-2.2263	-2.6673	2.4715
983	-2.1428 2.3052	-.47478	-2.1230	.92459	.00000	.00000	-.63622E-01	-2.1230	-2.5539	2.4903
984	-2.0998 2.2961	-.49126	-2.1238	.93901	.00000	.00000	-.59176E-01	-2.1238	-2.5319	2.4727
985	-2.0330 2.2985	-.49587	-2.0908	.97095	.00000	.00000	-.26113E-01	-2.0908	-2.5028	2.4767
986	-1.9729 2.3267	-.50130	-2.0559	1.0196	.00000	.00000	.20285E-01	-2.0559	-2.4945	2.5148
987	-1.9049 2.3731	-.50497	-2.0137	1.0813	.00000	.00000	.83134E-01	-2.0137	-2.4930	2.5761
988	-1.8274 2.4340	-.50665	-1.9642	1.1519	.00000	.00000	.16074	-1.9642	-2.4948	2.6555
989	-1.7398 2.5068	-.50732	-1.9079	1.2288	.00000	.00000	.25107	-1.9079	-2.4982	2.7492
990	-1.6420 2.5898	-.50727	-1.8447	1.3100	.00000	.00000	.35295	-1.8447	-2.5023	2.8552
991	-1.5344 2.6823	-.50695	-1.7751	1.3945	.00000	.00000	.46547	-1.7751	-2.5068	2.9722
992	-1.4168 2.7838	-.50645	-1.6990	1.4815	.00000	.00000	.58818	-1.6990	-2.5115	3.0996
993	-1.2897 2.8941	-.50588	-1.6167	1.5703	.00000	.00000	.72074	-1.6167	-2.5163	3.237
994	-1.1530 3.0130	-.50528	-1.5282	1.6608	.00000	.00000	.86295	-1.5282	-2.5212	3.384
995	-1.0068 3.1404	-.50482	-1.4336	1.7525	.00000	.00000	1.0146	-1.4336	-2.5262	3.540
996	-.85122 3.2765	-.50491	-1.3332	1.8454	.00000	.00000	1.1754	-1.3332	-2.5315	3.706
997	-.68606 3.4211	-.50619	-1.2269	1.9392	.00000	.00000	1.3452	-1.2269	-2.5374	3.88

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
998	-.51096 3.5745	-.50959	-1.1152	2.0340	.00000	.00000	1.5237	-1.1152	-2.5443	4.0680
999	-.32523 3.7371	-.51592	-.99778	2.1296	.00000	.00000	1.7112	-.99778	-2.5523	4.2635
1000	-.12795 3.9091	-.52547	-.87444	2.2258	.00000	.00000	1.9079	-.87444	-2.5613	4.4693
1001	.81911E-01 4.0903	-.53612	-.74375	2.3221	.00000	.00000	2.1155	-.74375	-2.5697	4.6852
1002	.30452 4.2797	-.54282	-.60356	2.4182	.00000	.00000	2.3359	-.60356	-2.5742	4.9100
1003	.53853 4.4752	-.53330	-.44969	2.5140	.00000	.00000	2.5731	-.44969	-2.5679	5.1411
1004	.77822 4.6748	-.49166	-.27859	2.6119	.00000	.00000	2.8313	-.27859	-2.5447	5.3760
1005	1.0143 4.8828	-.39325	-.85330E-01	2.7202	.00000	.00000	3.1203	-.85330E-01	-2.4993	5.6196
1006	1.2314 5.1218	-.23057	-.12526	2.8571	.00000	.00000	3.4496	.12526	-2.4487	5.8983
1007	1.4288 5.4420	-.77657E-02	.34896	3.0516	.00000	.00000	3.8455	.34896	-2.4245	6.2709
1008	1.6318 5.8867	.16007	.54960	3.3120	.00000	.00000	4.2887	.54960	-2.4969	6.7856
1009	1.9823 6.3029	.11408	.72319	3.5120	.00000	.00000	4.6823	.72319	-2.5859	7.2682
1010	2.3059 5.6457	-.64993	.61660	2.9027	.00000	.00000	4.0852	.61660	-2.4293	6.5145
1011	2.0731 3.4044	-1.2323	.37203	1.0636	.00000	.00000	2.3857	.37203	-1.5450	3.9307
1012	1.7566 2.4420	-1.0568	.34864	-.93945E-01	.00000	.00000	1.7598	.34864	-1.0599	2.8197
1013	1.3707 12.018	-10.603	-2.2342	-3.2262	.00000	.00000	2.1847	-2.2342	-11.417	13.602
1014	1.2507 23.362	-24.257	-6.2560	-3.1772	.00000	.00000	1.6405	-6.2560	-24.646	26.287
1015	1.4078 28.367	32.506	10.851	-3.7455	.00000	.00000	32.951	10.851	.96302	31.981

***** POST1 NODAL STRESS LISTING *****

HABCE-01/99-0745, Revision 2
B62

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1016	1.6725 24.224	27.870	9.4542	-3.8209	.00000	.00000	28.416	9.4542	1.1266	27.289
1017	1.9529 22.009	25.457	8.7476	-3.8942	.00000	.00000	26.085	8.7476	1.3245	24.760
1018	6.7404 7.0760	-.33558	6.7404	.00000	.00000	.00000	6.7404	6.7404	-.33558	7.0760
1019	6.6990 6.9869	-.26784	6.7342	.10767	.00000	.00000	6.7342	6.7006	-.26950	7.0037
1020	6.6156 6.6725	-.11043E-01	6.6952	.15831	.00000	.00000	6.6952	6.6194	-.14823E-01	6.7101
1021	6.5433 6.8055	-.19267	6.3968	.79716	.00000	.00000	6.6363	6.3968	-.28573	6.9220
1022	6.3795 7.0191	-.26948	6.2749	1.3836	.00000	.00000	6.6559	6.2749	-.54590	7.2018
1023	6.2360 6.9056	-.29845	6.2602	1.2689	.00000	.00000	6.4737	6.2602	-.53620	7.0099
1024	6.0722 6.7670	-.30319	6.1980	1.2012	.00000	.00000	6.2910	6.1980	-.52199	6.8130
1025	5.8831 6.6235	-.31010	6.0981	1.1744	.00000	.00000	6.0983	6.0981	-.52533	6.6236
1026	5.6680 6.4666	-.31229	5.9731	1.1740	.00000	.00000	5.9731	5.8903	-.53450	6.5076
1027	5.4255 6.2970	-.31407	5.8248	1.1913	.00000	.00000	5.8248	5.6630	-.55152	6.3763
1028	5.1554 6.1139	-.31451	5.6559	1.2208	.00000	.00000	5.6559	5.4155	-.57461	6.2305
1029	4.8572 5.9185	-.31463	5.4669	1.2591	.00000	.00000	5.4669	5.1474	-.60487	6.0718
1030	4.5308 5.7124	-.31438	5.2586	1.3039	.00000	.00000	5.2586	4.8594	-.64298	5.9015
1031	4.1760 5.4980	-.31403	5.0310	1.3536	.00000	.00000	5.0310	4.5525	-.69055	5.7216
1032	3.7929 5.2783	-.31356	4.7846	1.4073	.00000	.00000	4.7846	4.2289	-.74955	5.5342
1033	3.3813 5.0575	-.31303	4.5194	1.4641	.00000	.00000	4.5194	3.8911	-.82289	5.3421

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

HABGE-01/99-0745, Revision 2
1363

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1034	2.9411 4.8411	-.31260	4.2355	1.5234	.00000	.00000	4.2355	3.5431	-.91454	5.1500
1035	2.4724 4.6360	-.31259	3.9327	1.5850	.00000	.00000	3.9327	3.1897	-1.0299	4.9626
1036	1.9752 4.4511	-.31367	3.6109	1.6486	.00000	.00000	3.6109	2.8377	-1.1761	4.7870
1037	1.4496 4.2969	-.31660	3.2699	1.7141	.00000	.00000	3.2699	2.4948	-1.3618	4.6317
1038	.89605 4.1851	-.32249	2.9096	1.7816	.00000	.00000	2.9096	2.1697	-1.5961	4.5058
1039	.31527 4.1273	-.33132	2.5304	1.8509	.00000	.00000	2.5304	1.8709	-1.8869	4.4173
1040	-.29179 4.1330	-.34234	2.1330	1.9215	.00000	.00000	2.1330	1.6046	-2.2388	4.3718
1041	-.92404 4.2090	-.34925	1.7205	1.9926	.00000	.00000	1.7205	1.3766	-2.6499	4.3704
1042	-1.5820 4.3605	-.34311	1.2962	2.0624	.00000	.00000	1.2962	1.1909	-3.1160	4.4122
1043	-2.2691 4.5990	-.30024	.86774	2.1300	.00000	.00000	1.0618	.86774	-3.6312	4.6929
1044	-2.9982 4.9487	-.20108	.43671	2.1966	.00000	.00000	1.0044	.43671	-4.2037	5.2089
1045	-3.7927 5.4694	-.37429E-02	.82478E-02	2.2739	.00000	.00000	1.0615	.82478E-02	-4.8579	5.9194
1046	-4.6933 6.2185	.26737	-.44668	2.3870	.00000	.00000	1.2294	-.44668	-5.6553	6.8847
1047	-5.7034 7.2260	.57737	-.94775	2.5833	.00000	.00000	1.5034	-.94775	-6.6294	8.1327
1048	-6.6381 8.1000	.53485	-1.5763	2.8777	.00000	.00000	1.5466	-1.5763	-7.6499	9.1966
1049	-6.0180 7.2411	-.39914	-1.9424	3.0084	.00000	.00000	.90770	-1.9424	-7.3248	8.2325
1050	-3.0236 4.0525	-4.5277	-2.5125	2.0921	.00000	.00000	-1.5525	-2.5125	-5.9988	4.4461
1051	-1.0564 4.3842	-5.2678	-2.0029	1.2350	.00000	.00000	-.72098	-2.0029	-5.6032	4.8823

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

HABGE-01/99-0745, Revision 2

B64

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1052	-4.1605 28.864	-34.033	-6.3931	-.90476	.00000	.00000	-4.1331	-6.3931	-34.060	29.927
1053	-4.1016 6.7901	-.94547	3.4976	-.89108	.00000	.00000	3.4976	-.71126	-4.3358	7.8333
1054	2.0665 8.8217	11.683	9.0786	-1.0965	.00000	.00000	11.806	9.0786	1.9430	9.8634
1055	-.65394E-01 24.719	28.378	13.325	-1.0959	.00000	.00000	28.420	13.325	-.10755	28.527
1056	-2.2304 41.163	45.032	17.462	-1.0949	.00000	.00000	45.058	17.462	-2.2558	47.313
1057	20.181 20.432	-.25113	20.181	.00000	.00000	.00000	20.181	20.181	-.25113	20.432
1058	20.173 20.288	-.10229	20.199	.18520E-01	.00000	.00000	20.199	20.173	-.10230	20.301
1059	20.030 20.120	-.29940E-01	20.148	.64223E-01	.00000	.00000	20.148	20.031	-.30146E-01	20.178
1060	19.762 19.495	.37442	19.731	-1.2597	.00000	.00000	19.844	19.731	.29292	19.551
1061	19.382 19.873	-.20187	19.225	-2.1960	.00000	.00000	19.625	19.225	-.44511	20.070
1062	18.934 19.430	-.19373	19.129	-1.6210	.00000	.00000	19.129	19.070	-.33014	19.459
1063	18.413 18.976	-.20858	18.875	-1.2265	.00000	.00000	18.875	18.494	-.28901	19.164
1064	17.841 18.487	-.21440	18.546	-.92016	.00000	.00000	18.546	17.887	-.26117	18.808
1065	17.194 17.946	-.21608	18.152	-.67124	.00000	.00000	18.152	17.220	-.24192	18.394
1066	16.467 17.350	-.21795	17.695	-.46050	.00000	.00000	17.695	16.480	-.23065	17.925
1067	15.658 16.696	-.21812	17.179	-.27717	.00000	.00000	17.179	15.662	-.22296	17.407
1068	14.763 15.984	-.21834	16.606	-.11384	.00000	.00000	16.606	14.764	-.21921	16.821
1069	13.784 15.217	-.21807	15.976	.34313E-01	.00000	.00000	15.976	13.784	-.21816	16.194

HABGE-01/99-0745, Revision 2

B65

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SEQV	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1070	12.719	14.398	-.21780	15.289	.17075	.00000	.00000	15.289	12.722	-.22005	15.509
1071	11.570	13.533	-.21737	14.546	.29794	.00000	.00000	14.546	11.577	-.22489	14.771
1072	10.335	12.631	-.21688	13.748	.41772	.00000	.00000	13.748	10.351	-.23339	13.982
1073	9.0151	11.702	-.21648	12.895	.53151	.00000	.00000	12.895	9.0456	-.24698	13.142
1074	7.6104	10.765	-.21639	11.986	.64047	.00000	.00000	11.986	7.6625	-.26845	12.254
1075	6.1204	9.8446	-.21735	11.021	.74556	.00000	.00000	11.021	6.2069	-.30387	11.325
1076	4.5442	8.9788	-.21985	10.001	.84774	.00000	.00000	10.001	4.6906	-.36621	10.367
1077	2.8805	8.2227	-.22543	8.9225	.94774	.00000	.00000	8.9225	3.1468	-.49178	9.4143
1078	1.1272	7.6512	-.23338	7.7864	1.0463	.00000	.00000	7.7864	1.6949	-.80110	8.5875
1079	-.71770	7.3559	-.24468	6.5912	1.1433	.00000	.00000	6.5912	1.68636	-1.6487	8.2400
1080	-2.6550	7.4214	-.25079	5.3397	1.2386	.00000	.00000	5.3397	1.27310	-3.1789	8.5186
1081	-4.6817	7.8920	-.24820	4.0342	1.3294	.00000	.00000	4.0342	1.11985	-5.0498	9.0840
1082	-6.7888	8.7638	-.20381	2.6911	1.4142	.00000	.00000	2.6911	.87041E-01	-7.0796	9.7707
1083	-8.9583	9.9803	-.11287	1.3192	1.4885	.00000	.00000	1.3192	1.13091	-9.2021	10.521
1084	-11.170	11.523	-.10465	-.42169E-01	1.5604	.00000	.00000	.31662	-.42169E-01	-11.382	11.698
1085	-13.421	13.300	.37628	-1.4207	1.6423	.00000	.00000	.56907	-1.4207	-13.613	14.182
1086	-15.797	15.436	.79755	-2.8155	1.8059	.00000	.00000	.99179	-2.8155	-15.992	16.982
1087	-18.658	17.741	.73428	-4.6238	2.1505	.00000	.00000	.96989	-4.6238	-18.894	19.864

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

HABGE-01/99-0745, Revision 2

866

14	-77.788 70.764	-.79428	-62.980	.34058	.00000	.00000	-.79277	-62.980	-77.789	76.996
15	-72.915 67.494	-.96224	-62.871	.25432E-01	.00000	.00000	-.96223	-62.871	-72.915	71.953
16	-67.541 64.002	-.95053	-62.003	-.16236	.00000	.00000	-.95013	-62.003	-67.541	66.591
17	-62.069 60.422	-.96479	-60.675	-.31318	.00000	.00000	-.96318	-60.675	-62.070	61.107
18	-56.518 56.825	-.96132	-58.964	-.44706	.00000	.00000	-.95772	-56.522	-58.964	58.006

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
19	SEQV -50.875 53.215	-.95922	-56.935	-.57488	.00000	.00000	-.95260	-50.882	-56.935	55.983
20	-45.099 49.611	-.95611	-54.623	-.70041	.00000	.00000	-.94500	-45.110	-54.623	53.678
21	-39.151 46.047	-.95370	-52.052	-.82474	.00000	.00000	-.93590	-39.169	-52.052	51.111
22	-33.000 42.588	-.95176	-49.236	-.94797	.00000	.00000	-.92374	-33.028	-49.236	48.313
23	-26.620 39.340	-.95034	-46.189	-1.0699	.00000	.00000	-.90583	-26.664	-46.189	45.283
24	-19.993 36.455	-.94967	-42.918	-1.1899	.00000	.00000	-.87560	-20.067	-42.918	42.042
25	-13.111 34.146	-.95035	-39.433	-1.3065	.00000	.00000	-.81156	-13.250	-39.433	38.621
26	-5.9821 32.662	-.95360	-35.746	-1.4159	.00000	.00000	-.58233	-6.3534	-35.746	35.163
27	1.3584 32.243	-.96221	-31.876	-1.5111	.00000	.00000	2.1033	-1.7071	-31.876	33.979
28	8.8345 33.014	-.97454	-27.855	-1.5818	.00000	.00000	9.0833	-1.2233	-27.855	36.931
29	16.287 34.887	-1.0043	-23.745	-1.6091	.00000	.00000	16.436	-1.1528	-23.745	40.116

30	23.550 37.595	-1.0295	-19.605	-1.5875	.00000	.00000	23.653	-1.1316	-19.605	43.258
31	30.073 40.501	-1.0404	-15.616	-1.4503	.00000	.00000	30.141	-1.1079	-15.616	45.757
32	37.069 44.443	-1.2478	-11.518	-1.6300	.00000	.00000	37.139	-1.3170	-11.518	48.656
33	40.255 44.520	.59912	-7.8835	-.61884	.00000	.00000	40.264	.58946	-7.8835	48.148
34	47.084 56.275	-10.726	-7.2008	-2.3265	.00000	.00000	47.177	-7.2008	-10.820	57.997
35	30.667 59.267	82.184	17.496	-1.4836	.00000	.00000	82.227	30.624	17.496	64.730
36	15.115 24.398	19.339	-6.0422	3.6698	.00000	.00000	21.461	12.993	-6.0422	27.504

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
37	11.437 73.929	-72.678	-34.382	6.9496	.00000	.00000	12.007	-34.382	-73.249	85.256
38	-27.610 27.443	-.16699	-27.610	.00000	.00000	.00000	-.16699	-27.610	-27.610	27.443
39	-27.707 25.743	-1.8495	-27.443	-.51828	.00000	.00000	-1.8391	-27.443	-27.718	25.879
40	-27.213 26.369	-.79919	-27.053	-.78751	.00000	.00000	-.77573	-27.053	-27.236	26.461
41	-27.037 26.094	-1.0234	-27.165	-.53436	.00000	.00000	-1.0124	-27.048	-27.165	26.151
42	-26.922 25.908	-1.1244	-27.132	-.29872	.00000	.00000	-1.1209	-26.926	-27.132	26.011
43	-27.271 26.134	-1.0913	-27.180	-.60279E-01	.00000	.00000	-1.0911	-27.180	-27.271	26.181
44	-27.625 26.591	-.89237	-27.335	.21878	.00000	.00000	-.89058	-27.335	-27.627	26.731
45	-28.054 24.699	-3.7051	-28.288	1.9483	.00000	.00000	-3.5502	-28.209	-28.288	24.711

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1088	-23.331 21.348	.49437E-01	-7.4520	3.0662	.00000	.00000	.44487	-7.4520	-23.726	24.171
1089	-29.165 21.686	-5.7123	-12.832	3.4910	.00000	.00000	-5.2037	-12.832	-29.674	24.470
1090	-31.960 19.955	-10.624	-16.283	3.2506	.00000	.00000	-10.140	-16.283	-32.444	22.304
1091	1.0925 1.2327	-.14023	1.0925	.00000	.00000	.00000	1.0925	1.0925	-.14023	1.2327
1092	1.4381 1.7076	-.16009	1.1750	.48752	.00000	.00000	1.5751	1.1750	-.29706	1.8722
1093	1.5551 1.4861	.62049	1.6926	.62918	.00000	.00000	1.8715	1.6926	.30406	1.5675
1094	1.2030 2.2353	-.98540	1.0202	.43757	.00000	.00000	1.2872	1.0202	-1.0696	2.3569
1095	1.5845 1.4851	.19445	1.5375	.33478	.00000	.00000	1.6610	1.5375	.11802	1.5429
1096	1.8248 1.9183	-.15749	1.5683	.25378	.00000	.00000	1.8567	1.5683	-.18946	2.0462
1097	1.9959 2.0083	-.10981	1.6872	.22645	.00000	.00000	2.0200	1.6872	-.13389	2.1539
1098	2.2844 2.2388	-.11400	1.8535	.18943	.00000	.00000	2.2993	1.8535	-.12887	2.4282
1099	2.5494 2.4651	-.12178	2.0109	.17311	.00000	.00000	2.5606	2.0109	-.13295	2.6936
1100	2.8801 2.7374	-.11817	2.2050	.15517	.00000	.00000	2.8881	2.2050	-.12618	3.0143
1101	3.2324 3.0381	-.12144	2.4109	.14423	.00000	.00000	3.2386	2.4109	-.12763	3.3662
1102	3.6294 3.3743	-.12009	2.6423	.13412	.00000	.00000	3.6342	2.6423	-.12488	3.7591
1103	4.0602 3.7430	-.12082	2.8925	.12682	.00000	.00000	4.0640	2.8925	-.12467	4.1887
1104	4.5300 4.1454	-.12026	3.1650	.12051	.00000	.00000	4.5332	3.1650	-.12338	4.6561
1105	5.0363 4.5806	-.12012	3.4582	.11562	.00000	.00000	5.0389	3.4582	-.12271	5.1611

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

HABCE-01/99-0745, Revision 2

1369

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1106	5.5798 5.0486	-.11972	3.7728	.11145	.00000	.00000	5.5820	3.7728	-.12190	5.7039
1107	6.1603 5.5492	-.11922	4.1085	.10820	.00000	.00000	6.1622	4.1085	-.12108	6.2833
1108	6.7768 6.0821	-.11939	4.4650	.10529	.00000	.00000	6.7784	4.4650	-.12099	6.8994
1109	7.4312 6.6484	-.11944	4.8429	.10336	.00000	.00000	7.4327	4.8429	-.12085	7.5535
1110	8.1203 7.2479	-.12265	5.2406	.10108	.00000	.00000	8.1215	5.2406	-.12389	8.2454
1111	8.8531 7.8848	-.12517	5.6615	.10074	.00000	.00000	8.8542	5.6615	-.12630	8.9805
1112	9.6186 8.5585	-.13642	6.1006	.98177E-01	.00000	.00000	9.6196	6.1006	-.13741	9.7570
1113	10.448 9.2794	-.13931	6.5710	.10114	.00000	.00000	10.449	6.5710	-.14028	10.589
1114	11.299 10.036	-.16049	7.0555	.95378E-01	.00000	.00000	11.300	7.0555	-.16128	11.461
1115	12.265 10.848	-.13372	7.5968	.10695	.00000	.00000	12.266	7.5968	-.13465	12.400
1116	13.173 11.648	-.14554	8.1279	.86748E-01	.00000	.00000	13.174	8.1279	-.14611	13.320
1117	14.306 12.467	.33567E-01	8.7829	.12314	.00000	.00000	14.307	8.7829	.32505E-01	14.275
1118	15.017 13.065	.67533E-01	9.2977	.47683E-01	.00000	.00000	15.017	9.2977	.67381E-01	14.954
1119	16.235 13.538	.72136	10.116	.16464	.00000	.00000	16.237	10.116	.71961	15.517
1120	15.737 13.374	.48756	10.213	-.10185	.00000	.00000	15.738	10.213	.48688	15.251
1121	17.140 12.997	2.2657	11.335	.32511	.00000	.00000	17.147	11.335	2.2586	14.888
1122	12.482 13.171	-2.0301	9.0172	-.62472	.00000	.00000	12.508	9.0172	-2.0569	14.565
1123	46.190 39.063	4.5333	20.954	8.2659	.00000	.00000	47.771	20.954	2.9531	44.817

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
------	----	----	----	-----	-----	-----	----	----	----	------

HABGE-01/99-0745, Revision 2

B70

1124	18.374 55.858	-44.398	-.67220	2.0565	.00000	.00000	18.441	-.67220	-44.465	62.906
1125	-16.537 26.857	10.327	5.1041	-6.1289	.00000	.00000	11.659	5.1041	-17.869	29.528
1126	-16.454 63.313	45.709	15.652	19.230	.00000	.00000	51.176	15.652	-21.922	73.098
1127	-14.559 51.354	32.617	11.924	17.886	.00000	.00000	38.631	11.924	-20.573	59.204
1128	-12.674 32.759	2.9566	3.3280	16.562	.00000	.00000	13.455	3.3280	-23.172	36.627
1129	18.877 19.017	-.14023	18.877	.00000	.00000	.00000	18.877	18.877	-.14023	19.017
1130	18.526 18.701	-.63033E-01	18.729	-.34818	.00000	.00000	18.729	18.533	-.69552E-01	18.799
1131	18.447 18.015	.50097	18.503	-.69896	.00000	.00000	18.503	18.474	.47379	18.029
1132	18.716 19.501	-.94464	18.366	-.40999	.00000	.00000	18.725	18.366	-.95318	19.678
1133	18.296 18.241	.21542	18.598	-.29629	.00000	.00000	18.598	18.301	.21056	18.388
1134	18.087 18.374	-.16537	18.319	-.25028	.00000	.00000	18.319	18.090	-.16880	18.487
1135	17.913 18.181	-.99883E-01	18.238	-.19134	.00000	.00000	18.238	17.915	-.10191	18.340
1136	17.627 17.966	-.11325	18.065	-.16811	.00000	.00000	18.065	17.628	-.11485	18.180
1137	17.362 17.758	-.11684	17.905	-.13932	.00000	.00000	17.905	17.364	-.11795	18.023
1138	17.032 17.498	-.11498	17.712	-.12231	.00000	.00000	17.712	17.033	-.11586	17.828
1139	16.680 17.226	-.11737	17.504	-.10534	.00000	.00000	17.504	16.681	-.11803	17.622
1140	16.284 16.918	-.11636	17.274	-.92665E-01	.00000	.00000	17.274	16.284	-.11688	17.391
1141	15.853 16.587	-.11688	17.023	-.80999E-01	.00000	.00000	17.023	15.854	-.11729	17.140

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
------	------------	----	----	-----	-----	-----	----	----	----	------

HABGE-01/99-0745, Revision 2

B71

1142	15.227	-.11639	16.751	-.71271E-01	.00000	.00000	16.751	15.384	-.11672	16.868
1143	14.877	-.11619	16.458	-.62430E-01	.00000	.00000	16.458	14.878	-.11645	16.574
1144	14.334	-.11582	16.143	-.54706E-01	.00000	.00000	16.143	14.334	-.11603	16.259
1145	13.754	-.11528	15.808	-.47546E-01	.00000	.00000	15.808	13.754	-.11544	15.923
1146	13.137	-.11551	15.451	-.41275E-01	.00000	.00000	15.451	13.137	-.11564	15.567
1147	12.483	-.11546	15.073	-.35051E-01	.00000	.00000	15.073	12.483	-.11556	15.189
1148	11.794	-.11884	14.673	-.30025E-01	.00000	.00000	14.673	11.794	-.11891	14.792
1149	11.061	-.12101	14.251	-.23780E-01	.00000	.00000	14.251	11.061	-.12106	14.372
1150	10.295	-.13271	13.805	-.20388E-01	.00000	.00000	13.805	10.295	-.13275	13.938
1151	9.4655	-.13454	13.334	-.12002E-01	.00000	.00000	13.334	9.4655	-.13456	13.469
1152	8.6140	-.15718	12.837	-.12826E-01	.00000	.00000	12.837	8.6140	-.15719	12.994
1153	7.6477	-.12735	12.313	.32445E-02	.00000	.00000	12.313	7.6477	-.12735	12.441
1154	6.7386	-.14430	11.774	-.12945E-01	.00000	.00000	11.774	6.7386	-.14433	11.918
1155	5.6077	.43531E-01	11.227	.27015E-01	.00000	.00000	11.227	5.6078	-.43400E-01	11.184
1156	4.9002	.59866E-01	10.725	-.45474E-01	.00000	.00000	10.725	4.9006	.59438E-01	10.665
1157	3.6932	.74013	10.296	.74124E-01	.00000	.00000	10.296	3.6951	-.73827	9.5575
1158	4.2036	.44903	10.029	-.19044	.00000	.00000	10.029	4.2133	.43939	9.5892
1159	2.8322	2.3179	9.9686	.24015	.00000	.00000	9.9686	2.9269	2.2232	7.7454

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1160	7.4868	-2.1684	9.6563	-.70676	.00000	.00000	9.6563	7.5382	-2.2199	11.871

1161	10. -26.185 32.865	4.8896	1.7560	8.2069	.00000	.00000	6.9239	1.7560	-28.219	35.143
1162	-50.017 27.179	-47.829	-22.196	2.6321	.00000	.00000	-22.196	-46.073	-51.774	29.577
1163	-31.085 48.725	17.475	2.6617	-13.114	.00000	.00000	20.790	2.6617	-34.400	55.190
1164	45.791 69.724	111.59	52.981	17.822	.00000	.00000	116.11	52.981	41.275	74.836
1165	34.254 28.278	23.424	23.183	15.052	.00000	.00000	44.835	23.183	12.843	31.992
1166	22.582 62.275	-43.905	-.31941	12.326	.00000	.00000	24.794	-.31941	-46.117	70.911
1167	-29.235 28.860	-.37531	-29.235	.00000	.00000	.00000	-.37531	-29.235	-29.235	28.860
1168	-29.034 29.135	.71099E-01	-29.093	.64152E-01	.00000	.00000	.71240E-01	-29.035	-29.093	29.164
1169	-29.011 29.067	.90290E-01	-28.912	-.54472	.00000	.00000	.10048	-28.912	-29.021	29.121
1170	-28.930 28.520	-.52141	-29.102	-.68216	.00000	.00000	-.50504	-28.946	-29.102	28.597
1171	-28.015 28.350	.49057E-01	-28.568	-.31127	.00000	.00000	.52509E-01	-28.019	-28.568	28.620
1172	-26.883 27.397	-.72925E-01	-28.018	-.18914	.00000	.00000	-.71590E-01	-26.885	-28.018	27.947
1173	-25.787 26.526	-.94667E-01	-27.382	-.57451E-01	.00000	.00000	-.94539E-01	-25.787	-27.382	27.288
1174	-24.525 25.573	-.71969E-01	-26.633	.51010E-01	.00000	.00000	-.71863E-01	-24.525	-26.633	26.561
1175	-23.104 24.478	-.87341E-01	-25.801	.14743	.00000	.00000	-.86397E-01	-23.105	-25.801	25.715
1176	-21.503 23.287	-.80714E-01	-24.861	.23642	.00000	.00000	-.78105E-01	-21.505	-24.861	24.783
1177	-19.717 21.980	-.84722E-01	-23.820	.31833	.00000	.00000	-.79562E-01	-19.722	-23.820	23.741

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1178	-17.745 20.985	-.83024E-01	-22.673	.39611	.00000	.00000	-.74145E-01	-17.754	-22.673	22.59

HABGE-01/99-0745, Revision 2

B73

1179	-15.118	-.83932E-01	-21.421	.46993	.00000	.00000	-.69699E-01	-15.601	-21.421	21.351
1180	-13.241	-.83400E-01	-20.062	.54098	.00000	.00000	-.61194E-01	-13.263	-20.062	20.001
1181	-10.709	-.83393E-01	-18.597	.60954	.00000	.00000	-.48542E-01	-10.744	-18.597	18.549
1182	-7.9926	-.83159E-01	-17.026	.67614	.00000	.00000	-.25776E-01	-8.0500	-17.026	17.000
1183	-5.0918	-.82729E-01	-15.349	.74098	.00000	.00000	.24582E-01	-5.1992	-15.349	15.374
1184	-2.0077	-.83043E-01	-13.567	.80461	.00000	.00000	.20901	-2.2998	-13.567	13.776
1185	1.2603	-.82596E-01	-11.679	.86743	.00000	.00000	1.6858	-.50810	-11.679	13.364
1186	4.7162	-.85392E-01	-9.6841	.93091	.00000	.00000	4.8904	-.25955	-9.6841	14.575
1187	8.3686	-.85431E-01	-7.5789	.99587	.00000	.00000	8.4843	-.20116	-7.5789	16.063
1188	12.235	-.95301E-01	-5.3605	1.0657	.00000	.00000	12.327	-.18673	-5.3605	17.687
1189	16.338	-.92171E-01	-3.0139	1.1396	.00000	.00000	16.417	-.17083	-3.0139	19.431
1190	20.707	-.11533	-.53985	1.2217	.00000	.00000	20.779	-.18676	-.53985	21.318
1191	25.343	-.82038E-01	2.0898	1.2973	.00000	.00000	25.409	2.0898	-.14806	25.557
1192	30.212	-.12288	4.8271	1.3647	.00000	.00000	30.274	4.8271	-.18415	30.458
1193	35.113	.45640E-01	7.6953	1.3576	.00000	.00000	35.165	7.6953	-.68387E-02	35.172
1194	39.688	-.39073E-01	10.437	1.2681	.00000	.00000	39.729	10.437	-.79512E-01	39.808
1195	43.090	.55225	13.051	.90470	.00000	.00000	43.109	13.051	.53302	42.576

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1196	44.511 39.204	.10588	14.725	.42098	.00000	.00000	44.515	14.725	.10189	44.41
1197	42.270	1.8067	15.836	-.60157	.00000	.00000	42.279	15.836	1.7978	40.41

1198	35.8 38.403 35.251	-2.0771	14.572	-.50511	.00000	.00000	38.409	14.572	-2.0834	40.493
1199	36.127 26.786	5.6157	17.038	-1.2374	.00000	.00000	36.177	17.038	5.5656	30.611
1200	51.939 68.427	-24.681	13.141	9.6450	.00000	.00000	53.134	13.141	-25.877	79.011
1201	68.707 92.711	-29.069	17.887	21.767	.00000	.00000	73.334	17.887	-33.696	107.03
1202	13.985 14.101	-.11523	13.985	.00000	.00000	.00000	13.985	13.985	-.11523	14.101
1203	13.869 14.010	-.10002	13.951	.13894E-01	.00000	.00000	13.951	13.869	-.10004	14.051
1204	13.846 13.523	.51689	13.846	1.3182	.00000	.00000	13.975	13.846	.38778	13.587
1205	13.871 14.780	-.43846	13.610	2.4060	.00000	.00000	14.264	13.610	-.83220	15.096
1206	13.803 14.169	.44952E-01	13.816	1.9420	.00000	.00000	14.072	13.816	-.22391	14.296
1207	13.788 14.102	-.47482E-01	13.784	1.5815	.00000	.00000	13.966	13.784	-.22596	14.192
1208	13.808 14.072	-.66910E-01	13.797	1.3753	.00000	.00000	13.943	13.797	-.20192	14.145
1209	13.799 14.019	-.51190E-01	13.803	1.2462	.00000	.00000	13.910	13.803	-.16243	14.073
1210	13.801 14.008	-.61350E-01	13.803	1.1594	.00000	.00000	13.897	13.803	-.15764	14.055
1211	13.801 13.992	-.57423E-01	13.806	1.1026	.00000	.00000	13.889	13.806	-.14459	14.033
1212	13.802 13.986	-.59725E-01	13.806	1.0651	.00000	.00000	13.883	13.806	-.14108	14.024
1213	13.802 13.980	-.58790E-01	13.807	1.0420	.00000	.00000	13.880	13.807	-.13669	14.017

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1214	13.803 13.978	-.59242E-01	13.807	1.0293	.00000	.00000	13.879	13.807	-.13525	14.01
1215	13.803 13.977	-.58914E-01	13.807	1.0245	.00000	.00000	13.878	13.807	-.13422	14.01

1216	13.978	-.58852E-01	13.808	1.0257	.00000	.00000	13.879	13.808	-.13434	14.013
1217	13.979	-.58658E-01	13.808	1.0318	.00000	.00000	13.880	13.808	-.13503	14.015
1218	13.981	-.58377E-01	13.808	1.0416	.00000	.00000	13.882	13.808	-.13620	14.018
1219	13.984	-.58524E-01	13.808	1.0547	.00000	.00000	13.884	13.808	-.13831	14.022
1220	13.988	-.58430E-01	13.808	1.0709	.00000	.00000	13.887	13.808	-.14066	14.027
1221	13.994	-.60250E-01	13.807	1.0907	.00000	.00000	13.890	13.807	-.14553	14.035
1222	14.001	-.61093E-01	13.807	1.1149	.00000	.00000	13.894	13.807	-.15017	14.044
1223	14.013	-.67417E-01	13.805	1.1458	.00000	.00000	13.898	13.805	-.16143	14.060
1224	14.023	-.67481E-01	13.806	1.1833	.00000	.00000	13.905	13.806	-.16768	14.073
1225	14.046	-.80451E-01	13.802	1.2289	.00000	.00000	13.912	13.802	-.18838	14.101
1226	14.044	-.62604E-01	13.808	1.2718	.00000	.00000	13.923	13.808	-.17825	14.102
1227	14.063	-.76396E-01	13.804	1.3027	.00000	.00000	13.926	13.804	-.19758	14.124
1228	13.974	.25919E-01	13.836	1.2693	.00000	.00000	13.931	13.836	-.89939E-01	14.021
1229	13.932	.24029E-01	13.831	1.1390	.00000	.00000	13.894	13.831	-.69511E-01	13.964
1230	13.596	.36454	13.942	.77523	.00000	.00000	13.942	13.890	.32010	13.622
1231	13.527	.27086	13.873	.21350	.00000	.00000	13.873	13.715	.26747	13.606

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1232	14.011 13.125	1.0130	14.165	-.65559	.00000	.00000	14.165	14.044	.98006	13.181
1233	13.239 14.239	-.82330	13.406	-.93277	.00000	.00000	13.406	13.301	-.88490	14.29
1234	11.441	2.5729	13.803	-1.1393	.00000	.00000	13.803	11.585	2.4289	11.37

1235	10.4596 20.594	-14.129	5.8027	5.6011	.00000	.00000	5.8027	3.2997	-15.929	21.731
1236	-11.662 36.282	27.083	13.932	7.1114	.00000	.00000	28.347	13.932	-12.926	41.274
1237	-9.1721 24.005	17.098	11.233	-1.3906	.00000	.00000	17.171	11.233	-9.2455	26.417
1238	-3.2036 37.268	-40.226	-4.2624	-4.3320	.00000	.00000	-2.7035	-4.2624	-40.726	38.023
1239	56.748 56.603	.14485	56.748	.00000	.00000	.00000	56.748	56.748	.14485	56.603
1240	56.767 57.061	-.33419	56.686	-.89218E-01	.00000	.00000	56.768	56.686	-.33433	57.102
1241	56.971 56.030	1.0074	56.822	-2.2911	.00000	.00000	57.064	56.822	.91379	56.151
1242	56.501 57.097	-.36126	56.281	-3.6134	.00000	.00000	56.729	56.281	-.58996	57.319
1243	55.612 56.030	.30040E-01	56.167	-2.5115	.00000	.00000	56.167	55.725	-.83216E-01	56.250
1244	54.516 55.190	-.15382E-01	55.616	-1.9195	.00000	.00000	55.616	54.584	-.82868E-01	55.699
1245	53.374 54.291	-.41056E-01	54.965	-1.5085	.00000	.00000	54.965	53.416	-.83623E-01	55.049
1246	52.129 53.287	-.30175E-01	54.242	-1.1871	.00000	.00000	54.242	52.156	-.57176E-01	54.299
1247	50.705 52.169	-.35310E-01	53.407	-.93508	.00000	.00000	53.407	50.723	-.52536E-01	53.460
1248	49.105 50.922	-.34192E-01	52.472	-.72545	.00000	.00000	52.472	49.116	-.44899E-01	52.517
1249	47.321 49.548	-.34697E-01	51.432	-.54660	.00000	.00000	51.432	47.327	-.41006E-01	51.473

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1250	45.350 48.048	-.34572E-01	50.287	-.39006	.00000	.00000	50.287	45.353	-.37924E-01	50.331
1251	43.192 46.427	-.34544E-01	49.035	-.25041	.00000	.00000	49.035	43.193	-.35995E-01	49.071
1252	40.847 44.690	-.34432E-01	47.677	-.12384	.00000	.00000	47.677	40.847	-.34807E-01	47.711

1253	38.848	-.34308E-01	46.213	-.76485E-02	.00000	.00000	46.213	38.316	-.34310E-01	46.247
1254	35.600	-.34160E-01	44.642	.10016	.00000	.00000	44.642	35.600	-.34441E-01	44.676
1255	32.700	-.34022E-01	42.965	.20109	.00000	.00000	42.965	32.701	-.35258E-01	43.000
1256	29.616	-.34012E-01	41.183	.29649	.00000	.00000	41.183	29.619	-.36976E-01	41.220
1257	26.348	-.34258E-01	39.295	.38767	.00000	.00000	39.295	26.354	-.39953E-01	39.334
1258	22.893	-.35122E-01	37.299	.47629	.00000	.00000	37.299	22.903	-.45012E-01	37.344
1259	19.241	-.36732E-01	35.193	.56433	.00000	.00000	35.193	19.257	-.53238E-01	35.247
1260	15.375	-.39572E-01	32.971	.65427	.00000	.00000	32.971	15.403	-.67293E-01	33.039
1261	11.270	-.42711E-01	30.625	.74791	.00000	.00000	30.625	11.320	-.91941E-01	30.716
1262	6.9027	-.45686E-01	28.143	.84539	.00000	.00000	28.143	7.0041	-.14706	28.290
1263	2.2601	-.42923E-01	25.523	.94009	.00000	.00000	25.523	2.5951	-.37793	25.901
1264	-2.6038	-.30268E-01	22.778	1.0157	.00000	.00000	22.778	.32232	-2.9563	25.735
1265	-7.5228	.69349E-02	19.966	1.0329	.00000	.00000	19.966	.14607	-7.6619	27.628
1266	-12.065	.85782E-01	17.228	.93268	.00000	.00000	17.228	.15696	-12.136	29.364
1267	-15.545	.17969	14.792	.62694	.00000	.00000	14.792	.20465	-15.570	30.362

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1268	-16.684	.42809	13.127	.28811E-01	.00000	.00000	13.127	.42813	-16.685	29.812
1269	-15.013	.23719	12.298	-.67586	.00000	.00000	12.298	.26708	-15.043	27.340
1270	-9.6054	.38699	12.866	-1.3316	.00000	.00000	12.866	.56139	-9.7798	22.640
1271	-8.6905	-.40165	13.597	-1.0536	.00000	.00000	13.597	-.14827	-4.0039	17.600

1272	16.27531	-3.7255	13.502	1.4990	.00000	.00000	13.502	.77462	-4.2248	17.727
	15.831									
1273	6.2698	-2.0956	15.599	3.1701	.00000	.00000	15.599	7.3354	-3.1612	18.760
	16.285									
1274	3.1954	22.248	21.777	-1.1469	.00000	.00000	22.317	21.777	3.1266	19.190
	18.926									
1275	-3.7888	-29.366	3.8915	-5.1523	.00000	.00000	3.8915	-2.7899	-30.365	34.256
	31.453									

MINIMUM VALUES

NODE	146	753	757	827	1	1	1162	757	146	152
VALUE	-94.311	-53.959	-61.994	-18.908	.00000	.00000	-22.196	-61.994	-94.466	.40025
	.34835									

MAXIMUM VALUES

NODE	34	1164	447	1201	1	1	1164	35	1164	827
VALUE	92.860	111.59	64.369	21.767	.00000	.00000	116.11	58.132	41.275	122.82
	109.48									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
SEQV										

***** ESTIMATED BOUNDS CONSIDERING THE EFFECT OF DISCRETIZATION ERROR *****

MINIMUM VALUES

NODE	900	1162	1162	827	1164	1164	1162	1162	900	35
VALUE	-138.01	-103.47	-77.836	-86.266	.00000	.00000	-77.836	-101.71	-138.52	.00000
	.00000									

MAXIMUM VALUES

NODE	1164	1164	1164	1164	1164	1164	1164	1164	1164	827
VALUE	130.82	196.62	138.01	102.85	.00000	.00000	201.14	138.01	126.30	190.18
	176.83									

```
/filnam,pres2c
/PREP7
/TITLE,DSC STRUCTURAL ANALYSIS MODEL
KAN,0
ET,1,42,,,1
C*** STAINLESS STEEL
EX,1,26.5E6
NUXY,1,0.3
DENS,1,0.283
ALPX,1,9.8E-6
C*** CHEMICAL LEAD
EX,2,3.0E6
NUXY,2,0.4
DENS,2,0.411
ALPX,2,16.4E-6
C*** KTEMP,-1 *****
C*** NODAL INPUT
C*** BOTTOM DETAIL
N,1,0.0,0.0
N,7,6.0,0.0
FILL
N,8,6.625,0.0
N,9,7.25,0.0
N,10,8.0,0.0
N,35,33.0,0.0
FILL
N,36,33.275,0.0
N,37,33.55,0.0
NGEN,3,37,1,37,1,0.0,0.5
NGEN,2,37,75,109,1,0.0,0.75
N,147,33.125,1.75
N,148,33.55,1.75
NGEN,2,37,112,145
N,183,33.125,1.75
NGEN,2,35,149,157,1,0.0,1.0
N,193,7.25,2.75
N,194,8.0,2.75
NGEN,2,37,158,183,1,0.0,1.0
N,221,33.125,2.75
N,222,33.55,2.75
NGEN,3,39,184,222,1,0.0,1.0
NGEN,2,39,262,270,1,0.0,1.0
N,310,8.0,6.0
N,335,33.125,6.0
FILL
NGEN,2,35,301,335,1,0.0,0.0
N,371,33.55,6.0
NGEN,2,36,336;344,1,0.0,0.75
NGEN,2,36,345,371,1,0.0,0.5
N,408,7.25,7.75
N,409,8.0,7.75
N,410,5.0,9.0
N,411,6.125,9.0
N,412,7.25,9.0
N,413,8.0,9.0
NGEN,2,4,410,413,1,0.0,1.0
```

C*** ELEMENT GENERATION

C*** BOTTOM DETAIL

E, 1, 2, 39, 38
EGEN, 36, 1, -1
E, 38, 39, 76, 75
EGEN, 36, 1, -1
E, 75, 76, 113, 112
EGEN, 36, 1, -1
MAT, 2
E, 149, 150, 185, 184
EGEN, 8, 1, -1
MAT, 1
E, 120, 121, 194, 193
MAT, 2
E, 158, 159, 196, 195
EGEN, 24, 1, -1
E, 182, 183, 220, 219
MAT, 1
E, 147, 148, 222, 221
MAT, 2
E, 184, 185, 224, 223
EGEN, 8, 1, -1
MAT, 1
E, 193, 194, 233, 232
MAT, 2
E, 195, 196, 235, 234
EGEN, 25, 1, -1
MAT, 1
E, 221, 222, 261, 260
MAT, 2
E, 223, 224, 263, 262
EGEN, 8, 1, -1
MAT, 1
E, 232, 233, 272, 271
MAT, 2
E, 234, 235, 274, 273
EGEN, 25, 1, -1
MAT, 1
E, 260, 261, 300, 299
MAT, 2
E, 262, 263, 302, 301
EGEN, 8, 1, -1
MAT, 1
E, 271, 272, 345, 344
MAT, 2
E, 273, 274, 311, 310
EGEN, 25, 1, -1
MAT, 1
E, 299, 300, 371, 370
E, 336, 337, 373, 372
EGEN, 35, 1, -1
E, 380, 381, 409, 408
E, 408, 409, 413, 412
E, 412, 413, 417, 416
E, 411, 412, 416, 415
E, 410, 411, 415, 414

C*** DSC SHELL NODES

N,425,33.0,-0.75
N,426,33.275,-0.75
N,427,33.55,-0.75
NGEN,5,3,425,427,1,0.0,-1.0
N,440,33.0,-5.75
N,441,33.55,-5.75
NGEN,148,2,440,441,1,0.0,-1.0
N,736,33.0,-153.75
N,737,33.275,-153.75
N,738,33.55,-153.75
NGEN,6,3,736,738,1,0.0,-1.0

C*** DSC SHELL ELEMENTS

E,425,426,36,35
E,426,427,37,36
E,428,429,426,425
E,429,430,427,426
EGEN,4,3,291,292
E,440,438,437
E,440,441,438
E,441,439,438
E,442,443,441,440
EGEN,147,2,-1
E,736,737,734
E,737,735,734
E,736,738,735
E,739,740,737,736
E,740,741,738,737
EGEN,5,3,452,453,1

C*** BOTTOM DETAIL NODAL INPUT

LOCAL,11,0,0.0,-166,0.0
N,754,32.25,9.25
N,755,32.25,8.25
N,756,32.25,7.25
N,757,0.0,7.25
N,789,32.0,7.25
FILL
N,757,0.0,7.25
FILL,757,789
N,790,32.25,7.25
N,791,33.0,7.25
NGEN,2,35,757,789,1,0.0,-0.5
N,825,32.5,6.75
N,826,33.0,6.75
N,827,33.0,6.75
N,828,33.275,6.75
N,829,33.55,6.75
NGEN,3,38,792,829,1,0.0,-0.5
NGEN,3,38,868,901,1
NGEN,2,34,906,939,1,0.0,-1.0
N,974,32.5,4.75
N,975,33.0,4.75
N,976,33.0,4.75
N,977,33.275,4.75
N,978,33.55,4.75

NGEN, 3, 39, 940, 978, 1, 0.0, -1.0
NGEN, 2, 39, 1018, 1051, 1, 0.0, -1.5
NGEN, 2, 34, 1057, 1090, 1
N, 1125, 33.0, 1.25
N, 1126, 33.0, 1.25
N, 1127, 33.275, 1.25
N, 1128, 33.55, 1.25
NGEN, 2, 38, 1091, 1128, 1, 0.0, -0.25
NGEN, 2, 38, 1129, 1163, 1
N, 1202, 0.0, 0.375
N, 1234, 32.0, 0.375
FILL
N, 1235, 32.5, 0.375
N, 1236, 33.0, 0.375
N, 1237, 33.275, 0.375
N, 1238, 33.55, 0.375
NGEN, 2, 37, 1202, 1238, 1, 0.0, -0.625

C*** BOTTOM DETAIL ELEMENT GENERATION

E, 755, 748, 745, 754
E, 756, 751, 748, 755
E, 792, 793, 758, 757
EGEN, 33, 1, -1
E, 825, 826, 791, 790
E, 827, 828, 752, 751
E, 828, 829, 753, 752
E, 830, 831, 793, 792
EGEN, 34, 1, -1
E, 865, 866, 828, 827
E, 866, 867, 829, 828
E, 868, 869, 831, 830
EGEN, 34, 1, -1
E, 903, 904, 866, 865
E, 904, 905, 867, 866
MAT, 2
E, 940, 941, 907, 906
EGEN, 33, 1, -1
MAT, 1
E, 974, 975, 902, 901
E, 976, 977, 904, 903
E, 977, 978, 905, 904
MAT, 2
E, 979, 980, 941, 940
EGEN, 33, 1, -1
MAT, 1
E, 1013, 1014, 975, 974
E, 1015, 1016, 977, 976
E, 1016, 1017, 978, 977
MAT, 2
E, 1018, 1019, 980, 979
EGEN, 33, 1, -1
MAT, 1
E, 1052, 1053, 1014, 1013
E, 1054, 1055, 1016, 1015
E, 1055, 1056, 1017, 1016
MAT, 2
E, 1057, 1058, 1019, 1018

```
EGEN,33,1,-1
MAT,1
E,1124,1125,1053,1052
E,1126,1127,1055,1054
E,1127,1128,1056,1055
E,1129,1130,1092,1091
EGEN,34,1,-1
E,1164,1165,1127,1126
E,1165,1166,1128,1127
E,1202,1203,1168,1167
EGEN,34,1,-1
E,1236,1237,1165,1164
E,1237,1238,1166,1165
E,1239,1240,1203,1202
EGEN,36,1,-1
WSORT,Y
C*** AXISYMETRIC BOUNDARY CONDITIONS
c*** SYMBC,,,0.0 *****
csys,0
nsel,s,loc,x,0
dsym,symm,x,0
SYMBC,11,,,0.0 *****
csys,11
nsel,s,loc,y,0
dsym,symm,x,11
allsel
C*** CONSTANT COUPLED NODES
CP,1,UX,120,157
CP,2,UX,121,158
CP,3,UX,192,193
CP,4,UX,194,195
CP,5,UX,231,232
CP,6,UX,233,234
CP,7,UX,270,271
CP,8,UX,272,273
CP,9,UX,309,344
CP,10,UX,310,345
CP,12,UX,183,147
CP,13,UX,220,221
CP,14,UX,259,260
CP,15,UX,298,299
CP,16,UX,335,270
CP,17,UX,751,791
CP,18,UX,826,827
CP,19,UX,864,865
CP,20,UX,902,903
CP,21,UX,901,939
CP,22,UX,973,974
CP,23,UX,975,976
CP,24,UX,1012,1013
CP,25,UX,1014,1015
CP,26,UX,1051,1052
CP,27,UX,1053,1054
CP,28,UX,1090,1124
CP,29,UX,1125,1126
CP,30,UX,1164,1201
C*** LOADING CONDITIONS
```

CP, 31, UY, 112, 149
CPSGEN, 34, 1, -1
CP, 65, UY, 147, 183
CP, 66, UY, 868, 906
CPSGEN, 34, 1, -1
CP, 100, UY, 1057, 1091
CPSGEN, 34, 1, -1
CP, 134, UY, 1125, 1126
CP, 135, UY, 1163, 1164
CP, 168, UY, 301, 336
CPSGEN, 34, 1, -1
C*** BOUNDARY CONDITIONS
c***D, 37, UX
D, 1275, UY
C***
C***PRESSURE LOADING
ESEL, S, ELEM, , 1, 34, 1
SFE, ALL, 1, PRES, , 1.0
ALLSEL
ESEL, S, ELEM, , 289, 297, 2
SFE, ALL, 4, PRES, , 1.0
ALLSEL
SFE, 299, 4, PRES, , 1.0
ESEL, S, ELEM, , 302, 448, 1
SFE, ALL, 4, PRES, , 1.0
ALLSEL
SFE, 449, 4, PRES, , 1.0
ESEL, S, ELEM, , 452, 460, 2
SFE, ALL, 4, PRES, , 1.0
ALLSEL
SFE, 462, 3, PRES, , 1.0
SFE, 462, 4, PRES, , 1.0
SFE, 463, 4, PRES, , 1.0
ESEL, S, ELEM, , 752, 785, 1
SFE, ALL, 3, PRES, , 1.0
ALLSEL
SAVE
/SOLU
ANTYPE, STATIC
SOLVE
SAVE
FINI
/POST1
ALLSEL
/OUT, PRESTR2c, OUT
PRNSTR, ALL
/OUT
/title, DSC PRESSURE ANALYSIS - 0.55" SHELL THICKNESS
PLNSOL, S, INT

PRINT S NODAL SOLUTION PER NODE

*** WARNING *** CP= 1438.390 TIME= 09:16:00

The selected element set contains mixed materials.
This could invalidate error estimation.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1	-37.065 37.140	.74744E-01	-37.065	.00000	.00000	.00000	.74744E-01	-37.065	-37.065	37.140
2	-37.057 35.137	-2.1164	-36.861	2.6215	.00000	.00000	-1.9209	-36.861	-37.252	35.331
3	-36.112 36.012	-.80919	-36.134	4.0729	.00000	.00000	-.34538	-36.134	-36.576	36.231
4	-35.591 35.073	-1.0248	-36.020	2.6003	.00000	.00000	-.83031	-35.786	-36.020	35.190
5	-35.497 34.760	-1.0972	-35.869	2.0007	.00000	.00000	-.98123	-35.613	-35.869	34.888
6	-35.523 34.807	-.96229	-35.787	1.6226	.00000	.00000	-.88629	-35.599	-35.787	34.901
7	-36.076 35.044	-1.0736	-35.924	1.6546	.00000	.00000	-.99556	-35.924	-36.154	35.158
8	-40.242 36.666	-2.8129	-37.752	3.1859	.00000	.00000	-2.5437	-37.752	-40.512	37.968
9	-50.710 45.374	-2.3916	-41.330	5.4585	.00000	.00000	-1.7827	-41.330	-51.319	49.531
10	-67.259 60.375	-.34910	-47.464	5.7974	.00000	.00000	.14949	-47.464	-67.758	67.901
11	-81.050 72.429	.49959	-55.142	3.5206	.00000	.00000	.65130	-55.142	-81.202	81.851
12	-84.883 75.227	-.46275	-60.237	1.3552	.00000	.00000	-.44100	-60.237	-84.905	84.411
13	-82.300 73.383	-1.0471	-62.464	.65541	.00000	.00000	-1.0419	-62.464	-82.305	81.211

HABCE-01/99-0745, Revision 2

94	-5.2543 6.4846	-.79744	-6.0840	-2.4359	.00000	.00000	.27558	-6.0840	-6.3273	6.6029
95	-6.2157 7.0121	-.79372	-6.3376	-2.5229	.00000	.00000	.19864	-6.3376	-7.2080	7.4066
96	-7.1898 7.6331	-.79065	-6.6428	-2.6151	.00000	.00000	.14210	-6.6428	-8.1226	8.2647
97	-8.1835 8.3285	-.78835	-6.9948	-2.7113	.00000	.00000	.99198E-01	-6.9948	-9.0710	9.1702
98	-9.2014 9.0841	-.78754	-7.3902	-2.8099	.00000	.00000	.64536E-01	-7.3902	-10.053	10.118
99	-10.246 9.8869	-.79015	-7.8264	-2.9074	.00000	.00000	.32225E-01	-7.8264	-11.069	11.101
100	-11.318 10.721	-.80022	-8.3010	-2.9973	.00000	.00000	-.60484E-02	-8.3010	-12.113	12.106
101	-12.413 11.566	-.82336	-8.8116	-3.0676	.00000	.00000	-.61477E-01	-8.8116	-13.175	13.113
102	-13.515 12.387	-.86846	-9.3537	-3.0991	.00000	.00000	-.14984	-9.3537	-14.234	14.084
103	-14.625 13.168	-.93482	-9.9236	-3.0686	.00000	.00000	-.27846	-9.9236	-15.281	15.003
104	-15.610 13.774	-1.0445	-10.486	-2.9407	.00000	.00000	-.47321	-10.486	-16.181	15.708
105	-16.765 14.473	-1.1840	-11.115	-2.7576	.00000	.00000	-.71036	-11.115	-17.239	16.528
106	-17.264 14.996	-.85274	-11.434	-2.3985	.00000	.00000	-.50938	-11.434	-17.607	17.098
107	-19.115 16.057	-1.5775	-12.436	-2.7546	.00000	.00000	-1.1550	-12.436	-19.538	18.383
108	-14.640 13.539	-.42692	-11.083	-2.5295	.00000	.00000	.98337E-02	-11.083	-15.077	15.086

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
109	6.5042 12.162	5.0801	-3.0996	4.7378	.00000	.00000	10.583	1.0011	-3.0996	13.68

110	8.8946 21.553	8.7049	-1.0783	11.060	.00000	.00000	19.860	-1.0783	-2.2603	22.120
111	-2.3830 48.324	48.787	7.6120	6.5415	.00000	.00000	49.610	7.6120	-3.2060	52.816
112	-4.4209 3.4247	-.99620	-4.4209	.00000	.00000	.00000	-.99620	-4.4209	-4.4209	3.4247
113	-4.5590 3.9785	-.50876	-4.4055	-.86248E-01	.00000	.00000	-.50692	-4.4055	-4.5609	4.0539
114	-5.0047 4.0699	-1.2308	-4.7260	-1.0482	.00000	.00000	-.95923	-4.7260	-5.2763	4.3170
115	-5.4078 5.1165	-.91755	-4.8951	-1.6387	.00000	.00000	-.38315	-4.8951	-5.9422	5.5590
116	-5.6503 4.6627	-1.2765	-5.2948	-1.1604	.00000	.00000	-.98770	-5.2948	-5.9391	4.9514
117	-5.1086 4.1298	-1.1872	-5.2128	-.64758	.00000	.00000	-1.0830	-5.2128	-5.2128	4.1298
118	-3.6521 2.4569	-2.0815	-4.9024	-.11893	.00000	.00000	-2.0725	-3.6611	-4.9024	2.8299
119	-5.7389 6.2140	-.12097	-4.8714	-1.9299	.00000	.00000	.47814	-4.8714	-6.3380	6.8161
120	2.5321 19.966	-18.115	-7.5506	-5.1270	.00000	.00000	3.7351	-7.5506	-19.318	23.053
121	32.691 24.724	7.8396	10.627	-4.2877	.00000	.00000	33.410	10.627	7.1207	26.290
122	74.486 65.119	-.51251E-01	28.639	-.10335	.00000	.00000	74.486	28.639	-.51394E-01	74.537
123	67.272 57.828	.56668	31.933	.98958	.00000	.00000	67.287	31.933	.55200	66.735
124	64.720 56.297	-.20774	35.020	.32761E-01	.00000	.00000	64.720	35.020	-.20776	64.928
125	59.798 52.526	-.33886	36.509	-.46770	.00000	.00000	59.802	36.509	-.34249	60.144
126	54.174 48.493	-.58187	36.858	-.74890	.00000	.00000	54.184	36.858	-.59211	54.776

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
127	48.337 44.319	-.67460	36.480	-.93292	.00000	.00000	48.355	36.480	-.69236	49.047
128	42.469 40.211	-.70960	35.547	-1.0761	.00000	.00000	42.496	35.547	-.73640	43.233
129	36.588 36.220	-.72127	34.168	-1.2029	.00000	.00000	36.626	34.168	-.76002	37.386
130	30.667 32.381	-.72211	32.417	-1.3282	.00000	.00000	32.417	30.723	-.77821	33.195
131	24.657 28.754	-.72001	30.338	-1.4556	.00000	.00000	30.338	24.740	-.80323	31.142
132	18.511 25.464	-.71743	27.964	-1.5857	.00000	.00000	27.964	18.641	-.84732	28.812
133	12.191 22.741	-.71512	25.317	-1.7180	.00000	.00000	25.317	12.416	-.93991	26.257
134	5.6654 20.937	-.71340	22.415	-1.8516	.00000	.00000	22.415	6.1639	-1.2119	23.627
135	-1.0863 20.463	-.71330	19.269	-1.9853	.00000	.00000	19.269	1.0942	-2.8938	22.163
136	-8.0752 21.580	-.71720	15.893	-2.1164	.00000	.00000	15.893	-.15188	-8.6405	24.533
137	-15.296 24.222	-.73090	12.298	-2.2400	.00000	.00000	12.298	-.39420	-15.633	27.931
138	-22.715 28.067	-.75924	8.5046	-2.3465	.00000	.00000	8.5046	-.51126	-22.963	31.467
139	-30.257 32.720	-.82202	4.5408	-2.4216	.00000	.00000	4.5408	-.62413	-30.454	34.995
140	-37.760 37.808	-.89148	.47579	-2.4409	.00000	.00000	.47579	-.73059	-37.921	38.397
141	-45.108 42.993	-1.0834	-3.6705	-2.4090	.00000	.00000	-.95199	-3.6705	-45.240	44.288
142	-51.777 47.905	-1.0958	-7.6361	-2.2360	.00000	.00000	-.99732	-7.6361	-51.875	50.871
143	-58.134 52.699	-1.1397	-11.550	-2.1427	.00000	.00000	-1.0592	-11.550	-58.214	57.15
144	-63.581 56.682	-1.3562	-15.288	-2.1370	.00000	.00000	-1.2829	-15.288	-63.654	62.371

HABCE-01/99-0745, Revision 2

1389

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

TIME= 1.0000

LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SKY	SYZ	SXZ	S1	S2	S3	SINT
145	-74.720 67.954	.91975	-19.974	-3.6668	.00000	.00000	1.0971	-19.974	-74.897	75.994
146	-96.482 87.684	1.6473	-28.741	-6.2616	.00000	.00000	2.0452	-28.741	-96.880	98.926
147	-43.840 34.871	-6.1986	-15.551	-4.6080	.00000	.00000	-5.6427	-15.551	-44.395	38.753
148	-10.811 53.392	48.557	10.688	-6.8386	.00000	.00000	49.334	10.688	-11.589	60.923
149	-3.0410 2.6043	-.43666	-3.0410	.00000	.00000	.00000	-.43666	-3.0410	-3.0410	2.6043
150	-2.9708 2.4161	-.58744	-3.0336	-.33415E-01	.00000	.00000	-.58697	-2.9713	-3.0336	2.4467
151	-2.7745 2.0780	-.76175	-2.8924	.72855E-01	.00000	.00000	-.75912	-2.7771	-2.8924	2.1332
152	-2.4873 1.7176	-.91670	-2.7350	.10486	.00000	.00000	-.90973	-2.4943	-2.7350	1.8253
153	-2.0901 1.2092	-1.1925	-2.5624	-.56067E-01	.00000	.00000	-1.1890	-2.0936	-2.5624	1.3734
154	-1.4598 .87465	-1.4921	-2.2482	-.23651	.00000	.00000	-1.2389	-1.7130	-2.2482	1.0093
155	-.20450 1.6721	-1.4360	-1.5002	-.63141	.00000	.00000	.61690E-01	-1.5002	-1.7022	1.7639
156	1.8616 3.7077	-1.4728	-.41117	-1.2964	.00000	.00000	2.3063	-.41117	-1.9175	4.2238
157	3.2086 2.9149	2.6324	2.0583	-1.5816	.00000	.00000	4.5281	2.0583	1.3129	3.2152
158	-32.192 25.888	-2.7197	-14.154	-1.6186	.00000	.00000	-2.6311	-14.154	-32.280	29.64
159	-28.940 25.948	.96212	-14.224	-.94171	.00000	.00000	.99175	-14.224	-28.970	29.96
160	-23.983 21.403	.56257	-14.161	-.27195	.00000	.00000	.56558	-14.161	-23.986	24.55
161	-21.398 19.093	.21394	-14.358	-.12434	.00000	.00000	.21466	-14.358	-21.399	21.61
162	-19.523 17.340	-.23255	-14.515	-.15390	.00000	.00000	-.23132	-14.515	-19.524	19.29

HABGE-01/99-0745, Revision 2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
163	-17.772 15.888	-.46265	-14.373	-.19161	.00000	.00000	-.46053	-14.373	-17.774	17.313
164	-16.113 14.623	-.56802	-14.033	-.25494	.00000	.00000	-.56384	-14.033	-16.117	15.553
165	-14.474 13.439	-.60380	-13.537	-.33068	.00000	.00000	-.59592	-13.537	-14.482	13.886
166	-12.818 12.277	-.60999	-12.915	-.40992	.00000	.00000	-.59624	-12.831	-12.915	12.319
167	-11.120 11.118	-.60523	-12.186	-.48856	.00000	.00000	-.58258	-11.142	-12.186	11.603
168	-9.3691 9.9665	-.59800	-11.361	-.56555	.00000	.00000	-.56168	-9.4054	-11.361	10.799
169	-7.5578 8.8475	-.59131	-10.450	-.64065	.00000	.00000	-.53288	-7.6162	-10.450	9.9172
170	-5.6804 7.8106	-.58581	-9.4585	-.71396	.00000	.00000	-.48764	-5.7786	-9.4585	8.9708
171	-3.7328 6.9394	-.58167	-8.3907	-.78570	.00000	.00000	-.39664	-3.9179	-8.3907	7.9941
172	-1.7115 6.3583	-.58003	-7.2505	-.85620	.00000	.00000	-.11954	-2.1720	-7.2505	7.1310
173	.38673 6.2126	-.58411	-6.0416	-.92597	.00000	.00000	.94680	-1.1442	-6.0416	6.9884
174	2.5652 6.5997	-.60036	-4.7678	-.99576	.00000	.00000	2.8524	-.88754	-4.7678	7.6202
175	4.8281 7.5094	-.63913	-3.4337	-1.0668	.00000	.00000	5.0288	-.83991	-3.4337	8.4625
176	7.1797 8.8577	-.71201	-2.0433	-1.1404	.00000	.00000	7.3412	-.87349	-2.0433	9.3842
177	9.6319 10.561	-.82992	-.59693	-1.2215	.00000	.00000	9.7727	-.59693	-.97065	10.74
178	12.199 12.552	-.98475	.91443	-1.3142	.00000	.00000	12.329	.91443	-1.1145	13.44

179	14.914 14.788	-1.1479	2.5157	-1.4284	.00000	.00000	15.040	2.5157	-1.2739	16.314
180	17.705 17.060	-1.1975	4.2283	-1.5135	.00000	.00000	17.825	4.2283	-1.3179	19.143

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
181	21.576 19.677	-.34508	6.7522	-1.9888	.00000	.00000	21.755	6.7522	-.52405	22.279
182	30.034 26.850	.27024	11.109	-3.6593	.00000	.00000	30.478	11.109	-.17304	30.651
183	36.211 23.999	10.771	18.751	-4.7647	.00000	.00000	37.074	18.751	9.9076	27.166
184	-.61236 .23764	-.37472	-.61236	.00000	.00000	.00000	-.37472	-.61236	-.61236	.23764
185	-.58139 .24767	-.48044	-.61535	-.12459	.00000	.00000	-.39649	-.61535	-.66534	.26885
186	-.48683 .55858	-.62880	-.57261	-.31447	.00000	.00000	-.23544	-.57261	-.88020	.64476
187	-.31334 .94862	-.79880	-.50164	-.48995	.00000	.00000	-.92901E-02	-.50164	-1.1029	1.0936
188	-.68825E-01 1.3211	-1.0908	-.41997	-.55871	.00000	.00000	.17734	-.41997	-1.3369	1.5143
189	.15725 1.7460	-1.3692	-.30870	-.63574	.00000	.00000	.38734	-.30870	-1.5993	1.9867
190	.33923E-01 1.8581	-1.3434	-.22564	-.78435	.00000	.00000	.38903	-.22564	-1.6985	2.0871
191	-.79800 1.5786	-.75629	-.31499	-.87123	.00000	.00000	.94334E-01	-.31499	-1.6486	1.7430
192	-1.5166 2.1252	.31219	-.29831	-.79913	.00000	.00000	.61218	-.29831	-1.8166	2.4287
193	-13.151 14.065	-1.6008	-3.1032	-5.1488	.00000	.00000	.36119	-3.1032	-15.113	15.474
194	-13.153 10.458	-7.3829	-5.9419	-4.6794	.00000	.00000	-4.7706	-5.9419	-15.765	10.991

195	-11.974 9.6815	-1.4246	-5.3103	-1.6674	.00000	.00000	-1.1673	-5.3103	-12.231	11.064
196	-11.726 11.110	.72952	-5.3827	-1.5351	.00000	.00000	.91594	-5.3827	-11.912	12.828
197	-11.769 11.172	.80128	-6.3027	-1.3711	.00000	.00000	.94910	-6.3027	-11.917	12.866
198	-10.576 9.6799	.19416	-6.6980	-1.2163	.00000	.00000	.32981	-6.6980	-10.711	11.041

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
199	-9.4144 8.4583	-.19446	-6.7773	-1.1394	.00000	.00000	-.55745E-01	-6.7773	-9.5531	9.4974
200	-8.4627 7.5969	-.40087	-6.7208	-1.1149	.00000	.00000	-.24953	-6.7208	-8.6141	8.3645
201	-7.5936 6.9305	-.49223	-6.5526	-1.1418	.00000	.00000	-.31317	-6.5526	-7.7726	7.4595
202	-6.7437 6.3529	-.52613	-6.2979	-1.1936	.00000	.00000	-.30488	-6.2979	-6.9649	6.6600
203	-5.8805 5.8150	-.53275	-5.9718	-1.2541	.00000	.00000	-.25325	-5.9718	-6.1600	5.9068
204	-4.9916 5.3032	-.52927	-5.5864	-1.3170	.00000	.00000	-.16956	-5.3513	-5.5864	5.4168
205	-4.0709 4.8260	-.52333	-5.1495	-1.3802	.00000	.00000	-.49605E-01	-4.5446	-5.1495	5.0999
206	-3.1158 4.4081	-.51776	-4.6665	-1.4432	.00000	.00000	.12491	-3.7585	-4.6665	4.7914
207	-2.1246 4.0882	-.51314	-4.1408	-1.5058	.00000	.00000	.38896	-3.0267	-4.1408	4.5297
208	-1.0963 3.9145	-.50964	-3.5752	-1.5684	.00000	.00000	.79264	-2.3986	-3.5752	4.3678
209	-.29514E-01 3.9323	-.50827	-2.9721	-1.6313	.00000	.00000	1.3799	-1.9177	-2.9721	4.3521
210	1.0774 4.1670	-.51199	-2.3338	-1.6955	.00000	.00000	2.1552	-1.5898	-2.3338	4.4881

211	2.2276 4.6179	-.52674	-1.6628	-1.7624	.00000	.00000	3.0872	-1.3862	-1.6628	4.7499
212	3.4271 5.2695	-.56212	-.96137	-1.8350	.00000	.00000	4.1428	-.96137	-1.2778	5.4205
213	4.6865 6.1090	-.62935	-.22994	-1.9170	.00000	.00000	5.3057	-.22994	-1.2485	6.5542
214	6.0208 7.1338	-.73823	.53409	-2.0156	.00000	.00000	6.5762	.53409	-1.2937	7.8699
215	7.4622 8.3464	-.87370	1.3505	-2.1423	.00000	.00000	7.9805	1.3505	-1.3920	9.3726
216	9.0446 9.7492	-1.0161	2.2428	-2.3092	.00000	.00000	9.5493	2.2428	-1.5208	11.070

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SHY	SHZ	SHX	S1	S2	S3	SINT
217	10.812 11.215	-1.0236	3.2862	-2.4582	.00000	.00000	11.302	3.2862	-1.5139	12.816
218	12.255 12.223	-.64087	4.3810	-2.7480	.00000	.00000	12.816	4.3810	-1.2020	14.018
219	10.448 9.1603	1.8235	4.9831	-2.9887	.00000	.00000	11.382	4.9831	.88905	10.493
220	7.8483 5.3787	6.4270	5.9340	-2.9421	.00000	.00000	10.164	5.9340	4.1110	6.0533
221	11.826 16.185	25.075	12.717	-5.6989	.00000	.00000	27.189	12.717	9.7119	17.477
222	11.962 19.279	-7.2239	3.1344	-5.6273	.00000	.00000	13.491	3.1344	-8.7526	22.243
223	1.7339 1.9771	-.24318	1.7339	.00000	.00000	.00000	1.7339	1.7339	-.24318	1.9771
224	1.7290 1.9908	-.24094	1.7307	-.16254	.00000	.00000	1.7423	1.7307	-.25426	1.9965
225	1.7146 2.1268	-.33343	1.6545	-.38651	.00000	.00000	1.7851	1.6545	-.40394	2.1891
226	1.6906 2.4114	-.50879	1.5954	-.62655	.00000	.00000	1.8566	1.5954	-.67475	2.531

227	1.7215 2.7756	-.79659	1.5506	-.76689	.00000	.00000	1.9366	1.5506	-1.0118	2.9484
228	1.7050 3.1072	-1.1669	1.4715	-.82107	.00000	.00000	1.9231	1.4715	-1.3851	3.3082
229	1.3966 2.8913	-1.3172	1.3505	-.61054	.00000	.00000	1.5277	1.3505	-1.4482	2.9759
230	.98404 2.1110	-.91953	1.3165	-.17272	.00000	.00000	1.3165	.99958	-.93507	2.2516
231	.84129 2.1810	-1.1929	1.1046	.67368E-01	.00000	.00000	1.1046	.84352	-1.1952	2.2998
232	1.6197 13.053	-.21146	11.292	4.3107	.00000	.00000	11.292	5.1110	-3.7028	14.995
233	2.7455 16.333	-8.7274	8.1138	3.8608	.00000	.00000	8.1138	3.9237	-9.9056	18.019
234	.12073 1.7456	1.2921	1.6941	-.58949	.00000	.00000	1.6941	1.5374	-.12456	1.8187

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
235	.25942 2.4101	1.1250	1.4568	-1.2466	.00000	.00000	2.0119	1.4568	-.62740	2.6393
236	.29026 3.3241	.77286	1.1762	-1.8672	.00000	.00000	2.4143	1.1762	-1.3512	3.7655
237	.41698 3.0734	.11401	.86925	-1.7332	.00000	.00000	2.0053	.86925	-1.4743	3.4797
238	.59595 2.8247	-.15374	.80041	-1.5515	.00000	.00000	1.8173	.80041	-1.3751	3.1924
239	.66926 2.8057	-.27527	.76615	-1.5143	.00000	.00000	1.7832	.76615	-1.3892	3.1724
240	.73257 2.9144	-.33404	.76185	-1.5625	.00000	.00000	1.8503	.76185	-1.4517	3.3020
241	.80629 3.0740	-.35702	.78206	-1.6456	.00000	.00000	1.9700	.78206	-1.5207	3.4901
242	.88902 3.2498	-.36119	.81783	-1.7399	.00000	.00000	2.1127	.81783	-1.5849	3.6971

243	.97943 3.4306	-.35819	.86312	-1.8368	.00000	.00000	2.2654	.86312	-1.6442	3.9096
244	1.0767 3.6127	-.35366	.91492	-1.9331	.00000	.00000	2.4227	.91492	-1.6996	4.1223
245	1.1798 3.7951	-.34952	.97177	-2.0280	.00000	.00000	2.5826	.97177	-1.7523	4.3348
246	1.2878 3.9779	-.34611	1.0329	-2.1217	.00000	.00000	2.7445	1.0329	-1.8027	4.5472
247	1.3999 4.1615	-.34344	1.0978	-2.2147	.00000	.00000	2.9083	1.0978	-1.8518	4.7601
248	1.5156 4.3473	-.34220	1.1658	-2.3076	.00000	.00000	3.0743	1.1658	-1.9008	4.9751
249	1.6349 4.5384	-.34448	1.2358	-2.4021	.00000	.00000	3.2432	1.2358	-1.9528	5.1960
250	1.7585 4.7419	-.35471	1.3064	-2.5014	.00000	.00000	3.4173	1.3064	-2.0135	5.4308
251	1.8898 4.9703	-.38010	1.3762	-2.6111	.00000	.00000	3.6020	1.3762	-2.0922	5.6942
252	2.0353 5.2428	-.43024	1.4444	-2.7395	.00000	.00000	3.8067	1.4444	-2.2016	6.0083

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
253	2.2030 5.5806	-.51119	1.5126	-2.8968	.00000	.00000	4.0448	1.5126	-2.3530	6.3978
254	2.3949 6.0043	-.60932	1.5882	-3.0983	.00000	.00000	4.3360	1.5882	-2.5505	6.8861
255	2.6319 6.5319	-.66923	1.7014	-3.3652	.00000	.00000	4.7296	1.7014	-2.7669	7.4961
256	2.9919 7.1323	-.64653	1.9015	-3.6702	.00000	.00000	5.2690	1.9015	-2.9236	8.1921
257	2.6253 6.7228	-.63120	1.8204	-3.4912	.00000	.00000	4.8493	1.8204	-2.8552	7.7041
258	1.3944 3.2439	1.3211	2.1084	-1.8217	.00000	.00000	3.1798	2.1084	-.46428	3.644

259	.80200 1.7507	2.3886	2.2413	-.50321	.00000	.00000	2.5348	2.2413	.65586	1.8789
260	-1.1017 21.702	19.769	13.954	6.4021	.00000	.00000	21.576	13.954	-2.9090	24.485
261	-.97301 14.035	-1.9409	7.2863	6.3205	.00000	.00000	7.2863	4.8820	-7.7960	15.082
262	4.1744 4.3125	-.13809	4.1744	.00000	.00000	.00000	4.1744	4.1744	-.13809	4.3125
263	4.1411 4.1741	-.87164E-02	4.1802	-.11259	.00000	.00000	4.1802	4.1442	-.11769E-01	4.1920
264	4.0135 4.0723	-.38449E-01	3.9823	-.31147	.00000	.00000	4.0373	3.9823	-.62251E-01	4.0995
265	3.7450 4.0646	-.20009	3.7760	-.52727	.00000	.00000	3.8142	3.7760	-.26935	4.0836
266	3.4705 4.1289	-.45696	3.5564	-.65270	.00000	.00000	3.5761	3.5564	-.56259	4.1387
267	3.3241 4.4441	-.96221	3.2871	-.71511	.00000	.00000	3.4403	3.2871	-1.0784	4.5187
268	3.7247 5.1376	-1.5348	3.2590	-.56722	.00000	.00000	3.7852	3.2590	-1.5952	5.3804
269	4.7281 6.2374	-1.9714	3.6118	-.29076	.00000	.00000	4.7407	3.6118	-1.9840	6.7247
270	5.4623 5.7103	-.62346	4.6045	-.13575	.00000	.00000	5.4653	4.6045	-.62649	6.0918

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
271	5.9660 33.800	-18.504	20.038	-.64988	.00000	.00000	20.038	5.9833	-18.521	38.559
272	7.6945 18.662	7.8987	26.450	-.32069	.00000	.00000	26.450	8.1331	7.4600	18.990
273	11.369 7.4157	3.2150	8.2299	-1.1902	.00000	.00000	11.539	8.2299	3.0448	8.494
274	11.414 8.3435	2.4488	8.3890	-1.5496	.00000	.00000	11.675	8.3890	2.1886	9.480

275	12.077 10.788	.38750	8.3654	-1.7653	.00000	.00000	12.338	8.3654	.12672	12.211
276	11.481 10.627	-.10613E-01	8.4531	-1.4724	.00000	.00000	11.667	8.4531	-.19626	11.863
277	10.502 9.9550	-.97570E-01	8.3414	-1.2888	.00000	.00000	10.657	8.3414	-.25202	10.909
278	9.7020 9.4388	-.13469	8.2097	-1.2626	.00000	.00000	9.8614	8.2097	-.29417	10.156
279	8.9954 9.0073	-.16343	8.0425	-1.2995	.00000	.00000	9.1762	8.0425	-.34424	9.5204
280	8.3145 8.5885	-.17447	7.8359	-1.3580	.00000	.00000	8.5265	7.8359	-.38643	8.9129
281	7.6294 8.1653	-.17603	7.5859	-1.4242	.00000	.00000	7.8812	7.5859	-.42778	8.3090
282	6.9291 7.7367	-.17397	7.2941	-1.4920	.00000	.00000	7.2941	7.2297	-.47464	7.7687
283	6.2074 7.3054	-.17133	6.9627	-1.5591	.00000	.00000	6.9627	6.5681	-.53201	7.4948
284	5.4609 6.8765	-.16902	6.5947	-1.6250	.00000	.00000	6.5947	5.8963	-.60440	7.1991
285	4.6873 6.4579	-.16713	6.1924	-1.6900	.00000	.00000	6.1924	5.2177	-.69751	6.8899
286	3.8850 6.0608	-.16558	5.7578	-1.7543	.00000	.00000	5.7578	4.5391	-.81974	6.5776
287	3.0524 5.7005	-.16465	5.2923	-1.8187	.00000	.00000	5.2923	3.8719	-.98410	6.2764
288	2.1876 5.3976	-.16540	4.7963	-1.8845	.00000	.00000	4.7963	3.2327	-1.2105	6.0068

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
289	1.2876 5.1790	-.17017	4.2690	-1.9546	.00000	.00000	4.2690	2.6449	-1.5274	5.7964
290	.34845 5.0769	-.18299	3.7081	-2.0347	.00000	.00000	3.7081	2.1347	-1.9692	5.6771

291	- .63514 5.1248	-.20995	3.1099	-2.1331	.00000	.00000	3.1099	1.7211	-2.5662	5.6761
292	-1.6676 5.3472	-.25608	2.4713	-2.2591	.00000	.00000	2.4713	1.4050	-3.3286	5.8000
293	-2.7671 5.7543	-.31534	1.7882	-2.4165	.00000	.00000	1.7882	1.1685	-4.2509	6.0391
294	-3.9854 6.4106	-.30540	1.0712	-2.6199	.00000	.00000	1.0712	1.0561	-5.3469	6.4181
295	-5.3481 7.4057	-.15845	.33170	-2.8942	.00000	.00000	1.1338	.33170	-6.6404	7.7741
296	-5.6526 7.3218	-.24839	-.10429	-2.8050	.00000	.00000	.94433	-.10429	-6.8453	7.7896
297	-3.7527 3.8856	-2.4843	-.43492	-1.4933	.00000	.00000	-.43492	-1.4961	-4.7409	4.3059
298	-2.0450 4.8228	3.1193	2.3344	-.93312E-01	.00000	.00000	3.1210	2.3344	-2.0467	5.1677
299	-6.7460 22.503	-15.156	10.322	-.52504	.00000	.00000	10.322	-6.7134	-15.189	25.510
300	-6.5432 35.918	32.836	24.383	-.51962	.00000	.00000	32.843	24.383	-6.5500	39.393
301	6.8141 6.9167	-.10259	6.8141	.00000	.00000	.00000	6.8141	6.8141	-.10259	6.9167
302	6.7735 6.7185	.81959E-01	6.8268	-.28437E-01	.00000	.00000	6.8268	6.7736	.81838E-01	6.7450
303	6.6189 6.5527	.91263E-01	6.5865	.42351	.00000	.00000	6.6462	6.5865	.63900E-01	6.5823
304	6.2487 6.4566	-.61120E-01	6.3288	.67392	.00000	.00000	6.3288	6.3198	-.13230	6.4611
305	5.6223 6.1006	-.29120	5.9491	.26399	.00000	.00000	5.9491	5.6341	-.30296	6.2520
306	4.5692 5.7054	-.79109	5.2043	-.61787E-01	.00000	.00000	5.2043	4.5699	-.79180	5.9961

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
------	------------	----	----	-----	-----	-----	----	----	----	------

HABGE-01/99-0745, Revision 2

B 99

307	3.0561	-1.6642	4.0683	-.31142	.00000	.00000	4.0683	3.0765	-1.6847	5.7530
	5.3268									
308	1.3060	-2.1612	3.0085	-.45112	.00000	.00000	3.0085	1.3637	-2.2189	5.2274
	4.6296									
309	.27152	-.97804	2.7888	-.43684	.00000	.00000	2.7888	.40909	-1.1156	3.9044
	3.4082									
310	34.565	3.4493	18.218	-.32788	.00000	.00000	34.569	18.218	3.4458	31.123
	26.965									
311	32.184	3.1525	19.626	-.44015	.00000	.00000	32.191	19.626	3.1459	29.045
	25.230									
312	27.522	.36091	18.229	-.34894	.00000	.00000	27.526	18.229	.35643	27.170
	23.917									
313	24.519	-.68664E-01	17.905	-.26442E-01	.00000	.00000	24.519	17.905	-.68692E-01	24.588
	22.038									
314	22.627	-.41575E-01	17.849	.17203E-01	.00000	.00000	22.627	17.849	-.41588E-01	22.669
	20.697									
315	20.989	-.53187E-01	17.643	-.54247E-01	.00000	.00000	20.989	17.643	-.53327E-01	21.042
	19.585									
316	19.399	-.70708E-01	17.284	-.15540	.00000	.00000	19.400	17.284	-.71948E-01	19.472
	18.505									
317	17.794	-.79323E-01	16.791	-.26150	.00000	.00000	17.798	16.791	-.83148E-01	17.881
	17.399									
318	16.151	-.81483E-01	16.179	-.36776	.00000	.00000	16.179	16.159	-.89810E-01	16.269
	16.259									
319	14.453	-.81401E-01	15.458	-.47089	.00000	.00000	15.458	14.468	-.96641E-01	15.554
	15.084									
320	12.694	-.80831E-01	14.638	-.56980	.00000	.00000	14.638	12.720	-.10619	14.744
	13.885									
321	10.870	-.80314E-01	13.728	-.66455	.00000	.00000	13.728	10.910	-.12050	13.849
	12.677									
322	8.9785	-.79871E-01	12.736	-.75564	.00000	.00000	12.736	9.0411	-.14247	12.878
	11.486									
323	7.0178	-.79448E-01	11.666	-.84361	.00000	.00000	11.666	7.1167	-.17834	11.844
	10.349									
324	4.9866	-.79170E-01	10.523	-.92912	.00000	.00000	10.523	5.1516	-.24421	10.768
	9.3251									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
325	2.8822 8.4980	-.79611E-01	9.3105	-1.0133	.00000	.00000	9.3105	3.1957	-.39311	9.7037
326	.69954 7.9791	-.82049E-01	8.0280	-1.0986	.00000	.00000	8.0280	1.4748	-.85728	8.8853
327	-1.5739 7.8869	-.88878E-01	6.6723	-1.1895	.00000	.00000	6.6723	.57084	-2.2336	8.9059
328	-3.9631 8.3064	-.10369	5.2334	-1.2933	.00000	.00000	5.2334	.28963	-4.3565	9.5899
329	-6.5100 9.2591	-.13305	3.6926	-1.4183	.00000	.00000	3.6926	.16818	-6.8112	10.504
330	-9.2484 10.707	-.17017	2.0377	-1.5606	.00000	.00000	2.0377	.90627E-01	-9.5092	11.547
331	-12.204 12.631	-.15335	.28182	-1.7211	.00000	.00000	.28182	.87633E-01	-12.445	12.727
332	-15.458 15.206	.13023	-1.5309	-1.9446	.00000	.00000	.36916	-1.5309	-15.697	16.066
333	-19.741 18.432	-.11518	-4.0208	-2.3083	.00000	.00000	.15265	-4.0208	-20.009	20.161
334	-24.942 18.970	-4.6260	-8.6006	-2.0058	.00000	.00000	-4.4298	-8.6006	-25.138	20.708
335	-27.520 27.874	4.1622	-6.9259	-.72174	.00000	.00000	4.1786	-6.9259	-27.536	31.719
336	33.017 32.621	.39537	33.017	.00000	.00000	.00000	33.017	33.017	.39537	32.621
337	32.638 33.127	-.42570	32.764	.10602E-01	.00000	.00000	32.764	32.638	-.42570	33.190
338	32.293 31.317	1.4581	32.339	-3.0831	.00000	.00000	32.599	32.339	1.1528	31.446
339	32.007 33.257	-.24982	31.599	-5.1164	.00000	.00000	32.800	31.599	-1.0419	33.841
340	32.455 33.012	-.64200E-01	32.018	-3.9305	.00000	.00000	32.923	32.018	-.53252	33.454
341	35.539 35.351	-.35796	33.115	-3.7509	.00000	.00000	35.927	33.115	-.74570	36.674
342	43.134 42.003	-1.2455	36.124	-4.3479	.00000	.00000	43.556	36.124	-1.6674	45.22

HABGE-01/99-0745, Revision 2

8/01

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
343	55.028 49.769	.78166	41.492	-5.3319	.00000	.00000	55.547	41.492	.26255	55.285
344	37.025 50.001	-14.401	33.954	-1.1473	.00000	.00000	37.050	33.954	-14.426	51.477
345	6.3340 24.137	10.401	31.899	-2.3428	.00000	.00000	31.899	11.469	5.2653	26.634
346	-12.543 25.190	-1.3944	15.078	-4.2922	.00000	.00000	15.078	.66590E-01	-14.004	29.082
347	10.089 17.806	.41292	20.900	-.80313	.00000	.00000	20.900	10.155	.34671	20.553
348	9.9272 17.056	-.21572	19.440	-.59344	.00000	.00000	19.440	9.9618	-.25033	19.690
349	9.9983 16.066	-.92088E-02	18.464	-.72222	.00000	.00000	18.464	10.050	-.61061E-01	18.525
350	11.454 15.938	-.31815E-01	18.102	-.71956	.00000	.00000	18.102	11.499	-.76717E-01	18.179
351	13.132 16.229	-.21767E-01	18.054	-.68139	.00000	.00000	18.054	13.167	-.56969E-01	18.111
352	14.800 16.808	-.20878E-01	18.184	-.65185	.00000	.00000	18.184	14.828	-.49493E-01	18.233
353	16.494 17.617	-.17889E-01	18.469	-.62808	.00000	.00000	18.469	16.518	-.41745E-01	18.511
354	18.230 18.614	-.15934E-01	18.888	-.60754	.00000	.00000	18.888	18.251	-.36140E-01	18.924
355	20.008 19.761	-.14362E-01	19.420	-.58956	.00000	.00000	20.025	19.420	-.31707E-01	20.057
356	21.827 21.032	-.13182E-01	20.050	-.57399	.00000	.00000	21.842	20.050	-.28257E-01	21.870
357	23.691 22.406	-.12246E-01	20.767	-.56060	.00000	.00000	23.705	20.767	-.25497E-01	23.730
358	25.603 23.871	-.11450E-01	21.562	-.54903	.00000	.00000	25.615	21.562	-.23213E-01	25.638
359	27.564 25.417	-.10744E-01	22.429	-.53887	.00000	.00000	27.574	22.429	-.21271E-01	27.590

HABCE01/99-0745, Revision 2

8/02

360 29.571 -.99902E-02 23.360 -.52971 .00000 .00000 29.581 23.360 -.19473E-01 29.600
27.032

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

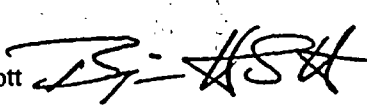
NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
361	31.623 28.710	-.96193E-02	24.349	-.52139	.00000	.00000	31.632	24.349	-.18211E-01	31.650
362	33.719 30.444	-.84538E-02	25.393	-.51431	.00000	.00000	33.726	25.393	-.16295E-01	33.743
363	35.879 32.252	-.12013E-01	26.492	-.51138	.00000	.00000	35.887	26.492	-.19298E-01	35.906
364	38.197 34.193	-.72664E-02	27.676	-.52147	.00000	.00000	38.204	27.676	-.14383E-01	38.219
365	40.894 36.497	-.54140E-01	28.998	-.55785	.00000	.00000	40.901	28.998	-.61738E-01	40.963
366	43.717 38.768	.70331E-01	30.459	-.52716	.00000	.00000	43.723	30.459	.63965E-01	43.659
367	44.441 39.634	-.10791	31.238	-.19054	.00000	.00000	44.442	31.238	-.10872	44.551
368	45.077 39.110	1.1961	32.339	-.49365	.00000	.00000	45.082	32.339	1.1906	43.892
369	71.699 68.460	-6.5135	38.628	-4.5635	.00000	.00000	71.964	38.628	-6.7788	78.743
370	36.726 32.854	2.8156	32.897	-3.8596	.00000	.00000	37.160	32.897	2.3818	34.778
371	6.3663 18.227	8.0529	25.096	-1.8388	.00000	.00000	25.096	9.2326	5.1866	19.910
372	47.938 47.543	.39537	47.938	.00000	.00000	.00000	47.938	47.938	.39537	47.541
373	48.121 48.501	-.50396	47.871	.17358	.00000	.00000	48.121	47.871	-.50458	48.621
374	48.661 47.290	1.4864	48.262	3.1407	.00000	.00000	48.869	48.262	1.2782	47.591
375	48.396 49.097	-.22807	47.733	5.1007	.00000	.00000	48.926	47.733	-.75737	49.681

HABCE-01/99-0745, Revision 2

ESP No.:	ES200100180	Supp No.	000	Rev. No.	0000	Page 1 of 1
----------	-------------	----------	-----	----------	------	-------------

FORM 19, CALCULATION COVER SHEET	
INITIATION (Control Doc Type - DCALC) DCALC No.: CA04977 Vendor Calculation (Check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Responsible Group: MEU Responsible Engineer: B. H. Scott	Total Number of Pages (including attachments): 890 Revision No.: 0001

CALCULATION	
ENGINEERING DISCIPLINE:	<div style="display: flex; flex-wrap: wrap;"><div style="width: 33%;"><input type="checkbox"/> Civil</div><div style="width: 33%;"><input type="checkbox"/> Instr & Controls</div><div style="width: 33%;"><input type="checkbox"/> Nuc Engrg</div><div style="width: 33%;"><input type="checkbox"/> Electrical</div><div style="width: 33%;"><input checked="" type="checkbox"/> Mechanical</div><div style="width: 33%;"><input type="checkbox"/> Diesel Gen Project</div><div style="width: 33%;"><input type="checkbox"/> Life Cycle Mngmt</div><div style="width: 33%;"><input type="checkbox"/> Reliability Engrg</div><div style="width: 33%;"><input type="checkbox"/> Nuc Fuel Mngmt</div><div style="width: 33%;"><input type="checkbox"/> Other:</div></div>
Title:	NUTECH HORIZONTAL MODULE SYSTEM (NUHOMS) 24P ISFSI DRY SHIELDED CANISTER (DSC) STRUCTURAL ANALYSIS FOR DSC NUMBERS R025 AND BEYOND
Unit	<input type="checkbox"/> UNIT 1 <input type="checkbox"/> UNIT 2 <input checked="" type="checkbox"/> ISFSI
Proprietary or Safeguards Calculation	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Comments:	THIS IS AN OWNER ACCEPTANCE REVIEW OF AN ORIGINAL VENDOR CALCULATION
Vendor Calc No.:	HABGE-01/99-0745
Revision No.:	2
Vendor Name:	HOPPER AND ASSOCIATES ENGINEERS
Safety Class (Check one):	<input checked="" type="checkbox"/> SR <input type="checkbox"/> AQ <input type="checkbox"/> NSR
There are assumptions that require Verification during walkdown:	AIT #: NONE
This calculation SUPERSEDES:	

REVIEW AND APPROVAL:	
Responsible Engineer: Hopper and Associates Engineers	Date: 01/19/2001
Owner Acceptance Review: B. H. Scott 	Date: 02/27/2001
Approval: NA	Date:

392	38.261 40.814	.46151E-02	42.964	.25342	.00000	.00000	42.964	38.263	.29364E-02	42.961
393	36.540 39.614	.38704E-02	42.105	.22352	.00000	.00000	42.105	36.541	.25030E-02	42.102
394	34.750 38.374	.33064E-02	41.187	.19616	.00000	.00000	41.187	34.752	.21990E-02	41.185
395	32.896 37.099	.28771E-02	40.214	.17115	.00000	.00000	40.214	32.897	.19866E-02	40.212
396	30.982 35.798	.26481E-02	39.191	.14834	.00000	.00000	39.191	30.982	.19378E-02	39.189

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
397	29.012 34.479	.21566E-02	38.120	.12748	.00000	.00000	38.120	29.012	.15964E-02	38.119
398	26.988 33.150	.26206E-02	37.005	.10783	.00000	.00000	37.005	26.989	.21897E-02	37.003
399	24.891 31.813	-.11572E-02	35.840	.86157E-01	.00000	.00000	35.840	24.892	-.14554E-02	35.842
400	22.630 30.433	.47643E-02	34.603	.53307E-01	.00000	.00000	34.603	22.631	.46387E-02	34.598
401	19.984 28.989	-.38373E-01	33.204	-.40426E-02	.00000	.00000	33.204	19.984	-.38374E-01	33.242
402	17.207 27.472	.82184E-01	31.770	.71269E-02	.00000	.00000	31.770	17.207	.82181E-01	31.688
403	16.523 26.848	-.13046	30.834	.32684	.00000	.00000	30.834	16.529	-.13687	30.971
404	15.941 25.341	1.2071	30.468	.71395E-03	.00000	.00000	30.468	15.941	1.2071	29.261
405	-10.710 29.267	-6.1162	19.709	-4.0780	.00000	.00000	19.709	-3.7328	-13.094	32.801
406	-21.972 35.678	6.1562	17.998	-1.6737	.00000	.00000	17.998	6.2555	-22.071	40.061
407	-6.7170 25.883	-6.6034	18.296	3.9621	.00000	.00000	18.296	-2.6977	-10.623	28.911

HABGE-01/99-0745, Revision 2

B105

408	-6.1153 27.739	-14.451	16.176	-2.3967	.00000	.00000	16.176	-5.4753	-15.091	31.267
409	-4.9372 24.176	13.985	21.918	-2.1146	.00000	.00000	21.918	14.218	-5.1706	27.089
410	1.4064 9.0585	.69988	10.090	-.71546E-01	.00000	.00000	10.090	1.4135	.69271	9.3974
411	1.4334 7.3729	-.31306	7.7754	-.64714E-01	.00000	.00000	7.7754	1.4358	-.31545	8.0909
412	1.7766 6.1503	-.11884	6.7560	.21544E-01	.00000	.00000	6.7560	1.7768	-.11908	6.8751
413	2.6509 5.6050	.84666E-01	6.5103	.10205	.00000	.00000	6.5103	2.6550	.80614E-01	6.4297
414	-1.3861 7.3989	-.40678	-8.2455	.71546E-01	.00000	.00000	-.40158	-1.3913	-8.2455	7.8439

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
415	-1.1323 5.8588	-.11156	-6.4126	.64714E-01	.00000	.00000	-.10747	-1.1363	-6.4126	6.3057
416	-1.4923 5.3615	.73940	-5.3557	.26890	.00000	.00000	.77134	-1.5242	-5.3557	6.1271
417	-1.2733 4.2636	-1.0290	-5.3412	.43839	.00000	.00000	-.69605	-1.6062	-5.3412	4.6452
425	-7.5531 132.30	135.99	20.989	-7.7742	.00000	.00000	136.41	20.989	-7.9729	144.38
426	-3.3242 35.828	26.515	-10.698	-6.2948	.00000	.00000	27.789	-4.5978	-10.698	38.487
427	.74473 60.987	-68.874	-37.813	-4.8390	.00000	.00000	1.0795	-37.813	-69.209	70.284
428	1.0142 72.157	78.255	13.522	-4.0895	.00000	.00000	78.471	13.522	.79829	77.67
429	-.39270 32.678	30.991	-1.1535	-4.4125	.00000	.00000	31.600	-1.0013	-1.1535	32.75
430	-1.9574 19.057	-20.687	-17.065	-4.7295	.00000	.00000	-.83091	-17.065	-21.813	20.98

431	-.18740 35.820	40.153	14.021	-3.0010	.00000	.00000	40.375	14.021	-.40942	40.785
432	-.56273E-01 25.941	29.046	10.607	-2.7456	.00000	.00000	29.302	10.607	-.31304	29.615
433	.43370E-01 18.696	20.870	8.0967	-2.4938	.00000	.00000	21.164	8.0967	-.25109	21.415
434	-.19913 18.231	15.321	19.643	-1.3801	.00000	.00000	19.643	15.443	-.32089	19.964
435	-.79519 28.419	30.201	23.684	-1.4604	.00000	.00000	30.269	23.684	-.86385	31.133
436	-1.3805 39.137	43.131	27.092	-1.5391	.00000	.00000	43.184	27.092	-1.4337	44.618
437	-1.0848 27.530	14.929	30.636	1.0330	.00000	.00000	30.636	14.995	-1.1512	31.788
438	-2.0163 33.281	27.848	33.862	.67948E-01	.00000	.00000	33.862	27.848	-2.0165	35.878
439	-1.6238 42.228	42.680	38.043	1.2007	.00000	.00000	42.712	38.043	-1.6563	44.369

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
440	2.0838 35.630	20.323	43.138	.25813	.00000	.00000	43.138	20.327	2.0801	41.058
441	1.1186 44.940	42.887	48.670	.78858E-01	.00000	.00000	48.670	42.887	1.1184	47.551
442	-1.0950 44.471	3.1379	45.336	.39536	.00000	.00000	45.336	3.1745	-1.1316	46.468
443	-.23413 58.643	56.220	60.369	.38970	.00000	.00000	60.369	56.223	-.23682	60.601
444	-.95335 49.355	7.8289	52.195	.52411	.00000	.00000	52.195	7.8601	-.98452	53.171
445	.29925E-02 58.998	51.555	64.337	.51605	.00000	.00000	64.337	51.560	-.21728E-02	64.331
446	-1.0255 52.377	13.335	57.025	.52407	.00000	.00000	57.025	13.354	-1.0446	58.071

447	-.13768E-01	46.079	65.821	.51577	.00000	.00000	65.821	46.085	-.19538E-01	65.840
	58.524									
448	-1.0225	18.550	60.151	.45412	.00000	.00000	60.151	18.560	-1.0331	61.184
	54.116									
449	.18804E-01	40.893	65.802	.44680	.00000	.00000	65.802	40.898	.13921E-01	65.788
	57.531									
450	-1.0277	22.908	61.908	.35499	.00000	.00000	61.908	22.913	-1.0329	62.941
	55.026									
451	.24152E-01	36.558	64.945	.34919	.00000	.00000	64.945	36.562	.20815E-01	64.925
	56.374									
452	-1.0234	26.214	62.685	.25316	.00000	.00000	62.685	26.216	-1.0258	63.711
	55.368									
453	.27231E-01	33.271	63.748	.24896	.00000	.00000	63.748	33.273	.25366E-01	63.723
	55.203									
454	-1.0182	28.500	62.818	.16345	.00000	.00000	62.818	28.501	-1.0191	63.838
	55.337									
455	.25068E-01	30.998	62.523	.16070	.00000	.00000	62.523	30.998	.24235E-01	62.499
	54.127									
456	-1.0121	29.921	62.582	.92397E-01	.00000	.00000	62.582	29.921	-1.0124	63.594
	55.081									
457	.21281E-01	29.584	61.447	.90803E-01	.00000	.00000	61.447	29.584	.21002E-01	61.426
	53.209									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
	SEQV									
458	-1.0067	30.678	62.173	.41068E-01	.00000	.00000	62.173	30.678	-1.0067	63.180
	54.716									
459	.16852E-01	28.831	60.597	.40324E-01	.00000	.00000	60.597	28.831	.16795E-01	60.580
	52.485									
460	-1.0022	30.969	61.726	.74245E-02	.00000	.00000	61.726	30.969	-1.0022	62.720
	54.327									
461	.12732E-01	28.541	59.984	.72452E-02	.00000	.00000	59.984	28.541	.12730E-01	59.970
	51.957									
462	-.99891	30.966	61.316	-.12021E-01	.00000	.00000	61.316	30.966	-.99892	62.310
	53.973									

463	.93133E-02	28.544	59.583	-.11866E-01	.00000	.00000	59.583	28.544	.93084E-02	59.573
	51.607									
464	-.99669	30.802	60.983	-.21078E-01	.00000	.00000	60.983	30.802	-.99671	61.979
	53.682									
465	.67422E-02	28.708	59.352	-.20761E-01	.00000	.00000	59.352	28.708	.67272E-02	59.345
	51.403									
466	-.99536	30.572	60.735	-.23228E-01	.00000	.00000	60.735	30.572	-.99538	61.730
	53.465									
467	.49782E-02	28.937	59.245	-.22864E-01	.00000	.00000	59.245	28.937	.49601E-02	59.240
	51.308									
468	-.99470	30.336	60.568	-.21300E-01	.00000	.00000	60.568	30.336	-.99471	61.562
	53.318									
469	.38931E-02	29.171	59.220	-.20959E-01	.00000	.00000	59.220	29.171	.38780E-02	59.216
	51.285									
470	-.99448	30.128	60.467	-.17395E-01	.00000	.00000	60.467	30.128	-.99449	61.461
	53.229									
471	.33253E-02	29.378	59.244	-.17112E-01	.00000	.00000	59.244	29.378	.33153E-02	59.241
	51.305									
472	-.99455	29.964	60.416	-.12927E-01	.00000	.00000	60.416	29.964	-.99455	61.411
	53.184									
473	.31173E-02	29.541	59.292	-.12714E-01	.00000	.00000	59.292	29.541	.31118E-02	59.289
	51.346									
474	-.99475	29.846	60.399	-.87476E-02	.00000	.00000	60.399	29.846	-.99476	61.394
	53.169									
475	.31343E-02	29.659	59.346	-.86014E-02	.00000	.00000	59.346	29.659	.31318E-02	59.342
	51.392									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
476	-.99501	29.768	60.404	-.52857E-02	.00000	.00000	60.404	29.768	-.99501	61.394
	53.173									
477	.32725E-02	29.736	59.396	-.51957E-02	.00000	.00000	59.396	29.736	.32716E-02	59.394
	51.435									
478	-.99526	29.724	60.419	-.26802E-02	.00000	.00000	60.419	29.724	-.99526	61.414
	53.186									

479	.34587E-02 51.471	29.780	59.437	-.26330E-02	.00000	.00000	59.437	29.780	.34585E-02	59.434
480	-.99548 53.203	29.703	60.438	-.89272E-03	.00000	.00000	60.438	29.703	-.99548	61.434
481	.36464E-02 51.498	29.801	59.468	-.87530E-03	.00000	.00000	59.468	29.801	.36463E-02	59.465
482	-.99564 53.219	29.698	60.457	.20702E-03	.00000	.00000	60.457	29.698	-.99564	61.453
483	.38097E-02 51.516	29.806	59.490	.20576E-03	.00000	.00000	59.490	29.806	.38097E-02	59.486
484	-.99576 53.234	29.703	60.473	.78251E-03	.00000	.00000	60.473	29.703	-.99576	61.469
485	.39378E-02 51.527	29.801	59.503	.77117E-03	.00000	.00000	59.503	29.801	.39378E-02	59.499
486	-.99583 53.244	29.712	60.485	.99350E-03	.00000	.00000	60.485	29.712	-.99583	61.481
487	.40295E-02 51.533	29.792	59.510	.97815E-03	.00000	.00000	59.510	29.792	.40295E-02	59.506
488	-.99587 53.252	29.722	60.494	.97638E-03	.00000	.00000	60.494	29.722	-.99587	61.490
489	.40890E-02 51.535	29.782	59.512	.96088E-03	.00000	.00000	59.512	29.782	.40890E-02	59.508
490	-.99589 53.257	29.732	60.500	.83642E-03	.00000	.00000	60.500	29.732	-.99589	61.496
491	.41228E-02 51.535	29.772	59.512	.82291E-03	.00000	.00000	59.512	29.772	.41228E-02	59.508
492	-.99589 53.259	29.740	60.503	.64781E-03	.00000	.00000	60.503	29.740	-.99589	61.499
493	.41381E-02 51.534	29.764	59.510	.63720E-03	.00000	.00000	59.510	29.764	.41381E-02	59.506

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
494	-.99588 53.261	29.746	60.504	.45774E-03	.00000	.00000	60.504	29.746	-.99588	61.500

495	.41411E-02 51.532	29.758	59.508	.45014E-03	.00000	.00000	59.508	29.758	.41411E-02	59.504
496	-.99587 53.261	29.750	60.504	.29228E-03	.00000	.00000	60.504	29.750	-.99587	61.500
497	.41370E-02 51.530	29.754	59.505	.28734E-03	.00000	.00000	59.505	29.754	.41370E-02	59.501
498	-.99586 53.260	29.753	60.504	.16245E-03	.00000	.00000	60.504	29.753	-.99586	61.500
499	.41295E-02 51.528	29.752	59.504	.15963E-03	.00000	.00000	59.504	29.752	.41295E-02	59.499
500	-.99585 53.260	29.754	60.503	.69514E-04	.00000	.00000	60.503	29.754	-.99585	61.499
501	.41212E-02 51.527	29.750	59.502	.68243E-04	.00000	.00000	59.502	29.750	.41212E-02	59.498
502	-.99584 53.259	29.754	60.502	.92488E-05	.00000	.00000	60.502	29.754	-.99584	61.498
503	.41136E-02 51.526	29.750	59.501	.89918E-05	.00000	.00000	59.501	29.750	.41136E-02	59.497
504	-.99584 53.258	29.754	60.501	-.25041E-04	.00000	.00000	60.501	29.754	-.99584	61.497
505	.41073E-02 51.525	29.750	59.500	-.24708E-04	.00000	.00000	59.500	29.750	.41073E-02	59.496
506	-.99583 53.258	29.754	60.501	-.40500E-04	.00000	.00000	60.501	29.754	-.99583	61.497
507	.41027E-02 51.525	29.750	59.500	-.39887E-04	.00000	.00000	59.500	29.750	.41027E-02	59.496
508	-.99583 53.257	29.754	60.500	-.43563E-04	.00000	.00000	60.500	29.754	-.99583	61.496
509	.40995E-02 51.525	29.751	59.500	-.42878E-04	.00000	.00000	59.500	29.751	.40995E-02	59.495
510	-.99583 53.257	29.753	60.500	-.39417E-04	.00000	.00000	60.500	29.753	-.99583	61.496
511	.40976E-02 51.525	29.751	59.500	-.38785E-04	.00000	.00000	59.500	29.751	.40976E-02	59.495

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
512	-.99583 53.257	29.753	60.500	-.31872E-04	.00000	.00000	60.500	29.753	-.99583	61.496
513	.40966E-02 51.525	29.751	59.500	-.31354E-04	.00000	.00000	59.500	29.751	.40966E-02	59.495
514	-.99583 53.257	29.752	60.500	-.23472E-04	.00000	.00000	60.500	29.752	-.99583	61.496
515	.40962E-02 51.525	29.752	59.500	-.23085E-04	.00000	.00000	59.500	29.752	.40962E-02	59.496
516	-.99583 53.257	29.752	60.500	-.15727E-04	.00000	.00000	60.500	29.752	-.99583	61.496
517	.40963E-02 51.525	29.752	59.500	-.15463E-04	.00000	.00000	59.500	29.752	.40963E-02	59.496
518	-.99583 53.257	29.752	60.500	-.93751E-05	.00000	.00000	60.500	29.752	-.99583	61.496
519	.40966E-02 51.525	29.752	59.500	-.92150E-05	.00000	.00000	59.500	29.752	.40966E-02	59.496
520	-.99583 53.257	29.752	60.500	-.46380E-05	.00000	.00000	60.500	29.752	-.99583	61.496
521	.40969E-02 51.525	29.752	59.500	-.45558E-05	.00000	.00000	59.500	29.752	.40969E-02	59.496
522	-.99583 53.257	29.752	60.500	-.14196E-05	.00000	.00000	60.500	29.752	-.99583	61.496
523	.40973E-02 51.525	29.752	59.500	-.13912E-05	.00000	.00000	59.500	29.752	.40973E-02	59.496
524	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
525	.40976E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40976E-02	59.496
526	-.99583 53.257	29.752	60.500	.15361E-05	.00000	.00000	60.500	29.752	-.99583	61.496
527	.40978E-02 51.525	29.752	59.500	.15136E-05	.00000	.00000	59.500	29.752	.40978E-02	59.496
528	-.99583 53.257	29.752	60.500	.18795E-05	.00000	.00000	60.500	29.752	-.99583	61.496
529	.40980E-02 51.525	29.752	59.500	.18504E-05	.00000	.00000	59.500	29.752	.40980E-02	59.496

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

HABGE-01/99-0745, Revision 2

B //2

46	-31.538 27.271	-5.2729	-29.780	5.6847	.00000	.00000	-4.0954	-29.780	-32.716	28.621
47	-36.317 35.833	.42338	-30.078	6.4403	.00000	.00000	1.5196	-30.078	-37.413	38.933
48	-39.629 38.419	1.8601	-31.714	2.6087	.00000	.00000	2.0234	-31.714	-39.792	41.816
49	-40.769 36.970	-.89191	-34.023	-.14708	.00000	.00000	-.89136	-34.023	-40.770	39.879
50	-39.679 36.658	-.67751	-34.343	-.87555	.00000	.00000	-.65786	-34.343	-39.699	39.041
51	-38.458 36.023	-.71455	-34.541	-1.3642	.00000	.00000	-.66531	-34.541	-38.507	37.842
52	-36.454 34.683	-.86279	-34.299	-1.6533	.00000	.00000	-.78616	-34.299	-36.531	35.745
53	-34.361 33.353	-.88371	-33.811	-1.8080	.00000	.00000	-.78635	-33.811	-34.458	33.672
54	-32.142 31.917	-.90162	-33.131	-1.9036	.00000	.00000	-.78605	-32.257	-33.131	32.345

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
55	-29.866 30.451	-.90349	-32.306	-1.9830	.00000	.00000	-.76836	-30.001	-32.306	31.538
56	-27.529 28.954	-.90270	-31.359	-2.0609	.00000	.00000	-.74414	-27.688	-31.359	30.614
57	-25.121 27.436	-.90054	-30.302	-2.1428	.00000	.00000	-.71242	-25.309	-30.302	29.589
58	-22.628 25.906	-.89856	-29.144	-2.2298	.00000	.00000	-.67211	-22.855	-29.144	28.471
59	-20.040 24.382	-.89692	-27.889	-2.3212	.00000	.00000	-.61948	-20.317	-27.889	27.261
60	-17.347 22.890	-.89571	-26.541	-2.4160	.00000	.00000	-.54824	-17.694	-26.541	25.99
61	-14.543 21.468	-.89536	-25.104	-2.5127	.00000	.00000	-.44744	-14.991	-25.104	24.61

62	-11.627 20.167	-.89695	-23.581	-2.6084	.00000	.00000	-.29650	-12.228	-23.581	23.284
63	-8.6037 19.050	-.90231	-21.976	-2.6969	.00000	.00000	-.51822E-01	-9.4542	-21.976	21.924
64	-5.4895 18.191	-.91613	-20.299	-2.7675	.00000	.00000	.38717	-6.7928	-20.299	20.686
65	-2.3251 17.656	-.93656	-18.564	-2.8029	.00000	.00000	1.2568	-4.5184	-18.564	19.821
66	.84629 17.479	-.98455	-16.796	-2.7824	.00000	.00000	2.8600	-2.9982	-16.796	19.656
67	3.8470 17.601	-1.0097	-15.038	-2.6653	.00000	.00000	5.0243	-2.1869	-15.038	20.062
68	6.9370 18.140	-1.1595	-13.268	-2.5060	.00000	.00000	7.6499	-1.8724	-13.268	20.918
69	8.7276 18.162	-.88193	-11.728	-2.2848	.00000	.00000	9.2431	-1.3975	-11.728	20.971
70	13.423 20.290	-.65912	-9.4008	-2.1480	.00000	.00000	13.744	-.97946	-9.4008	23.144
71	12.762 21.439	-6.0919	-10.118	-2.0051	.00000	.00000	12.973	-6.3028	-10.118	23.090
72	1.8785 30.141	-23.991	-3.7991	9.3406	.00000	.00000	27.408	-1.5390	-3.7991	31.207

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
73	-3.8537 40.178	21.908	-6.1895	17.175	.00000	.00000	30.496	-6.1895	-12.442	42.938
74	-4.4176 27.994	-18.867	-18.551	13.897	.00000	.00000	4.0201	-18.551	-27.305	31.325
75	-18.445 17.742	-.70247	-18.445	.00000	.00000	.00000	-.70247	-18.445	-18.445	17.742
76	-18.471 17.430	-1.0657	-18.325	-1.0634	.00000	.00000	-1.0010	-18.325	-18.536	17.536
77	-18.368 17.422	-1.0100	-18.226	-1.2460	.00000	.00000	-.92098	-18.226	-18.457	17.536

78	-18.381 17.380	-.97306	-18.295	-.40648	.00000	.00000	-.96358	-18.295	-18.391	17.427
79	-18.380 17.193	-1.2017	-18.403	-.20076	.00000	.00000	-1.1994	-18.383	-18.403	17.204
80	-18.429 17.222	-1.2093	-18.430	.14515	.00000	.00000	-1.2080	-18.430	-18.430	17.222
81	-18.870 17.402	-1.3602	-18.619	.43333	.00000	.00000	-1.3495	-18.619	-18.881	17.531
82	-15.577 14.546	-2.4565	-18.066	.44110	.00000	.00000	-2.4416	-15.592	-18.066	15.624
83	-7.6214 10.700	-12.215	-17.798	3.4917	.00000	.00000	-5.7389	-14.098	-17.798	12.059
84	-4.9735 14.680	4.1301	-10.767	3.9303	.00000	.00000	5.5922	-6.4355	-10.767	16.359
85	-1.3921 10.346	1.2214	-10.024	1.0229	.00000	.00000	1.5741	-1.7449	-10.024	11.598
86	3.5412 9.5085	-.37204	-7.2972	-.11655	.00000	.00000	3.5447	-.37551	-7.2972	10.842
87	1.6706 7.7833	-.33068	-6.7017	-1.0384	.00000	.00000	2.1120	-.77214	-6.7017	8.8137
88	.74454 6.9839	-.52809	-6.1696	-1.6481	.00000	.00000	1.8749	-1.6585	-6.1696	8.0445
89	-.31152 6.3528	-.71141	-5.8934	-1.9384	.00000	.00000	1.4372	-2.4602	-5.8934	7.3306
90	-1.3380 5.9512	-.77548	-5.7393	-2.1018	.00000	.00000	1.0638	-3.1773	-5.7393	6.8031

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
91	-2.3531 5.7764	-.79849	-5.7039	-2.1995	.00000	.00000	.75699	-3.9086	-5.7039	6.4601
92	-3.3336 5.8288	-.80370	-5.7577	-2.2778	.00000	.00000	.53681	-4.6741	-5.7577	6.2941
93	-4.2972 6.0782	-.80134	-5.8880	-2.3546	.00000	.00000	.38318	-5.4817	-5.8880	6.2711

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
530	-.99583 53.257	29.752	60.500	.18165E-05	.00000	.00000	60.500	29.752	-.99583	61.496
531	.40981E-02 51.525	29.752	59.500	.17876E-05	.00000	.00000	59.500	29.752	.40981E-02	59.496
532	-.99583 53.257	29.752	60.500	.15391E-05	.00000	.00000	60.500	29.752	-.99583	61.496
533	.40981E-02 51.525	29.752	59.500	.15142E-05	.00000	.00000	59.500	29.752	.40981E-02	59.496
534	-.99583 53.257	29.752	60.500	.11811E-05	.00000	.00000	60.500	29.752	-.99583	61.496
535	.40982E-02 51.525	29.752	59.500	.11617E-05	.00000	.00000	59.500	29.752	.40982E-02	59.496
536	-.99583 53.257	29.752	60.500	.82681E-06	.00000	.00000	60.500	29.752	-.99583	61.496
537	.40982E-02 51.525	29.752	59.500	.81307E-06	.00000	.00000	59.500	29.752	.40982E-02	59.496
538	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
539	.40982E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40982E-02	59.496
540	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
541	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
542	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
543	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
544	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
545	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
546	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
547	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

HABGE-01/99-0745, Revision 2

B 1/L

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
548	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
549	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
550	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
551	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
552	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
553	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
554	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
555	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
556	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
557	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
558	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
559	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
560	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
561	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
562	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
563	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

HABGE-01/99-0745, Revision 2

564	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
565	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
566	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
567	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
568	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
569	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
570	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
571	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
572	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
573	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
574	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
575	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
576	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
577	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
578	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
579	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

580	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
581	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
582	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
583	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
584	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
585	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
586	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
587	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
588	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
589	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
590	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
591	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
592	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
593	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
594	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
595	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

596	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
597	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
598	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
599	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
600	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
601	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SEQV	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
602	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496	
603	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496	
604	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496	
605	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496	
606	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496	
607	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496	
608	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496	
609	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496	
610	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496	
611	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496	

612	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
613	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
614	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
615	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
616	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
617	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
618	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
619	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
620	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
621	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
622	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
623	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
624	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
625	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
626	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
627	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

HABGE-01/99-0745, Revision 2

B / 2 /

628	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
629	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
630	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
631	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
632	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
633	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
634	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
635	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
636	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
637	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
638	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
639	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
640	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
641	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496
642	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
643	.40981E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40981E-02	59.496

644	-.99583 53.257	29.752	60.500	-.70296E-06	.00000	.00000	60.500	29.752	-.99583	61.496
645	.40981E-02 51.525	29.752	59.500	-.69149E-06	.00000	.00000	59.500	29.752	.40981E-02	59.496
646	-.99583 53.257	29.752	60.500	-.88987E-06	.00000	.00000	60.500	29.752	-.99583	61.496
647	.40981E-02 51.525	29.752	59.500	-.87555E-06	.00000	.00000	59.500	29.752	.40981E-02	59.496
648	-.99583 53.257	29.752	60.500	-.10137E-05	.00000	.00000	60.500	29.752	-.99583	61.496
649	.40981E-02 51.525	29.752	59.500	-.99768E-06	.00000	.00000	59.500	29.752	.40981E-02	59.496
650	-.99583 53.257	29.752	60.500	-.99231E-06	.00000	.00000	60.500	29.752	-.99583	61.496
651	.40980E-02 51.525	29.752	59.500	-.97711E-06	.00000	.00000	59.500	29.752	.40980E-02	59.496
652	-.99583 53.257	29.752	60.500	-.71138E-06	.00000	.00000	60.500	29.752	-.99583	61.496
653	.40979E-02 51.525	29.752	59.500	-.70137E-06	.00000	.00000	59.500	29.752	.40979E-02	59.496
654	-.99583 53.257	29.752	60.500	.00000	.00000	.00000	60.500	29.752	-.99583	61.496
655	.40978E-02 51.525	29.752	59.500	.00000	.00000	.00000	59.500	29.752	.40978E-02	59.496

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
656	-.99583 53.257	29.752	60.500	.12307E-05	.00000	.00000	60.500	29.752	-.99583	61.496
657	.40976E-02 51.525	29.752	59.500	.12075E-05	.00000	.00000	59.500	29.752	.40976E-02	59.496
658	-.99583 53.257	29.752	60.500	.32214E-05	.00000	.00000	60.500	29.752	-.99583	61.496
659	.40974E-02 51.525	29.752	59.500	.31651E-05	.00000	.00000	59.500	29.752	.40974E-02	59.496

660	-.99583 53.257	29.752	60.500	.60655E-05	.00000	.00000	60.500	29.752	-.99583	61.496
661	.40972E-02 51.525	29.752	59.500	.59627E-05	.00000	.00000	59.500	29.752	.40972E-02	59.496
662	-.99583 53.257	29.752	60.500	.97723E-05	.00000	.00000	60.500	29.752	-.99583	61.496
663	.40971E-02 51.525	29.752	59.500	.96095E-05	.00000	.00000	59.500	29.752	.40971E-02	59.496
664	-.99583 53.257	29.752	60.500	.14148E-04	.00000	.00000	60.500	29.752	-.99583	61.496
665	.40971E-02 51.525	29.752	59.500	.13916E-04	.00000	.00000	59.500	29.752	.40971E-02	59.496
666	-.99583 53.257	29.752	60.500	.18677E-04	.00000	.00000	60.500	29.752	-.99583	61.496
667	.40974E-02 51.525	29.752	59.500	.18375E-04	.00000	.00000	59.500	29.752	.40974E-02	59.496
668	-.99583 53.257	29.753	60.500	.22381E-04	.00000	.00000	60.500	29.753	-.99583	61.496
669	.40981E-02 51.525	29.751	59.500	.22024E-04	.00000	.00000	59.500	29.751	.40981E-02	59.496
670	-.99583 53.257	29.753	60.500	.23677E-04	.00000	.00000	60.500	29.753	-.99583	61.496
671	.40993E-02 51.525	29.751	59.500	.23308E-04	.00000	.00000	59.500	29.751	.40993E-02	59.496
672	-.99583 53.257	29.753	60.501	.20268E-04	.00000	.00000	60.501	29.753	-.99583	61.496
673	.41013E-02 51.525	29.751	59.500	.19967E-04	.00000	.00000	59.500	29.751	.41013E-02	59.496

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
674	-.99584 53.258	29.753	60.501	.91097E-05	.00000	.00000	60.501	29.753	-.99584	61.496
675	.41041E-02 51.525	29.751	59.500	.90068E-05	.00000	.00000	59.500	29.751	.41041E-02	59.496

676	-.99584 53.258	29.753	60.501	-.13455E-04	.00000	.00000	60.501	29.753	-.99584	61.497
677	.41077E-02 51.526	29.751	59.501	-.13173E-04	.00000	.00000	59.501	29.751	.41077E-02	59.497
678	-.99585 53.258	29.753	60.502	-.51316E-04	.00000	.00000	60.502	29.753	-.99585	61.498
679	.41120E-02 51.526	29.751	59.501	-.50400E-04	.00000	.00000	59.501	29.751	.41120E-02	59.497
680	-.99585 53.259	29.752	60.502	-.10784E-03	.00000	.00000	60.502	29.752	-.99585	61.498
681	.41165E-02 51.527	29.752	59.502	-.10599E-03	.00000	.00000	59.502	29.752	.41165E-02	59.498
682	-.99586 53.259	29.750	60.502	-.18459E-03	.00000	.00000	60.502	29.750	-.99586	61.498
683	.41202E-02 51.528	29.754	59.503	-.18150E-03	.00000	.00000	59.503	29.754	.41202E-02	59.499
684	-.99586 53.259	29.748	60.502	-.27954E-03	.00000	.00000	60.502	29.748	-.99586	61.498
685	.41215E-02 51.529	29.756	59.505	-.27492E-03	.00000	.00000	59.505	29.756	.41215E-02	59.501
686	-.99587 53.258	29.744	60.501	-.38449E-03	.00000	.00000	60.501	29.744	-.99587	61.497
687	.41181E-02 51.530	29.760	59.506	-.37822E-03	.00000	.00000	59.506	29.760	.41181E-02	59.502
688	-.99586 53.256	29.740	60.499	-.48211E-03	.00000	.00000	60.499	29.740	-.99586	61.495
689	.41071E-02 51.531	29.764	59.507	-.47436E-03	.00000	.00000	59.507	29.764	.41071E-02	59.502
690	-.99585 53.253	29.734	60.496	-.54255E-03	.00000	.00000	60.496	29.734	-.99585	61.491
691	.40848E-02 51.530	29.770	59.506	-.53399E-03	.00000	.00000	59.506	29.770	.40848E-02	59.502

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
------	------------	----	----	-----	-----	-----	----	----	----	------

692	-.99582 53.248	29.729	60.490	-.52046E-03	.00000	.00000	60.490	29.729	-.99582	61.486
693	.40475E-02 51.529	29.775	59.504	-.51252E-03	.00000	.00000	59.504	29.775	.40475E-02	59.500
694	-.99578 53.242	29.724	60.483	-.35329E-03	.00000	.00000	60.483	29.724	-.99578	61.479
695	.39917E-02 51.525	29.780	59.500	-.34842E-03	.00000	.00000	59.500	29.780	.39917E-02	59.496
696	-.99570 53.234	29.723	60.474	.37626E-04	.00000	.00000	60.474	29.723	-.99570	61.469
697	.39159E-02 51.518	29.781	59.491	.35740E-04	.00000	.00000	59.491	29.781	.39159E-02	59.487
698	-.99561 53.225	29.728	60.463	.74121E-03	.00000	.00000	60.463	29.728	-.99561	61.459
699	.38222E-02 51.506	29.776	59.478	.72744E-03	.00000	.00000	59.478	29.776	.38222E-02	59.474
700	-.99548 53.216	29.743	60.453	.18433E-02	.00000	.00000	60.453	29.743	-.99548	61.449
701	.37186E-02 51.490	29.762	59.460	.18112E-02	.00000	.00000	59.460	29.762	.37185E-02	59.456
702	-.99534 53.210	29.772	60.446	.34033E-02	.00000	.00000	60.446	29.772	-.99534	61.441
703	.36222E-02 51.469	29.732	59.435	.33457E-02	.00000	.00000	59.435	29.732	.36218E-02	59.432
704	-.99521 53.210	29.820	60.447	.54178E-02	.00000	.00000	60.447	29.820	-.99521	61.442
705	.35625E-02 51.445	29.684	59.407	.53277E-02	.00000	.00000	59.407	29.684	.35616E-02	59.404
706	-.99511 53.222	29.892	60.461	.77699E-02	.00000	.00000	60.461	29.892	-.99511	61.456
707	.35842E-02 51.420	29.613	59.378	.76424E-02	.00000	.00000	59.378	29.613	.35823E-02	59.375
708	-.99512 53.253	29.989	60.496	.10164E-01	.00000	.00000	60.496	29.989	-.99512	61.491
709	.37491E-02 51.400	29.516	59.355	.99995E-02	.00000	.00000	59.355	29.516	.37457E-02	59.352

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

HABGE-01/99-0745, Revision 2

B/2L

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
710	-.99530 53.310	30.108	60.561	.12051E-01	.00000	.00000	60.561	30.108	-.99530	61.556
711	.41350E-02 51.395	29.398	59.349	.11859E-01	.00000	.00000	59.349	29.398	.41302E-02	59.345
712	-.99576 53.401	30.238	60.664	.12553E-01	.00000	.00000	60.664	30.238	-.99576	61.660
713	.48284E-02 51.417	29.269	59.374	.12358E-01	.00000	.00000	59.374	29.269	.48232E-02	59.369
714	-.99661 53.531	30.356	60.813	.10408E-01	.00000	.00000	60.813	30.356	-.99662	61.810
715	.59193E-02 51.483	29.152	59.450	.10255E-01	.00000	.00000	59.450	29.152	.59157E-02	59.444
716	-.99800 53.701	30.424	61.008	.39601E-02	.00000	.00000	61.008	30.424	-.99800	62.006
717	.74467E-02 51.615	29.084	59.601	.39207E-02	.00000	.00000	59.601	29.084	.74461E-02	59.594
718	-.99994 53.902	30.385	61.240	-.87626E-02	.00000	.00000	61.240	30.385	-.99994	62.240
719	.94806E-02 51.832	29.122	59.852	-.85852E-02	.00000	.00000	59.852	29.122	.94780E-02	59.843
720	-1.0027 54.114	30.160	61.482	-.29822E-01	.00000	.00000	61.482	30.160	-1.0027	62.485
721	.11632E-01 52.152	29.347	60.224	-.29293E-01	.00000	.00000	60.224	29.347	.11603E-01	60.213
722	-1.0052 54.295	29.649	61.685	-.60952E-01	.00000	.00000	61.685	29.649	-1.0053	62.690
723	.14630E-01 52.581	29.855	60.726	-.59909E-01	.00000	.00000	60.726	29.855	.14510E-01	60.712
724	-1.0108 54.389	28.743	61.764	-.10284	.00000	.00000	61.764	28.743	-1.0111	62.77
725	.14126E-01 53.112	30.756	61.342	-.10111	.00000	.00000	61.342	30.756	.13793E-01	61.32
726	-1.0048 54.302	27.337	61.603	-.15418	.00000	.00000	61.603	27.338	-1.0057	62.60
727	.23461E-01 53.702	32.154	62.018	-.15163	.00000	.00000	62.018	32.155	.22745E-01	61.99

HABCE-01/99-0745, Revision 2

B/27

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
728	-1.0383 53.952	25.363	61.029	-.21001	.00000	.00000	61.029	25.365	-1.0400	62.069
729	-.11637E-01 54.317	34.117	62.623	-.20659	.00000	.00000	62.623	34.118	-.12888E-01	62.636
730	-.91546 53.091	22.832	59.902	-.26130	.00000	.00000	59.902	22.835	-.91833	60.820
731	.10510 54.723	36.634	63.019	-.25711	.00000	.00000	63.019	36.636	.10330	62.916
732	-1.3590 51.911	19.911	57.806	-.28854	.00000	.00000	57.806	19.915	-1.3629	59.169
733	-.36691 55.241	39.539	62.679	-.28398	.00000	.00000	62.679	39.541	-.36893	63.048
734	.70397 49.338	23.227	57.253	-.95842	.00000	.00000	57.253	23.267	.66326	56.590
735	-.41282 50.292	29.754	57.640	-.35654	.00000	.00000	57.640	29.759	-.41704	58.057
736	-.66172 46.993	19.500	53.039	-.48439	.00000	.00000	53.039	19.511	-.67335	53.713
737	.39335E-02 47.364	26.115	54.674	-.24070	.00000	.00000	54.674	26.117	.17149E-02	54.673
738	.21499 49.762	35.833	57.060	.55890	.00000	.00000	57.060	35.842	.20622	56.854
739	-.83840 43.152	9.0768	46.401	-.45155	.00000	.00000	46.401	9.0973	-.85892	47.260
740	-.73771 45.843	29.449	52.009	-.35675	.00000	.00000	52.009	29.453	-.74193	52.751
741	-.60241 55.277	50.804	57.863	-.26346	.00000	.00000	57.863	50.805	-.60376	58.467
742	-.81414 37.648	6.7615	40.045	.87852E-02	.00000	.00000	40.045	6.7615	-.81415	40.860
743	-.57214 41.410	29.889	46.578	-.39889E-01	.00000	.00000	46.578	29.889	-.57219	47.150
744	-.28716 52.810	52.219	52.822	-.87739E-01	.00000	.00000	52.822	52.219	-.28731	53.109

HABGE01/99-0745, Revision 2

B 128

745	-1.8372	8.9959	32.344	.92320	.00000	.00000	32.344	9.0741	-1.9153	34.259
	30.298									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
746	-1.1230	27.902	37.875	1.1847	.00000	.00000	37.875	27.950	-1.1713	39.047
	35.151									
747	-.56095	48.885	43.899	.78609	.00000	.00000	48.898	43.899	-.57344	49.471
	47.171									
748	.94757	13.473	24.292	1.1257	.00000	.00000	24.292	13.573	.84720	23.445
	20.329									
749	-.53082E-01	26.076	27.499	1.8308	.00000	.00000	27.499	26.204	-.18074	27.680
	27.056									
750	-.24060	36.592	30.276	1.5210	.00000	.00000	36.655	30.276	-.30331	36.958
	34.218									
751	.23340	26.087	16.531	.12457	.00000	.00000	26.088	16.531	.23280	25.855
	22.643									
752	1.5541	25.557	16.566	.26220	.00000	.00000	25.559	16.566	1.5512	24.008
	21.009									
753	1.0758	23.520	15.646	.79689	.00000	.00000	23.548	15.646	1.0475	22.501
	19.772									
754	-2.7108	-7.8496	27.937	-.42894	.00000	.00000	27.937	-2.6753	-7.8851	35.822
	33.522									
755	1.2332	-9.3349	18.116	.11024	.00000	.00000	18.116	1.2343	-9.3360	27.452
	23.983									
756	-3.7973	-10.774	4.6897	.96421	.00000	.00000	4.6897	-3.6665	-10.905	15.595
	13.517									
757	13.660	-.39399	13.660	.00000	.00000	.00000	13.660	13.660	-.39399	14.054
	14.054									
758	13.673	.34913	13.624	.77041	.00000	.00000	13.717	13.624	.30473	13.413
	13.366									
759	13.494	-.33132E-01	13.443	1.2144	.00000	.00000	13.602	13.443	-.14130	13.743
	13.664									
760	13.518	.94056E-02	13.505	.80392	.00000	.00000	13.566	13.505	-.38269E-01	13.604
	13.574									

HABGE-01/99-0745, Revision 2

B 125

761	13.581 13.608	-.70732E-02	13.542	.59758	.00000	.00000	13.607	13.542	-.33304E-01	13.640
762	13.609 13.617	-.31213E-02	13.570	.47074	.00000	.00000	13.625	13.570	-.19382E-01	13.645
763	13.606 13.612	-.19153E-02	13.582	.38658	.00000	.00000	13.617	13.582	-.12888E-01	13.630

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
764	13.586 13.596	-.86178E-03	13.581	.32787	.00000	.00000	13.594	13.581	-.87691E-02	13.603
765	13.562 13.577	.27294E-03	13.574	.28544	.00000	.00000	13.574	13.568	-.57324E-02	13.580
766	13.540 13.559	.47932E-03	13.566	.25371	.00000	.00000	13.566	13.545	-.42730E-02	13.570
767	13.524 13.546	.42801E-03	13.557	.22875	.00000	.00000	13.557	13.528	-.34399E-02	13.561
768	13.514 13.537	.30147E-03	13.550	.20837	.00000	.00000	13.550	13.518	-.29105E-02	13.553
769	13.508 13.530	.18717E-03	13.545	.19130	.00000	.00000	13.545	13.511	-.25216E-02	13.547
770	13.504 13.525	.10759E-03	13.540	.17677	.00000	.00000	13.540	13.506	-.22059E-02	13.542
771	13.501 13.522	.76155E-04	13.536	.16426	.00000	.00000	13.536	13.503	-.19219E-02	13.538
772	13.500 13.519	.95236E-04	13.533	.15343	.00000	.00000	13.533	13.502	-.16484E-02	13.534
773	13.500 13.517	.17393E-03	13.530	.14410	.00000	.00000	13.530	13.501	-.13640E-02	13.531
774	13.501 13.517	.31626E-03	13.528	.13612	.00000	.00000	13.528	13.503	-.10559E-02	13.529
775	13.506 13.519	.49805E-03	13.528	.12941	.00000	.00000	13.528	13.508	-.74189E-03	13.524
776	13.516 13.524	.62292E-03	13.530	.12381	.00000	.00000	13.530	13.517	-.51108E-03	13.530

777	13.531 13.533	.44849E-03	13.534	.11879	.00000	.00000	13.534	13.532	-.59433E-03	13.534
778	13.547 13.545	-.49803E-03	13.539	.11315	.00000	.00000	13.548	13.539	-.14430E-02	13.550
779	13.554 13.551	-.29311E-02	13.541	.10447	.00000	.00000	13.555	13.541	-.37362E-02	13.558
780	13.523 13.535	-.78388E-02	13.531	.88668E-01	.00000	.00000	13.531	13.523	-.84199E-02	13.539
781	13.403 13.463	-.15525E-01	13.491	.60267E-01	.00000	.00000	13.491	13.403	-.15796E-01	13.507

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
782	13.121 13.286	-.25839E-01	13.395	.14390E-01	.00000	.00000	13.395	13.121	-.25855E-01	13.421
783	12.588 12.945	-.32703E-01	13.213	-.49837E-01	.00000	.00000	13.213	12.589	-.32900E-01	13.246
784	11.740 12.411	-.40677E-01	12.915	-.12326	.00000	.00000	12.915	11.741	-.41966E-01	12.957
785	10.632 11.699	-.31590E-02	12.522	-.17758	.00000	.00000	12.522	10.635	-.61234E-02	12.528
786	9.1023 10.906	-.98433E-01	11.932	-.28931	.00000	.00000	11.932	9.1114	-.10752	12.040
787	6.9577 9.8552	-.79750E-01	11.143	-.45545	.00000	.00000	11.143	6.9871	-.10910	11.253
788	5.3062 8.8679	.32158	10.557	-.12621	.00000	.00000	10.557	5.3094	.31838	10.239
789	5.7640 8.7976	.50291	10.526	.81543	.00000	.00000	10.526	5.8875	.37942	10.146
790	9.3104 10.110	.89365	11.661	1.4204	.00000	.00000	11.661	9.5437	.66042	11.000
791	11.741 14.445	-2.2871	11.429	2.3195	.00000	.00000	12.115	11.429	-2.6606	14.775
792	4.9544 5.2012	-.24674	4.9544	.00000	.00000	.00000	4.9544	4.9544	-.24674	5.201

793	4.9781 4.8541	.15430	4.9420	-.39413	.00000	.00000	5.0101	4.9420	.12231	4.8878
794	4.9212 4.9835	.18187E-01	4.8878	-.56517	.00000	.00000	4.9855	4.8878	-.46117E-01	5.0316
795	4.9304 4.9532	.56099E-02	4.9156	-.34304	.00000	.00000	4.9541	4.9156	-.18170E-01	4.9723
796	4.9450 4.9644	-.81746E-02	4.9277	-.25624	.00000	.00000	4.9582	4.9277	-.21395E-01	4.9796
797	4.9556 4.9660	-.40861E-02	4.9408	-.21266	.00000	.00000	4.9647	4.9408	-.13188E-01	4.9779
798	4.9545 4.9636	-.35358E-02	4.9452	-.18354	.00000	.00000	4.9613	4.9452	-.10321E-01	4.9716
799	4.9491 4.9572	-.15421E-02	4.9465	-.16138	.00000	.00000	4.9544	4.9465	-.67969E-02	4.9612

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
800	4.9414 4.9493	.19549E-03	4.9452	-.14234	.00000	.00000	4.9455	4.9452	-.39017E-02	4.9494
801	4.9347 4.9430	.58598E-03	4.9428	-.12591	.00000	.00000	4.9428	4.9379	-.26249E-02	4.9454
802	4.9297 4.9383	.56433E-03	4.9403	-.11225	.00000	.00000	4.9403	4.9323	-.19907E-02	4.9423
803	4.9264 4.9349	.42944E-03	4.9381	-.10110	.00000	.00000	4.9381	4.9285	-.16445E-02	4.9397
804	4.9243 4.9326	.27438E-03	4.9362	-.91979E-01	.00000	.00000	4.9362	4.9260	-.14432E-02	4.9377
805	4.9230 4.9309	.16710E-03	4.9347	-.84449E-01	.00000	.00000	4.9347	4.9244	-.12812E-02	4.9360
806	4.9221 4.9295	.12191E-03	4.9334	-.78103E-01	.00000	.00000	4.9334	4.9234	-.11171E-02	4.9340
807	4.9217 4.9285	.15028E-03	4.9324	-.72594E-01	.00000	.00000	4.9324	4.9228	-.92027E-03	4.9331
808	4.9217 4.9278	.26954E-03	4.9316	-.67609E-01	.00000	.00000	4.9316	4.9226	-.65908E-03	4.9321

809	4.9223 4.9275	.49125E-03	4.9312	-.62859E-01	.00000	.00000	4.9312	4.9232	-.31141E-03	4.9315
810	4.9241 4.9279	.78753E-03	4.9313	-.58118E-01	.00000	.00000	4.9313	4.9248	.10157E-03	4.9312
811	4.9274 4.9295	.10224E-02	4.9319	-.53367E-01	.00000	.00000	4.9319	4.9280	.44439E-03	4.9315
812	4.9321 4.9325	.84269E-03	4.9331	-.49106E-01	.00000	.00000	4.9331	4.9326	.35375E-03	4.9328
813	4.9369 4.9367	-.46488E-03	4.9343	-.46877E-01	.00000	.00000	4.9374	4.9343	-.90989E-03	4.9383
814	4.9373 4.9402	-.40259E-02	4.9336	-.49945E-01	.00000	.00000	4.9378	4.9336	-.45307E-02	4.9423
815	4.9237 4.9382	-.11319E-01	4.9276	-.63859E-01	.00000	.00000	4.9276	4.9246	-.12145E-01	4.9397
816	4.8793 4.9209	-.23405E-01	4.9100	-.96079E-01	.00000	.00000	4.9100	4.8811	-.25287E-01	4.9353
817	4.7797 4.8733	-.39170E-01	4.8727	-.15314	.00000	.00000	4.8727	4.7845	-.44033E-01	4.9167

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
818	4.5977 4.7762	-.52828E-01	4.8071	-.23567	.00000	.00000	4.8071	4.6096	-.64740E-01	4.8718
819	4.3212 4.6235	-.61533E-01	4.7077	-.32908	.00000	.00000	4.7077	4.3458	-.86103E-01	4.7938
820	3.9145 4.3650	-.25268E-01	4.5731	-.40950	.00000	.00000	4.5731	3.9566	-.67381E-01	4.6405
821	3.4561 4.1721	-.70714E-01	4.3849	-.52593	.00000	.00000	4.3849	3.5329	-.14747	4.5324
822	2.7693 4.1129	-.31743	4.0606	-.76051	.00000	.00000	4.0606	2.9465	-.49463	4.5552
823	2.3488 3.1344	.56548	4.1266	-.32306	.00000	.00000	4.1266	2.4055	.50876	3.6178
824	2.2597 3.0635	1.3616	4.2652	.95829	.00000	.00000	4.2652	2.8690	.75240	3.5128

825	1.0273 3.4995	.33683	3.5434	1.1108	.00000	.00000	3.5434	1.8452	-.48114	4.0245
826	-.15702 5.4376	-3.9317	1.8527	1.1097	.00000	.00000	1.8527	.14507	-4.2338	6.0865
827	-.66321 33.565	37.582	14.137	-1.9086	.00000	.00000	37.677	14.137	-.75822	38.435
828	-.37728 25.380	28.642	11.396	-1.2977	.00000	.00000	28.700	11.396	-.43520	29.135
829	-.10559 16.529	18.898	8.4455	-.69673	.00000	.00000	18.924	8.4455	-.13110	19.055
830	-3.6729 3.7467	.73878E-01	-3.6729	.00000	.00000	.00000	.73878E-01	-3.6729	-3.6729	3.7467
831	-3.7124 3.5244	-.23697	-3.6699	-.40372	.00000	.00000	-.19069	-3.6699	-3.7586	3.5680
832	-3.6708 3.8820	.12432	-3.5942	-.56339	.00000	.00000	.20619	-3.5942	-3.7526	3.9588
833	-3.6601 3.6950	-.14104E-01	-3.6631	-.34108	.00000	.00000	.17530E-01	-3.6631	-3.6917	3.7092
834	-3.6753 3.6918	-.67849E-02	-3.6679	-.25739	.00000	.00000	.11186E-01	-3.6679	-3.6933	3.7045
835	-3.6912 3.6963	-.73219E-02	-3.6794	-.21252	.00000	.00000	.48978E-02	-3.6794	-3.7034	3.7083

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
836	-3.6900 3.6939	-.58874E-02	-3.6822	-.18354	.00000	.00000	.32334E-02	-3.6822	-3.6991	3.7024
837	-3.6848 3.6912	-.26295E-02	-3.6817	-.16144	.00000	.00000	.44347E-02	-3.6817	-3.6919	3.6963
838	-3.6772 3.6867	.31317E-03	-3.6791	-.14234	.00000	.00000	.58144E-02	-3.6791	-3.6827	3.6885
839	-3.6702 3.6807	.86596E-03	-3.6765	-.12589	.00000	.00000	.51778E-02	-3.6745	-3.6765	3.6811
840	-3.6650 3.6755	.86941E-03	-3.6741	-.11225	.00000	.00000	.43034E-02	-3.6684	-3.6741	3.6784

841	-3.6615 3.6716	.66207E-03	-3.6720	-.10109	.00000	.00000	.34507E-02	-3.6643	-3.6720	3.6755
842	-3.6593 3.6687	.41641E-03	-3.6703	-.91978E-01	.00000	.00000	.27266E-02	-3.6616	-3.6703	3.6730
843	-3.6579 3.6666	.25108E-03	-3.6689	-.84449E-01	.00000	.00000	.21996E-02	-3.6598	-3.6689	3.6711
844	-3.6570 3.6650	.18037E-03	-3.6677	-.78102E-01	.00000	.00000	.18476E-02	-3.6587	-3.6677	3.6695
845	-3.6565 3.6640	.23013E-03	-3.6666	-.72593E-01	.00000	.00000	.16707E-02	-3.6579	-3.6666	3.6683
846	-3.6564 3.6634	.43022E-03	-3.6658	-.67609E-01	.00000	.00000	.16798E-02	-3.6577	-3.6658	3.6675
847	-3.6571 3.6636	.80537E-03	-3.6652	-.62861E-01	.00000	.00000	.18853E-02	-3.6582	-3.6652	3.6671
848	-3.6588 3.6647	.13184E-02	-3.6651	-.58124E-01	.00000	.00000	.22412E-02	-3.6598	-3.6651	3.6673
849	-3.6621 3.6668	.17559E-02	-3.6656	-.53381E-01	.00000	.00000	.25335E-02	-3.6629	-3.6656	3.6681
850	-3.6670 3.6695	.15453E-02	-3.6670	-.49132E-01	.00000	.00000	.22032E-02	-3.6670	-3.6676	3.6698
851	-3.6720 3.6711	-.47855E-03	-3.6693	-.46914E-01	.00000	.00000	.12082E-03	-3.6693	-3.6726	3.6727
852	-3.6728 3.6669	-.62507E-02	-3.6715	-.49993E-01	.00000	.00000	-.55692E-02	-3.6715	-3.6735	3.6679
853	-3.6597 3.6489	-.18164E-01	-3.6710	-.63867E-01	.00000	.00000	-.17044E-01	-3.6608	-3.6710	3.6540

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
854	-3.6154 3.6045	-.38580E-01	-3.6626	-.95987E-01	.00000	.00000	-.36006E-01	-3.6180	-3.6626	3.6266
855	-3.5159 3.5230	-.64899E-01	-3.6368	-.15304	.00000	.00000	-.58125E-01	-3.5227	-3.6368	3.5787
856	-3.3326 3.3971	-.91037E-01	-3.5810	-.23510	.00000	.00000	-.74075E-01	-3.3495	-3.5810	3.5070

857	-3.0527 3.2409	-.99416E-01	-3.4836	-.32839	.00000	.00000	-.63342E-01	-3.0888	-3.4836	3.4202
858	-2.6838 3.0911	-.58693E-01	-3.3357	-.41913	.00000	.00000	.66025E-02	-2.7491	-3.3357	3.3424
859	-2.1957 2.8672	-.82620E-01	-3.1611	-.51103	.00000	.00000	.34477E-01	-2.3128	-3.1611	3.1956
860	-1.2822 2.4955	-.50936	-2.9610	-.71049	.00000	.00000	-.86991E-01	-1.7045	-2.9610	2.8740
861	-1.2698 2.6887	.32367	-2.6209	-.48706	.00000	.00000	.46075	-1.4068	-2.6209	3.0817
862	-.76398 6.2074	4.5218	-1.2072	1.6385	.00000	.00000	4.9885	-1.2072	-1.2307	6.2191
863	.31781 4.8529	-3.7115	-3.3051	1.7115	.00000	.00000	.94665	-3.3051	-4.3404	5.2870
864	.18904 3.7743	-3.8143	-3.2992	.71428E-01	.00000	.00000	.19031	-3.2992	-3.8156	4.0059
865	.58366 27.741	30.986	7.2474	-1.0764	.00000	.00000	31.024	7.2474	.54560	30.478
866	2.1154 22.038	25.494	6.0099	-2.2354	.00000	.00000	25.706	6.0099	1.9036	23.802
867	3.6817 26.649	31.685	8.3115	-3.3753	.00000	.00000	32.086	8.3115	3.2807	28.806
868	-12.457 12.704	.24723	-12.457	.00000	.00000	.00000	.24723	-12.457	-12.457	12.704
869	-12.421 12.015	-.45422	-12.413	.64780	.00000	.00000	-.41925	-12.413	-12.456	12.057
870	-12.200 12.486	.18962	-12.127	1.0477	.00000	.00000	.27760	-12.127	-12.288	12.565
871	-12.250 12.287	-.22365E-01	-12.248	.69891	.00000	.00000	.17453E-01	-12.248	-12.290	12.308

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
872	-12.323 12.331	-.57063E-02	-12.286	.51552	.00000	.00000	.15833E-01	-12.286	-12.344	12.301

873	-12.344 12.337	-.93574E-02 -12.309	.40730	.00000	.00000	.40777E-02 -12.309	-12.357	12.361
874	-12.342 12.337	-.72125E-02 -12.319	.33361	.00000	.00000	.18037E-02 -12.319	-12.351	12.353
875	-12.322 12.325	-.34019E-02 -12.316	.28236	.00000	.00000	.30668E-02 -12.316	-12.328	12.331
876	-12.297 12.310	.27144E-03 -12.308	.24573	.00000	.00000	.51799E-02 -12.302	-12.308	12.313
877	-12.275 12.294	.95390E-03 -12.299	.21846	.00000	.00000	.48404E-02 -12.279	-12.299	12.304
878	-12.260 12.281	.10199E-02 -12.291	.19701	.00000	.00000	.41848E-02 -12.263	-12.291	12.295
879	-12.249 12.272	.78717E-03 -12.284	.17954	.00000	.00000	.34179E-02 -12.252	-12.284	12.288
880	-12.243 12.265	.50441E-03 -12.279	.16489	.00000	.00000	.27246E-02 -12.245	-12.279	12.281
881	-12.239 12.260	.31083E-03 -12.274	.15239	.00000	.00000	.22079E-02 -12.241	-12.274	12.276
882	-12.236 12.256	.22598E-03 -12.270	.14162	.00000	.00000	.18649E-02 -12.238	-12.270	12.272
883	-12.235 12.253	.28535E-03 -12.267	.13232	.00000	.00000	.17161E-02 -12.236	-12.267	12.269
884	-12.235 12.252	.52603E-03 -12.264	.12430	.00000	.00000	.17886E-02 -12.236	-12.264	12.266
885	-12.236 12.252	.98073E-03 -12.262	.11748	.00000	.00000	.21085E-02 -12.237	-12.262	12.264
886	-12.241 12.255	.16081E-02 -12.262	.11180	.00000	.00000	.26290E-02 -12.242	-12.262	12.265
887	-12.251 12.261	.21562E-02 -12.263	.10710	.00000	.00000	.30923E-02 -12.251	-12.263	12.267
888	-12.265 12.269	.19368E-02 -12.267	.10290	.00000	.00000	.27999E-02 -12.266	-12.267	12.270
889	-12.281 12.278	-.44369E-03 -12.273	.98008E-01	.00000	.00000	.33843E-03 -12.273	-12.282	12.282

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
890	-12.287 12.276	-.73567E-02	-12.278	.90023E-01	.00000	.00000	-.66968E-02	-12.278	-12.287	12.281
891	-12.255 12.243	-.21674E-01	-12.273	.74984E-01	.00000	.00000	-.21214E-01	-12.256	-12.273	12.252
892	-12.137 12.144	-.46379E-01	-12.243	.47446E-01	.00000	.00000	-.46192E-01	-12.137	-12.243	12.196
893	-11.857 11.932	-.78435E-01	-12.159	.22253E-02	.00000	.00000	-.78435E-01	-11.857	-12.159	12.081
894	-11.331 11.564	-.11106	-11.989	-.60492E-01	.00000	.00000	-.11073	-11.332	-11.989	11.878
895	-10.494 11.028	-.11960	-11.697	-.13321	.00000	.00000	-.11789	-10.496	-11.697	11.579
896	-9.3132 10.356	-.72944E-01	-11.257	-.20792	.00000	.00000	-.68268E-01	-9.3178	-11.257	11.189
897	-7.8453 9.5024	-.12805	-10.725	-.27029	.00000	.00000	-.11859	-7.8547	-10.725	10.607
898	-6.1681 8.4752	-.46164	-10.171	-.36305	.00000	.00000	-.43864	-6.1912	-10.171	9.7326
899	-3.7068 7.8653	-.18912	-9.1533	-.47100	.00000	.00000	-.12714	-3.7688	-9.1533	9.0262
900	-5.2068 13.816	6.9594	-7.2543	2.1416	.00000	.00000	7.3254	-5.5728	-7.2543	14.580
901	-1.2015 13.903	-15.904	-12.796	2.0938	.00000	.00000	-.90912	-12.796	-16.197	19.288
902	2.1888 8.3273	1.9659	-6.1401	.77001	.00000	.00000	2.8554	1.2993	-6.1401	8.9956
903	5.8759 12.625	10.814	-2.3064	-3.0353	.00000	.00000	12.258	4.4324	-2.3064	14.564
904	.11452E-01 28.197	28.351	1.1977	-2.8391	.00000	.00000	28.632	1.1977	-.27017	28.902
905	-5.8826 47.698	45.949	4.5665	-2.6453	.00000	.00000	46.084	4.5665	-6.0173	52.101
906	-1.9035 1.7431	-.16040	-1.9035	.00000	.00000	.00000	-.16040	-1.9035	-1.9035	1.7431
907	-1.9184 1.8011	-.10952	-1.9025	-.90730E-02	.00000	.00000	-.10947	-1.9025	-1.9184	1.8090

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

HABCE-01/99-0745, Revision 2

8/38

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
908	-1.9281 1.9480	.46786E-02	-1.8221	-.29027	.00000	.00000	.47330E-01	-1.8221	-1.9707	2.0181
909	-1.8773 2.0399	-.29721E-02	-1.8221	-.49955	.00000	.00000	.12186	-1.8221	-2.0021	2.1239
910	-1.8556 1.9520	-.74529E-02	-1.8418	-.37411	.00000	.00000	.65404E-01	-1.8418	-1.9285	1.9939
911	-1.8508 1.9070	-.16254E-01	-1.8525	-.29886	.00000	.00000	.31207E-01	-1.8525	-1.8982	1.9294
912	-1.8493 1.8905	-.11848E-01	-1.8536	-.25161	.00000	.00000	.21982E-01	-1.8536	-1.8832	1.9051
913	-1.8502 1.8861	-.23568E-02	-1.8518	-.21602	.00000	.00000	.22560E-01	-1.8518	-1.8751	1.8977
914	-1.8539 1.8828	.52428E-03	-1.8538	-.18824	.00000	.00000	.19438E-01	-1.8538	-1.8728	1.8923
915	-1.8559 1.8796	.15199E-02	-1.8554	-.16709	.00000	.00000	.16432E-01	-1.8554	-1.8708	1.8872
916	-1.8571 1.8766	.14984E-02	-1.8569	-.15025	.00000	.00000	.13567E-01	-1.8569	-1.8692	1.8828
917	-1.8581 1.8741	.10822E-02	-1.8580	-.13652	.00000	.00000	.11054E-01	-1.8580	-1.8680	1.8791
918	-1.8587 1.8721	.69304E-03	-1.8589	-.12511	.00000	.00000	.90728E-02	-1.8589	-1.8671	1.8762
919	-1.8593 1.8705	.41395E-03	-1.8596	-.11545	.00000	.00000	.75542E-02	-1.8596	-1.8664	1.8739
920	-1.8597 1.8694	.29748E-03	-1.8600	-.10718	.00000	.00000	.64538E-02	-1.8600	-1.8658	1.8723
921	-1.8600 1.8686	.37191E-03	-1.8603	-.10002	.00000	.00000	.57340E-02	-1.8603	-1.8653	1.8711
922	-1.8602 1.8681	.68371E-03	-1.8605	-.93759E-01	.00000	.00000	.53957E-02	-1.8605	-1.8650	1.8703
923	-1.8604 1.8680	.12687E-02	-1.8604	-.88242E-01	.00000	.00000	.54420E-02	-1.8604	-1.8646	1.8700
924	-1.8605 1.8680	.20640E-02	-1.8603	-.83349E-01	.00000	.00000	.57864E-02	-1.8603	-1.8642	1.8700
925	-1.8604 1.8680	.27294E-02	-1.8601	-.78978E-01	.00000	.00000	.60714E-02	-1.8601	-1.8637	1.8690

HABCE-01/99-0745, Revision 2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
926	-1.8601 1.8670	.23570E-02	-1.8602	-.75041E-01	.00000	.00000	.53757E-02	-1.8602	-1.8631	1.8685
927	-1.8597 1.8638	-.89066E-03	-1.8614	-.71448E-01	.00000	.00000	.18516E-02	-1.8614	-1.8624	1.8643
928	-1.8595 1.8559	-.10029E-01	-1.8649	-.68097E-01	.00000	.00000	-.75247E-02	-1.8620	-1.8649	1.8573
929	-1.8602 1.8408	-.28995E-01	-1.8723	-.64915E-01	.00000	.00000	-.26697E-01	-1.8625	-1.8723	1.8456
930	-1.8634 1.8170	-.60597E-01	-1.8853	-.61731E-01	.00000	.00000	-.58485E-01	-1.8655	-1.8853	1.8268
931	-1.8714 1.7876	-.10312	-1.9039	-.58429E-01	.00000	.00000	-.10119	-1.8733	-1.9039	1.8027
932	-1.8805 1.7636	-.13938	-1.9201	-.51979E-01	.00000	.00000	-.13783	-1.8821	-1.9201	1.7823
933	-1.8686 1.7552	-.13634	-1.9120	-.30879E-01	.00000	.00000	-.13579	-1.8691	-1.9120	1.7762
934	-1.7166 1.7275	-.40892E-01	-1.8111	.54418E-01	.00000	.00000	-.39127E-01	-1.7184	-1.8111	1.7720
935	-1.0096 1.5689	.15745	-1.4425	.36822	.00000	.00000	.26392	-1.1161	-1.4425	1.7065
936	.81793 2.2274	.20731	-.65525	1.0516	.00000	.00000	1.6077	-.58243	-.65525	2.2629
937	2.8370 3.5254	.17189	.24949	1.3573	.00000	.00000	3.4065	.24949	-.39762	3.8041
938	3.9964 2.2132	4.8141	2.6784	.68675	.00000	.00000	5.2045	3.6060	2.6784	2.5261
939	4.4492 8.0319	13.218	6.2307	.15422	.00000	.00000	13.221	6.2307	4.4465	8.7740
940	-4.1769 4.0748	-.10207	-4.1769	.00000	.00000	.00000	-.10207	-4.1769	-4.1769	4.0748
941	-4.2007 4.0589	-.13773	-4.1914	-.40201E-01	.00000	.00000	-.13733	-4.1914	-4.2011	4.0631

942	-4.2328 4.1157	-.64029E-01	-4.1117	-.12988	.00000	.00000	-.59986E-01	-4.1117	-4.2369	4.1769
943	-4.1396 4.1363	.28096E-01	-4.0508	-.18444	.00000	.00000	.36243E-01	-4.0508	-4.1477	4.1840

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SKY	SYZ	SXZ	S1	S2	S3	SINT
944	-4.1363 4.1165	-.13184E-01	-4.1103	-.13199	.00000	.00000	-.89630E-02	-4.1103	-4.1405	4.1315
945	-4.1305 4.1086	-.24800E-01	-4.1273	-.11125	.00000	.00000	-.21788E-01	-4.1273	-4.1335	4.1117
946	-4.1269 4.1214	-.78177E-02	-4.1246	-.96742E-01	.00000	.00000	-.55469E-02	-4.1246	-4.1292	4.1236
947	-4.1297 4.1289	-.24437E-02	-4.1280	-.81923E-01	.00000	.00000	-.81827E-03	-4.1280	-4.1314	4.1306
948	-4.1286 4.1310	.51442E-03	-4.1288	-.70973E-01	.00000	.00000	.17340E-02	-4.1288	-4.1298	4.1315
949	-4.1275 4.1314	.15341E-02	-4.1294	-.62914E-01	.00000	.00000	.24925E-02	-4.1284	-4.1294	4.1319
950	-4.1267 4.1309	.14089E-02	-4.1299	-.56586E-01	.00000	.00000	.21844E-02	-4.1275	-4.1299	4.1321
951	-4.1263 4.1302	.10497E-02	-4.1302	-.51473E-01	.00000	.00000	.16915E-02	-4.1269	-4.1302	4.1319
952	-4.1261 4.1297	.66864E-03	-4.1304	-.47213E-01	.00000	.00000	.12087E-02	-4.1266	-4.1304	4.1316
953	-4.1260 4.1294	.40589E-03	-4.1305	-.43600E-01	.00000	.00000	.86652E-03	-4.1265	-4.1305	4.1314
954	-4.1261 4.1292	.29265E-03	-4.1305	-.40499E-01	.00000	.00000	.69010E-03	-4.1265	-4.1305	4.1311
955	-4.1262 4.1292	.35992E-03	-4.1304	-.37820E-01	.00000	.00000	.70652E-03	-4.1265	-4.1304	4.1311
956	-4.1264 4.1294	.65175E-03	-4.1302	-.35505E-01	.00000	.00000	.95718E-03	-4.1267	-4.1302	4.1311
957	-4.1267 4.1300	.12034E-02	-4.1301	-.33514E-01	.00000	.00000	.14755E-02	-4.1269	-4.1301	4.1311

HABCE-01/99-0745, Revision 2

B141

958	-4.1272 4.1309	.19588E-02 -4.1299	-.31813E-01 .00000	.00000	.22038E-02 -4.1275	-4.1299	4.1321
959	-4.1281 4.1320	.26008E-02 -4.1300	-.30348E-01 .00000	.00000	.28237E-02 -4.1283	-4.1300	4.1328
960	-4.1293 4.1326	.22791E-02 -4.1306	-.28995E-01 .00000	.00000	.24825E-02 -4.1295	-4.1306	4.1331
961	-4.1306 4.1310	-.73973E-03 -4.1324	-.27493E-01 .00000	.00000	-.55671E-03 -4.1307	-4.1324	4.1318

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
962	-4.1307 4.1242	-.93195E-02 -4.1358	-.25362E-01 .00000	.00000	-.91634E-02 -4.1309	-4.1358	4.1266			
963	-4.1276 4.1075	-.27177E-01 -4.1413	-.21890E-01 .00000	.00000	-.27061E-01 -4.1277	-4.1413	4.1142			
964	-4.1174 4.0757	-.57312E-01 -4.1481	-.16175E-01 .00000	.00000	-.57247E-01 -4.1175	-4.1481	4.0909			
965	-4.0940 4.0263	-.97247E-01 -4.1524	-.72300E-02 .00000	.00000	-.97234E-01 -4.0940	-4.1524	4.0552			
966	-4.0519 3.9670	-.13260 -4.1456	.74692E-02 .00000	.00000	-.13259 -4.0520	-4.1456	4.0130			
967	-3.9767 3.9236	-.11921 -4.1044	.41955E-01 .00000	.00000	-.11875 -3.9772	-4.1044	3.9857			
968	-3.8436 3.9356	.55448E-02 -3.9941	.15398 .00000	.00000	.11694E-01 -3.8498	-3.9941	4.0058			
969	-3.5362 4.0902	.34069 -3.7299	.55103 .00000	.00000	.41749 -3.6130	-3.7299	4.1474			
970	-2.4930 4.6497	.93027 -3.0670	1.5924 .00000	.00000	1.5564 -3.0670	-3.1191	4.6756			
971	.26074 5.4773	1.3679 -1.7426	2.7413 .00000	.00000	3.6109 -1.7426	-1.9823	5.5932			
972	2.7539 4.5936	3.0958 .88128E-01	2.0790 .00000	.00000	5.0108 .83886	.88128E-01	4.9227			
973	3.2714 7.5446	10.645 3.3576	1.0302 .00000	.00000	10.786 3.3576	3.1302	7.6550			

974	-5.0509 50.330	-61.972	-39.399	-4.7754	.00000	.00000	-4.6530	-39.399	-62.369	57.716
975	-5.5222 43.496	34.700	-10.153	-4.7043	.00000	.00000	35.242	-6.0650	-10.153	45.395
976	-18.188 23.732	1.9493	-24.049	1.3319	.00000	.00000	2.0370	-18.276	-24.049	26.086
977	-5.6655 35.625	25.641	-13.120	.19950	.00000	.00000	25.642	-5.6668	-13.120	38.762
978	7.1416 56.189	60.121	1.2340	-.91513	.00000	.00000	60.137	7.1258	1.2340	58.903
979	-6.5553 6.4807	-.74639E-01	-6.5553	.00000	.00000	.00000	-.74639E-01	-6.5553	-6.5553	6.4807

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
980	-6.5004 6.3990	-.12199	-6.5415	-.59654E-02	.00000	.00000	-.12199	-6.5004	-6.5415	6.4195
981	-6.4740 6.1709	-.25079	-6.3555	-.15851	.00000	.00000	-.24676	-6.3555	-6.4780	6.2312
982	-6.4582 6.4954	.12971	-6.2515	-.18998	.00000	.00000	.13519	-6.2515	-6.4637	6.5989
983	-6.3968 6.3292	-.62713E-01	-6.3789	-.13142	.00000	.00000	-.59987E-01	-6.3789	-6.3995	6.3395
984	-6.3948 6.3725	-.16153E-01	-6.3759	-.11871	.00000	.00000	-.13944E-01	-6.3759	-6.3970	6.3831
985	-6.4091 6.3986	-.42367E-02	-6.3922	-.95361E-01	.00000	.00000	-.28172E-02	-6.3922	-6.4105	6.4077
986	-6.4040 6.3998	-.25208E-02	-6.3977	-.78933E-01	.00000	.00000	-.15476E-02	-6.3977	-6.4050	6.4034
987	-6.3988 6.4006	.89450E-03	-6.3983	-.68660E-01	.00000	.00000	.16311E-02	-6.3983	-6.3995	6.4012
988	-6.3960 6.3997	.12049E-02	-6.3993	-.61013E-01	.00000	.00000	.17867E-02	-6.3966	-6.3993	6.4011
989	-6.3940 6.3987	.11651E-02	-6.3996	-.55218E-01	.00000	.00000	.16418E-02	-6.3945	-6.3996	6.4013

HABGE-01/99-0745, Revision 2

B/H3

990	-6.3929 6.3978	.84475E-03 -6.3997	-.50494E-01 .00000	.00000	.12435E-02 -6.3933	-6.3997	6.4010
991	-6.3923 6.3970	.53643E-03 -6.3997	-.46505E-01 .00000	.00000	.87472E-03 -6.3926	-6.3997	6.4006
992	-6.3920 6.3966	.32546E-03 -6.3996	-.43072E-01 .00000	.00000	.61568E-03 -6.3923	-6.3996	6.4002
993	-6.3918 6.3962	.23238E-03 -6.3994	-.40094E-01 .00000	.00000	.48387E-03 -6.3921	-6.3994	6.3999
994	-6.3918 6.3961	.28295E-03 -6.3992	-.37523E-01 .00000	.00000	.50321E-03 -6.3921	-6.3992	6.3997
995	-6.3919 6.3962	.51144E-03 -6.3989	-.35340E-01 .00000	.00000	.70681E-03 -6.3921	-6.3989	6.3996
996	-6.3922 6.3966	.94828E-03 -6.3986	-.33550E-01 .00000	.00000	.11243E-02 -6.3924	-6.3986	6.3997
997	-6.3928 6.3974	.15537E-02 -6.3984	-.32152E-01 .00000	.00000	.17154E-02 -6.3929	-6.3984	6.4001

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
998	-6.3937 6.3984	.20848E-02 -6.3984	-.31080E-01 .00000	.00000	.22358E-02 -6.3939	-6.3984	6.4006			
999	-6.3951 6.3991	.18771E-02 -6.3989	-.30074E-01 .00000	.00000	.20185E-02 -6.3952	-6.3989	6.4009			
1000	-6.3965 6.3982	-.43278E-03 -6.4003	-.28483E-01 .00000	.00000	-.30594E-03 -6.3966	-6.4003	6.4000			
1001	-6.3970 6.3930	-.71486E-02 -6.4031	-.25023E-01 .00000	.00000	-.70506E-02 -6.3971	-6.4031	6.3960			
1002	-6.3941 6.3794	-.21252E-01 -6.4072	-.17576E-01 .00000	.00000	-.21204E-01 -6.3941	-6.4072	6.3860			
1003	-6.3833 6.3521	-.45387E-01 -6.4115	-.34877E-02 .00000	.00000	-.45385E-01 -6.3833	-6.4115	6.3661			
1004	-6.3588 6.3083	-.77618E-01 -6.4125	.19818E-01 .00000	.00000	-.77556E-01 -6.3589	-6.4125	6.3350			
1005	-6.3165 6.2567	-.10387 -6.4024	.52955E-01 .00000	.00000	-.10342 -6.3170	-6.4024	6.2989			

1006	-6.2818 6.2474	-.83819E-01	-6.3750	.97445E-01	.00000	.00000	-.82287E-01	-6.2834	-6.3750	6.2928
1007	-6.3441 6.4424	.10188	-6.3217	.18039	.00000	.00000	.10692	-6.3217	-6.3491	6.4560
1008	-6.8844 7.2703	.60876	-6.3407	.40362	.00000	.00000	.63044	-6.3407	-6.9061	7.5365
1009	-8.4531 9.8407	1.9969	-6.4629	1.2211	.00000	.00000	2.1377	-6.4629	-8.5939	10.732
1010	-9.6943 13.426	3.8967	-6.3439	3.1544	.00000	.00000	4.5931	-6.3439	-10.391	14.984
1011	-7.6901 11.492	1.9302	-6.4726	4.0717	.00000	.00000	3.4222	-6.4726	-9.1821	12.604
1012	-5.5013 7.6985	-2.6423	-7.4115	3.7409	.00000	.00000	-.67090E-01	-7.4115	-8.0765	8.0094
1013	19.990 51.583	-7.6168	-32.869	13.710	.00000	.00000	25.642	-13.268	-32.869	58.511
1014	19.624 54.333	-19.379	-35.437	13.499	.00000	.00000	23.840	-23.595	-35.437	59.277
1015	49.869 96.364	-51.514	-35.262	-11.417	.00000	.00000	51.138	-35.262	-52.784	103.92

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1016	19.207 48.582	32.127	-18.652	-9.5018	.00000	.00000	37.157	14.177	-18.652	55.809
1017	-11.722 110.55	100.06	-7.5608	-7.6138	.00000	.00000	100.58	-7.5608	-12.238	112.82
1018	-8.8689 8.7538	-.11512	-8.8689	.00000	.00000	.00000	-.11512	-8.8689	-8.8689	8.7538
1019	-8.8489 8.8244	-.24023E-01	-8.8455	.83040E-01	.00000	.00000	-.23242E-01	-8.8455	-8.8497	8.8265
1020	-8.7882 8.5994	-.20143	-8.7739	.33625	.00000	.00000	-.18828	-8.7739	-8.8013	8.6131
1021	-8.7074 8.4244	-.21614	-8.5718	.23751E-01	.00000	.00000	-.21607	-8.5718	-8.7074	8.491

1022	-8.6847 8.5857	-.56329E-01	-8.5093	-.49923	.00000	.00000	-.27540E-01	-8.5093	-8.7135	8.6860
1023	-8.6871 8.6653	.64831E-02	-8.5736	-.40105	.00000	.00000	.24945E-01	-8.5736	-8.7056	8.7305
1024	-8.6665 8.6498	-.91916E-02	-8.6143	-.32638	.00000	.00000	.30955E-02	-8.6143	-8.6788	8.6819
1025	-8.6560 8.6555	.33042E-03	-8.6272	-.28002	.00000	.00000	.93789E-02	-8.6272	-8.6650	8.6744
1026	-8.6538 8.6571	.32961E-03	-8.6390	-.24518	.00000	.00000	.72700E-02	-8.6390	-8.6607	8.6680
1027	-8.6522 8.6580	.73530E-03	-8.6457	-.21867	.00000	.00000	.62578E-02	-8.6457	-8.6578	8.6640
1028	-8.6521 8.6587	.71138E-03	-8.6504	-.19753	.00000	.00000	.52185E-02	-8.6504	-8.6566	8.6618
1029	-8.6523 8.6591	.48570E-03	-8.6537	-.18014	.00000	.00000	.42344E-02	-8.6537	-8.6560	8.6602
1030	-8.6527 8.6594	.31802E-03	-8.6560	-.16553	.00000	.00000	.34833E-02	-8.6558	-8.6560	8.6595
1031	-8.6531 8.6596	.18916E-03	-8.6576	-.15305	.00000	.00000	.28954E-02	-8.6558	-8.6576	8.6605
1032	-8.6536 8.6598	.13459E-03	-8.6588	-.14230	.00000	.00000	.24739E-02	-8.6559	-8.6588	8.6613
1033	-8.6540 8.6601	.16111E-03	-8.6596	-.13297	.00000	.00000	.22038E-02	-8.6561	-8.6596	8.6618

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1034	-8.6544 8.6603	.29052E-03	-8.6602	-.12488	.00000	.00000	.20920E-02	-8.6562	-8.6602	8.6623
1035	-8.6548 8.6606	.54174E-03	-8.6605	-.11789	.00000	.00000	.21470E-02	-8.6564	-8.6605	8.6627
1036	-8.6550 8.6610	.89524E-03	-8.6607	-.11190	.00000	.00000	.23415E-02	-8.6565	-8.6607	8.6631
1037	-8.6554 8.6613	.12180E-02	-8.6609	-.10677	.00000	.00000	.25346E-02	-8.6567	-8.6609	8.6634

1038	-8.6559 8.6615	.11342E-02	-8.6612	-.10215	.00000	.00000	.23394E-02	-8.6571	-8.6612	8.6635
1039	-8.6568 8.6610	-.13694E-03	-8.6621	-.97279E-01	.00000	.00000	.95610E-03	-8.6579	-8.6621	8.6631
1040	-8.6584 8.6589	-.39147E-02	-8.6643	-.90618E-01	.00000	.00000	-.29660E-02	-8.6594	-8.6643	8.6614
1041	-8.6613 8.6540	-.12070E-01	-8.6686	-.79629E-01	.00000	.00000	-.11337E-01	-8.6620	-8.6686	8.6573
1042	-8.6649 8.6449	-.25863E-01	-8.6754	-.60847E-01	.00000	.00000	-.25434E-01	-8.6653	-8.6754	8.6499
1043	-8.6687 8.6312	-.45406E-01	-8.6842	-.31606E-01	.00000	.00000	-.45290E-01	-8.6688	-8.6842	8.6389
1044	-8.6719 8.6222	-.58722E-01	-8.6899	.67406E-02	.00000	.00000	-.58716E-01	-8.6719	-8.6899	8.6312
1045	-8.6833 8.6452	-.39622E-01	-8.6859	.35661E-01	.00000	.00000	-.39475E-01	-8.6835	-8.6859	8.6464
1046	-8.7971 8.8398	.10323	-8.6747	.40062E-02	.00000	.00000	.10324	-8.6747	-8.7971	8.9003
1047	-9.2884 9.6347	.63347	-8.6714	-.20498	.00000	.00000	.63770	-8.6714	-9.2926	9.9303
1048	-11.589 12.359	1.7098	-9.2049	-.79901	.00000	.00000	1.7576	-9.2049	-11.637	13.395
1049	-19.654 21.684	4.8441	-11.372	-1.1990	.00000	.00000	4.9026	-11.372	-19.713	24.615
1050	-32.725 31.560	3.5240	-17.701	-.55899	.00000	.00000	3.5326	-17.701	-32.733	36.266
1051	-39.722 25.159	-10.715	-26.589	.47246E-01	.00000	.00000	-10.715	-26.589	-39.722	29.008

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1052	-57.632 150.79	98.037	-45.604	8.7899	.00000	.00000	98.532	-45.604	-58.127	156.60
1053	-58.427 62.674	-124.50	-112.19	8.6509	.00000	.00000	-57.313	-112.19	-125.61	68.29

1054	-63.109 259.00	209.21	-15.960	34.362	.00000	.00000	213.48	-15.960	-67.378	280.86
1055	-40.184 101.60	29.412	-63.003	33.514	.00000	.00000	42.926	-53.698	-63.003	105.93
1056	-17.826 131.92	-152.42	-109.93	32.662	.00000	.00000	-10.319	-109.93	-159.93	149.61
1057	-12.139 12.014	-.12470	-12.139	.00000	.00000	.00000	-.12470	-12.139	-12.139	12.014
1058	-12.185 12.168	.90269E-02	-12.131	.36953E-01	.00000	.00000	.91389E-02	-12.131	-12.185	12.195
1059	-12.266 12.278	.25693E-01	-12.236	.10777	.00000	.00000	.26637E-01	-12.236	-12.267	12.294
1060	-12.271 11.737	-.66197	-12.179	1.1609	.00000	.00000	-.54702	-12.179	-12.386	11.839
1061	-12.174 12.433	-.21459E-01	-11.836	1.9047	.00000	.00000	.27008	-11.836	-12.466	12.736
1062	-12.081 12.313	.17420E-01	-11.926	1.5374	.00000	.00000	.20971	-11.926	-12.274	12.483
1063	-12.046 12.209	-.12734E-01	-11.981	1.2964	.00000	.00000	.12534	-11.981	-12.184	12.309
1064	-12.043 12.179	.30849E-02	-12.003	1.1112	.00000	.00000	.10474	-12.003	-12.144	12.249
1065	-12.041 12.149	-.25713E-03	-12.022	.97390	.00000	.00000	.78005E-01	-12.022	-12.119	12.198
1066	-12.043 12.132	.71182E-03	-12.034	.86558	.00000	.00000	.62604E-01	-12.034	-12.105	12.167
1067	-12.045 12.119	.49818E-03	-12.042	.77881	.00000	.00000	.50646E-01	-12.042	-12.095	12.146
1068	-12.046 12.109	.34353E-03	-12.047	.70778	.00000	.00000	.41786E-01	-12.047	-12.088	12.129
1069	-12.048 12.102	.23517E-03	-12.051	.64861	.00000	.00000	.35054E-01	-12.051	-12.082	12.117

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
------	------------	----	----	-----	-----	-----	----	----	----	------

HABCE-01/99-0745, Revision 2

B/48

1070	-12.049 12.096	.14438E-03 -12.054	.59860	.00000	.00000	.29811E-01 -12.054	-12.078	12.108
1071	-12.049 12.091	.10656E-03 -12.056	.55576	.00000	.00000	.25685E-01 -12.056	-12.075	12.101
1072	-12.050 12.087	.11491E-03 -12.057	.51862	.00000	.00000	.22394E-01 -12.057	-12.073	12.095
1073	-12.051 12.084	.18342E-03 -12.058	.48605	.00000	.00000	.19755E-01 -12.058	-12.070	12.090
1074	-12.051 12.081	.32195E-03 -12.059	.45717	.00000	.00000	.17640E-01 -12.059	-12.068	12.086
1075	-12.051 12.078	.51974E-03 -12.059	.43129	.00000	.00000	.15935E-01 -12.059	-12.066	12.082
1076	-12.049 12.075	.70299E-03 -12.059	.40791	.00000	.00000	.14496E-01 -12.059	-12.063	12.077
1077	-12.046 12.071	.66097E-03 -12.057	.38680	.00000	.00000	.13067E-01 -12.057	-12.059	12.072
1078	-12.043 12.066	-.57732E-04 -12.056	.36821	.00000	.00000	.11190E-01 -12.054	-12.056	12.067
1079	-12.041 12.062	-.21642E-02 -12.056	.35317	.00000	.00000	.81870E-02 -12.052	-12.056	12.064
1080	-12.047 12.061	-.68890E-02 -12.060	.34361	.00000	.00000	.29090E-02 -12.057	-12.060	12.063
1081	-12.072 12.073	-.14575E-01 -12.073	.34267	.00000	.00000	-.48441E-02 -12.073	-12.082	12.077
1082	-12.132 12.106	-.25998E-01 -12.102	.35244	.00000	.00000	-.15746E-01 -12.102	-12.142	12.126
1083	-12.241 12.180	-.34076E-01 -12.152	.37090	.00000	.00000	-.22817E-01 -12.152	-12.253	12.230
1084	-12.379 12.298	-.11419E-01 -12.205	.37513	.00000	.00000	-.50840E-04 -12.205	-12.390	12.390
1085	-12.372 12.341	.51970E-01 -12.187	.27167	.00000	.00000	.57908E-01 -12.187	-12.377	12.435
1086	-11.635 12.230	.56071 -11.699	-.12633	.00000	.00000	.56202 -11.636	-11.699	12.261
1087	-8.1616 10.631	.99999 -10.109	-1.5762	.00000	.00000	1.2636 -8.4251	-10.109	11.372

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

HABCE-01/99-0745, Revision 2

8/1/99

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1088	2.0025 10.914	4.1566	-4.6452	-4.3192	.00000	.00000	7.5310	-1.3719	-4.6452	12.176
1089	16.869 16.985	4.5414	1.8619	-5.6660	.00000	.00000	19.077	2.3328	1.8619	17.215
1090	24.400 30.080	-7.2576	.55823	-5.4457	.00000	.00000	25.311	.55823	-8.1682	33.479
1091	-73.984 74.561	.57661	-73.984	.00000	.00000	.00000	.57661	-73.984	-73.984	74.561
1092	-75.059 74.396	-.46886	-74.208	-3.3554	.00000	.00000	-.31822	-74.208	-75.210	74.891
1093	-74.823 75.143	-.25426	-74.982	-4.9700	.00000	.00000	.75533E-01	-74.982	-75.153	75.228
1094	-73.495 74.180	.21995	-73.980	-3.3022	.00000	.00000	.36758	-73.643	-73.980	74.348
1095	-74.451 74.421	-.85743E-01	-74.313	-2.4788	.00000	.00000	-.32077E-02	-74.313	-74.534	74.531
1096	-74.653 74.682	.35467E-01	-74.494	-1.8989	.00000	.00000	.83716E-01	-74.494	-74.701	74.785
1097	-74.328 74.391	-.16632E-01	-74.381	-1.6180	.00000	.00000	.18581E-01	-74.363	-74.381	74.400
1098	-74.444 74.478	.58633E-02	-74.423	-1.3715	.00000	.00000	.31119E-01	-74.423	-74.470	74.501
1099	-74.412 74.441	-.18516E-02	-74.417	-1.2017	.00000	.00000	.17550E-01	-74.417	-74.431	74.449
1100	-74.418 74.442	.42312E-03	-74.420	-1.0668	.00000	.00000	.15714E-01	-74.420	-74.434	74.449
1101	-74.419 74.438	-.97543E-04	-74.421	-.95960	.00000	.00000	.12274E-01	-74.421	-74.431	74.443
1102	-74.420 74.436	.14387E-05	-74.422	-.87204	.00000	.00000	.10218E-01	-74.422	-74.430	74.440
1103	-74.421 74.435	-.43171E-05	-74.423	-.79908	.00000	.00000	.85746E-02	-74.423	-74.430	74.438
1104	-74.422 74.434	-.83727E-05	-74.423	-.73742	.00000	.00000	.72978E-02	-74.423	-74.429	74.431
1105	-74.423 74.433	-.64502E-05	-74.424	-.68460	.00000	.00000	.62905E-02	-74.424	-74.429	74.431

HABGE-01/99-0745, Revision 2

8/50

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1106	-74.423 74.432	-.73538E-05	-74.424	-.63885	.00000	.00000	.54761E-02	-74.424	-74.429	74.434
1107	-74.423 74.431	-.61981E-05	-74.424	-.59883	.00000	.00000	.48119E-02	-74.424	-74.428	74.433
1108	-74.424 74.431	-.31065E-05	-74.425	-.56355	.00000	.00000	.42639E-02	-74.425	-74.428	74.432
1109	-74.424 74.430	.46496E-05	-74.425	-.53221	.00000	.00000	.38103E-02	-74.425	-74.428	74.432
1110	-74.426 74.431	.15872E-04	-74.426	-.50421	.00000	.00000	.34316E-02	-74.426	-74.429	74.433
1111	-74.429 74.433	.48826E-04	-74.427	-.47908	.00000	.00000	.31324E-02	-74.427	-74.432	74.435
1112	-74.435 74.436	.28436E-04	-74.429	-.45639	.00000	.00000	.28267E-02	-74.429	-74.438	74.441
1113	-74.445 74.443	.21648E-03	-74.432	-.43584	.00000	.00000	.27680E-02	-74.432	-74.448	74.450
1114	-74.456 74.450	-.36958E-03	-74.437	-.41682	.00000	.00000	.19638E-02	-74.437	-74.459	74.461
1115	-74.467 74.459	.12514E-02	-74.441	-.39951	.00000	.00000	.33946E-02	-74.441	-74.469	74.473
1116	-74.447 74.442	-.42758E-02	-74.438	-.38090	.00000	.00000	-.23269E-02	-74.438	-74.449	74.447
1117	-74.373 74.405	.98690E-02	-74.412	-.36414	.00000	.00000	.11652E-01	-74.375	-74.412	74.423
1118	-74.181 74.238	-.37145E-01	-74.364	-.34232	.00000	.00000	-.35565E-01	-74.182	-74.364	74.329
1119	-73.432 73.874	.11225	-74.083	-.29040	.00000	.00000	.11340	-73.433	-74.083	74.196
1120	-73.601 73.467	-.46635	-74.254	-.39463	.00000	.00000	-.46422	-73.604	-74.254	73.790
1121	-69.828 73.083	1.9237	-72.422	.66656E-01	.00000	.00000	1.9238	-69.828	-72.422	74.345
1122	-84.131 73.957	-7.9756	-79.355	-1.8998	.00000	.00000	-7.9282	-79.355	-84.179	76.251

HABGE-01/99-0745, Revision 2

8/5/1

1123	-168.57 178.13	34.071	-93.141	-9.3562	.00000	.00000	34.502	-93.141	-169.00	203.50
------	-------------------	--------	---------	---------	--------	--------	--------	---------	---------	--------

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1124	-49.354 39.361	-59.079	-87.923	-10.681	.00000	.00000	-42.481	-65.952	-87.923	45.442
1125	43.611 165.95	193.69	16.588	-8.7745	.00000	.00000	194.20	43.100	16.588	177.61
1126	-8.4191 557.79	562.52	107.61	112.45	.00000	.00000	583.87	107.61	-29.770	613.64
1127	-17.312 191.80	59.596	-46.152	96.304	.00000	.00000	124.84	-46.152	-82.555	207.39
1128	-27.304 728.46	-841.82	-317.63	80.427	.00000	.00000	-19.438	-317.63	-849.68	830.25
1129	-79.460 80.036	.57661	-79.460	.00000	.00000	.00000	.57661	-79.460	-79.460	80.036
1130	-78.595 78.260	-.73927	-79.043	3.0614	.00000	.00000	-.61908	-78.715	-79.043	78.424
1131	-78.326 78.759	.12689	-77.897	5.2143	.00000	.00000	.47194	-77.897	-78.671	79.143
1132	-79.606 79.602	.10296	-78.989	3.2558	.00000	.00000	.23573	-78.989	-79.739	79.974
1133	-78.651 78.719	-.15525	-78.880	2.3821	.00000	.00000	-.83031E-01	-78.723	-78.880	78.797
1134	-78.460 78.693	.87165E-01	-78.604	1.9683	.00000	.00000	.13646	-78.509	-78.604	78.741
1135	-78.787 78.801	-.30044E-01	-78.779	1.5947	.00000	.00000	.22350E-02	-78.779	-78.819	78.821
1136	-78.676 78.744	.92673E-02	-78.721	1.3774	.00000	.00000	.33371E-01	-78.700	-78.721	78.754
1137	-78.712 78.749	-.21197E-02	-78.735	1.2007	.00000	.00000	.16191E-01	-78.731	-78.735	78.751
8	-78.709 78.742	.55163E-03	-78.731	1.0668	.00000	.00000	.15009E-01	-78.723	-78.731	78.746

1139	-78.711 78.738	-.17359E-04	-78.730	.95958	.00000	.00000	.11679E-01	-78.722	-78.730	78.742
1140	-78.712 78.735	.29698E-04	-78.729	.87192	.00000	.00000	.96870E-02	-78.721	-78.729	78.739
1141	-78.712 78.732	.27766E-04	-78.728	.79901	.00000	.00000	.81378E-02	-78.720	-78.728	78.736

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1142	-78.712 78.730	.14444E-04	-78.727	.73736	.00000	.00000	.69212E-02	-78.719	-78.727	78.734
1143	-78.713 78.728	.14882E-04	-78.726	.68456	.00000	.00000	.59679E-02	-78.719	-78.726	78.732
1144	-78.713 78.727	.11855E-04	-78.725	.63882	.00000	.00000	.51960E-02	-78.718	-78.725	78.731
1145	-78.714 78.726	.10582E-04	-78.725	.59882	.00000	.00000	.45658E-02	-78.718	-78.725	78.729
1146	-78.714 78.725	.89363E-05	-78.724	.56352	.00000	.00000	.40431E-02	-78.718	-78.724	78.728
1147	-78.714 78.724	.73335E-05	-78.724	.53215	.00000	.00000	.36047E-02	-78.718	-78.724	78.727
1148	-78.713 78.723	.10398E-05	-78.723	.50404	.00000	.00000	.32285E-02	-78.716	-78.723	78.726
1149	-78.711 78.720	.64319E-05	-78.722	.47870	.00000	.00000	.29177E-02	-78.713	-78.722	78.725
1150	-78.705 78.716	-.49250E-04	-78.719	.45572	.00000	.00000	.25894E-02	-78.708	-78.719	78.722
1151	-78.695 78.709	.96396E-04	-78.716	.43477	.00000	.00000	.24983E-02	-78.698	-78.716	78.718
1152	-78.684 78.701	-.45273E-03	-78.711	.41590	.00000	.00000	.17455E-02	-78.686	-78.711	78.711
1153	-78.674 78.694	.11674E-02	-78.706	.39849	.00000	.00000	.31857E-02	-78.676	-78.706	78.706
1154	-78.694 78.702	-.37190E-02	-78.712	.38514	.00000	.00000	-.18340E-02	-78.696	-78.712	78.711

1155	-78.768 78.763	.10817E-01	-78.730	.37243	.00000	.00000	.12578E-01	-78.730	-78.770	78.783
1156	-78.961 78.851	-.34508E-01	-78.804	.36690	.00000	.00000	-.32803E-01	-78.804	-78.963	78.930
1157	-79.709 79.480	.12301	-78.995	.39369	.00000	.00000	.12495	-78.995	-79.711	79.836
1158	-79.545 78.880	-.48106	-79.173	.26497	.00000	.00000	-.48017	-79.173	-79.546	79.066
1159	-83.296 83.505	2.0016	-79.567	.70780	.00000	.00000	2.0075	-79.567	-83.302	85.309

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1160	-69.084 66.100	-8.2929	-78.594	-1.2937	.00000	.00000	-8.2654	-69.112	-78.594	70.329
1161	15.668 68.182	33.665	-39.981	-8.6913	.00000	.00000	37.177	12.156	-39.981	77.158
1162	19.436 147.77	-148.01	-90.480	-6.3339	.00000	.00000	19.675	-90.480	-148.25	167.92
1163	-43.635 522.18	533.78	94.690	.76505	.00000	.00000	533.78	94.690	-43.636	577.42
1164	328.71 552.45	873.10	314.76	-18.725	.00000	.00000	873.74	328.06	314.76	558.98
1165	-237.67 222.98	7.2929	29.493	-20.559	.00000	.00000	239.49	29.493	5.4726	234.02
1166	144.80 1040.4	-1044.9	-310.48	-22.372	.00000	.00000	145.22	-310.48	-1045.3	1190.5
1167	-410.57 407.77	-2.8000	-410.57	.00000	.00000	.00000	-2.8000	-410.57	-410.57	407.77
1168	-408.63 410.37	1.4450	-409.23	.25643	.00000	.00000	1.4452	-408.63	-409.23	410.67
1169	-405.82 401.15	-5.8410	-407.28	-10.827	.00000	.00000	-5.5481	-406.12	-407.28	401.71
1170	-401.28 403.59	.36048	-402.78	-17.905	.00000	.00000	1.1571	-402.07	-402.78	403.94

1171	-395.18 397.49	-.98852	-400.56	-12.450	.00000	.00000	-.59571	-395.57	-400.56	399.97
1172	-387.67 391.78	-.62550	-396.37	-9.0798	.00000	.00000	-.41261	-387.88	-396.37	395.96
1173	-378.84 384.71	-.72553	-391.39	-6.6753	.00000	.00000	-.60772	-378.95	-391.39	390.78
1174	-368.44 376.61	-.70063	-385.41	-4.8349	.00000	.00000	-.63708	-368.51	-385.41	384.77
1175	-356.51 367.35	-.70828	-378.53	-3.3392	.00000	.00000	-.67694	-356.54	-378.53	377.85
1176	-342.99 356.98	-.70705	-370.73	-2.0732	.00000	.00000	-.69449	-343.01	-370.73	370.04
1177	-327.91 345.53	-.70783	-362.02	-.96721	.00000	.00000	-.70497	-327.91	-362.02	361.32

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1178	-311.25 333.03	-.70794	-352.40	.22717E-01	.00000	.00000	-.70794	-311.25	-352.40	351.70
1179	-293.00 319.55	-.70813	-341.88	.92577	.00000	.00000	-.70520	-293.00	-341.88	341.17
1180	-273.18 305.17	-.70823	-330.44	1.7621	.00000	.00000	-.69684	-273.19	-330.44	329.75
1181	-251.77 290.00	-.70831	-318.10	2.5461	.00000	.00000	-.68249	-251.79	-318.10	317.42
1182	-228.78 274.19	-.70837	-304.84	3.2882	.00000	.00000	-.66097	-228.82	-304.84	304.18
1183	-204.20 257.94	-.70841	-290.68	3.9964	.00000	.00000	-.62996	-204.28	-290.68	290.05
1184	-178.05 241.52	-.70845	-275.60	4.6767	.00000	.00000	-.58521	-178.17	-275.60	275.03
1185	-150.31 225.32	-.70847	-259.62	5.3336	.00000	.00000	-.51856	-150.50	-259.62	259.11
6	-120.99 209.85	-.70849	-242.72	5.9710	.00000	.00000	-.41281	-121.29	-242.72	242.11

1187	-90.085 195.83	-.70851	-224.92	6.5917	.00000	.00000	-.22498	-90.569	-224.92	224.69
1188	-57.597 184.20	-.70852	-206.20	7.1981	.00000	.00000	.18812	-58.494	-206.20	206.39
1189	-23.526 176.09	-.70854	-186.57	7.7923	.00000	.00000	1.6986	-25.933	-186.57	188.27
1190	12.129 172.71	-.70851	-166.03	8.3757	.00000	.00000	16.262	-4.8422	-166.03	182.29
1191	49.367 175.08	-.70872	-144.58	8.9498	.00000	.00000	50.918	-2.2602	-144.58	195.50
1192	88.189 183.69	-.70780	-122.22	9.5156	.00000	.00000	89.196	-1.7150	-122.22	211.42
1193	128.59 198.44	-.71123	-98.950	10.074	.00000	.00000	129.37	-1.4913	-98.950	228.32
1194	170.59 218.75	-.70103	-74.761	10.629	.00000	.00000	171.25	-1.3580	-74.761	246.01
1195	214.13 243.83	-.72255	-49.680	11.164	.00000	.00000	214.71	-1.3011	-49.680	264.39

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1196	259.34 273.01	-.71305	-23.656	11.732	.00000	.00000	259.87	-1.2413	-23.656	283.53
1197	306.15 305.50	-.52648	3.3394	12.248	.00000	.00000	306.64	3.3394	-1.0149	307.65
1198	353.28 340.69	-1.6460	30.486	12.518	.00000	.00000	353.72	30.486	-2.0869	355.81
1199	417.35 390.66	1.0285	64.254	23.225	.00000	.00000	418.64	64.254	-.26320	418.90
1200	563.73 472.43	70.117	136.01	50.727	.00000	.00000	568.89	136.01	64.957	503.91
1201	669.89 743.41	-161.19	108.67	66.888	.00000	.00000	675.24	108.67	-166.54	841.71
1202	45.023 45.387	-.36345	45.023	.00000	.00000	.00000	45.023	45.023	-.36345	45.387

1203	44.798 45.680	-.82302	44.880	.73413	.00000	.00000	44.880	44.810	-.83483	45.715
1204	44.718 51.460	.59803	44.643	15.328	.00000	.00000	49.521	44.643	-4.2043	53.725
1205	44.650 62.616	-.66030	44.215	25.081	.00000	.00000	55.793	44.215	-11.804	67.597
1206	44.595 55.984	-.48537	44.462	19.218	.00000	.00000	51.675	44.462	-7.5657	59.241
1207	44.542 52.786	-.49891	44.499	15.912	.00000	.00000	49.596	44.499	-5.5534	55.150
1208	44.550 51.020	-.50199	44.533	13.834	.00000	.00000	48.459	44.533	-4.4106	52.870
1209	44.546 49.944	-.49966	44.547	12.453	.00000	.00000	47.759	44.547	-3.7129	51.472
1210	44.547 49.261	-.50026	44.556	11.503	.00000	.00000	47.315	44.556	-3.2676	50.582
1211	44.549 48.810	-.50006	44.561	10.840	.00000	.00000	47.021	44.561	-2.9728	49.994
1212	44.550 48.509	-.50006	44.564	10.377	.00000	.00000	46.825	44.564	-2.7753	49.600
1213	44.551 48.309	-.50004	44.566	10.058	.00000	.00000	46.695	44.566	-2.6436	49.338

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1214	44.553 48.180	-.50003	44.567	9.8479	.00000	.00000	46.611	44.567	-2.5586	49.170
1215	44.554 48.104	-.50002	44.568	9.7211	.00000	.00000	46.562	44.568	-2.5080	49.070
1216	44.555 48.067	-.50002	44.568	9.6595	.00000	.00000	46.538	44.568	-2.4836	49.022
1217	44.556 48.062	-.50001	44.569	9.6502	.00000	.00000	46.536	44.569	-2.4799	49.015
1218	44.556 48.083	-.50001	44.569	9.6832	.00000	.00000	46.549	44.569	-2.4929	49.042

HABGE-01/99-0745, Revision 2

6/59

1219	44.557 48.124	-.50001	44.569	9.7512	.00000	.00000	46.577	44.569	-2.5198	49.097
1220	44.558 48.184	-.50001	44.569	9.8482	.00000	.00000	46.616	44.569	-2.5585	49.175
1221	44.558 48.259	-.50000	44.569	9.9696	.00000	.00000	46.666	44.569	-2.6073	49.273
1222	44.559 48.348	-.50000	44.569	10.112	.00000	.00000	46.724	44.569	-2.6652	49.389
1223	44.559 48.449	-.50001	44.569	10.272	.00000	.00000	46.791	44.569	-2.7311	49.522
1224	44.560 48.562	-.50000	44.569	10.447	.00000	.00000	46.864	44.569	-2.8044	49.669
1225	44.560 48.685	-.49999	44.569	10.636	.00000	.00000	46.945	44.569	-2.8843	49.829
1226	44.561 48.817	-.50010	44.569	10.836	.00000	.00000	47.031	44.569	-2.9706	50.002
1227	44.561 48.958	-.49952	44.569	11.047	.00000	.00000	47.123	44.569	-3.0621	50.185
1228	44.563 49.111	-.50173	44.569	11.267	.00000	.00000	47.223	44.569	-3.1616	50.385
1229	44.554 49.260	-.49574	44.568	11.495	.00000	.00000	47.318	44.568	-3.2592	50.577
1230	44.582 49.447	-.50246	44.573	11.730	.00000	.00000	47.451	44.573	-3.3717	50.823
1231	44.533 49.626	-.54604	44.548	11.972	.00000	.00000	47.515	44.548	-3.5280	51.043

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1232	44.452 49.464	-.16589	44.630	12.219	.00000	.00000	47.579	44.630	-3.2928	50.87
1233	45.700 51.809	-1.9951	44.466	12.472	.00000	.00000	48.765	44.466	-5.0597	53.82
1234	23.792 37.795	4.3740	39.909	12.632	.00000	.00000	39.909	30.015	-1.8495	41.75

1235	-87.583 128.65	52.130	19.865	12.889	.00000	.00000	53.309	19.865	-88.762	142.07
1236	-169.84 369.87	245.56	49.227	-49.171	.00000	.00000	251.31	49.227	-175.58	426.88
1237	-101.41 205.29	5.0098	-5.7076	-103.03	.00000	.00000	67.758	-5.7076	-164.16	231.92
1238	-41.345 513.72	-577.00	-161.94	-94.926	.00000	.00000	-25.020	-161.94	-593.33	568.31
1239	499.79 497.72	2.0730	499.79	.00000	.00000	.00000	499.79	499.79	2.0730	497.72
1240	498.08 501.41	-3.1848	498.38	-.16135E-02	.00000	.00000	498.38	498.08	-3.1848	501.57
1241	495.75 490.01	7.1104	496.81	-16.502	.00000	.00000	496.81	496.31	6.5537	490.26
1242	490.50 494.83	-1.6668	491.26	-27.371	.00000	.00000	492.02	491.26	-3.1842	495.20
1243	484.25 488.03	.27934E-02	489.43	-19.519	.00000	.00000	489.43	485.04	-.78274	490.21
1244	476.79 482.19	-.36849	485.39	-14.692	.00000	.00000	485.39	477.25	-.82044	486.21
1245	467.92 475.00	-.27923	480.45	-11.348	.00000	.00000	480.45	468.20	-.55411	481.00
1246	457.54 466.80	-.29860	474.51	-8.8324	.00000	.00000	474.51	457.71	-.46892	474.98
1247	445.60 457.46	-.29225	467.64	-6.8338	.00000	.00000	467.64	445.70	-.39696	468.04
1248	432.09 447.00	-.29308	459.85	-5.1773	.00000	.00000	459.85	432.15	-.35506	460.21
1249	417.01 435.43	-.29228	451.15	-3.7594	.00000	.00000	451.15	417.04	-.32615	451.48

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1250	400.35 422.76	-.29214	441.54	-2.5147	.00000	.00000	441.54	400.36	-.30792	441.84

HABCE-01/99-0745, Revision 2

1251	382.11 409.06	-.29193	431.01	-1.3995	.00000	.00000	431.01	382.11	-.29705	431.31
1252	362.28 394.36	-.29181	419.58	-.38374	.00000	.00000	419.58	362.28	-.29222	419.87
1253	340.88 378.73	-.29172	407.23	.55390	.00000	.00000	407.23	340.88	-.29262	407.53
1254	317.89 362.28	-.29165	393.98	1.4292	.00000	.00000	393.98	317.90	-.29807	394.28
1255	293.32 345.11	-.29160	379.82	2.2538	.00000	.00000	379.82	293.34	-.30890	380.12
1256	267.16 327.38	-.29157	364.74	3.0367	.00000	.00000	364.74	267.20	-.32604	365.07
1257	239.43 309.30	-.29154	348.76	3.7849	.00000	.00000	348.76	239.49	-.35128	349.11
1258	210.11 291.15	-.29152	331.86	4.5039	.00000	.00000	331.86	210.20	-.38788	332.25
1259	179.20 273.29	-.29150	314.05	5.1980	.00000	.00000	314.05	179.35	-.44190	314.50
1260	146.72 256.23	-.29149	295.34	5.8709	.00000	.00000	295.34	146.95	-.52558	295.86
1261	112.65 240.60	-.29146	275.71	6.5254	.00000	.00000	275.71	113.02	-.66725	276.38
1262	76.992 227.25	-.29148	255.17	7.1640	.00000	.00000	255.17	77.650	-.94996	256.12
1263	39.754 217.20	-.29147	233.72	7.7886	.00000	.00000	233.72	41.216	-1.7530	235.47
1264	.93368 211.54	-.29126	211.36	8.4009	.00000	.00000	211.36	8.7444	-8.1019	219.46
1265	-39.473 211.29	-.29214	188.09	9.0029	.00000	.00000	188.09	1.6775	-41.442	229.53
1266	-81.453 217.14	-.29087	163.90	9.5917	.00000	.00000	163.90	.82728	-82.571	246.47
1267	-125.05 229.30	-.28092	138.80	10.186	.00000	.00000	138.80	.54512	-125.88	264.68

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

HABCE-01/99-0745, Revision 2

B/C0

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1268	-170.16 247.36	-.38225	112.78	10.734	.00000	.00000	112.78	.29365	-170.84	283.62
1269	-216.80 271.07	.19509	86.064	11.323	.00000	.00000	86.064	.78440	-217.39	303.45
1270	-266.46 299.07	-2.3029	57.107	12.146	.00000	.00000	57.107	-1.7456	-267.01	324.12
1271	-286.68 311.72	7.3227	40.119	2.3152	.00000	.00000	40.119	7.3409	-286.70	326.82
1272	-209.67 263.08	32.746	64.307	-24.502	.00000	.00000	64.307	35.198	-212.12	276.43
1273	-67.076 161.78	-5.2026	91.552	-48.293	.00000	.00000	91.552	21.213	-93.491	185.04
1274	-32.028 189.09	106.75	133.60	-63.371	.00000	.00000	133.60	131.33	-56.611	190.21
1275	-68.263 308.33	-314.94	-6.0941	-70.746	.00000	.00000	-6.0941	-49.414	-333.79	327.69

MINIMUM VALUES

ODE	1167 184	1166	1167	1237	1	1	1053	1167	1166	184
ALUE	-410.57 .23764	-1044.9	-410.57	-103.03	.00000	.00000	-57.313	-410.57	-1045.3	.23764

MAXIMUM VALUES

ODE	1201 1166	1164	1239	1126	1	1	1164	1239	1164	1166
ALUE	669.89 1040.4	873.10	499.79	112.45	.00000	.00000	873.74	499.79	314.76	1190.5

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
------	------------	----	----	-----	-----	-----	----	----	----	------

**** ESTIMATED BOUNDS CONSIDERING THE EFFECT OF DISCRETIZATION ERROR ****

HABCE-01/99-0745, Revision 2

5161

MINIMUM VALUES

CODE	1236	1166	1128	1164	1164	1164	1237	1128	1166	36
VALUE	-700.12 35 .00000	-1388.9	-727.28	-693.52	.00000	.00000	-439.60	-727.28	-1389.4	.00000

MAXIMUM VALUES

CODE	1201	1164	1164	1164	1164	1164	1164	1164	1164	1166
VALUE	1080.5 1166 1384.5	1547.9	989.56	656.07	.00000	.00000	1548.5	1002.9	989.56	1534.6

HOPPER AND ASSOCIATES
ENGINEERS

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/14/99 PAGE: C1
SUBJECT: APPENDIX C BY: AJS CK: SR SHT: 1 OF 89

APPENDIX C

ANSYS THERMAL ANALYSIS

```
./filnam,thermic
/PREP7
/TITLE,DSC STRUCTURAL ANALYSIS MODEL
KAN,0
ET,1,42,,,1
C*** STAINLESS STEEL
EX,1,26.5E6
NUXY,1,0.3
DENS,1,0.283
ALPX,1,9.8E-6
C*** CHEMICAL LEAD
EX,2,3.0E6
NUXY,2,0.4
DENS,2,0.411
ALPX,2,16.4E-6
c*** KTEMP,-1 *****
C*** NODAL INPUT
C*** BOTTOM DETAIL
N,1,0.0,0.0
N,7,6.0,0.0
FILL
N,8,6.625,0.0
N,9,7.25,0.0
N,10,8.0,0.0
N,35,33.0,0.0
FILL
N,36,33.275,0.0
N,37,33.55,0.0
NGEN,3,37,1,37,1,0.0,0.5
NGEN,2,37,75,109,1,0.0,0.75
N,147,33.125,1.75
N,148,33.55,1.75
NGEN,2,37,112,145
N,183,33.125,1.75
NGEN,2,35,149,157,1,0.0,1.0
N,193,7.25,2.75
N,194,8.0,2.75
NGEN,2,37,158,183,1,0.0,1.0
N,221,33.125,2.75
N,222,33.55,2.75
NGEN,3,39,184,222,1,0.0,1.0
NGEN,2,39,262,270,1,0.0,1.0
N,310,8.0,6.0
N,335,33.125,6.0
FILL
NGEN,2,35,301,335,1,0.0,0.0
N,371,33.55,6.0
NGEN,2,36,336,344,1,0.0,0.75
NGEN,2,36,345,371,1,0.0,0.5
N,408,7.25,7.75
N,409,8.0,7.75
N,410,5.0,9.0
N,411,6.125,9.0
N,412,7.25,9.0
N,413,8.0,9.0
NGEN,2,4,410,413,1,0.0,1.0
```

C*** ELEMENT GENERATION

C*** BOTTOM DETAIL

E,1,2,39,38
EGEN,36,1,-1
E,38,39,76,75
EGEN,36,1,-1
E,75,76,113,112
EGEN,36,1,-1
MAT,2
E,149,150,185,184
EGEN,8,1,-1
MAT,1
E,120,121,194,193
MAT,2
E,158,159,196,195
EGEN,24,1,-1
E,182,183,220,219
MAT,1
E,147,148,222,221
MAT,2
E,184,185,224,223
EGEN,8,1,-1
MAT,1
E,193,194,233,232
MAT,2
E,195,196,235,234
EGEN,25,1,-1
MAT,1
E,221,222,261,260
MAT,2
E,223,224,263,262
EGEN,8,1,-1
MAT,1
E,232,233,272,271
MAT,2
E,234,235,274,273
EGEN,25,1,-1
MAT,1
E,260,261,300,299
MAT,2
E,262,263,302,301
EGEN,8,1,-1
MAT,1
E,271,272,345,344
MAT,2
E,273,274,311,310
EGEN,25,1,-1
MAT,1
E,299,300,371,370
E,336,337,373,372
EGEN,35,1,-1
E,380,381,409,408
E,408,409,413,412
E,412,413,417,416
E,411,412,416,415
E,410,411,415,414

C*** DSC SHELL NODES

N,425,33.0,-0.75
N,426,33.275,-0.75
N,427,33.55,-0.75
NGEN,5,3,425,427,1,0.0,-1.0
N,440,33.0,-5.75
N,441,33.55,-5.75
NGEN,148,2,440,441,1,0.0,-1.0
N,736,33.0,-153.75
N,737,33.275,-153.75
N,738,33.55,-153.75
NGEN,6,3,736,738,1,0.0,-1.0

C*** DSC SHELL ELEMENTS

E,425,426,36,35
E,426,427,37,36
E,428,429,426,425
E,429,430,427,426
EGEN,4,3,291,292
E,440,438,437
E,440,441,438
E,441,439,438
E,442,443,441,440
EGEN,147,2,-1
E,736,737,734
E,737,735,734
E,736,738,735
E,739,740,737,736
E,740,741,738,737
EGEN,5,3,452,453,1

C*** BOTTOM DETAIL NODAL INPUT

LOCAL,11,0,0.0,-166,0.0
N,754,32.25,9.25
N,755,32.25,8.25
N,756,32.25,7.25
N,757,0.0,7.25
N,789,32.0,7.25
FILL
N,757,0.0,7.25
FILL,757,789
N,790,32.25,7.25
N,791,33.0,7.25
NGEN,2,35,757,789,1,0.0,-0.5
N,825,32.5,6.75
N,826,33.0,6.75
N,827,33.0,6.75
N,828,33.275,6.75
N,829,33.55,6.75
NGEN,3,38,792,829,1,0.0,-0.5
NGEN,3,38,868,901,1
NGEN,2,34,906,939,1,0.0,-1.0
N,974,32.5,4.75
N,975,33.0,4.75
N,976,33.0,4.75
N,977,33.275,4.75
N,978,33.55,4.75

NGEN,3,39,940,978,1,0.0,-1.0
NGEN,2,39,1018,1051,1,0.0,-1.5
NGEN,2,34,1057,1090,1
N,1125,33.0,1.25
N,1126,33.0,1.25
N,1127,33.275,1.25
N,1128,33.55,1.25
NGEN,2,38,1091,1128,1,0.0,-0.25
NGEN,2,38,1129,1163,1
N,1202,0.0,0.375
N,1234,32.0,0.375
FILL
N,1235,32.5,0.375
N,1236,33.0,0.375
N,1237,33.275,0.375
N,1238,33.55,0.375
NGEN,2,37,1202,1238,1,0.0,-0.625

C*** BOTTOM DETAIL ELEMENT GENERATION

E,755,748,745,754
E,756,751,748,755
E,792,793,758,757
EGEN,33,1,-1
E,825,826,791,790
E,827,828,752,751
E,828,829,753,752
E,830,831,793,792
EGEN,34,1,-1
E,865,866,828,827
E,866,867,829,828
E,868,869,831,830
EGEN,34,1,-1
E,903,904,866,865
E,904,905,867,866
MAT,2
E,940,941,907,906
EGEN,33,1,-1
MAT,1
E,974,975,902,901
E,976,977,904,903
E,977,978,905,904
MAT,2
E,979,980,941,940
EGEN,33,1,-1
MAT,1
E,1013,1014,975,974
E,1015,1016,977,976
E,1016,1017,978,977
MAT,2
E,1018,1019,980,979
EGEN,33,1,-1
MAT,1
E,1052,1053,1014,1013
E,1054,1055,1016,1015
E,1055,1056,1017,1016
MAT,2
E,1057,1058,1019,1018

```
EGEN,33,1,-1
MAT,1
E,1124,1125,1053,1052
E,1126,1127,1055,1054
E,1127,1128,1056,1055
E,1129,1130,1092,1091
EGEN,34,1,-1
E,1164,1165,1127,1126
E,1165,1166,1128,1127
E,1202,1203,1168,1167
EGEN,34,1,-1
E,1236,1237,1165,1164
E,1237,1238,1166,1165
E,1239,1240,1203,1202
EGEN,36,1,-1
WSORT,Y
C*** AXISYMETRIC BOUNDARY CONDITIONS
c*** SYMBC,,,0.0 *****
csys,0
nsel,s,loc,x,0
dsym,symm,x,0
c*** SYMBC,11,,0.0 *****
c***csys,11
c***nsel,s,loc,y,0
c***dsym,symm,x,11
allsel
C*** CONSTANT COUPLED NODES
CP,1,UX,120,157
CP,2,UX,121,158
CP,3,UX,192,193
CP,4,UX,194,195
CP,5,UX,231,232
CP,6,UX,233,234
CP,7,UX,270,271
CP,8,UX,272,273
CP,9,UX,309,344
CP,10,UX,310,345
CP,12,UX,183,147
CP,13,UX,220,221
CP,14,UX,259,260
CP,15,UX,298,299
CP,16,UX,335,370
CP,17,UX,751,791
CP,18,UX,826,827
CP,19,UX,864,865
CP,20,UX,902,903
CP,21,UX,901,939
CP,22,UX,973,974
CP,23,UX,975,976
CP,24,UX,1012,1013
CP,25,UX,1014,1015
CP,26,UX,1051,1052
CP,27,UX,1053,1054
CP,28,UX,1090,1124
CP,29,UX,1125,1126
CP,30,UX,1164,1201
C*** LOADING CONDITIONS
```

CP, 31, UY, 112, 149
CPSGEN, 34, 1, -1
CP, 65, UY, 147, 183
CP, 66, UY, 868, 906
CPSGEN, 34, 1, -1
CP, 100, UY, 1057, 1091
CPSGEN, 34, 1, -1
CP, 134, UY, 1129, 1167
CPSGEN, 34, 1, -1
CP, 168, UY, 301, 336
CPSGEN, 35, 1, -1
C*** BOUNDARY CONDITIONS
D, 1239, UY, 0.0
C*** THERMAL LOADING
C*** LOAD STEP1, DSC WITH AIR GAP
BF, 1, TEMP, 276
BF, 2, TEMP, 280
BF, 3, TEMP, 283
BF, 4, TEMP, 287
BF, 5, TEMP, 290
BF, 6, TEMP, 294
BF, 7, TEMP, 297
BF, 8, TEMP, 300
BF, 9, TEMP, 302
BF, 10, TEMP, 304
BF, 11, TEMP, 306
BF, 12, TEMP, 308
BF, 13, TEMP, 310
BF, 14, TEMP, 312
BF, 15, TEMP, 314
BF, 16, TEMP, 316
BF, 17, TEMP, 318
BF, 18, TEMP, 320
BF, 19, TEMP, 322
BF, 20, TEMP, 324
BF, 21, TEMP, 326
BF, 22, TEMP, 328
BF, 23, TEMP, 330
BF, 24, TEMP, 332
BF, 25, TEMP, 334
BF, 26, TEMP, 336
BF, 27, TEMP, 338
BF, 28, TEMP, 340
BF, 29, TEMP, 342
BF, 30, TEMP, 344
BF, 31, TEMP, 346
BF, 32, TEMP, 348
BF, 33, TEMP, 350
BF, 34, TEMP, 352
BF, 35, TEMP, 354
BF, 36, TEMP, 357
BF, 37, TEMP, 358
BF, 38, TEMP, 276
BF, 39, TEMP, 280
BF, 40, TEMP, 283
BF, 41, TEMP, 287
BF, 42, TEMP, 290

BF, 43, TEMP, 294
BF, 44, TEMP, 297
BF, 45, TEMP, 300
BF, 46, TEMP, 302
BF, 47, TEMP, 304
BF, 48, TEMP, 306
BF, 49, TEMP, 308
BF, 50, TEMP, 310
BF, 51, TEMP, 312
BF, 52, TEMP, 314
BF, 53, TEMP, 316
BF, 54, TEMP, 318
BF, 55, TEMP, 320
BF, 56, TEMP, 322
BF, 57, TEMP, 324
BF, 58, TEMP, 326
BF, 59, TEMP, 328
BF, 60, TEMP, 330
BF, 61, TEMP, 332
BF, 62, TEMP, 334
BF, 63, TEMP, 336
BF, 64, TEMP, 338
BF, 65, TEMP, 340
BF, 66, TEMP, 342
BF, 67, TEMP, 344
BF, 68, TEMP, 346
BF, 69, TEMP, 348
BF, 70, TEMP, 350
BF, 71, TEMP, 352
BF, 72, TEMP, 354
BF, 73, TEMP, 357
BF, 74, TEMP, 358
BF, 75, TEMP, 275
BF, 76, TEMP, 279
BF, 77, TEMP, 283
BF, 78, TEMP, 286
BF, 79, TEMP, 289
BF, 80, TEMP, 292
BF, 81, TEMP, 295
BF, 82, TEMP, 297
BF, 83, TEMP, 299
BF, 84, TEMP, 301
BF, 85, TEMP, 303
BF, 86, TEMP, 305
BF, 87, TEMP, 307
BF, 88, TEMP, 309
BF, 89, TEMP, 311
BF, 90, TEMP, 313
BF, 91, TEMP, 315
BF, 92, TEMP, 317
BF, 93, TEMP, 319
BF, 94, TEMP, 321
BF, 95, TEMP, 323
BF, 96, TEMP, 325
BF, 97, TEMP, 327
BF, 98, TEMP, 329
BF, 99, TEMP, 331

BF,100,TEMP,333
BF,101,TEMP,335
BF,102,TEMP,337
BF,103,TEMP,339
BF,104,TEMP,341
BF,105,TEMP,343
BF,106,TEMP,345
BF,107,TEMP,347
BF,108,TEMP,349
BF,109,TEMP,351
BF,110,TEMP,354
BF,111,TEMP,355
BF,112,TEMP,275
BF,113,TEMP,279
BF,114,TEMP,283
BF,115,TEMP,286
BF,116,TEMP,289
BF,117,TEMP,292
BF,118,TEMP,295
BF,119,TEMP,297
BF,120,TEMP,299
BF,121,TEMP,301
BF,122,TEMP,303
BF,123,TEMP,305
BF,124,TEMP,307
BF,125,TEMP,309
BF,126,TEMP,311
BF,127,TEMP,313
BF,128,TEMP,315
BF,129,TEMP,317
BF,130,TEMP,319
BF,131,TEMP,321
BF,132,TEMP,323
BF,133,TEMP,325
BF,134,TEMP,327
BF,135,TEMP,329
BF,136,TEMP,331
BF,137,TEMP,333
BF,138,TEMP,335
BF,139,TEMP,337
BF,140,TEMP,339
BF,141,TEMP,341
BF,142,TEMP,343
BF,143,TEMP,345
BF,144,TEMP,347
BF,145,TEMP,349
BF,146,TEMP,351
BF,147,TEMP,354
BF,148,TEMP,355
BF,149,TEMP,275
BF,150,TEMP,279
BF,151,TEMP,283
BF,152,TEMP,286
BF,153,TEMP,289
BF,154,TEMP,292
BF,155,TEMP,295
BF,156,TEMP,297

BF, 157, TEMP, 299
BF, 158, TEMP, 301
BF, 159, TEMP, 303
BF, 160, TEMP, 305
BF, 161, TEMP, 307
BF, 162, TEMP, 309
BF, 163, TEMP, 311
BF, 164, TEMP, 313
BF, 165, TEMP, 315
BF, 166, TEMP, 317
BF, 167, TEMP, 319
BF, 168, TEMP, 321
BF, 169, TEMP, 323
BF, 170, TEMP, 325
BF, 171, TEMP, 327
BF, 172, TEMP, 329
BF, 173, TEMP, 331
BF, 174, TEMP, 333
BF, 175, TEMP, 335
BF, 176, TEMP, 337
BF, 177, TEMP, 339
BF, 178, TEMP, 341
BF, 179, TEMP, 343
BF, 180, TEMP, 345
BF, 181, TEMP, 347
BF, 182, TEMP, 349
BF, 183, TEMP, 351
BF, 184, TEMP, 274
BF, 185, TEMP, 278
BF, 186, TEMP, 282
BF, 187, TEMP, 285
BF, 188, TEMP, 288
BF, 189, TEMP, 291
BF, 190, TEMP, 294
BF, 191, TEMP, 296
BF, 192, TEMP, 298
BF, 193, TEMP, 298
BF, 194, TEMP, 300
BF, 195, TEMP, 300
BF, 196, TEMP, 302
BF, 197, TEMP, 304
BF, 198, TEMP, 306
BF, 199, TEMP, 308
BF, 200, TEMP, 310
BF, 201, TEMP, 312
BF, 202, TEMP, 314
BF, 203, TEMP, 316
BF, 204, TEMP, 318
BF, 205, TEMP, 320
BF, 206, TEMP, 322
BF, 207, TEMP, 324
BF, 208, TEMP, 326
BF, 209, TEMP, 328
BF, 210, TEMP, 330
BF, 211, TEMP, 332
BF, 212, TEMP, 334
BF, 213, TEMP, 336

BF, 214, TEMP, 338
BF, 215, TEMP, 340
BF, 216, TEMP, 342
BF, 217, TEMP, 344
BF, 218, TEMP, 346
BF, 219, TEMP, 348
BF, 220, TEMP, 350
BF, 221, TEMP, 353
BF, 222, TEMP, 354
BF, 223, TEMP, 273
BF, 224, TEMP, 277
BF, 225, TEMP, 281
BF, 226, TEMP, 284
BF, 227, TEMP, 287
BF, 228, TEMP, 290
BF, 229, TEMP, 293
BF, 230, TEMP, 295
BF, 231, TEMP, 297
BF, 232, TEMP, 297
BF, 233, TEMP, 299
BF, 234, TEMP, 299
BF, 235, TEMP, 301
BF, 236, TEMP, 303
BF, 237, TEMP, 305
BF, 238, TEMP, 307
BF, 239, TEMP, 309
BF, 240, TEMP, 311
BF, 241, TEMP, 313
BF, 242, TEMP, 315
BF, 243, TEMP, 317
BF, 244, TEMP, 319
BF, 245, TEMP, 321
BF, 246, TEMP, 323
BF, 247, TEMP, 325
BF, 248, TEMP, 327
BF, 249, TEMP, 329
BF, 250, TEMP, 331
BF, 251, TEMP, 333
BF, 252, TEMP, 335
BF, 253, TEMP, 337
BF, 254, TEMP, 339
BF, 255, TEMP, 341
BF, 256, TEMP, 343
BF, 257, TEMP, 345
BF, 258, TEMP, 347
BF, 259, TEMP, 349
BF, 260, TEMP, 352
BF, 261, TEMP, 353
BF, 262, TEMP, 272
BF, 263, TEMP, 276
BF, 264, TEMP, 280
BF, 265, TEMP, 283
BF, 266, TEMP, 286
BF, 267, TEMP, 289
BF, 268, TEMP, 292
BF, 269, TEMP, 294
BF, 270, TEMP, 296

BF, 271, TEMP, 296
BF, 272, TEMP, 298
BF, 273, TEMP, 298
BF, 274, TEMP, 300
BF, 275, TEMP, 302
BF, 276, TEMP, 304
BF, 277, TEMP, 306
BF, 278, TEMP, 308
BF, 279, TEMP, 310
BF, 280, TEMP, 312
BF, 281, TEMP, 314
BF, 282, TEMP, 316
BF, 283, TEMP, 318
BF, 284, TEMP, 320
BF, 285, TEMP, 322
BF, 286, TEMP, 324
BF, 287, TEMP, 326
BF, 288, TEMP, 328
BF, 289, TEMP, 330
BF, 290, TEMP, 332
BF, 291, TEMP, 334
BF, 292, TEMP, 336
BF, 293, TEMP, 338
BF, 294, TEMP, 340
BF, 295, TEMP, 342
BF, 296, TEMP, 344
BF, 297, TEMP, 346
BF, 298, TEMP, 348
BF, 299, TEMP, 351
BF, 300, TEMP, 352
BF, 301, TEMP, 271
BF, 302, TEMP, 275
BF, 303, TEMP, 279
BF, 304, TEMP, 282
BF, 305, TEMP, 285
BF, 306, TEMP, 288
BF, 307, TEMP, 291
BF, 308, TEMP, 293
BF, 309, TEMP, 295
BF, 310, TEMP, 297
BF, 311, TEMP, 299
BF, 312, TEMP, 301
BF, 313, TEMP, 303
BF, 314, TEMP, 305
BF, 315, TEMP, 307
BF, 316, TEMP, 309
BF, 317, TEMP, 311
BF, 318, TEMP, 313
BF, 319, TEMP, 315
BF, 320, TEMP, 317
BF, 321, TEMP, 319
BF, 322, TEMP, 321
BF, 323, TEMP, 323
BF, 324, TEMP, 325
BF, 325, TEMP, 327
BF, 326, TEMP, 329
BF, 327, TEMP, 331

BF, 328, TEMP, 333
BF, 329, TEMP, 335
BF, 330, TEMP, 337
BF, 331, TEMP, 339
BF, 332, TEMP, 341
BF, 333, TEMP, 343
BF, 334, TEMP, 345
BF, 335, TEMP, 347
BF, 336, TEMP, 270
BF, 337, TEMP, 274
BF, 338, TEMP, 278
BF, 339, TEMP, 281
BF, 340, TEMP, 284
BF, 341, TEMP, 287
BF, 342, TEMP, 290
BF, 343, TEMP, 292
BF, 344, TEMP, 294
BF, 345, TEMP, 296
BF, 346, TEMP, 298
BF, 347, TEMP, 300
BF, 348, TEMP, 302
BF, 349, TEMP, 304
BF, 350, TEMP, 306
BF, 351, TEMP, 308
BF, 352, TEMP, 310
BF, 353, TEMP, 312
BF, 354, TEMP, 314
BF, 355, TEMP, 316
BF, 356, TEMP, 318
BF, 357, TEMP, 320
BF, 358, TEMP, 322
BF, 359, TEMP, 324
BF, 360, TEMP, 326
BF, 361, TEMP, 328
BF, 362, TEMP, 330
BF, 363, TEMP, 332
BF, 364, TEMP, 334
BF, 365, TEMP, 336
BF, 366, TEMP, 338
BF, 367, TEMP, 340
BF, 368, TEMP, 342
BF, 369, TEMP, 344
BF, 370, TEMP, 346
BF, 371, TEMP, 351
BF, 372, TEMP, 269
BF, 373, TEMP, 273
BF, 374, TEMP, 277
BF, 375, TEMP, 280
BF, 376, TEMP, 283
BF, 377, TEMP, 286
BF, 378, TEMP, 289
BF, 379, TEMP, 291
BF, 380, TEMP, 293
BF, 381, TEMP, 295
BF, 382, TEMP, 297
BF, 383, TEMP, 299
BF, 384, TEMP, 301

BF, 385, TEMP, 303
BF, 386, TEMP, 305
BF, 387, TEMP, 307
BF, 388, TEMP, 309
BF, 389, TEMP, 311
BF, 390, TEMP, 313
BF, 391, TEMP, 315
BF, 392, TEMP, 317
BF, 393, TEMP, 319
BF, 394, TEMP, 321
BF, 395, TEMP, 323
BF, 396, TEMP, 325
BF, 397, TEMP, 327
BF, 398, TEMP, 329
BF, 399, TEMP, 331
BF, 400, TEMP, 333
BF, 401, TEMP, 335
BF, 402, TEMP, 337
BF, 403, TEMP, 339
BF, 404, TEMP, 341
BF, 405, TEMP, 343
BF, 406, TEMP, 345
BF, 407, TEMP, 350
BF, 408, TEMP, 297
BF, 409, TEMP, 297
BF, 410, TEMP, 297
BF, 411, TEMP, 297
BF, 412, TEMP, 297
BF, 413, TEMP, 297
BF, 414, TEMP, 297
BF, 415, TEMP, 297
BF, 416, TEMP, 297
BF, 417, TEMP, 297
BF, 425, TEMP, 346
BF, 426, TEMP, 346
BF, 427, TEMP, 346
BF, 428, TEMP, 346
BF, 429, TEMP, 346
BF, 430, TEMP, 346
BF, 431, TEMP, 346
BF, 432, TEMP, 346
BF, 433, TEMP, 346
BF, 434, TEMP, 346
BF, 435, TEMP, 346
BF, 436, TEMP, 346
BF, 437, TEMP, 346
BF, 438, TEMP, 346
BF, 439, TEMP, 346
BF, 440, TEMP, 346
BF, 441, TEMP, 346
BF, 442, TEMP, 346
BF, 443, TEMP, 346
BF, 444, TEMP, 346
BF, 445, TEMP, 346
BF, 446, TEMP, 346
BF, 447, TEMP, 346
BF, 448, TEMP, 346

BF, 449, TEMP, 346
BF, 450, TEMP, 346
BF, 451, TEMP, 346
BF, 452, TEMP, 346
BF, 453, TEMP, 346
BF, 454, TEMP, 346
BF, 455, TEMP, 346
BF, 456, TEMP, 346
BF, 457, TEMP, 346
BF, 458, TEMP, 346
BF, 459, TEMP, 346
BF, 460, TEMP, 346
BF, 461, TEMP, 346
BF, 462, TEMP, 346
BF, 463, TEMP, 346
BF, 464, TEMP, 346
BF, 465, TEMP, 346
BF, 466, TEMP, 346
BF, 467, TEMP, 346
BF, 468, TEMP, 346
BF, 469, TEMP, 346
BF, 470, TEMP, 346
BF, 471, TEMP, 346
BF, 472, TEMP, 346
BF, 473, TEMP, 346
BF, 474, TEMP, 346
BF, 475, TEMP, 346
BF, 476, TEMP, 346
BF, 477, TEMP, 346
BF, 478, TEMP, 346
BF, 479, TEMP, 346
BF, 480, TEMP, 346
BF, 481, TEMP, 346
BF, 482, TEMP, 346
BF, 483, TEMP, 346
BF, 484, TEMP, 346
BF, 485, TEMP, 346
BF, 486, TEMP, 346
BF, 487, TEMP, 346
BF, 488, TEMP, 346
BF, 489, TEMP, 346
BF, 490, TEMP, 346
BF, 491, TEMP, 346
BF, 492, TEMP, 346
BF, 493, TEMP, 346
BF, 494, TEMP, 346
BF, 495, TEMP, 346
BF, 496, TEMP, 346
BF, 497, TEMP, 346
BF, 498, TEMP, 346
BF, 499, TEMP, 346
BF, 500, TEMP, 346
BF, 501, TEMP, 346
BF, 502, TEMP, 346
BF, 503, TEMP, 346
BF, 504, TEMP, 346
BF, 505, TEMP, 346

BF, 506, TEMP, 346
BF, 507, TEMP, 346
BF, 508, TEMP, 346
BF, 509, TEMP, 346
BF, 510, TEMP, 346
BF, 511, TEMP, 346
BF, 512, TEMP, 346
BF, 513, TEMP, 346
BF, 514, TEMP, 346
BF, 515, TEMP, 346
BF, 516, TEMP, 346
BF, 517, TEMP, 346
BF, 518, TEMP, 346
BF, 519, TEMP, 346
BF, 520, TEMP, 346
BF, 521, TEMP, 346
BF, 522, TEMP, 346
BF, 523, TEMP, 346
BF, 524, TEMP, 346
BF, 525, TEMP, 346
BF, 526, TEMP, 346
BF, 527, TEMP, 346
BF, 528, TEMP, 346
BF, 529, TEMP, 346
BF, 530, TEMP, 346
BF, 531, TEMP, 346
BF, 532, TEMP, 346
BF, 533, TEMP, 346
BF, 534, TEMP, 346
BF, 535, TEMP, 346
BF, 536, TEMP, 346
BF, 537, TEMP, 346
BF, 538, TEMP, 346
BF, 539, TEMP, 346
BF, 540, TEMP, 346
BF, 541, TEMP, 346
BF, 542, TEMP, 346
BF, 543, TEMP, 346
BF, 544, TEMP, 346
BF, 545, TEMP, 346
BF, 546, TEMP, 346
BF, 547, TEMP, 346
BF, 548, TEMP, 346
BF, 549, TEMP, 346
BF, 550, TEMP, 346
BF, 551, TEMP, 346
BF, 552, TEMP, 346
BF, 553, TEMP, 346
BF, 554, TEMP, 346
BF, 555, TEMP, 346
BF, 556, TEMP, 346
BF, 557, TEMP, 346
BF, 558, TEMP, 346
BF, 559, TEMP, 346
BF, 560, TEMP, 346
BF, 561, TEMP, 346
BF, 562, TEMP, 346

BF, 563, TEMP, 346
BF, 564, TEMP, 346
BF, 565, TEMP, 346
BF, 566, TEMP, 346
BF, 567, TEMP, 346
BF, 568, TEMP, 346
BF, 569, TEMP, 346
BF, 570, TEMP, 346
BF, 571, TEMP, 346
BF, 572, TEMP, 346
BF, 573, TEMP, 346
BF, 574, TEMP, 346
BF, 575, TEMP, 346
BF, 576, TEMP, 346
BF, 577, TEMP, 346
BF, 578, TEMP, 346
BF, 579, TEMP, 346
BF, 580, TEMP, 346
BF, 581, TEMP, 346
BF, 582, TEMP, 346
BF, 583, TEMP, 346
BF, 584, TEMP, 346
BF, 585, TEMP, 346
BF, 586, TEMP, 346
BF, 587, TEMP, 346
BF, 588, TEMP, 346
BF, 589, TEMP, 346
BF, 590, TEMP, 346
BF, 591, TEMP, 346
BF, 592, TEMP, 346
BF, 593, TEMP, 346
BF, 594, TEMP, 346
BF, 595, TEMP, 346
BF, 596, TEMP, 346
BF, 597, TEMP, 346
BF, 598, TEMP, 346
BF, 599, TEMP, 346
BF, 600, TEMP, 346
BF, 601, TEMP, 346
BF, 602, TEMP, 346
BF, 603, TEMP, 346
BF, 604, TEMP, 346
BF, 605, TEMP, 346
BF, 606, TEMP, 346
BF, 607, TEMP, 346
BF, 608, TEMP, 346
BF, 609, TEMP, 346
BF, 610, TEMP, 346
BF, 611, TEMP, 346
BF, 612, TEMP, 346
BF, 613, TEMP, 346
BF, 614, TEMP, 346
BF, 615, TEMP, 346
BF, 616, TEMP, 346
BF, 617, TEMP, 346
BF, 618, TEMP, 346
BF, 619, TEMP, 346

BF, 620, TEMP, 346
BF, 621, TEMP, 346
BF, 622, TEMP, 346
BF, 623, TEMP, 346
BF, 624, TEMP, 346
BF, 625, TEMP, 346
BF, 626, TEMP, 346
BF, 627, TEMP, 346
BF, 628, TEMP, 346
BF, 629, TEMP, 346
BF, 630, TEMP, 346
BF, 631, TEMP, 346
BF, 632, TEMP, 346
BF, 633, TEMP, 346
BF, 634, TEMP, 346
BF, 635, TEMP, 346
BF, 636, TEMP, 346
BF, 637, TEMP, 346
BF, 638, TEMP, 346
BF, 639, TEMP, 346
BF, 640, TEMP, 346
BF, 641, TEMP, 346
BF, 642, TEMP, 346
BF, 643, TEMP, 346
BF, 644, TEMP, 346
BF, 645, TEMP, 346
BF, 646, TEMP, 346
BF, 647, TEMP, 346
BF, 648, TEMP, 346
BF, 649, TEMP, 346
BF, 650, TEMP, 346
BF, 651, TEMP, 346
BF, 652, TEMP, 346
BF, 653, TEMP, 346
BF, 654, TEMP, 346
BF, 655, TEMP, 346
BF, 656, TEMP, 346
BF, 657, TEMP, 346
BF, 658, TEMP, 346
BF, 659, TEMP, 346
BF, 660, TEMP, 346
BF, 661, TEMP, 346
BF, 662, TEMP, 346
BF, 663, TEMP, 346
BF, 664, TEMP, 346
BF, 665, TEMP, 346
BF, 666, TEMP, 346
BF, 667, TEMP, 346
BF, 668, TEMP, 346
BF, 669, TEMP, 346
BF, 670, TEMP, 346
BF, 671, TEMP, 346
BF, 672, TEMP, 346
BF, 673, TEMP, 346
BF, 674, TEMP, 346
BF, 675, TEMP, 346
BF, 676, TEMP, 346

BF, 677, TEMP, 346
BF, 678, TEMP, 346
BF, 679, TEMP, 346
BF, 680, TEMP, 346
BF, 681, TEMP, 346
BF, 682, TEMP, 346
BF, 683, TEMP, 346
BF, 684, TEMP, 346
BF, 685, TEMP, 346
BF, 686, TEMP, 346
BF, 687, TEMP, 346
BF, 688, TEMP, 346
BF, 689, TEMP, 346
BF, 690, TEMP, 346
BF, 691, TEMP, 346
BF, 692, TEMP, 346
BF, 693, TEMP, 346
BF, 694, TEMP, 346
BF, 695, TEMP, 346
BF, 696, TEMP, 346
BF, 697, TEMP, 346
BF, 698, TEMP, 346
BF, 699, TEMP, 346
BF, 700, TEMP, 346
BF, 701, TEMP, 346
BF, 702, TEMP, 346
BF, 703, TEMP, 346
BF, 704, TEMP, 346
BF, 705, TEMP, 346
BF, 706, TEMP, 346
BF, 707, TEMP, 346
BF, 708, TEMP, 346
BF, 709, TEMP, 346
BF, 710, TEMP, 346
BF, 711, TEMP, 346
BF, 712, TEMP, 346
BF, 713, TEMP, 346
BF, 714, TEMP, 346
BF, 715, TEMP, 346
BF, 716, TEMP, 346
BF, 717, TEMP, 346
BF, 718, TEMP, 346
BF, 719, TEMP, 346
BF, 720, TEMP, 346
BF, 721, TEMP, 346
BF, 722, TEMP, 346
BF, 723, TEMP, 346
BF, 724, TEMP, 346
BF, 725, TEMP, 346
BF, 726, TEMP, 346
BF, 727, TEMP, 346
BF, 728, TEMP, 346
BF, 729, TEMP, 346
BF, 730, TEMP, 346
BF, 731, TEMP, 346
BF, 732, TEMP, 346
BF, 733, TEMP, 346

BF, 734, TEMP, 346
BF, 735, TEMP, 346
BF, 736, TEMP, 346
BF, 737, TEMP, 346
BF, 738, TEMP, 346
BF, 739, TEMP, 346
BF, 740, TEMP, 346
BF, 741, TEMP, 346
BF, 742, TEMP, 346
BF, 743, TEMP, 346
BF, 744, TEMP, 346
BF, 745, TEMP, 346
BF, 746, TEMP, 346
BF, 747, TEMP, 346
BF, 748, TEMP, 346
BF, 749, TEMP, 346
BF, 750, TEMP, 346
BF, 751, TEMP, 346
BF, 752, TEMP, 346
BF, 753, TEMP, 346
BF, 754, TEMP, 346
BF, 755, TEMP, 346
BF, 756, TEMP, 346
BF, 757, TEMP, 269
BF, 758, TEMP, 271.543
BF, 759, TEMP, 274.086
BF, 760, TEMP, 276.629
BF, 761, TEMP, 279.172
BF, 762, TEMP, 281.715
BF, 763, TEMP, 284.258
BF, 764, TEMP, 286.801
BF, 765, TEMP, 289.344
BF, 766, TEMP, 291.887
BF, 767, TEMP, 294.43
BF, 768, TEMP, 296.973
BF, 769, TEMP, 299.516
BF, 770, TEMP, 302.059
BF, 771, TEMP, 304.602
BF, 772, TEMP, 307.145
BF, 773, TEMP, 309.688
BF, 774, TEMP, 312.231
BF, 775, TEMP, 314.774
BF, 776, TEMP, 317.317
BF, 777, TEMP, 319.86
BF, 778, TEMP, 322.403
BF, 779, TEMP, 324.946
BF, 780, TEMP, 327.489
BF, 781, TEMP, 330.032
BF, 782, TEMP, 332.575
BF, 783, TEMP, 335.118
BF, 784, TEMP, 337.661
BF, 785, TEMP, 340.204
BF, 786, TEMP, 342.747
BF, 787, TEMP, 345.29
BF, 788, TEMP, 347.833
BF, 789, TEMP, 350.376
BF, 790, TEMP, 352.919

BF, 791, TEMP, 355.462
BF, 792, TEMP, 269
BF, 793, TEMP, 271.543
BF, 794, TEMP, 274.086
BF, 795, TEMP, 276.629
BF, 796, TEMP, 279.172
BF, 797, TEMP, 281.715
BF, 798, TEMP, 284.258
BF, 799, TEMP, 286.801
BF, 800, TEMP, 289.344
BF, 801, TEMP, 291.887
BF, 802, TEMP, 294.43
BF, 803, TEMP, 296.973
BF, 804, TEMP, 299.516
BF, 805, TEMP, 302.059
BF, 806, TEMP, 304.602
BF, 807, TEMP, 307.145
BF, 808, TEMP, 309.688
BF, 809, TEMP, 312.231
BF, 810, TEMP, 314.774
BF, 811, TEMP, 317.317
BF, 812, TEMP, 319.86
BF, 813, TEMP, 322.403
BF, 814, TEMP, 324.946
BF, 815, TEMP, 327.489
BF, 816, TEMP, 330.032
BF, 817, TEMP, 332.575
BF, 818, TEMP, 335.118
BF, 819, TEMP, 337.661
BF, 820, TEMP, 340.204
BF, 821, TEMP, 342.747
BF, 822, TEMP, 345.29
BF, 823, TEMP, 347.833
BF, 824, TEMP, 350.376
BF, 825, TEMP, 352.919
BF, 826, TEMP, 355.462
BF, 827, TEMP, 358
BF, 828, TEMP, 358
BF, 829, TEMP, 358
BF, 830, TEMP, 268
BF, 831, TEMP, 270.486
BF, 832, TEMP, 272.972
BF, 833, TEMP, 275.458
BF, 834, TEMP, 277.944
BF, 835, TEMP, 280.43
BF, 836, TEMP, 282.916
BF, 837, TEMP, 285.402
BF, 838, TEMP, 287.888
BF, 839, TEMP, 290.374
BF, 840, TEMP, 292.86
BF, 841, TEMP, 295.346
BF, 842, TEMP, 297.832
BF, 843, TEMP, 300.318
BF, 844, TEMP, 302.804
BF, 845, TEMP, 305.29
BF, 846, TEMP, 307.776
BF, 847, TEMP, 310.262

BF, 848, TEMP, 312.748
BF, 849, TEMP, 315.234
BF, 850, TEMP, 317.72
BF, 851, TEMP, 320.206
BF, 852, TEMP, 322.692
BF, 853, TEMP, 325.178
BF, 854, TEMP, 327.664
BF, 855, TEMP, 330.15
BF, 856, TEMP, 332.636
BF, 857, TEMP, 335.122
BF, 858, TEMP, 337.608
BF, 859, TEMP, 340.094
BF, 860, TEMP, 342.58
BF, 861, TEMP, 345.066
BF, 862, TEMP, 347.552
BF, 863, TEMP, 350.038
BF, 864, TEMP, 352.524
BF, 865, TEMP, 355
BF, 866, TEMP, 355
BF, 867, TEMP, 355
BF, 868, TEMP, 268
BF, 869, TEMP, 270.486
BF, 870, TEMP, 272.972
BF, 871, TEMP, 275.458
BF, 872, TEMP, 277.944
BF, 873, TEMP, 280.43
BF, 874, TEMP, 282.916
BF, 875, TEMP, 285.402
BF, 876, TEMP, 287.888
BF, 877, TEMP, 290.374
BF, 878, TEMP, 292.86
BF, 879, TEMP, 295.346
BF, 880, TEMP, 297.832
BF, 881, TEMP, 300.318
BF, 882, TEMP, 302.804
BF, 883, TEMP, 305.29
BF, 884, TEMP, 307.776
BF, 885, TEMP, 310.262
BF, 886, TEMP, 312.748
BF, 887, TEMP, 315.234
BF, 888, TEMP, 317.72
BF, 889, TEMP, 320.206
BF, 890, TEMP, 322.692
BF, 891, TEMP, 325.178
BF, 892, TEMP, 327.664
BF, 893, TEMP, 330.15
BF, 894, TEMP, 332.636
BF, 895, TEMP, 335.122
BF, 896, TEMP, 337.608
BF, 897, TEMP, 340.094
BF, 898, TEMP, 342.58
BF, 899, TEMP, 345.066
BF, 900, TEMP, 347.552
BF, 901, TEMP, 350.038
BF, 902, TEMP, 352.524
BF, 903, TEMP, 355
BF, 904, TEMP, 355

BF, 905, TEMP, 355
BF, 906, TEMP, 268
BF, 907, TEMP, 270.486
BF, 908, TEMP, 272.972
BF, 909, TEMP, 275.458
BF, 910, TEMP, 277.944
BF, 911, TEMP, 280.43
BF, 912, TEMP, 282.916
BF, 913, TEMP, 285.402
BF, 914, TEMP, 287.888
BF, 915, TEMP, 290.374
BF, 916, TEMP, 292.86
BF, 917, TEMP, 295.346
BF, 918, TEMP, 297.832
BF, 919, TEMP, 300.318
BF, 920, TEMP, 302.804
BF, 921, TEMP, 305.29
BF, 922, TEMP, 307.776
BF, 923, TEMP, 310.262
BF, 924, TEMP, 312.748
BF, 925, TEMP, 315.234
BF, 926, TEMP, 317.72
BF, 927, TEMP, 320.206
BF, 928, TEMP, 322.692
BF, 929, TEMP, 325.178
BF, 930, TEMP, 327.664
BF, 931, TEMP, 330.15
BF, 932, TEMP, 332.636
BF, 933, TEMP, 335.122
BF, 934, TEMP, 337.608
BF, 935, TEMP, 340.094
BF, 936, TEMP, 342.58
BF, 937, TEMP, 345.066
BF, 938, TEMP, 347.552
BF, 939, TEMP, 350.038
BF, 940, TEMP, 268
BF, 941, TEMP, 270.529
BF, 942, TEMP, 273.058
BF, 943, TEMP, 275.587
BF, 944, TEMP, 278.116
BF, 945, TEMP, 280.645
BF, 946, TEMP, 283.174
BF, 947, TEMP, 285.703
BF, 948, TEMP, 288.232
BF, 949, TEMP, 290.761
BF, 950, TEMP, 293.29
BF, 951, TEMP, 295.819
BF, 952, TEMP, 298.348
BF, 953, TEMP, 300.877
BF, 954, TEMP, 303.406
BF, 955, TEMP, 305.935
BF, 956, TEMP, 308.464
BF, 957, TEMP, 310.993
BF, 958, TEMP, 313.522
BF, 959, TEMP, 316.051
BF, 960, TEMP, 318.58
BF, 961, TEMP, 321.109

BF, 962, TEMP, 323.638
BF, 963, TEMP, 326.167
BF, 964, TEMP, 328.696
BF, 965, TEMP, 331.225
BF, 966, TEMP, 333.754
BF, 967, TEMP, 336.283
BF, 968, TEMP, 338.812
BF, 969, TEMP, 341.341
BF, 970, TEMP, 343.87
BF, 971, TEMP, 346.399
BF, 972, TEMP, 348.928
BF, 973, TEMP, 351.457
BF, 974, TEMP, 352
BF, 975, TEMP, 354
BF, 976, TEMP, 354
BF, 977, TEMP, 354
BF, 978, TEMP, 354
BF, 979, TEMP, 267
BF, 980, TEMP, 269.529
BF, 981, TEMP, 272.058
BF, 982, TEMP, 274.587
BF, 983, TEMP, 277.116
BF, 984, TEMP, 279.645
BF, 985, TEMP, 282.174
BF, 986, TEMP, 284.703
BF, 987, TEMP, 287.232
BF, 988, TEMP, 289.761
BF, 989, TEMP, 292.29
BF, 990, TEMP, 294.819
BF, 991, TEMP, 297.348
BF, 992, TEMP, 299.877
BF, 993, TEMP, 302.406
BF, 994, TEMP, 304.935
BF, 995, TEMP, 307.464
BF, 996, TEMP, 309.993
BF, 997, TEMP, 312.522
BF, 998, TEMP, 315.051
BF, 999, TEMP, 317.58
BF, 1000, TEMP, 320.109
BF, 1001, TEMP, 322.638
BF, 1002, TEMP, 325.167
BF, 1003, TEMP, 327.696
BF, 1004, TEMP, 330.225
BF, 1005, TEMP, 332.754
BF, 1006, TEMP, 335.283
BF, 1007, TEMP, 337.812
BF, 1008, TEMP, 340.341
BF, 1009, TEMP, 342.87
BF, 1010, TEMP, 345.399
BF, 1011, TEMP, 347.928
BF, 1012, TEMP, 350.457
BF, 1013, TEMP, 351
BF, 1014, TEMP, 353
BF, 1015, TEMP, 353
BF, 1016, TEMP, 353
BF, 1017, TEMP, 353
BF, 1018, TEMP, 266

BF,1019,TEMP,268.529
BF,1020,TEMP,271.058
BF,1021,TEMP,273.587
BF,1022,TEMP,276.116
BF,1023,TEMP,278.645
BF,1024,TEMP,281.174
BF,1025,TEMP,283.703
BF,1026,TEMP,286.232
BF,1027,TEMP,288.761
BF,1028,TEMP,291.29
BF,1029,TEMP,293.819
BF,1030,TEMP,296.348
BF,1031,TEMP,298.877
BF,1032,TEMP,301.406
BF,1033,TEMP,303.935
BF,1034,TEMP,306.464
BF,1035,TEMP,308.993
BF,1036,TEMP,311.522
BF,1037,TEMP,314.051
BF,1038,TEMP,316.58
BF,1039,TEMP,319.109
BF,1040,TEMP,321.638
BF,1041,TEMP,324.167
BF,1042,TEMP,326.696
BF,1043,TEMP,329.225
BF,1044,TEMP,331.754
BF,1045,TEMP,334.283
BF,1046,TEMP,336.812
BF,1047,TEMP,339.341
BF,1048,TEMP,341.87
BF,1049,TEMP,344.399
BF,1050,TEMP,346.928
BF,1051,TEMP,349.457
BF,1052,TEMP,350
BF,1053,TEMP,352
BF,1054,TEMP,352
BF,1055,TEMP,352
BF,1056,TEMP,352
BF,1057,TEMP,265
BF,1058,TEMP,267.529
BF,1059,TEMP,270.058
BF,1060,TEMP,272.587
BF,1061,TEMP,275.116
BF,1062,TEMP,277.645
BF,1063,TEMP,280.174
BF,1064,TEMP,282.703
BF,1065,TEMP,285.232
BF,1066,TEMP,287.761
BF,1067,TEMP,290.29
BF,1068,TEMP,292.819
BF,1069,TEMP,295.348
BF,1070,TEMP,297.877
BF,1071,TEMP,300.406
BF,1072,TEMP,302.935
BF,1073,TEMP,305.464
BF,1074,TEMP,307.993
BF,1075,TEMP,310.522

BF,1076,TEMP,313.051
BF,1077,TEMP,315.58
BF,1078,TEMP,318.109
BF,1079,TEMP,320.638
BF,1080,TEMP,323.167
BF,1081,TEMP,325.696
BF,1082,TEMP,328.225
BF,1083,TEMP,330.754
BF,1084,TEMP,333.283
BF,1085,TEMP,335.812
BF,1086,TEMP,338.341
BF,1087,TEMP,340.87
BF,1088,TEMP,343.399
BF,1089,TEMP,345.928
BF,1090,TEMP,348.457
BF,1091,TEMP,265
BF,1092,TEMP,267.529
BF,1093,TEMP,270.058
BF,1094,TEMP,272.587
BF,1095,TEMP,275.116
BF,1096,TEMP,277.645
BF,1097,TEMP,280.174
BF,1098,TEMP,282.703
BF,1099,TEMP,285.232
BF,1100,TEMP,287.761
BF,1101,TEMP,290.29
BF,1102,TEMP,292.819
BF,1103,TEMP,295.348
BF,1104,TEMP,297.877
BF,1105,TEMP,300.406
BF,1106,TEMP,302.935
BF,1107,TEMP,305.464
BF,1108,TEMP,307.993
BF,1109,TEMP,310.522
BF,1110,TEMP,313.051
BF,1111,TEMP,315.58
BF,1112,TEMP,318.109
BF,1113,TEMP,320.638
BF,1114,TEMP,323.167
BF,1115,TEMP,325.696
BF,1116,TEMP,328.225
BF,1117,TEMP,330.754
BF,1118,TEMP,333.283
BF,1119,TEMP,335.812
BF,1120,TEMP,338.341
BF,1121,TEMP,340.87
BF,1122,TEMP,343.399
BF,1123,TEMP,345.928
BF,1124,TEMP,348.457
BF,1125,TEMP,351
BF,1126,TEMP,351
BF,1127,TEMP,351
BF,1128,TEMP,351
BF,1129,TEMP,265
BF,1130,TEMP,267.529
BF,1131,TEMP,270.058
BF,1132,TEMP,272.587

BF, 1133, TEMP, 275.116
BF, 1134, TEMP, 277.645
BF, 1135, TEMP, 280.174
BF, 1136, TEMP, 282.703
BF, 1137, TEMP, 285.232
BF, 1138, TEMP, 287.761
BF, 1139, TEMP, 290.29
BF, 1140, TEMP, 292.819
BF, 1141, TEMP, 295.348
BF, 1142, TEMP, 297.877
BF, 1143, TEMP, 300.406
BF, 1144, TEMP, 302.935
BF, 1145, TEMP, 305.464
BF, 1146, TEMP, 307.993
BF, 1147, TEMP, 310.522
BF, 1148, TEMP, 313.051
BF, 1149, TEMP, 315.58
BF, 1150, TEMP, 318.109
BF, 1151, TEMP, 320.638
BF, 1152, TEMP, 323.167
BF, 1153, TEMP, 325.696
BF, 1154, TEMP, 328.225
BF, 1155, TEMP, 330.754
BF, 1156, TEMP, 333.283
BF, 1157, TEMP, 335.812
BF, 1158, TEMP, 338.341
BF, 1159, TEMP, 340.87
BF, 1160, TEMP, 343.399
BF, 1161, TEMP, 345.928
BF, 1162, TEMP, 348.457
BF, 1163, TEMP, 351
BF, 1164, TEMP, 351
BF, 1165, TEMP, 351
BF, 1166, TEMP, 351
BF, 1167, TEMP, 265
BF, 1168, TEMP, 267.529
BF, 1169, TEMP, 270.058
BF, 1170, TEMP, 272.587
BF, 1171, TEMP, 275.116
BF, 1172, TEMP, 277.645
BF, 1173, TEMP, 280.174
BF, 1174, TEMP, 282.703
BF, 1175, TEMP, 285.232
BF, 1176, TEMP, 287.761
BF, 1177, TEMP, 290.29
BF, 1178, TEMP, 292.819
BF, 1179, TEMP, 295.348
BF, 1180, TEMP, 297.877
BF, 1181, TEMP, 300.406
BF, 1182, TEMP, 302.935
BF, 1183, TEMP, 305.464
BF, 1184, TEMP, 307.993
BF, 1185, TEMP, 310.522
BF, 1186, TEMP, 313.051
BF, 1187, TEMP, 315.58
BF, 1188, TEMP, 318.109
BF, 1189, TEMP, 320.638

BF,1190,TEMP,323.167
BF,1191,TEMP,325.696
BF,1192,TEMP,328.225
BF,1193,TEMP,330.754
BF,1194,TEMP,333.283
BF,1195,TEMP,335.812
BF,1196,TEMP,338.341
BF,1197,TEMP,340.87
BF,1198,TEMP,343.399
BF,1199,TEMP,345.928
BF,1200,TEMP,348.457
BF,1201,TEMP,351
BF,1202,TEMP,266
BF,1203,TEMP,268.333
BF,1204,TEMP,270.666
BF,1205,TEMP,272.999
BF,1206,TEMP,275.332
BF,1207,TEMP,277.665
BF,1208,TEMP,279.998
BF,1209,TEMP,282.331
BF,1210,TEMP,284.664
BF,1211,TEMP,286.997
BF,1212,TEMP,289.33
BF,1213,TEMP,291.663
BF,1214,TEMP,293.996
BF,1215,TEMP,296.329
BF,1216,TEMP,298.662
BF,1217,TEMP,300.995
BF,1218,TEMP,303.328
BF,1219,TEMP,305.661
BF,1220,TEMP,307.994
BF,1221,TEMP,310.327
BF,1222,TEMP,312.66
BF,1223,TEMP,314.993
BF,1224,TEMP,317.326
BF,1225,TEMP,319.659
BF,1226,TEMP,321.992
BF,1227,TEMP,324.325
BF,1228,TEMP,326.658
BF,1229,TEMP,328.991
BF,1230,TEMP,331.324
BF,1231,TEMP,333.657
BF,1232,TEMP,335.99
BF,1233,TEMP,338.323
BF,1234,TEMP,340.656
BF,1235,TEMP,342.989
BF,1236,TEMP,345.322
BF,1237,TEMP,347.655
BF,1238,TEMP,349.988
BF,1239,TEMP,266
BF,1240,TEMP,268.333
BF,1241,TEMP,270.666
BF,1242,TEMP,272.999
BF,1243,TEMP,275.332
BF,1244,TEMP,277.665
BF,1245,TEMP,279.998
BF,1246,TEMP,282.331

BF,1247,TEMP,284.664
BF,1248,TEMP,286.997
BF,1249,TEMP,289.33
BF,1250,TEMP,291.663
BF,1251,TEMP,293.996
BF,1252,TEMP,296.329
BF,1253,TEMP,298.662
BF,1254,TEMP,300.995
BF,1255,TEMP,303.328
BF,1256,TEMP,305.661
BF,1257,TEMP,307.994
BF,1258,TEMP,310.327
BF,1259,TEMP,312.66
BF,1260,TEMP,314.993
BF,1261,TEMP,317.326
BF,1262,TEMP,319.659
BF,1263,TEMP,321.992
BF,1264,TEMP,324.325
BF,1265,TEMP,326.658
BF,1266,TEMP,328.991
BF,1267,TEMP,331.324
BF,1268,TEMP,333.657
BF,1269,TEMP,335.99
BF,1270,TEMP,338.323
BF,1271,TEMP,340.656
BF,1272,TEMP,342.989
BF,1273,TEMP,345.322
BF,1274,TEMP,347.655
BF,1275,TEMP,349.988
SAVE
FINI
/SOLU
ANTYPE,STATIC
SOLVE
SAVE
FINI
/POST1
ALLSEL
/OUT,THER1c,OUT
PRNSOL,S,PRIN
/OUT

```
/filnam,therm2c
/PREP7
/TITLE,DSC STRUCTURAL ANALYSIS MODEL
KAN,0
ET,1,42,,,1
C*** STAINLESS STEEL
EX,1,26.5E6
NUXY,1,0.3
DENS,1,0.283
ALPX,1,9.8E-6
C*** CHEMICAL LEAD
EX,2,3.0E6
NUXY,2,0.4
DENS,2,0.411
ALPX,2,16.4E-6
C*** KTEMP,-1 *****
C*** NODAL INPUT
C*** BOTTOM DETAIL
N,1,0.0,0.0
N,7,6.0,0.0
FILL
N,8,6.625,0.0
N,9,7.25,0.0
N,10,8.0,0.0
N,35,33.0,0.0
FILL
N,36,33.275,0.0
N,37,33.55,0.0
NGEN,3,37,1,37,1,0.0,0.5
NGEN,2,37,75,109,1,0.0,0.75
N,147,33.125,1.75
N,148,33.55,1.75
NGEN,2,37,112,145
N,183,33.125,1.75
NGEN,2,35,149,157,1,0.0,1.0
N,193,7.25,2.75
N,194,8.0,2.75
NGEN,2,37,158,183,1,0.0,1.0
N,221,33.125,2.75
N,222,33.55,2.75
NGEN,3,39,184,222,1,0.0,1.0
NGEN,2,39,262,270,1,0.0,1.0
N,310,8.0,6.0
N,335,33.125,6.0
FILL
NGEN,2,35,301,335,1,0.0,0.0
N,371,33.55,6.0
NGEN,2,36,336,344,1,0.0,0.75
NGEN,2,36,345,371,1,0.0,0.5
N,408,7.25,7.75
N,409,8.0,7.75
N,410,5.0,9.0
N,411,6.125,9.0
N,412,7.25,9.0
N,413,8.0,9.0
NGEN,2,4,410,413,1,0.0,1.0
```

C*** ELEMENT GENERATION

C*** BOTTOM DETAIL

E, 1, 2, 39, 38
EGEN, 36, 1, -1
E, 38, 39, 76, 75
EGEN, 36, 1, -1
E, 75, 76, 113, 112
EGEN, 36, 1, -1
MAT, 2
E, 149, 150, 185, 184
EGEN, 8, 1, -1
MAT, 1
E, 120, 121, 194, 193
MAT, 2
E, 158, 159, 196, 195
EGEN, 24, 1, -1
E, 182, 183, 220, 219
MAT, 1
E, 147, 148, 222, 221
MAT, 2
E, 184, 185, 224, 223
EGEN, 8, 1, -1
MAT, 1
E, 193, 194, 233, 232
MAT, 2
E, 195, 196, 235, 234
EGEN, 25, 1, -1
MAT, 1
E, 221, 222, 261, 260
MAT, 2
E, 223, 224, 263, 262
EGEN, 8, 1, -1
MAT, 1
E, 232, 233, 272, 271
MAT, 2
E, 234, 235, 274, 273
EGEN, 25, 1, -1
MAT, 1
E, 260, 261, 300, 299
MAT, 2
E, 262, 263, 302, 301
EGEN, 8, 1, -1
MAT, 1
E, 271, 272, 345, 344
MAT, 2
E, 273, 274, 311, 310
EGEN, 25, 1, -1
MAT, 1
E, 299, 300, 371, 370
E, 336, 337, 373, 372
EGEN, 35, 1, -1
E, 380, 381, 409, 408
E, 408, 409, 413, 412
E, 412, 413, 417, 416
E, 411, 412, 416, 415
E, 410, 411, 415, 414

C*** DSC SHELL NODES

N,425,33.0,-0.75
N,426,33.275,-0.75
N,427,33.55,-0.75
NGEN,5,3,425,427,1,0.0,-1.0
N,440,33.0,-5.75
N,441,33.55,-5.75
NGEN,148,2,440,441,1,0.0,-1.0
N,736,33.0,-153.75
N,737,33.275,-153.75
N,738,33.55,-153.75
NGEN,6,3,736,738,1,0.0,-1.0

C*** DSC SHELL ELEMENTS

E,425,426,36,35
E,426,427,37,36
E,428,429,426,425
E,429,430,427,426
EGEN,4,3,291,292
E,440,438,437
E,440,441,438
E,441,439,438
E,442,443,441,440
EGEN,147,2,-1
E,736,737,734
E,737,735,734
E,736,738,735
E,739,740,737,736
E,740,741,738,737
EGEN,5,3,452,453,1

C*** BOTTOM DETAIL NODAL INPUT

LOCAL,11,0,0.0,-166,0.0
N,754,32.25,9.25
N,755,32.25,8.25
N,756,32.25,7.25
N,757,0.0,7.25
N,789,32.0,7.25
FILL
N,757,0.0,7.25
FILL,757,789
N,790,32.25,7.25
N,791,33.0,7.25
NGEN,2,35,757,789,1,0.0,-0.5
N,825,32.5,6.75
N,826,33.0,6.75
N,827,33.0,6.75
N,828,33.275,6.75
N,829,33.55,6.75
NGEN,3,38,792,829,1,0.0,-0.5
NGEN,3,38,868,901,1
NGEN,2,34,906,939,1,0.0,-1.0
N,974,32.5,4.75
N,975,33.0,4.75
N,976,33.0,4.75
N,977,33.275,4.75
N,978,33.55,4.75

NGEN, 3, 39, 940, 978, 1, 0.0, -1.0
NGEN, 2, 39, 1018, 1051, 1, 0.0, -1.5
NGEN, 2, 34, 1057, 1090, 1
N, 1125, 33.0, 1.25
N, 1126, 33.0, 1.25
N, 1127, 33.275, 1.25
N, 1128, 33.55, 1.25
NGEN, 2, 38, 1091, 1128, 1, 0.0, -0.25
NGEN, 2, 38, 1129, 1163, 1
N, 1202, 0.0, 0.375
N, 1234, 32.0, 0.375
FILL
N, 1235, 32.5, 0.375
N, 1236, 33.0, 0.375
N, 1237, 33.275, 0.375
N, 1238, 33.55, 0.375
NGEN, 2, 37, 1202, 1238, 1, 0.0, -0.625

C*** BOTTOM DETAIL ELEMENT GENERATION

E, 755, 748, 745, 754
E, 756, 751, 748, 755
E, 792, 793, 758, 757
EGEN, 33, 1, -1
E, 825, 826, 791, 790
E, 827, 828, 752, 751
E, 828, 829, 753, 752
E, 830, 831, 793, 792
EGEN, 34, 1, -1
E, 865, 866, 828, 827
E, 866, 867, 829, 828
E, 868, 869, 831, 830
EGEN, 34, 1, -1
E, 903, 904, 866, 865
E, 904, 905, 867, 866
MAT, 2
E, 940, 941, 907, 906
EGEN, 33, 1, -1
MAT, 1
E, 974, 975, 902, 901
E, 976, 977, 904, 903
E, 977, 978, 905, 904
MAT, 2
E, 979, 980, 941, 940
EGEN, 33, 1, -1
MAT, 1
E, 1013, 1014, 975, 974
E, 1015, 1016, 977, 976
E, 1016, 1017, 978, 977
MAT, 2
E, 1018, 1019, 980, 979
EGEN, 33, 1, -1
MAT, 1
E, 1052, 1053, 1014, 1013
E, 1054, 1055, 1016, 1015
E, 1055, 1056, 1017, 1016
MAT, 2
E, 1057, 1058, 1019, 1018

```
EGEN,33,1,-1
MAT,1
E,1124,1125,1053,1052
E,1126,1127,1055,1054
E,1127,1128,1056,1055
E,1129,1130,1092,1091
EGEN,34,1,-1
E,1164,1165,1127,1126
E,1165,1166,1128,1127
E,1202,1203,1168,1167
EGEN,34,1,-1
E,1236,1237,1165,1164
E,1237,1238,1166,1165
E,1239,1240,1203,1202
EGEN,36,1,-1
WSORT,Y
C*** AXISYMETRIC BOUNDARY CONDITIONS
c*** SYMBC,,0.0 *****
csys,0
nsel,s,loc,x,0
dsym,symm,x,0
c*** SYMBC,11,,0.0 *****
c***csys,11
c***nsel,s,loc,y,0
c***dsym,symm,x,11
allsel
C*** CONSTANT COUPLED NODES
CP,1,UX,120,157
CP,2,UX,121,158
CP,3,UX,192,193
CP,4,UX,194,195
CP,5,UX,231,232
CP,6,UX,233,234
CP,7,UX,270,271
CP,8,UX,272,273
CP,9,UX,309,344
CP,10,UX,310,345
CP,12,UX,183,147
CP,13,UX,220,221
CP,14,UX,259,260
CP,15,UX,298,299
CP,16,UX,335,370
CP,17,UX,751,791
CP,18,UX,826,827
CP,19,UX,864,865
CP,20,UX,902,903
CP,21,UX,901,939
CP,22,UX,973,974
CP,23,UX,975,976
CP,24,UX,1012,1013
CP,25,UX,1014,1015
CP,26,UX,1051,1052
CP,27,UX,1053,1054
CP,28,UX,1090,1124
CP,29,UX,1125,1126
CP,30,UX,1164,1201
C*** LOADING CONDITIONS
```

CP, 31, UY, 112, 149
CPSGEN, 34, 1, -1
CP, 65, UY, 147, 183
CP, 66, UY, 868, 906
CPSGEN, 34, 1, -1
CP, 100, UY, 1057, 1091
CPSGEN, 34, 1, -1
CP, 134, UY, 1129, 1167
CPSGEN, 34, 1, -1
CP, 168, UY, 301, 336
CPSGEN, 35, 1, -1
C*** BOUNDARY CONDITIONS
D, 1239, UY, 0.0
C*** THERMAL LOADING
C*** LOAD STEP1, DSC resting on cask
BF, 1, TEMP, 276
BF, 2, TEMP, 272
BF, 3, TEMP, 269
BF, 4, TEMP, 265
BF, 5, TEMP, 261
BF, 6, TEMP, 257
BF, 7, TEMP, 254
BF, 8, TEMP, 251
BF, 9, TEMP, 247
BF, 10, TEMP, 244
BF, 11, TEMP, 242
BF, 12, TEMP, 240
BF, 13, TEMP, 238
BF, 14, TEMP, 236
BF, 15, TEMP, 234
BF, 16, TEMP, 232
BF, 17, TEMP, 230
BF, 18, TEMP, 228
BF, 19, TEMP, 226
BF, 20, TEMP, 224
BF, 21, TEMP, 222
BF, 22, TEMP, 220
BF, 23, TEMP, 218
BF, 24, TEMP, 216
BF, 25, TEMP, 214
BF, 26, TEMP, 212
BF, 27, TEMP, 210
BF, 28, TEMP, 208
BF, 29, TEMP, 206
BF, 30, TEMP, 204
BF, 31, TEMP, 202
BF, 32, TEMP, 200
BF, 33, TEMP, 198
BF, 34, TEMP, 196
BF, 35, TEMP, 194
BF, 36, TEMP, 194
BF, 37, TEMP, 194
BF, 38, TEMP, 276
BF, 39, TEMP, 272
BF, 40, TEMP, 269
BF, 41, TEMP, 265
BF, 42, TEMP, 261

BF, 43, TEMP, 257
BF, 44, TEMP, 254
BF, 45, TEMP, 251
BF, 46, TEMP, 247
BF, 47, TEMP, 244
BF, 48, TEMP, 242
BF, 49, TEMP, 240
BF, 50, TEMP, 238
BF, 51, TEMP, 236
BF, 52, TEMP, 234
BF, 53, TEMP, 232
BF, 54, TEMP, 230
BF, 55, TEMP, 228
BF, 56, TEMP, 226
BF, 57, TEMP, 224
BF, 58, TEMP, 222
BF, 59, TEMP, 220
BF, 60, TEMP, 218
BF, 61, TEMP, 216
BF, 62, TEMP, 214
BF, 63, TEMP, 212
BF, 64, TEMP, 210
BF, 65, TEMP, 208
BF, 66, TEMP, 206
BF, 67, TEMP, 204
BF, 68, TEMP, 202
BF, 69, TEMP, 200
BF, 70, TEMP, 198
BF, 71, TEMP, 196
BF, 72, TEMP, 194
BF, 73, TEMP, 194
BF, 74, TEMP, 194
BF, 75, TEMP, 275
BF, 76, TEMP, 271
BF, 77, TEMP, 268
BF, 78, TEMP, 264
BF, 79, TEMP, 260
BF, 80, TEMP, 256
BF, 81, TEMP, 253
BF, 82, TEMP, 250
BF, 83, TEMP, 246
BF, 84, TEMP, 244
BF, 85, TEMP, 242
BF, 86, TEMP, 240
BF, 87, TEMP, 238
BF, 88, TEMP, 236
BF, 89, TEMP, 234
BF, 90, TEMP, 232
BF, 91, TEMP, 230
BF, 92, TEMP, 228
BF, 93, TEMP, 226
BF, 94, TEMP, 224
BF, 95, TEMP, 222
BF, 96, TEMP, 220
BF, 97, TEMP, 218
BF, 98, TEMP, 216
BF, 99, TEMP, 214

BF, 100, TEMP, 212
BF, 101, TEMP, 210
BF, 102, TEMP, 208
BF, 103, TEMP, 206
BF, 104, TEMP, 204
BF, 105, TEMP, 202
BF, 106, TEMP, 200
BF, 107, TEMP, 198
BF, 108, TEMP, 196
BF, 109, TEMP, 194
BF, 110, TEMP, 194
BF, 111, TEMP, 194
BF, 112, TEMP, 275
BF, 113, TEMP, 271
BF, 114, TEMP, 268
BF, 115, TEMP, 264
BF, 116, TEMP, 260
BF, 117, TEMP, 256
BF, 118, TEMP, 253
BF, 119, TEMP, 250
BF, 120, TEMP, 246
BF, 121, TEMP, 244
BF, 122, TEMP, 242
BF, 123, TEMP, 240
BF, 124, TEMP, 238
BF, 125, TEMP, 236
BF, 126, TEMP, 234
BF, 127, TEMP, 232
BF, 128, TEMP, 230
BF, 129, TEMP, 228
BF, 130, TEMP, 226
BF, 131, TEMP, 224
BF, 132, TEMP, 222
BF, 133, TEMP, 220
BF, 134, TEMP, 218
BF, 135, TEMP, 216
BF, 136, TEMP, 214
BF, 137, TEMP, 212
BF, 138, TEMP, 210
BF, 139, TEMP, 208
BF, 140, TEMP, 206
BF, 141, TEMP, 204
BF, 142, TEMP, 202
BF, 143, TEMP, 200
BF, 144, TEMP, 198
BF, 145, TEMP, 196
BF, 146, TEMP, 194
BF, 147, TEMP, 194
BF, 148, TEMP, 194
BF, 149, TEMP, 275
BF, 150, TEMP, 271
BF, 151, TEMP, 268
BF, 152, TEMP, 264
BF, 153, TEMP, 260
BF, 154, TEMP, 256
BF, 155, TEMP, 253
BF, 156, TEMP, 250

BF, 157, TEMP, 246
BF, 158, TEMP, 244
BF, 159, TEMP, 242
BF, 160, TEMP, 240
BF, 161, TEMP, 238
BF, 162, TEMP, 236
BF, 163, TEMP, 234
BF, 164, TEMP, 232
BF, 165, TEMP, 230
BF, 166, TEMP, 228
BF, 167, TEMP, 226
BF, 168, TEMP, 224
BF, 169, TEMP, 222
BF, 170, TEMP, 220
BF, 171, TEMP, 218
BF, 172, TEMP, 216
BF, 173, TEMP, 214
BF, 174, TEMP, 212
BF, 175, TEMP, 210
BF, 176, TEMP, 208
BF, 177, TEMP, 206
BF, 178, TEMP, 204
BF, 179, TEMP, 202
BF, 180, TEMP, 200
BF, 181, TEMP, 198
BF, 182, TEMP, 196
BF, 183, TEMP, 194
BF, 184, TEMP, 274
BF, 185, TEMP, 270
BF, 186, TEMP, 267
BF, 187, TEMP, 263
BF, 188, TEMP, 259
BF, 189, TEMP, 255
BF, 190, TEMP, 252
BF, 191, TEMP, 249
BF, 192, TEMP, 245
BF, 193, TEMP, 245
BF, 194, TEMP, 244
BF, 195, TEMP, 244
BF, 196, TEMP, 242
BF, 197, TEMP, 240
BF, 198, TEMP, 238
BF, 199, TEMP, 236
BF, 200, TEMP, 234
BF, 201, TEMP, 232
BF, 202, TEMP, 230
BF, 203, TEMP, 228
BF, 204, TEMP, 226
BF, 205, TEMP, 224
BF, 206, TEMP, 222
BF, 207, TEMP, 220
BF, 208, TEMP, 218
BF, 209, TEMP, 216
BF, 210, TEMP, 214
BF, 211, TEMP, 212
BF, 212, TEMP, 210
BF, 213, TEMP, 208

BF, 214, TEMP, 206
BF, 215, TEMP, 204
BF, 216, TEMP, 202
BF, 217, TEMP, 200
BF, 218, TEMP, 198
BF, 219, TEMP, 196
BF, 220, TEMP, 194
BF, 221, TEMP, 194
BF, 222, TEMP, 194
BF, 223, TEMP, 273
BF, 224, TEMP, 269
BF, 225, TEMP, 266
BF, 226, TEMP, 262
BF, 227, TEMP, 258
BF, 228, TEMP, 254
BF, 229, TEMP, 251
BF, 230, TEMP, 248
BF, 231, TEMP, 244
BF, 232, TEMP, 244
BF, 233, TEMP, 244
BF, 234, TEMP, 244
BF, 235, TEMP, 242
BF, 236, TEMP, 240
BF, 237, TEMP, 238
BF, 238, TEMP, 236
BF, 239, TEMP, 234
BF, 240, TEMP, 232
BF, 241, TEMP, 230
BF, 242, TEMP, 228
BF, 243, TEMP, 226
BF, 244, TEMP, 224
BF, 245, TEMP, 222
BF, 246, TEMP, 220
BF, 247, TEMP, 218
BF, 248, TEMP, 216
BF, 249, TEMP, 214
BF, 250, TEMP, 212
BF, 251, TEMP, 210
BF, 252, TEMP, 208
BF, 253, TEMP, 206
BF, 254, TEMP, 204
BF, 255, TEMP, 202
BF, 256, TEMP, 200
BF, 257, TEMP, 198
BF, 258, TEMP, 196
BF, 259, TEMP, 194
BF, 260, TEMP, 194
BF, 261, TEMP, 194
BF, 262, TEMP, 272
BF, 263, TEMP, 268
BF, 264, TEMP, 265
BF, 265, TEMP, 261
BF, 266, TEMP, 257
BF, 267, TEMP, 253
BF, 268, TEMP, 250
BF, 269, TEMP, 247
BF, 270, TEMP, 243

BF, 271, TEMP, 243
BF, 272, TEMP, 244
BF, 273, TEMP, 244
BF, 274, TEMP, 242
BF, 275, TEMP, 240
BF, 276, TEMP, 238
BF, 277, TEMP, 236
BF, 278, TEMP, 234
BF, 279, TEMP, 232
BF, 280, TEMP, 230
BF, 281, TEMP, 228
BF, 282, TEMP, 226
BF, 283, TEMP, 224
BF, 284, TEMP, 222
BF, 285, TEMP, 220
BF, 286, TEMP, 218
BF, 287, TEMP, 216
BF, 288, TEMP, 214
BF, 289, TEMP, 212
BF, 290, TEMP, 210
BF, 291, TEMP, 208
BF, 292, TEMP, 206
BF, 293, TEMP, 204
BF, 294, TEMP, 202
BF, 295, TEMP, 200
BF, 296, TEMP, 198
BF, 297, TEMP, 196
BF, 298, TEMP, 194
BF, 299, TEMP, 194
BF, 300, TEMP, 194
BF, 301, TEMP, 272
BF, 302, TEMP, 268
BF, 303, TEMP, 265
BF, 304, TEMP, 261
BF, 305, TEMP, 257
BF, 306, TEMP, 253
BF, 307, TEMP, 250
BF, 308, TEMP, 247
BF, 309, TEMP, 243
BF, 310, TEMP, 244
BF, 311, TEMP, 242
BF, 312, TEMP, 240
BF, 313, TEMP, 238
BF, 314, TEMP, 236
BF, 315, TEMP, 234
BF, 316, TEMP, 232
BF, 317, TEMP, 230
BF, 318, TEMP, 228
BF, 319, TEMP, 226
BF, 320, TEMP, 224
BF, 321, TEMP, 222
BF, 322, TEMP, 220
BF, 323, TEMP, 218
BF, 324, TEMP, 216
BF, 325, TEMP, 214
BF, 326, TEMP, 212
BF, 327, TEMP, 210

BF, 328, TEMP, 208
BF, 329, TEMP, 206
BF, 330, TEMP, 204
BF, 331, TEMP, 202
BF, 332, TEMP, 200
BF, 333, TEMP, 198
BF, 334, TEMP, 196
BF, 335, TEMP, 194
BF, 336, TEMP, 272
BF, 337, TEMP, 268
BF, 338, TEMP, 265
BF, 339, TEMP, 261
BF, 340, TEMP, 257
BF, 341, TEMP, 253
BF, 342, TEMP, 250
BF, 343, TEMP, 247
BF, 344, TEMP, 243
BF, 345, TEMP, 244
BF, 346, TEMP, 242
BF, 347, TEMP, 240
BF, 348, TEMP, 238
BF, 349, TEMP, 236
BF, 350, TEMP, 234
BF, 351, TEMP, 232
BF, 352, TEMP, 230
BF, 353, TEMP, 228
BF, 354, TEMP, 226
BF, 355, TEMP, 224
BF, 356, TEMP, 222
BF, 357, TEMP, 220
BF, 358, TEMP, 218
BF, 359, TEMP, 216
BF, 360, TEMP, 214
BF, 361, TEMP, 212
BF, 362, TEMP, 210
BF, 363, TEMP, 208
BF, 364, TEMP, 206
BF, 365, TEMP, 204
BF, 366, TEMP, 202
BF, 367, TEMP, 200
BF, 368, TEMP, 198
BF, 369, TEMP, 196
BF, 370, TEMP, 194
BF, 371, TEMP, 194
BF, 372, TEMP, 272
BF, 373, TEMP, 268
BF, 374, TEMP, 265
BF, 375, TEMP, 261
BF, 376, TEMP, 257
BF, 377, TEMP, 253
BF, 378, TEMP, 250
BF, 379, TEMP, 247
BF, 380, TEMP, 243
BF, 381, TEMP, 244
BF, 382, TEMP, 242
BF, 383, TEMP, 240
BF, 384, TEMP, 238

BF, 385, TEMP, 236
BF, 386, TEMP, 234
BF, 387, TEMP, 232
BF, 388, TEMP, 230
BF, 389, TEMP, 228
BF, 390, TEMP, 226
BF, 391, TEMP, 224
BF, 392, TEMP, 222
BF, 393, TEMP, 220
BF, 394, TEMP, 218
BF, 395, TEMP, 216
BF, 396, TEMP, 214
BF, 397, TEMP, 212
BF, 398, TEMP, 210
BF, 399, TEMP, 208
BF, 400, TEMP, 206
BF, 401, TEMP, 204
BF, 402, TEMP, 202
BF, 403, TEMP, 200
BF, 404, TEMP, 198
BF, 405, TEMP, 196
BF, 406, TEMP, 194
BF, 407, TEMP, 194
BF, 408, TEMP, 244
BF, 409, TEMP, 244
BF, 410, TEMP, 244
BF, 411, TEMP, 244
BF, 412, TEMP, 244
BF, 413, TEMP, 244
BF, 414, TEMP, 244
BF, 415, TEMP, 244
BF, 416, TEMP, 244
BF, 417, TEMP, 244
BF, 425, TEMP, 194
BF, 426, TEMP, 194
BF, 427, TEMP, 194
BF, 428, TEMP, 194
BF, 429, TEMP, 194
BF, 430, TEMP, 194
BF, 431, TEMP, 194
BF, 432, TEMP, 194
BF, 433, TEMP, 194
BF, 434, TEMP, 194
BF, 435, TEMP, 194
BF, 436, TEMP, 194
BF, 437, TEMP, 194
BF, 438, TEMP, 194
BF, 439, TEMP, 194
BF, 440, TEMP, 194
BF, 441, TEMP, 194
BF, 442, TEMP, 194
BF, 443, TEMP, 194
BF, 444, TEMP, 194
BF, 445, TEMP, 194
BF, 446, TEMP, 194
BF, 447, TEMP, 194
BF, 448, TEMP, 194

BF, 449, TEMP, 194
BF, 450, TEMP, 194
BF, 451, TEMP, 194
BF, 452, TEMP, 194
BF, 453, TEMP, 194
BF, 454, TEMP, 194
BF, 455, TEMP, 194
BF, 456, TEMP, 194
BF, 457, TEMP, 194
BF, 458, TEMP, 194
BF, 459, TEMP, 194
BF, 460, TEMP, 194
BF, 461, TEMP, 194
BF, 462, TEMP, 194
BF, 463, TEMP, 194
BF, 464, TEMP, 194
BF, 465, TEMP, 194
BF, 466, TEMP, 194
BF, 467, TEMP, 194
BF, 468, TEMP, 194
BF, 469, TEMP, 194
BF, 470, TEMP, 194
BF, 471, TEMP, 194
BF, 472, TEMP, 194
BF, 473, TEMP, 194
BF, 474, TEMP, 194
BF, 475, TEMP, 194
BF, 476, TEMP, 194
BF, 477, TEMP, 194
BF, 478, TEMP, 194
BF, 479, TEMP, 194
BF, 480, TEMP, 194
BF, 481, TEMP, 194
BF, 482, TEMP, 194
BF, 483, TEMP, 194
BF, 484, TEMP, 194
BF, 485, TEMP, 194
BF, 486, TEMP, 194
BF, 487, TEMP, 194
BF, 488, TEMP, 194
BF, 489, TEMP, 194
BF, 490, TEMP, 194
BF, 491, TEMP, 194
BF, 492, TEMP, 194
BF, 493, TEMP, 194
BF, 494, TEMP, 194
BF, 495, TEMP, 194
BF, 496, TEMP, 194
BF, 497, TEMP, 194
BF, 498, TEMP, 194
BF, 499, TEMP, 194
BF, 500, TEMP, 194
BF, 501, TEMP, 194
BF, 502, TEMP, 194
BF, 503, TEMP, 194
BF, 504, TEMP, 194
BF, 505, TEMP, 194

BF, 506, TEMP, 194
BF, 507, TEMP, 194
BF, 508, TEMP, 194
BF, 509, TEMP, 194
BF, 510, TEMP, 194
BF, 511, TEMP, 194
BF, 512, TEMP, 194
BF, 513, TEMP, 194
BF, 514, TEMP, 194
BF, 515, TEMP, 194
BF, 516, TEMP, 194
BF, 517, TEMP, 194
BF, 518, TEMP, 194
BF, 519, TEMP, 194
BF, 520, TEMP, 194
BF, 521, TEMP, 194
BF, 522, TEMP, 194
BF, 523, TEMP, 194
BF, 524, TEMP, 194
BF, 525, TEMP, 194
BF, 526, TEMP, 194
BF, 527, TEMP, 194
BF, 528, TEMP, 194
BF, 529, TEMP, 194
BF, 530, TEMP, 194
BF, 531, TEMP, 194
BF, 532, TEMP, 194
BF, 533, TEMP, 194
BF, 534, TEMP, 194
BF, 535, TEMP, 194
BF, 536, TEMP, 194
BF, 537, TEMP, 194
BF, 538, TEMP, 194
BF, 539, TEMP, 194
BF, 540, TEMP, 194
BF, 541, TEMP, 194
BF, 542, TEMP, 194
BF, 543, TEMP, 194
BF, 544, TEMP, 194
BF, 545, TEMP, 194
BF, 546, TEMP, 194
BF, 547, TEMP, 194
BF, 548, TEMP, 194
BF, 549, TEMP, 194
BF, 550, TEMP, 194
BF, 551, TEMP, 194
BF, 552, TEMP, 194
BF, 553, TEMP, 194
BF, 554, TEMP, 194
BF, 555, TEMP, 194
BF, 556, TEMP, 194
BF, 557, TEMP, 194
BF, 558, TEMP, 194
BF, 559, TEMP, 194
BF, 560, TEMP, 194
BF, 561, TEMP, 194
BF, 562, TEMP, 194

BF, 563, TEMP, 194
BF, 564, TEMP, 194
BF, 565, TEMP, 194
BF, 566, TEMP, 194
BF, 567, TEMP, 194
BF, 568, TEMP, 194
BF, 569, TEMP, 194
BF, 570, TEMP, 194
BF, 571, TEMP, 194
BF, 572, TEMP, 194
BF, 573, TEMP, 194
BF, 574, TEMP, 194
BF, 575, TEMP, 194
BF, 576, TEMP, 194
BF, 577, TEMP, 194
BF, 578, TEMP, 194
BF, 579, TEMP, 194
BF, 580, TEMP, 194
BF, 581, TEMP, 194
BF, 582, TEMP, 194
BF, 583, TEMP, 194
BF, 584, TEMP, 194
BF, 585, TEMP, 194
BF, 586, TEMP, 194
BF, 587, TEMP, 194
BF, 588, TEMP, 194
BF, 589, TEMP, 194
BF, 590, TEMP, 194
BF, 591, TEMP, 194
BF, 592, TEMP, 194
BF, 593, TEMP, 194
BF, 594, TEMP, 194
BF, 595, TEMP, 194
BF, 596, TEMP, 194
BF, 597, TEMP, 194
BF, 598, TEMP, 194
BF, 599, TEMP, 194
BF, 600, TEMP, 194
BF, 601, TEMP, 194
BF, 602, TEMP, 194
BF, 603, TEMP, 194
BF, 604, TEMP, 194
BF, 605, TEMP, 194
BF, 606, TEMP, 194
BF, 607, TEMP, 194
BF, 608, TEMP, 194
BF, 609, TEMP, 194
BF, 610, TEMP, 194
BF, 611, TEMP, 194
BF, 612, TEMP, 194
BF, 613, TEMP, 194
BF, 614, TEMP, 194
BF, 615, TEMP, 194
BF, 616, TEMP, 194
BF, 617, TEMP, 194
BF, 618, TEMP, 194
BF, 619, TEMP, 194

BF, 620, TEMP, 194
BF, 621, TEMP, 194
BF, 622, TEMP, 194
BF, 623, TEMP, 194
BF, 624, TEMP, 194
BF, 625, TEMP, 194
BF, 626, TEMP, 194
BF, 627, TEMP, 194
BF, 628, TEMP, 194
BF, 629, TEMP, 194
BF, 630, TEMP, 194
BF, 631, TEMP, 194
BF, 632, TEMP, 194
BF, 633, TEMP, 194
BF, 634, TEMP, 194
BF, 635, TEMP, 194
BF, 636, TEMP, 194
BF, 637, TEMP, 194
BF, 638, TEMP, 194
BF, 639, TEMP, 194
BF, 640, TEMP, 194
BF, 641, TEMP, 194
BF, 642, TEMP, 194
BF, 643, TEMP, 194
BF, 644, TEMP, 194
BF, 645, TEMP, 194
BF, 646, TEMP, 194
BF, 647, TEMP, 194
BF, 648, TEMP, 194
BF, 649, TEMP, 194
BF, 650, TEMP, 194
BF, 651, TEMP, 194
BF, 652, TEMP, 194
BF, 653, TEMP, 194
BF, 654, TEMP, 194
BF, 655, TEMP, 194
BF, 656, TEMP, 194
BF, 657, TEMP, 194
BF, 658, TEMP, 194
BF, 659, TEMP, 194
BF, 660, TEMP, 194
BF, 661, TEMP, 194
BF, 662, TEMP, 194
BF, 663, TEMP, 194
BF, 664, TEMP, 194
BF, 665, TEMP, 194
BF, 666, TEMP, 194
BF, 667, TEMP, 194
BF, 668, TEMP, 194
BF, 669, TEMP, 194
BF, 670, TEMP, 194
BF, 671, TEMP, 194
BF, 672, TEMP, 194
BF, 673, TEMP, 194
BF, 674, TEMP, 194
BF, 675, TEMP, 194
BF, 676, TEMP, 194

BF, 677, TEMP, 194
BF, 678, TEMP, 194
BF, 679, TEMP, 194
BF, 680, TEMP, 194
BF, 681, TEMP, 194
BF, 682, TEMP, 194
BF, 683, TEMP, 194
BF, 684, TEMP, 194
BF, 685, TEMP, 194
BF, 686, TEMP, 194
BF, 687, TEMP, 194
BF, 688, TEMP, 194
BF, 689, TEMP, 194
BF, 690, TEMP, 194
BF, 691, TEMP, 194
BF, 692, TEMP, 194
BF, 693, TEMP, 194
BF, 694, TEMP, 194
BF, 695, TEMP, 194
BF, 696, TEMP, 194
BF, 697, TEMP, 194
BF, 698, TEMP, 194
BF, 699, TEMP, 194
BF, 700, TEMP, 194
BF, 701, TEMP, 194
BF, 702, TEMP, 194
BF, 703, TEMP, 194
BF, 704, TEMP, 194
BF, 705, TEMP, 194
BF, 706, TEMP, 194
BF, 707, TEMP, 194
BF, 708, TEMP, 194
BF, 709, TEMP, 194
BF, 710, TEMP, 194
BF, 711, TEMP, 194
BF, 712, TEMP, 194
BF, 713, TEMP, 194
BF, 714, TEMP, 194
BF, 715, TEMP, 194
BF, 716, TEMP, 194
BF, 717, TEMP, 194
BF, 718, TEMP, 194
BF, 719, TEMP, 194
BF, 720, TEMP, 194
BF, 721, TEMP, 194
BF, 722, TEMP, 194
BF, 723, TEMP, 194
BF, 724, TEMP, 194
BF, 725, TEMP, 194
BF, 726, TEMP, 194
BF, 727, TEMP, 194
BF, 728, TEMP, 194
BF, 729, TEMP, 194
BF, 730, TEMP, 194
BF, 731, TEMP, 194
BF, 732, TEMP, 194
BF, 733, TEMP, 194

BF, 734, TEMP, 194
BF, 735, TEMP, 194
BF, 736, TEMP, 194
BF, 737, TEMP, 194
BF, 738, TEMP, 194
BF, 739, TEMP, 194
BF, 740, TEMP, 194
BF, 741, TEMP, 194
BF, 742, TEMP, 194
BF, 743, TEMP, 194
BF, 744, TEMP, 194
BF, 745, TEMP, 194
BF, 746, TEMP, 194
BF, 747, TEMP, 194
BF, 748, TEMP, 194
BF, 749, TEMP, 194
BF, 750, TEMP, 194
BF, 751, TEMP, 194
BF, 752, TEMP, 194
BF, 753, TEMP, 194
BF, 754, TEMP, 194
BF, 755, TEMP, 194
BF, 756, TEMP, 194
BF, 757, TEMP, 269
BF, 758, TEMP, 266.794
BF, 759, TEMP, 264.588
BF, 760, TEMP, 262.382
BF, 761, TEMP, 260.176
BF, 762, TEMP, 257.97
BF, 763, TEMP, 255.764
BF, 764, TEMP, 253.558
BF, 765, TEMP, 251.352
BF, 766, TEMP, 249.146
BF, 767, TEMP, 246.94
BF, 768, TEMP, 244.734
BF, 769, TEMP, 242.528
BF, 770, TEMP, 240.322
BF, 771, TEMP, 238.116
BF, 772, TEMP, 235.91
BF, 773, TEMP, 233.704
BF, 774, TEMP, 231.498
BF, 775, TEMP, 229.292
BF, 776, TEMP, 227.086
BF, 777, TEMP, 224.88
BF, 778, TEMP, 222.674
BF, 779, TEMP, 220.468
BF, 780, TEMP, 218.262
BF, 781, TEMP, 216.056
BF, 782, TEMP, 213.85
BF, 783, TEMP, 211.644
BF, 784, TEMP, 209.438
BF, 785, TEMP, 207.232
BF, 786, TEMP, 205.026
BF, 787, TEMP, 202.82
BF, 788, TEMP, 200.614
BF, 789, TEMP, 198.408
BF, 790, TEMP, 196.202

BF,791,TEMP,193.996
BF,792,TEMP,269
BF,793,TEMP,266.794
BF,794,TEMP,264.588
BF,795,TEMP,262.382
BF,796,TEMP,260.176
BF,797,TEMP,257.97
BF,798,TEMP,255.764
BF,799,TEMP,253.558
BF,800,TEMP,251.352
BF,801,TEMP,249.146
BF,802,TEMP,246.94
BF,803,TEMP,244.734
BF,804,TEMP,242.528
BF,805,TEMP,240.322
BF,806,TEMP,238.116
BF,807,TEMP,235.91
BF,808,TEMP,233.704
BF,809,TEMP,231.498
BF,810,TEMP,229.292
BF,811,TEMP,227.086
BF,812,TEMP,224.88
BF,813,TEMP,222.674
BF,814,TEMP,220.468
BF,815,TEMP,218.262
BF,816,TEMP,216.056
BF,817,TEMP,213.85
BF,818,TEMP,211.644
BF,819,TEMP,209.438
BF,820,TEMP,207.232
BF,821,TEMP,205.026
BF,822,TEMP,202.82
BF,823,TEMP,200.614
BF,824,TEMP,198.408
BF,825,TEMP,196.202
BF,826,TEMP,193.996
BF,827,TEMP,194
BF,828,TEMP,194
BF,829,TEMP,194
BF,830,TEMP,268
BF,831,TEMP,265.794
BF,832,TEMP,263.588
BF,833,TEMP,261.382
BF,834,TEMP,259.176
BF,835,TEMP,256.97
BF,836,TEMP,254.764
BF,837,TEMP,252.558
BF,838,TEMP,250.352
BF,839,TEMP,248.146
BF,840,TEMP,245.94
BF,841,TEMP,243.734
BF,842,TEMP,241.528
BF,843,TEMP,239.322
BF,844,TEMP,237.116
BF,845,TEMP,234.91
BF,846,TEMP,232.704
BF,847,TEMP,230.498

BF, 848, TEMP, 228.292
BF, 849, TEMP, 226.086
BF, 850, TEMP, 223.88
BF, 851, TEMP, 221.674
BF, 852, TEMP, 219.468
BF, 853, TEMP, 217.262
BF, 854, TEMP, 215.056
BF, 855, TEMP, 212.85
BF, 856, TEMP, 210.644
BF, 857, TEMP, 208.438
BF, 858, TEMP, 206.232
BF, 859, TEMP, 204.026
BF, 860, TEMP, 201.82
BF, 861, TEMP, 199.614
BF, 862, TEMP, 197.408
BF, 863, TEMP, 195.202
BF, 864, TEMP, 192.996
BF, 865, TEMP, 194
BF, 866, TEMP, 194
BF, 867, TEMP, 194
BF, 868, TEMP, 268
BF, 869, TEMP, 265.794
BF, 870, TEMP, 263.588
BF, 871, TEMP, 261.382
BF, 872, TEMP, 259.176
BF, 873, TEMP, 256.97
BF, 874, TEMP, 254.764
BF, 875, TEMP, 252.558
BF, 876, TEMP, 250.352
BF, 877, TEMP, 248.146
BF, 878, TEMP, 245.94
BF, 879, TEMP, 243.734
BF, 880, TEMP, 241.528
BF, 881, TEMP, 239.322
BF, 882, TEMP, 237.116
BF, 883, TEMP, 234.91
BF, 884, TEMP, 232.704
BF, 885, TEMP, 230.498
BF, 886, TEMP, 228.292
BF, 887, TEMP, 226.086
BF, 888, TEMP, 223.88
BF, 889, TEMP, 221.674
BF, 890, TEMP, 219.468
BF, 891, TEMP, 217.262
BF, 892, TEMP, 215.056
BF, 893, TEMP, 212.85
BF, 894, TEMP, 210.644
BF, 895, TEMP, 208.438
BF, 896, TEMP, 206.232
BF, 897, TEMP, 204.026
BF, 898, TEMP, 201.82
BF, 899, TEMP, 199.614
BF, 900, TEMP, 197.408
BF, 901, TEMP, 195.202
BF, 902, TEMP, 192.996
BF, 903, TEMP, 194
BF, 904, TEMP, 194

BF, 905, TEMP, 194
BF, 906, TEMP, 268
BF, 907, TEMP, 265.794
BF, 908, TEMP, 263.588
BF, 909, TEMP, 261.382
BF, 910, TEMP, 259.176
BF, 911, TEMP, 256.97
BF, 912, TEMP, 254.764
BF, 913, TEMP, 252.558
BF, 914, TEMP, 250.352
BF, 915, TEMP, 248.146
BF, 916, TEMP, 245.94
BF, 917, TEMP, 243.734
BF, 918, TEMP, 241.528
BF, 919, TEMP, 239.322
BF, 920, TEMP, 237.116
BF, 921, TEMP, 234.91
BF, 922, TEMP, 232.704
BF, 923, TEMP, 230.498
BF, 924, TEMP, 228.292
BF, 925, TEMP, 226.086
BF, 926, TEMP, 223.88
BF, 927, TEMP, 221.674
BF, 928, TEMP, 219.468
BF, 929, TEMP, 217.262
BF, 930, TEMP, 215.056
BF, 931, TEMP, 212.85
BF, 932, TEMP, 210.644
BF, 933, TEMP, 208.438
BF, 934, TEMP, 206.232
BF, 935, TEMP, 204.026
BF, 936, TEMP, 201.82
BF, 937, TEMP, 199.614
BF, 938, TEMP, 197.408
BF, 939, TEMP, 195.202
BF, 940, TEMP, 268
BF, 941, TEMP, 265.788
BF, 942, TEMP, 263.576
BF, 943, TEMP, 261.364
BF, 944, TEMP, 259.152
BF, 945, TEMP, 256.94
BF, 946, TEMP, 254.728
BF, 947, TEMP, 252.516
BF, 948, TEMP, 250.304
BF, 949, TEMP, 248.092
BF, 950, TEMP, 245.88
BF, 951, TEMP, 243.668
BF, 952, TEMP, 241.456
BF, 953, TEMP, 239.244
BF, 954, TEMP, 237.032
BF, 955, TEMP, 234.82
BF, 956, TEMP, 232.608
BF, 957, TEMP, 230.396
BF, 958, TEMP, 228.184
BF, 959, TEMP, 225.972
BF, 960, TEMP, 223.76
BF, 961, TEMP, 221.548

BF, 962, TEMP, 219.336
BF, 963, TEMP, 217.124
BF, 964, TEMP, 214.912
BF, 965, TEMP, 212.7
BF, 966, TEMP, 210.488
BF, 967, TEMP, 208.276
BF, 968, TEMP, 206.064
BF, 969, TEMP, 203.852
BF, 970, TEMP, 201.64
BF, 971, TEMP, 199.428
BF, 972, TEMP, 197.216
BF, 973, TEMP, 195.004
BF, 974, TEMP, 195
BF, 975, TEMP, 195
BF, 976, TEMP, 195
BF, 977, TEMP, 195
BF, 978, TEMP, 195
BF, 979, TEMP, 267
BF, 980, TEMP, 264.788
BF, 981, TEMP, 262.576
BF, 982, TEMP, 260.364
BF, 983, TEMP, 258.152
BF, 984, TEMP, 255.94
BF, 985, TEMP, 253.728
BF, 986, TEMP, 251.516
BF, 987, TEMP, 249.304
BF, 988, TEMP, 247.092
BF, 989, TEMP, 244.88
BF, 990, TEMP, 242.668
BF, 991, TEMP, 240.456
BF, 992, TEMP, 238.244
BF, 993, TEMP, 236.032
BF, 994, TEMP, 233.82
BF, 995, TEMP, 231.608
BF, 996, TEMP, 229.396
BF, 997, TEMP, 227.184
BF, 998, TEMP, 224.972
BF, 999, TEMP, 222.76
BF, 1000, TEMP, 220.548
BF, 1001, TEMP, 218.336
BF, 1002, TEMP, 216.124
BF, 1003, TEMP, 213.912
BF, 1004, TEMP, 211.7
BF, 1005, TEMP, 209.488
BF, 1006, TEMP, 207.276
BF, 1007, TEMP, 205.064
BF, 1008, TEMP, 202.852
BF, 1009, TEMP, 200.64
BF, 1010, TEMP, 198.428
BF, 1011, TEMP, 196.216
BF, 1012, TEMP, 194.004
BF, 1013, TEMP, 194
BF, 1014, TEMP, 194
BF, 1015, TEMP, 194
BF, 1016, TEMP, 194
BF, 1017, TEMP, 194
BF, 1018, TEMP, 266

BF,1019,TEMP,263.788
BF,1020,TEMP,261.576
BF,1021,TEMP,259.364
BF,1022,TEMP,257.152
BF,1023,TEMP,254.94
BF,1024,TEMP,252.728
BF,1025,TEMP,250.516
BF,1026,TEMP,248.304
BF,1027,TEMP,246.092
BF,1028,TEMP,243.88
BF,1029,TEMP,241.668
BF,1030,TEMP,239.456
BF,1031,TEMP,237.244
BF,1032,TEMP,235.032
BF,1033,TEMP,232.82
BF,1034,TEMP,230.608
BF,1035,TEMP,228.396
BF,1036,TEMP,226.184
BF,1037,TEMP,223.972
BF,1038,TEMP,221.76
BF,1039,TEMP,219.548
BF,1040,TEMP,217.336
BF,1041,TEMP,215.124
BF,1042,TEMP,212.912
BF,1043,TEMP,210.7
BF,1044,TEMP,208.488
BF,1045,TEMP,206.276
BF,1046,TEMP,204.064
BF,1047,TEMP,201.852
BF,1048,TEMP,199.64
BF,1049,TEMP,197.428
BF,1050,TEMP,195.216
BF,1051,TEMP,193.004
BF,1052,TEMP,193
BF,1053,TEMP,193
BF,1054,TEMP,193
BF,1055,TEMP,193
BF,1056,TEMP,193
BF,1057,TEMP,265
BF,1058,TEMP,262.788
BF,1059,TEMP,260.576
BF,1060,TEMP,258.364
BF,1061,TEMP,256.152
BF,1062,TEMP,253.94
BF,1063,TEMP,251.728
BF,1064,TEMP,249.516
BF,1065,TEMP,247.304
BF,1066,TEMP,245.092
BF,1067,TEMP,242.88
BF,1068,TEMP,240.668
BF,1069,TEMP,238.456
BF,1070,TEMP,236.244
BF,1071,TEMP,234.032
BF,1072,TEMP,231.82
BF,1073,TEMP,229.608
BF,1074,TEMP,227.396
BF,1075,TEMP,225.184

BF,1076,TEMP,222.972
BF,1077,TEMP,220.76
BF,1078,TEMP,218.548
BF,1079,TEMP,216.336
BF,1080,TEMP,214.124
BF,1081,TEMP,211.912
BF,1082,TEMP,209.7
BF,1083,TEMP,207.488
BF,1084,TEMP,205.276
BF,1085,TEMP,203.064
BF,1086,TEMP,200.852
BF,1087,TEMP,198.64
BF,1088,TEMP,196.428
BF,1089,TEMP,194.216
BF,1090,TEMP,192.004
BF,1091,TEMP,265
BF,1092,TEMP,262.788
BF,1093,TEMP,260.576
BF,1094,TEMP,258.364
BF,1095,TEMP,256.152
BF,1096,TEMP,253.94
BF,1097,TEMP,251.728
BF,1098,TEMP,249.516
BF,1099,TEMP,247.304
BF,1100,TEMP,245.092
BF,1101,TEMP,242.88
BF,1102,TEMP,240.668
BF,1103,TEMP,238.456
BF,1104,TEMP,236.244
BF,1105,TEMP,234.032
BF,1106,TEMP,231.82
BF,1107,TEMP,229.608
BF,1108,TEMP,227.396
BF,1109,TEMP,225.184
BF,1110,TEMP,222.972
BF,1111,TEMP,220.76
BF,1112,TEMP,218.548
BF,1113,TEMP,216.336
BF,1114,TEMP,214.124
BF,1115,TEMP,211.912
BF,1116,TEMP,209.7
BF,1117,TEMP,207.488
BF,1118,TEMP,205.276
BF,1119,TEMP,203.064
BF,1120,TEMP,200.852
BF,1121,TEMP,198.64
BF,1122,TEMP,196.428
BF,1123,TEMP,194.216
BF,1124,TEMP,192.004
BF,1125,TEMP,191
BF,1126,TEMP,191
BF,1127,TEMP,191
BF,1128,TEMP,191
BF,1129,TEMP,265
BF,1130,TEMP,262.788
BF,1131,TEMP,260.576
BF,1132,TEMP,258.364

BF, 1133, TEMP, 256.152
BF, 1134, TEMP, 253.94
BF, 1135, TEMP, 251.728
BF, 1136, TEMP, 249.516
BF, 1137, TEMP, 247.304
BF, 1138, TEMP, 245.092
BF, 1139, TEMP, 242.88
BF, 1140, TEMP, 240.668
BF, 1141, TEMP, 238.456
BF, 1142, TEMP, 236.244
BF, 1143, TEMP, 234.032
BF, 1144, TEMP, 231.82
BF, 1145, TEMP, 229.608
BF, 1146, TEMP, 227.396
BF, 1147, TEMP, 225.184
BF, 1148, TEMP, 222.972
BF, 1149, TEMP, 220.76
BF, 1150, TEMP, 218.548
BF, 1151, TEMP, 216.336
BF, 1152, TEMP, 214.124
BF, 1153, TEMP, 211.912
BF, 1154, TEMP, 209.7
BF, 1155, TEMP, 207.488
BF, 1156, TEMP, 205.276
BF, 1157, TEMP, 203.064
BF, 1158, TEMP, 200.852
BF, 1159, TEMP, 198.64
BF, 1160, TEMP, 196.428
BF, 1161, TEMP, 194.216
BF, 1162, TEMP, 192.004
BF, 1163, TEMP, 191
BF, 1164, TEMP, 191
BF, 1165, TEMP, 191
BF, 1166, TEMP, 191
BF, 1167, TEMP, 265
BF, 1168, TEMP, 262.788
BF, 1169, TEMP, 260.576
BF, 1170, TEMP, 258.364
BF, 1171, TEMP, 256.152
BF, 1172, TEMP, 253.94
BF, 1173, TEMP, 251.728
BF, 1174, TEMP, 249.516
BF, 1175, TEMP, 247.304
BF, 1176, TEMP, 245.092
BF, 1177, TEMP, 242.88
BF, 1178, TEMP, 240.668
BF, 1179, TEMP, 238.456
BF, 1180, TEMP, 236.244
BF, 1181, TEMP, 234.032
BF, 1182, TEMP, 231.82
BF, 1183, TEMP, 229.608
BF, 1184, TEMP, 227.396
BF, 1185, TEMP, 225.184
BF, 1186, TEMP, 222.972
BF, 1187, TEMP, 220.76
BF, 1188, TEMP, 218.548
BF, 1189, TEMP, 216.336

BF, 1190, TEMP, 214.124
BF, 1191, TEMP, 211.912
BF, 1192, TEMP, 209.7
BF, 1193, TEMP, 207.488
BF, 1194, TEMP, 205.276
BF, 1195, TEMP, 203.064
BF, 1196, TEMP, 200.852
BF, 1197, TEMP, 198.64
BF, 1198, TEMP, 196.428
BF, 1199, TEMP, 194.216
BF, 1200, TEMP, 192.004
BF, 1201, TEMP, 191
BF, 1202, TEMP, 266
BF, 1203, TEMP, 263.917
BF, 1204, TEMP, 261.834
BF, 1205, TEMP, 259.751
BF, 1206, TEMP, 257.668
BF, 1207, TEMP, 255.585
BF, 1208, TEMP, 253.502
BF, 1209, TEMP, 251.419
BF, 1210, TEMP, 249.336
BF, 1211, TEMP, 247.253
BF, 1212, TEMP, 245.17
BF, 1213, TEMP, 243.087
BF, 1214, TEMP, 241.004
BF, 1215, TEMP, 238.921
BF, 1216, TEMP, 236.838
BF, 1217, TEMP, 234.755
BF, 1218, TEMP, 232.672
BF, 1219, TEMP, 230.589
BF, 1220, TEMP, 228.506
BF, 1221, TEMP, 226.423
BF, 1222, TEMP, 224.34
BF, 1223, TEMP, 222.257
BF, 1224, TEMP, 220.174
BF, 1225, TEMP, 218.091
BF, 1226, TEMP, 216.008
BF, 1227, TEMP, 213.925
BF, 1228, TEMP, 211.842
BF, 1229, TEMP, 209.759
BF, 1230, TEMP, 207.676
BF, 1231, TEMP, 205.593
BF, 1232, TEMP, 203.51
BF, 1233, TEMP, 201.427
BF, 1234, TEMP, 199.344
BF, 1235, TEMP, 197.261
BF, 1236, TEMP, 195.178
BF, 1237, TEMP, 193.095
BF, 1238, TEMP, 191.012
BF, 1239, TEMP, 266
BF, 1240, TEMP, 263.917
BF, 1241, TEMP, 261.834
BF, 1242, TEMP, 259.751
BF, 1243, TEMP, 257.668
BF, 1244, TEMP, 255.585
BF, 1245, TEMP, 253.502
BF, 1246, TEMP, 251.419

*Revised Thermal
Stress 0.55" ϵ
New wt.*

1	8317.15	8317.15	-20.825	SINT	8337.975
2	9023.55	8352.4	298.19		8725.36
3	10058.85	9063.65	-144.9611		10203.81
4	11227.55	9823.1	-154.44		11381.99
5	11824.15	10091.75	-272.705		12096.86
6	10075.5	8137.1	-848.82		10924.32
7	7018.05	4527.81	-3371.4		10389.45
8	4429.965	1545.61	-6958.45		11388.42
9	3224.05	-2.95	-10200.6		13424.65
10	2544.65	-72.85	-8481.3		11025.95
11	2372.638	1708.595	-3924.95		6297.588
12	6022.8	3327.62	-944.14		6966.94
13	7647.75	4461.55	-292.5		7940.25
14	7519	4332.7	9.76048		7509.24
15	6793.45	3659.075	-6.154445		6799.604
16	6235.1	3130.285	5.812		6229.288
17	5874.1	2838.259	-119.752		5993.852
18	5712.95	2617.932	-151.226		5864.176
19	5676.2	2423.752	-111.7846		5787.985
20	5706	2254.282	-43.4121		5749.412
21	5764.05	2142.045	-11.40875		5775.459
22	5830.25	2061.17	-6.30185		5836.552
23	5897.5	1981.84	-3.80274		5901.303
24	5970.45	1905.585	-0.7571		5971.207
25	6067.15	1846.835	4.164505		6062.985
26	6224	1834.45	11.31415		6212.686
27	6500.3	1914.35	21.414		6478.886
28	6971.3	2142.15	26.8995		6944.401
29	7708.9	2568.6	31.483		7677.417
30	8644.7	3124.85	-21.8215		8666.522
31	9587.15	3657.25	-58.685		9645.835
32	9750.15	3509.7	-262.35		10012.5
33	7559.05	1589.975	-902.38		8461.43
34	5025.4	341.705	-1235.9		6261.3
35	6621.8	-102.85	-1020.535		7642.335
36	3730.669	-552.855	-2083.15		5813.819

NODE

*****	0			0
	0			0
LOAD				0
TIME=				0
	0			0
NODE				0
79	7596.505	6566.029	-864.74	8461.245
80	8302.65	7024	-2503	10805.65
81	10764.95	7381.35	-4715.75	15480.7
82	10584.35	7460.65	-6147.65	16732
83	12233.45	10250.4	2295.95	9937.5
84	11221.95	9972.5	3237.271	7984.68
85	9271.7	6671.15	-4547.4	13819.1
86	9725.65	6685.3	-1727.25	11452.9
87	8846.4	5934.49	-510.675	9357.075
88	8993.55	6103.05	-131.29	9124.84
89	9110.85	6175.25	34.119	9076.731
90	9242.2	6211.1	85.3415	9156.859
91	9344.4	6207.4	70.515	9273.885
92	9428.65	6178.8	43.004	9385.646
93	9500.4	6130.35	21.0085	9479.392
94	9568.25	6070.5	7.18975	9561.06
95	9636.2	6004.5	0.103345	9636.097
96	9706.55	5935.25	-2.2938	9708.844
97	9779.6	5864.15	-0.716905	9780.317
98	9854.05	5791.2	5.80155	9848.248
99	9927.4	5715	19.629	9907.771
100	9993.35	5631.85	43.355	9949.995
101	10044.15	5536.15	76.2155	9967.935
102	10067.25	5418.2	108.806	9958.444
103	10056.45	5271.55	114.3525	9942.098
104	10005.05	5082.9	27.81534	9977.235
105	9962.35	4894.7	-209.95	10172.3
106	9952.35	4713.75	-683.98	10636.33
107	10941.5	5280.8	-1587.05	12528.55
108	10402.5	4623.2	-3607.9	14010.4
109	10776	4417.35	-4866.5	15642.5
110	8050.2	2427.495	-4863.75	12913.95
111	4981.55	-863.05	-8657.55	13639.1
112	8145.85	6537.9	-885.45	9031.3
113	7928.11	6359.4	-1289.965	9218.075
114	7425.805	5807.85	-1084.65	8510.455
115	6082.101	4793.2	-2178.47	8260.571
116	5257.29	4294.75	-2323.565	7580.855
117	6680.805	4602.7	-3232.2	9913.005
*****	0			0
	0			0

LOAD

TIME=

0

NODE

118	12052.45	6524.7	-4399.45	16451.9
119	24887.5	10158.25	-9143.3	34030.8
120	23140	18690	14662	8478
121	19465	16466	13677.85	5787.15
122	17182.7	11381.9	-5723.1	22905.8
123	10429	7513.67	-1347.15	11776.15
124	9625.95	6851.775	-783.43	10409.38
125	9813.85	7116.7	-191.545	10005.4
126	10497.9	7669.95	22.2893	10475.61
127	11122.55	8139.4	89.999	11032.55
128	11552.3	8424.4	76.016	11476.28
129	11810.2	8549.85	45.534	11764.67
130	11960.9	8572.95	20.9735	11939.93
131	12056.35	8540.75	5.19845	12051.15
132	12131.5	8483.8	-3.04545	12134.55
133	12203.95	8419.8	-5.81255	12209.76
134	12280.45	8353.1	-3.64225	12284.09
135	12354.7	8281.65	4.9752	12349.72
136	12409	8190.9	23.3885	12385.61
137	12406.5	8055	55.519	12350.98
138	12291.5	7829.35	101.7305	12189.77
139	11991	7460.45	151.82	11839.18
140	11444	6902.25	172.11	11271.89
141	10672.5	6172.5	65.0305	10607.47
142	9941.75	5486.65	-205.37	10147.12
143	9947.9	5377.3	-1066.075	11013.98
144	11012.45	6206.05	-1288.4	12300.85
145	18529.5	10994.05	-4507.1	23036.6
146	40071	19625	966.19	39104.81
147	33985.5	22004	16324	17661.5
148	10417.4	4284	-4954.9	15372.3
149	748.705	-9310.25	-9310.25	10058.96
150	793.455	-9260.7	-9355.45	10148.91
151	592.79	-9192.85	-9364.65	9957.44
152	279.16	-9123.7	-9332.6	9611.76
153	-1137.45	-9055	-9531.05	8393.6
154	-3160.9	-9209.4	-10125	6964.1
155	-5526.6	-10119.9	-11112	5585.4
156	-6231.5	-11509.5	-12138	5906.5

0

0

LOAD

TIME=

0

NODE

157	-9407.15	-13413	-13952.5	4545.35
158	-7037.95	-8297.8	-10690.55	3652.6
159	-3860.4	-8005.4	-9064.6	5204.2
160	-2331.55	-7410.65	-8075.85	5744.3
161	-900.645	-7393.95	-7556.15	6655.505
162	-134.944	-7235.4	-7556.85	7421.906
163	135.805	-7187.05	-7593.2	7729.005
164	168.395	-7207.5	-7572.2	7740.595
165	127.115	-7215.95	-7558.95	7686.065
166	77.6135	-7188.55	-7584.8	7662.414
167	40.2375	-7164.35	-7610.1	7650.338
168	17.194	-7142	-7633.95	7651.144
169	5.1024	-7120.65	-7656.3	7661.402
170	0.687155	-7099.85	-7677.1	7677.787
171	2.87245	-7079.45	-7696.6	7699.472
172	13.3905	-7059.45	-7714.6	7727.991
173	36.4485	-7040.2	-7731	7767.449
174	77.0245	-7022.55	-7745.8	7822.825
175	136.35	-7007.7	-7759.8	7896.15
176	202.08	-6997.35	-7775.15	7977.23
177	229.645	-6992.4	-7797.55	8027.195
178	118.9925	-6991.7	-7837.35	7956.343
179	-327.46	-7031.25	-7949.25	7621.79
180	-1303.05	-7297	-8313.35	7010.3
181	-2783.45	-8699.5	-9678.3	6894.85
182	-2567.45	-11246.15	-14487.5	11920.05
183	-10254.85	-16362.5	-19194	8939.15
184	699.64	-9198.4	-9198.4	9898.04
185	742.425	-9166.2	-9262.05	10004.48
186	532.485	-9138.4	-9304.3	9836.785
187	113.5905	-9148.3	-9335.1	9448.691
188	-1135.85	-9173.85	-9658.85	8523
189	-3248.5	-8966.9	-10171.5	6923
190	-6066.6	-8722.1	-10789	4722.4
191	-7376.35	-8197.65	-10767.5	3391.15
192	-7473.2	-9335.8	-10819.5	3346.3
193	32781.5	16452.5	-14538	47319.5
194	33942.5	13459	-13004	46946.5
195	-5447.85	-6790.6	-9373.5	3925.65

Q

Q

LOAD
TIME=

Q

NODE

196	-4216.25	-6296.3	-8192.55	3976.3
197	-2325.05	-7116.5	-7623.4	5298.35

198	-804.24	-7081.2	-7304.4	6500.16
199	-97.778	-6874.05	-7355.6	7257.822
200	127.18	-6805.9	-7264.75	7391.93
201	150.225	-6793.8	-7148.5	7298.725
202	110.841	-6757.65	-7109.55	7220.391
203	65.338	-6713.45	-7119.15	7184.488
204	31.434	-6682.8	-7137.5	7168.934
205	10.80505	-6658.95	-7159.05	7169.855
206	0.2071	-6637.85	-7180.65	7180.857
207	-3.4542	-6617.4	-7201.1	7197.646
208	-1.195875	-6596.95	-7219.95	7218.754
209	8.5743	-6576.7	-7237.5	7246.074
210	29.7785	-6558.55	-7254.7	7284.479
211	67.1775	-6546.2	-7274.1	7341.278
212	122.3805	-6546	-7300.65	7423.031
213	184.87	-6567.45	-7342.5	7527.37
214	215.84	-6619.8	-7411.2	7627.04
215	122.354	-6705.8	-7518.7	7641.054
216	-270.87	-6801	-7665.8	7394.93
217	-1242	-6880.85	-7866.75	6624.75
218	-2908.8	-7091.2	-8259	5350.2
219	-3722.45	-7276.05	-8492.7	4770.25
220	-3635.2	-8720.45	-9500	5864.8
221	29018.5	19180.5	-8341.05	37359.55
222	33811.5	20118	-8060.3	41871.8
223	557.9655	-8693.4	-8693.4	9251.366
224	581.59	-8681.85	-8774.45	9356.04
225	499.305	-8671.8	-8906.3	9405.605
226	274.63	-8803.55	-8980.05	9254.68
227	-684.46	-9033.05	-9252.25	8567.79
228	-2702.65	-8793.7	-9791.1	7088.45
229	-5801.3	-8400.75	-10446.5	4645.2
230	-7416.95	-8915.55	-10839	3422.05
231	-8067.65	-8962.55	-10714.3	2646.65
232	31026.5	20743	-3099.05	34125.55
233	35621.5	19936	-157.165	35778.67
234	-5410.65	-6891.6	-9160.9	3750.25
Q				0
*****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
235	-4688.75	-6389.9	-8208.05	3519.3
236	-1827	-6587.2	-6933.55	5106.55
237	-455.01	-6584.15	-7001.45	6546.44
238	-3.5995	-6438.4	-6923.9	6927.5
239	-118.59	-6367.35	-6736.2	6854.79

240	118.48	-6318.3	-6635.4	6753.88
241	83.6	-6259.55	-6631.85	6715.45
242	48.1045	-6224.2	-6646.75	6694.855
243	22.5895	-6199.5	-6668.2	6690.79
244	7.389	-6179.05	-6690.9	6698.289
245	-0.32197	-6159.75	-6712.8	6712.478
246	-3.01135	-6140.3	-6733.05	6730.039
247	-1.493385	-6120.05	-6751.45	6749.957
248	5.4238	-6099.25	-6768.05	6773.474
249	20.775	-6078.85	-6783.45	6804.225
250	48.5005	-6061.5	-6799.4	6847.901
251	90.7905	-6052.85	-6820.2	6910.991
252	141.85	-6062.9	-6854.25	6996.1
253	175.9	-6106.15	-6915.75	7091.65
254	125.1605	-6195.95	-7022.6	7147.761
255	-146.82	-6302.35	-7165.4	7018.58
256	-913.095	-6198.95	-7191.65	6278.555
257	-2631.9	-4708.25	-6777.4	4145.5
258	-1124.08	-6744.75	-7547.35	6423.27
259	378.05	-4696.45	-5506.1	5884.15
260	18602	4543.7	-2054.35	20656.35
261	63915	37981	4905.05	59009.95
262	389.518	-7911.25	-7911.25	8300.768
263	352.055	-7854.75	-7953.35	8305.405
264	374.195	-7744.95	-7929.55	8303.745
265	412.5	-7767.05	-7992.55	8405.05
266	-166.25	-8184.85	-8423.7	8257.45
267	-1843.5	-8860.75	-9153.6	7310.1
268	-5091.25	-9458.9	-10433	5341.75
269	-6882	-10024.1	-11042.5	4160.5
270	-6887.55	-11340	-12128	5240.45
271	33817.5	18712	-17404	51221.5
272	32599	14772.5	-13876	46475
273	-3361.7	-9720.25	-10587.5	7225.8
Q				0
*****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
274	-3435	-6493.9	-7401.9	3966.9
275	-859.775	-6429.1	-6752.9	5893.125
276	-72.37	-6058.8	-6420.95	6348.58
277	57.3425	-5850.6	-6103.85	6161.193
278	81.5725	-5742.25	-6052.4	6133.973
279	69.3605	-5724.25	-6083.2	6152.561
280	46.5565	-5723.9	-6127.95	6174.507
281	25.849	-5721.05	-6168.1	6193.949

282	11.6965	-5712.25	-6200.65	6212.347
283	3.5124	-5698.75	-6227.3	6230.812
284	-0.573428	-5682.45	-6250	6249.427
285	-2.04295	-5664.55	-6270.25	6268.207
286	-1.3905	-5645.55	-6288.7	6287.31
287	2.04045	-5624.8	-6304.7	6306.74
288	10.0099	-5600.65	-6317	6327.01
289	25.019	-5570.9	-6323.3	6348.319
290	49.1095	-5533.5	-6322	6371.11
291	81.1715	-5489.7	-6314.1	6395.272
292	109.737	-5449.45	-6309.3	6419.037
293	102.653	-5439.05	-6333.05	6435.703
294	-25.7635	-5523	-6448.5	6422.737
295	-386.81	-5761.35	-6719.5	6332.69
296	-1184.855	-6263.05	-7256.95	6072.095
297	-2364.1	-7525.45	-8382	6017.9
298	-1777.7	-8522.35	-11333.75	9556.05
299	28982.5	21251	-7732.4	36714.9
300	36078	26208.5	-7045.2	43123.2
301	313.701	-7302.9	-7302.9	7616.601
302	215.22	-7164.6	-7283.1	7498.32
303	286.76	-6720.4	-6919.8	7206.56
304	577.26	-6148.35	-6426.25	7003.51
305	210.855	-5961	-6321.7	6532.555
306	-1037	-7043.95	-7500.65	6463.65
307	-4286.85	-9818.05	-10875.5	6588.65
308	-7494.5	-12753	-14853.5	7359
309	-12447.5	-16103	-18140.5	5693
310	-9152.3	-12670.5	-13206	4053.7
311	-4156.75	-8399.45	-8628.75	4472
312	-408.88	-4683	-5548.4	5139.52

0

0

0

0

0

LOAD

0

TIME=

0

0

0

NODE

0

313	167.08	-3907.5	-4872.4	5039.48
314	131.17	-4399.5	-4984.2	5115.37
315	95.1005	-4809.95	-5206.2	5301.301
316	66.6785	-4995.75	-5413.4	5480.079
317	43.436	-5089.25	-5536.35	5579.786
318	25.936	-5125.25	-5606.8	5632.736
319	15.048	-5128.8	-5647.05	5662.098
320	8.9694	-5116.95	-5672.5	5681.469
321	5.8687	-5099.9	-5692.35	5698.219
322	4.46865	-5082.75	-5711.35	5715.819
323	4.26155	-5067.1	-5731	5735.262

324	5.4757	-5051.5	-5750.1	5755.576
325	9.0081	-5030.7	-5764.15	5773.158
326	16.2705	-4993.85	-5764.2	5780.471
327	28.6465	-4922.6	-5735.05	5763.697
328	46.509	-4790.8	-5655.65	5702.159
329	65.2525	-4570.2	-5504.3	5569.553
330	71.3435	-4252.5	-5278	5349.344
331	18.79385	-3909.6	-5046.25	5065.044
332	-110.415	-4008.25	-5202.75	5092.335
333	-392.55	-6246.3	-7436.4	7043.85
334	-3016	-10288.35	-14690.5	11674.5
335	-12309.05	-16859	-21415.5	9106.45
336	18406.3	18406.3	411.857	17994.44
337	18171.05	17978	-271.91	18442.96
338	17310.25	16342.2	1086.975	16223.28
339	14935.9	12397.55	-130.484	15066.38
340	12086.6	7331.285	-145.77	12232.37
341	9564.5	5935.695	-1734.75	11299.25
342	15871	11520.4	-2657.9	18528.9
343	45766	19528	-11004	56770
344	34715	28477	15887.5	18827.5
345	34925.5	27481.5	15055.5	19870
346	35176.5	24958	-7063.85	42240.35
347	20286	14913.25	1354.15	18931.85
348	24737	20443.5	-377.025	25114.03
349	27471	23125.5	76.722	27394.28
350	28110.5	23831.5	-35.1575	28145.66
351	28306	24100.5	-0.32372	28306.32
Q				0
*****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
352	28371.5	24209	-6.85055	28378.35
353	28383	24236	-4.73205	28387.73
354	28378.5	24219	-5.144	28383.64
355	28381.5	24184.5	-4.81175	28386.31
356	28399.5	24144.5	-4.60075	28404.1
357	28434.5	24103	-4.36265	28438.86
358	28487	24063	-4.1696	28491.17
359	28554.5	24025.5	-3.98575	28558.49
360	28636	23990	-3.55935	28639.56
361	28721	23950	-2.9193	28723.92
362	28787	23887.5	-0.17878	28787.18
363	28778.5	23761.5	0.517293	28777.98
364	28602	23499	18.7405	28583.26
365	28083.5	22960.5	-15.327	28098.83

366	26963.5	21976	166.805	26796.7
367	24152.5	19650	-400.26	24552.76
368	21980	12797.5	2130	19850
369	34299.5	24894	-8216.75	42516.25
370	32465	27012.5	16826.5	15638.5
371	18228	6014.8	-1284.88	19512.88
372	19955.5	19955.5	411.857	19543.64
373	20351.5	19789.5	-367.33	20718.83
374	22188.5	20790	793.65	21394.85
375	26250	22657.5	-485.075	26735.08
376	31401.5	26081	10.3155	31391.18
377	32965.5	28275	-676.67	33642.17
378	26035.5	23482	-1165.7	27201.2
379	14206.75	1444.25	-16057.5	30264.25
380	11260.8	1066.115	-13032.55	24293.35
381	14952.5	10596.45	-1592.65	16545.15
382	28278	16604	-8799.5	37077.5
383	46124.5	28651	1963.6	44160.9
384	36654.5	26738.5	-135.1005	36789.6
385	31962	26194	131.875	31830.13
386	30672	26054.5	-19.306	30691.31
387	30352.5	25926.5	5.87445	30346.63
388	30212.5	25886	-4.8532	30217.35
389	30173	25887	-4.43715	30177.44
390	30184	25896	-5.22915	30189.23

Q

0

0

Q

0

LOAD

0

TIME=

0

Q

0

NODE

0

391	30214.5	25896	-4.7957	30219.3
392	30251.5	25880.5	-4.3801	30255.88
393	30288.5	25849.5	-3.94635	30292.45
394	30323	25803	-3.5814	30326.58
395	30353	25742	-3.26	30356.26
396	30379.5	25670	-2.79375	30382.29
397	30409.5	25594	-2.37925	30411.88
398	30467	25534.5	-0.446554	30467.45
399	30603	25533	-1.6725	30604.67
400	30916	25668	12.88675	30903.11
401	31564	26055	-27.6025	31591.6
402	32866.5	26964	143.435	32723.07
403	35694.5	28938	-453.64	36148.14
404	42297.5	32928	2066.2	40231.3
405	25987.5	20064.5	-7889.35	33876.85
406	20171	7246.25	-4152.95	24323.95
407	17967.5	1083.915	-2125.4	20092.9

408	7961.45	633.055	-6076.2	14037.65
409	10738.35	5927.9	1423.69	9314.66
410	4351.35	623.07	315.34	4036.01
411	3338.55	614.14	-161.205	3499.755
412	2758.7	228.91	26.78	2731.92
413	2266.3	106.14	-365.035	2631.335
414	-171.795	-615.5	-3763.85	3592.055
415	-70.5155	-522.925	-2940.9	2870.385
416	357.41	-443.765	-2373.4	2730.81
417	73.571	-543.255	-2221.75	2295.321
425	7501.65	1038.47	-301.19	7802.84
426	3420.575	102.16	-559.22	3979.795
427	3288.33	-1491.17	-4217.405	7505.735
428	5534.05	1225.962	-100.228	5634.278
429	2404.165	-47.59	-946.675	3350.84
430	1872.451	-1686.585	-4137.1	6009.551
431	3821.2	1870.825	-421.8525	4243.053
432	1568.67	-58.472	-967.77	2536.44
433	912.757	-1443.554	-3575.15	4487.907
434	2862.4	1433.373	-668.33	3530.73
435	916.705	-55.274	-879.2815	1795.987
436	252.2015	-846.165	-3098.6	3350.802
Q				0
****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
437	1437.01	803.6526	-628.1265	2065.137
438	475.864	56.61	-752.124	1227.988
439	83.321	-231.7675	-1904.4	1987.721
440	523.0875	202.762	-652.185	1175.273
441	103.4795	-17.802	-1078.065	1181.545
442	1127.241	-24.99	-439.398	1566.639
443	274.746	-432.797	-1397.98	1672.726
444	773.0836	-294.141	-337.6286	1110.712
445	334.1204	-431.1752	-883.115	1217.235
446	473.6397	-210.53	-422.735	896.3747
447	327.6351	-373.3117	-483.3655	811.0006
448	246.8663	-122.4312	-428.84	675.7063
449	279.0577	-199.454	-291.6024	570.66
450	89.73142	-57.78772	-374.76	464.4914
451	215.8714	-17.48	-207.8537	423.7252
452	3.97571	-27.0545	-295.04	299.0157
453	164.6015	72.34875	-134.14	298.7415
454	12.19045	-62.33158	-211.87	224.0605
455	158.68	67.7714	-75.79207	234.4721
456	24.37512	-82.63649	-137.945	162.3201

NODE

499	0.25696	0.092875	-0.057003	0.313963
500	0.052406	-0.100839	-0.192477	0.244883
501	0.22691	0.037525	-0.007652	0.234562
502	0.04835	-0.057637	-0.135981	0.18433
503	0.180123	0.024173	-0.001619	0.181742
504	0.039675	-0.010205	-0.10286	0.142536
505	0.130386	0.033496	-0.017987	0.148372
506	0.029623	0.018943	-0.072717	0.102339
507	0.085682	0.03587	-0.026309	0.111991
508	0.032432	0.020156	-0.046505	0.078936
509	0.049714	0.032411	-0.027398	0.077112
510	0.035502	0.012278	-0.025928	0.061429
511	0.026187	0.023348	-0.024349	0.050536
512	0.032441	0.006336	-0.011197	0.043638
513	0.019275	0.005785	-0.019443	0.038718
514	0.026426	0.002384	-0.001777	0.028203
Q				0
*****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
515	0.012908	-0.004471	-0.014305	0.027214
516	0.019595	0.003945	-0.000423	0.020018
517	0.007691	-0.005794	-0.01328	0.020971
518	0.01323	0.006383	-0.001734	0.014963
519	0.003803	-0.004865	-0.011823	0.015626
520	0.009509	0.005339	-0.002233	0.011743
521	0.001165	-0.00259	-0.01056	0.011725
522	0.006946	0.003306	-0.002211	0.009156
523	2.69E-05	-0.001149	-0.008767	0.008794
524	0.005066	0.001295	-0.001904	0.006969
525	0.000475	-0.001281	-0.006612	0.007087
526	0.003727	-0.000351	-0.001481	0.005209
527	0.001026	-0.00155	-0.004547	0.005573
528	0.0025	-0.001052	-0.001211	0.003712
529	0.001196	-0.001494	-0.002806	0.004002
530	0.001494	-0.000676	-0.001522	0.003016
531	0.00113	-0.001254	-0.001487	0.002618
532	0.000743	-0.00038	-0.001489	0.002232
533	0.000944	-0.00055	-0.00097	0.001914
534	0.000234	-0.000169	-0.001272	0.001506
535	0.000717	2.92E-05	-0.000679	0.001396
536	7.55E-06	-0.000115	-0.000983	0.000991
537	0.000581	0.000259	-0.000428	0.00101
538	5.47E-05	-0.000242	-0.000693	0.000748
539	0.000548	0.000231	-0.000234	0.000782
540	9.06E-05	-0.000277	-0.000461	0.000552

541	0.00048	0.000162	-9.58E-05	0.000576
542	9.84E-05	-0.000181	-0.000351	0.000449
543	0.000419	6.24E-05	-7.56E-06	0.000426
544	8.95E-05	-9.97E-05	-0.000248	0.000337
545	0.000329	4.6E-05	-5.01E-06	0.000334
546	7.27E-05	-1.22E-05	-0.000188	0.00026
547	0.000236	6.41E-05	-3.62E-05	0.000272
548	5.38E-05	3.92E-05	-0.000131	0.000185
549	0.000154	6.72E-05	-5.02E-05	0.000204
550	6.22E-05	3.63E-05	-8.31E-05	0.000145
551	8.77E-05	5.99E-05	-5.12E-05	0.000139
552	6.65E-05	2.18E-05	-4.55E-05	0.000112
553	4.79E-05	3.99E-05	-4.5E-05	9.29E-05
Q				0
*****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
554	6E-05	1.1E-05	-1.89E-05	7.89E-05
555	3.5E-05	8.36E-06	-3.56E-05	7.06E-05
556	4.84E-05	4.05E-06	-2.21E-06	5.06E-05
557	2.32E-05	-9.6E-06	-2.62E-05	4.93E-05
558	3.55E-05	8.06E-06	-1.14E-06	3.67E-05
559	1.36E-05	-1.08E-05	-2.49E-05	3.85E-05
560	2.37E-05	1.22E-05	-3.43E-06	2.72E-05
561	6.53E-06	-8.96E-06	-2.19E-05	2.85E-05
562	1.74E-05	9.61E-06	-4.25E-06	2.16E-05
563	1.79E-06	-4.51E-06	-1.97E-05	2.15E-05
564	1.26E-05	5.87E-06	-4.13E-06	1.67E-05
565	5.2E-08	-2.2E-06	-1.62E-05	1.62E-05
566	9.28E-06	2.03E-06	-3.52E-06	1.28E-05
567	9.75E-07	-2.51E-06	-1.21E-05	1.31E-05
568	6.77E-06	-8.97E-07	-2.72E-06	9.49E-06
569	1.94E-06	-2.94E-06	-8.27E-06	1.02E-05
570	4.5E-06	-1.91E-06	-2.39E-06	6.88E-06
571	2.21E-06	-2.77E-06	-5.06E-06	7.26E-06
572	2.64E-06	-1.22E-06	-2.89E-06	5.53E-06
573	2.06E-06	-2.25E-06	-2.68E-06	4.73E-06
574	1.26E-06	-6.73E-07	-2.78E-06	4.03E-06
575	1.7E-06	-9.19E-07	-1.73E-06	3.43E-06
576	3.05E-07	-2.94E-07	-2.36E-06	2.66E-06
577	1.29E-06	1.59E-07	-1.16E-06	2.45E-06
578	9.33E-09	-3.65E-07	-1.84E-06	1.85E-06
579	1.18E-06	5.09E-07	-6.65E-07	1.84E-06
580	1E-07	-6.76E-07	-1.34E-06	1.44E-06
581	1.2E-06	4.54E-07	-2.86E-07	1.48E-06
582	1.46E-07	-5.29E-07	-1.28E-06	1.43E-06

583	1.17E-06	3.32E-07	-2E-08	1.19E-06
584	1.34E-07	-4.28E-07	-1.21E-06	1.34E-06
585	1.16E-06	3.06E-07	-1.97E-09	1.16E-06
586	8.11E-08	-4.05E-07	-1.15E-06	1.23E-06
587	1.08E-06	2.57E-07	-1.76E-09	1.09E-06
588	3.66E-09	-4.65E-07	-1.09E-06	1.1E-06
589	9.69E-07	1.46E-07	-1.94E-09	9.71E-07
590	1.39E-09	-6.77E-07	-9.73E-07	9.74E-07
591	8.38E-07	-1.08E-08	-1.38E-07	9.76E-07
592	1.41E-08	-6.91E-07	-9.52E-07	9.66E-07
Q				0
****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
593	6.27E-07	-8.47E-08	-5.69E-07	1.2E-06
594	1.32E-07	-2.85E-07	-1.21E-06	1.35E-06
595	2.35E-07	-2.14E-07	-1.14E-06	1.37E-06
596	7.51E-07	-3.75E-09	-1.38E-06	2.13E-06
597	1.36E-09	-8.77E-07	-1.83E-06	1.83E-06
598	2.16E-06	6.17E-09	-1.32E-06	3.48E-06
599	-3.99E-09	-2.18E-06	-2.71E-06	2.71E-06
600	4.19E-06	7.57E-09	-8.58E-07	5.05E-06
601	-1.38E-09	-3.36E-06	-4.3E-06	4.29E-06
602	6.86E-06	2.23E-07	-1.12E-08	6.87E-06
603	3.13E-09	-3.9E-06	-6.95E-06	6.96E-06
604	1.01E-05	2.11E-06	1.19E-09	1.01E-05
605	1.56E-08	-3.93E-06	-1.01E-05	1.02E-05
606	1.35E-05	5.09E-06	-9.87E-09	1.35E-05
607	3.2E-08	-3.02E-06	-1.35E-05	1.36E-05
608	1.64E-05	9.28E-06	-3.08E-08	1.64E-05
609	3.66E-07	-9.4E-07	-1.64E-05	1.68E-05
610	1.79E-05	1.44E-05	-6.72E-08	1.8E-05
611	3.88E-06	9.93E-08	-1.77E-05	2.16E-05
612	2.09E-05	1.58E-05	-1.33E-07	2.1E-05
613	1.12E-05	1.62E-07	-1.58E-05	2.7E-05
614	2.72E-05	8.65E-06	-4.81E-07	2.76E-05
615	2.17E-05	4.63E-07	-8.7E-06	3.04E-05
616	3.2E-05	3.18E-07	-7.75E-06	3.97E-05
617	3.56E-05	7.56E-06	-3.13E-07	3.6E-05
618	3.29E-05	-9.01E-08	-3.4E-05	6.69E-05
619	5.23E-05	3.36E-05	5.52E-08	5.23E-05
620	2.67E-05	-1.65E-07	-7.42E-05	0.000101
621	7.47E-05	6.9E-05	6.42E-08	7.46E-05
622	1.05E-05	-1.95E-06	-0.000129	0.00014
623	0.000129	8.52E-05	-1.52E-08	0.000129
624	-1.08E-07	-2.61E-05	-0.000199	0.000199

625	0.000198	9.21E-05	-2.04E-07	0.000198
626	8.61E-08	-8.32E-05	-0.000277	0.000277
627	0.000275	8.22E-05	-5.37E-07	0.000276
628	4.66E-07	-0.000167	-0.000352	0.000352
629	0.00035	4.42E-05	-1.06E-06	0.000351
630	1.13E-06	-0.000279	-0.000402	0.000404
631	0.0004	-1.84E-06	-3.6E-05	0.000436
Q				0
*****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
632	2.26E-06	-0.000387	-0.000426	0.000428
633	0.000395	-3E-06	-0.000173	0.000568
634	4.76E-06	-0.000292	-0.000563	0.000568
635	0.00029	-5.35E-06	-0.000382	0.000672
636	5.69E-05	-7.68E-05	-0.000695	0.000752
637	7.61E-05	-5.68E-05	-0.000668	0.000745
638	0.000471	3.41E-07	-0.000765	0.001237
639	-4.83E-08	-0.000469	-0.001028	0.001028
640	0.00125	3.23E-06	-0.000707	0.001957
641	-1.68E-06	-0.001207	-0.001469	0.001467
642	0.002368	4.14E-06	-0.000429	0.002796
643	-7.53E-07	-0.001823	-0.002355	0.002354
644	0.00383	0.000183	3.47E-06	0.003826
645	2.39E-06	-0.002088	-0.003809	0.003811
646	0.005563	0.001255	4.48E-07	0.005563
647	8.45E-06	-0.002063	-0.005533	0.005541
648	0.007368	0.002902	-6.17E-06	0.007375
649	1.84E-05	-0.001514	-0.007328	0.007346
650	0.008865	0.005198	-1.82E-05	0.008883
651	0.000251	-0.000362	-0.008816	0.009067
652	0.009639	0.007912	-3.85E-05	0.009678
653	0.002388	5.57E-05	-0.009382	0.01177
654	0.011461	0.008181	-7.58E-05	0.011537
655	0.006424	9.17E-05	-0.008136	0.01456
656	0.014762	0.004132	-0.000355	0.015117
657	0.012215	0.000361	-0.004106	0.016321
658	0.017181	0.000104	-0.005139	0.02232
659	0.019796	0.005105	-9.95E-05	0.019896
660	0.017404	-5.37E-05	-0.019821	0.037225
661	0.028792	0.019708	3.23E-05	0.02876
662	0.013567	-9E-05	-0.041994	0.055561
663	0.04176	0.038174	3.27E-05	0.041727
664	0.004578	-0.001407	-0.072225	0.076803
665	0.071826	0.045972	-1.52E-05	0.071841
666	-5E-05	-0.016319	-0.109762	0.109711

667	0.109156	0.048982	-0.000122	0.109278
668	6.1E-05	-0.048044	-0.151462	0.151523
669	0.150624	0.042528	-0.000309	0.150932
670	0.000276	-0.094172	-0.190586	0.190861
Q				0
*****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
671	0.189538	0.020815	-0.001024	0.190562
672	0.000647	-0.155321	-0.215505	0.216151
673	0.214318	-0.001029	-0.024942	0.23926
674	0.001284	-0.208509	-0.22893	0.230214
675	0.20736	-0.001676	-0.101515	0.308875
676	0.002822	-0.145611	-0.30734	0.310162
677	0.144789	-0.003115	-0.21638	0.361169
678	0.037776	-0.028263	-0.375355	0.413131
679	0.027971	-0.03755	-0.37305	0.401021
680	0.28443	0.000443	-0.40786	0.69229
681	-0.00023	-0.282785	-0.567745	0.567515
682	0.71567	0.001802	-0.367675	1.083345
683	-0.000891	-0.68504	-0.8109	0.810009
684	1.329095	0.002209	-0.204771	1.533866
685	-0.000292	-0.98792	-1.321725	1.321433
686	2.1241	0.142175	0.001751	2.122349
687	0.001512	-1.118335	-2.1124	2.113912
688	3.0563	0.74009	-1.17E-05	3.056312
689	0.00492	-1.083385	-3.03945	3.04437
690	4.0113	1.64979	-0.00377	4.01507
691	0.010464	-0.755605	-3.9892	3.999664
692	4.77525	2.90625	-0.010515	4.785765
693	0.161392	-0.116288	-4.74905	4.910442
694	5.16465	4.32945	-0.021937	5.186587
695	1.4455	0.031075	-4.9782	6.4237
696	6.27885	4.21125	-0.04338	6.32223
697	3.68065	0.051646	-4.188	7.86865
698	8.0122	1.936695	-0.272475	8.284675
699	6.85865	0.274665	-1.924365	8.783015
700	9.2196	0.033337	-3.33975	12.55935
701	10.98055	3.3188	-0.032427	11.01298
702	9.17295	-0.031462	-11.53135	20.7043
703	15.819	11.4665	0.018462	15.80054
704	6.85165	-0.048848	-23.749	30.60065
705	23.6165	20.78355	0.016045	23.60045
706	1.859028	-0.959104	-40.255	42.11403
707	40.032	24.7679	-0.012202	40.0442
708	-0.022651	-10.04665	-60.547	60.52435

709	60.213	25.994	-0.072773	60.28577
0				0
*****				0
0				0
LOAD				0
TIME=				0
0				0
NODE				0
710	0.04095	-27.643	-82.7945	82.83545
711	82.34	21.8921	-0.17681	82.51681
712	0.162125	-52.9865	-103.186	103.3481
713	102.619	9.78801	-1.050285	103.6693
714	0.36982	-86.273	-115.24	115.6098
715	114.605	-0.57558	-16.5045	131.1095
716	0.730785	-109.1815	-125.936	126.6668
717	108.58	-0.93578	-59.1205	167.7005
718	1.70585	-72.022	-167.5405	169.2464
719	71.6115	-1.8555	-122.4055	194.017
720	25.485	-9.104759	-202.5475	228.0325
721	8.965294	-25.278	-207.945	216.9103
722	170.065	0.310145	-217.0115	387.0765
723	-0.25168	-169.09	-313.23	312.9783
724	408.745	1.158125	-190.3905	599.1355
725	-0.304805	-387.915	-447.28	446.9752
726	745.03	1.550835	-96.72366	841.7537
727	-0.701515	-535.135	-740.885	740.1835
728	1176.845	101.335	3.111835	1173.733
729	3.2207	-597.37	-1170.305	1173.526
730	1677.555	431.56	-8.5042	1686.059
731	-5.6542	-570.02	-1668.335	1662.681
732	2181.275	944.87	28.90975	2152.365
733	37.708	-363.186	-2169.275	2206.983
734	1070.94	887.41	-224.303	1295.243
735	488.67	-173.993	-1031.39	1520.06
736	1932.54	1024.56	97.0755	1835.465
737	1696.9	254.475	154.417	1542.483
738	1218.865	197.575	-1347.755	2566.62
739	3038.5	2088.7	-181.953	3220.453
740	2408	38.5535	-131.088	2539.088
741	1806.55	17.5836	-2040.99	3847.54
742	3861.05	986.95	6.68	3854.37
743	3575.3	267.085	-102.4705	3677.771
744	3288.65	216.505	-886.6245	4175.275
745	4528.55	160.59	-895.37	5423.92
746	4630.3	316.155	-513.36	5143.66
747	4640.8	210.67	-194.91	4835.71
748	5930.9	1422.975	-1244.635	7175.535
0				0
*****				0

	Q			0
LOAD				0
TIME=				0
	Q			0
NODE				0
749	6437.25	1716.655	270.145	6167.105
750	6990.1	3370.25	662.31	6327.79
751	4606.75	-2476.95	-5325.4	9932.15
752	6346.2	1048.325	-2789.85	9136.05
753	8422.75	7081.95	-1580	10002.75
754	4378.35	-556.96	-1214.03	5592.38
755	6235.75	887.8	-162.62	6398.37
756	7046.8	570.185	-873.17	7919.97
757	9768.65	9768.65	-313.305	10081.96
758	9948.5	9471.2	244.4215	9704.079
759	9917.25	9110.35	-164.9512	10082.2
760	9977.4	9035.25	-74.2565	10051.66
761	10139.65	8983.4	-49.6435	10189.29
762	10263	8903.8	-28.29895	10291.3
763	10351.9	8802.65	-19.3525	10371.25
764	10420.5	8690.35	-13.87405	10434.37
765	10479.9	8572	-9.77575	10489.68
766	10536.75	8451.15	-7.5094	10544.26
767	10596.45	8330	-6.011	10602.46
768	10660.6	8209.8	-5.02065	10665.62
769	10729.35	8089.8	-4.30075	10733.65
770	10801.2	7970.5	-3.78685	10804.99
771	10875.6	7850.6	-3.4724	10879.07
772	10950.5	7729.65	-3.39725	10953.9
773	11023.15	7605.6	-3.5964	11026.75
774	11088.6	7474.75	-4.03575	11092.64
775	11140.8	7332.9	-4.5087	11145.31
776	11175.7	7176.4	-4.49185	11180.19
777	11192.75	7006	-3.01375	11195.76
778	11204.8	6831.8	1.4087	11203.39
779	11248.75	6684.45	10.3466	11238.4
780	11397.45	6622	24.782	11372.67
781	11764.65	6733.95	41.907	11722.74
782	12489.5	7128	56.0775	12433.42
783	13677.5	7879.6	47.063	13630.44
784	15288	8943.9	13.9051	15274.09
785	16872.5	9938.75	-145.02	17017.52
786	17689.5	10262.8	-214.48	17903.98
787	15526	8117.8	-934.13	16460.13
	Q			0
*****				0
	Q			0
LOAD				0
TIME=				0

0				0
NODE				0
788	9400.6	3186	-2174.9	11575.5
789	5752.65	1281.86	-6785.9	12538.55
790	4205.3	-709.92	-10536	14741.3
791	2890.3	-839.885	-10950	13840.3
792	9952.08	9952.08	-255.225	10207.31
793	10053.2	9737.705	223.3025	9829.898
794	10019	9514.95	58.244	9960.756
795	10106.2	9423.25	-8.8323	10115.03
796	10211.65	9318.55	-10.5148	10222.16
797	10312.75	9208	-4.2771	10317.03
798	10397.9	9088.85	-4.29825	10402.2
799	10476.25	8966.35	-2.27115	10478.52
800	10550.05	8841.7	-0.58615	10550.64
801	10622.3	8716	0.10175	10622.2
802	10694.75	8590.6	0.37125	10694.38
803	10768.25	8465	0.411145	10767.84
804	10843.55	8339.75	0.36287	10843.19
805	10919	8214.55	0.241815	10918.76
806	10995.85	8089.15	-0.02159	10995.87
807	11072	7963.2	-0.548035	11072.55
808	11147.6	7836.6	-1.452865	11149.05
809	11220.45	7707.25	-2.74335	11223.19
810	11289.15	7574.25	-4.1513	11293.3
811	11352.05	7437.05	-4.88525	11356.94
812	11409.85	7295.6	-3.37585	11413.23
813	11468.1	7155.3	2.8671	11465.23
814	11539.85	7026.4	16.733	11523.12
815	11650.05	6929.25	40.0125	11610.04
816	11836.05	6893.55	69.3205	11766.73
817	12141	6952.2	92.594	12048.41
818	12594.5	7122.4	84.4985	12510
819	13153.5	7363.5	25.66365	13127.84
820	13687.5	7555.6	-168.81	13856.31
821	13742.5	7361.55	-405.25	14147.75
822	13300.5	6735.65	-1155.55	14456.05
823	11334	4851.05	-3592.05	14926.05
824	9673.7	3832.6	-2329	12002.7
825	8892.2	2728.65	-1278.3	10170.5
826	4231	-1695.84	-3513.15	7744.15

0				0
*****				0
0				0
LOAD				0
TIME=				0
0				0
NODE				0
827	8390.05	1712.59	-5101.3	13491.35

828	6988.6	1453.875	-3599.75	10588.35
829	6219.132	1907.6	-4842.1	11061.23
830	10611.06	10611.06	-211.954	10823.01
831	10692.95	10407.62	95.795	10597.16
832	10660.85	10233.9	173.94	10486.91
833	10704.7	10156.75	-40.509	10745.21
834	10766.5	10046.65	-6.8766	10773.38
835	10829.6	9916.35	-7.7962	10837.4
836	10912.25	9796.25	-6.65385	10918.9
837	11000.95	9676.25	-3.7048	11004.65
838	11093.8	9557.2	-1.0193	11094.82
839	11187.75	9438.75	0.06645	11187.68
840	11281.3	9319.95	0.508	11280.79
841	11373.2	9200.75	0.586165	11372.61
842	11463.25	9081.15	0.52727	11462.72
843	11552.6	8961.4	0.352385	11552.25
844	11641.4	8841.9	-0.060045	11641.46
845	11729.9	8722.45	-0.915615	11730.82
846	11818.7	8604.05	-2.42055	11821.12
847	11910.2	8487.95	-4.6054	11914.81
848	12006.25	8375.5	-7.0537	12013.3
849	12107.9	8268.35	-8.47185	12116.37
850	12215.35	8166	-6.2808	12221.63
851	12324.25	8065.05	3.6749	12320.58
852	12421.8	7956	26.3915	12395.41
853	12484	7820.85	65.4605	12418.54
854	12473.5	7629.3	117.631	12355.87
855	12348	7347.95	163.69	12184.31
856	12072	6947.65	165.96	11906.04
857	11667.5	6440.65	63.215	11604.29
858	11234.5	5903	-219.985	11454.49
859	11131.5	5647.1	-715.135	11846.64
860	11943.5	6131.75	-1770.5	13714
861	15105.5	8358.85	-3626	18731.5
862	14889	7887.5	-6823.6	21712.6
863	19813.5	11480.5	1566.55	18246.95
864	9402.6	2538.307	-6095	15497.6
865	19800.5	10065.45	-1288.41	21088.91
Q				0
****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
866	7713.4	1775.915	-3297.2	11010.6
867	4616.3	-2467.15	-18863	23479.3
868	10661.11	10661.11	-214.4285	10875.54
869	10938.07	10583.8	-62.81	11000.88

870	11167.1	10672.8	66.571	11100.53
871	10973.15	10499.45	-124.985	11098.14
872	10927.7	10342.1	-45.841	10973.54
873	10948.9	10200	-36.608	10985.51
874	11007.2	10061.85	-26.57935	11033.78
875	11094.7	9934.95	-18.68815	11113.39
876	11195.5	9811.9	-12.15305	11207.65
877	11298.95	9690.45	-8.56765	11307.52
878	11401	9568.05	-6.35515	11407.36
879	11499.45	9444.95	-5.0272	11504.48
880	11593.95	9320.75	-4.16185	11598.11
881	11685.6	9196	-3.6547	11689.25
882	11774.3	9071.35	-3.5957	11777.9
883	11863.05	8947.85	-4.20355	11867.25
884	11954	8827.5	-5.71595	11959.72
885	12052.05	8713.4	-8.1653	12060.22
886	12162.95	8609.75	-11.04515	12174
887	12291.35	8521.1	-12.76415	12304.11
888	12438.25	8447.75	-10.1598	12448.41
889	12591.1	8379.7	1.90375	12589.2
890	12714.8	8288.65	29.687	12685.11
891	12738	8119	78.2845	12659.72
892	12549.5	7782.3	145.435	12404.07
893	12010	7169.3	211.38	11798.62
894	11012	6197.35	230.88	10781.12
895	9580.1	4888.75	115.222	9464.878
896	8070.25	3532.95	-231.545	8301.795
897	7471.6	2958.1	-836.66	8308.26
898	9295	4326.1	-2262.85	11557.85
899	15698	9511.85	-2472.2	18170.2
900	43244.5	16700	-9438.45	52682.95
901	41999	25623	19847.5	22151.5
902	16115.5	8113.05	-2261.845	18377.35
903	21634.5	12732	4691.25	16943.25
904	8996.5	2697.1	-148.8345	9145.335
Q				0
****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
905	6146.5	-1388.9	-20019.5	26166
906	-148.735	-7499.95	-7499.95	7351.215
907	-180.4235	-7483.25	-7551.3	7370.877
908	-55.77775	-7343.75	-7595.1	7539.322
909	194.59	-7278.1	-7615.4	7809.99
910	105.04	-7327.45	-7508.55	7613.59
911	59.125	-7295.75	-7516.2	7575.325

912	39.773	-7270.1	-7527.05	7566.823
913	33.144	-7248.4	-7541.1	7574.244
914	27.7795	-7230.8	-7559.45	7587.23
915	23.5035	-7213.7	-7578.9	7602.404
916	19.7115	-7196.65	-7599.1	7618.812
917	16.5485	-7179.45	-7619.7	7636.249
918	13.954	-7162	-7640.4	7654.354
919	11.724	-7144.35	-7661.25	7672.974
920	9.5059	-7126.7	-7682.3	7691.806
921	6.85285	-7109.25	-7703.65	7710.503
922	3.3637	-7092.2	-7725.6	7728.964
923	-1.055135	-7076.1	-7748.55	7747.495
924	-5.71055	-7061.4	-7772.65	7766.939
925	-8.48445	-7048.15	-7797.85	7789.366
926	-5.085	-7035.7	-7823.1	7818.015
927	11.1945	-7021.75	-7845.65	7856.845
928	48.7125	-7001.3	-7860.45	7909.163
929	113.8055	-6966.35	-7859.95	7973.756
930	203.755	-6906.3	-7835.45	8039.205
931	293.635	-6812.2	-7782.1	8075.735
932	320.74	-6685.4	-7707.8	8028.54
933	168.924	-6556.9	-7650.6	7819.524
934	-326.425	-6521.2	-7706.7	7380.275
935	-1333.6	-6803.6	-8080.95	6747.35
936	-2829.9	-7997.6	-9258.35	6428.45
937	-4195.55	-11016.05	-12264.25	8068.7
938	-6207.75	-14227	-18004.5	11796.75
939	-14068	-19013	-21902	7834
940	-123.59	-7428.2	-7428.2	7304.61
941	-196.8825	-7419.45	-7481.75	7284.868
942	-136.447	-7287	-7467.6	7331.153
943	15.63695	-7204.05	-7350.05	7365.687
Q				0
*****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
944	-9.8119	-7232.1	-7399.55	7389.738
945	-19.68825	-7228.8	-7430.8	7411.112
946	-10.52015	-7217	-7453.5	7442.98
947	-4.91825	-7206.3	-7478.5	7473.582
948	-1.0333	-7192.9	-7502.05	7501.017
949	0.66005	-7178.6	-7525.8	7526.46
950	1.226795	-7163.7	-7549.6	7550.827
951	1.27419	-7148.55	-7573.5	7574.774
952	1.12567	-7133.15	-7597.35	7598.476
953	0.80191	-7117.75	-7621.2	7622.002

954	0.08861	-7102.35	-7645.15	7645.239
955	-1.367675	-7086.95	-7669.15	7667.782
956	-3.9179	-7071.5	-7693.2	7689.282
957	-7.61755	-7056	-7717.25	7709.632
958	-11.75795	-7040.2	-7741.1	7729.342
959	-14.15755	-7023.7	-7764.2	7750.042
960	-10.4665	-7006	-7785.65	7775.184
961	6.2743	-6986.7	-7804.35	7810.624
962	44.6115	-6965.9	-7819.45	7864.062
963	111.51	-6944.7	-7830.85	7942.36
964	204.255	-6926.6	-7841.7	8045.955
965	298.5	-6917.75	-7859.35	8157.85
966	329.235	-6929.7	-7899.9	8229.135
967	177.795	-6977.1	-7987.55	8165.345
968	-333.515	-7078.75	-8156.15	7822.635
969	-1401.85	-7260.05	-8446.5	7044.65
970	-3049.2	-7571.65	-8894.35	5845.15
971	-4469	-8296.7	-9595.7	5126.7
972	-4607.3	-8945.85	-10015.7	5408.4
973	-4379.7	-10075.35	-10730.9	6351.2
974	33476	17590.5	-9324.65	42800.65
975	33366.5	16815.5	-9207.25	42573.75
976	7503.5	1207.33	-8284.35	15787.85
977	9381	3394.45	-3871.4	13252.4
978	12031.3	6274.25	-2185.05	14216.35
979	-127.5	-7330	-7330	7202.5
980	-175.6985	-7289.7	-7349.25	7173.552
981	-214.765	-7145.4	-7302.9	7088.135
982	97.9165	-7050	-7245.6	7343.517
0				0
*****				0
0				0
LOAD				0
TIME=				0
0				0
NODE				0
983	-34.3985	-7105.25	-7267.55	7233.152
984	-19.08395	-7099.95	-7294.15	7275.066
985	-10.74755	-7097	-7324.6	7313.852
986	-4.30645	-7084.75	-7348	7343.694
987	-0.7007	-7070.15	-7370.8	7370.099
988	0.79695	-7054.7	-7393.85	7394.647
989	1.290145	-7038.9	-7417.25	7418.54
990	1.291465	-7023.15	-7441	7442.291
991	1.15596	-7007.45	-7464.85	7466.006
992	0.85651	-6991.9	-7488.85	7489.707
993	0.193655	-6976.5	-7512.85	7513.044
994	-1.20928	-6961.05	-7536.95	7535.741
995	-3.70665	-6945.45	-7560.95	7557.243

996	-7.4185	-6929.45	-7584.65	7577.232
997	-11.66865	-6912.5	-7607.65	7595.981
998	-14.444	-6894.2	-7629.35	7614.906
999	-11.35715	-6874.25	-7648.95	7637.593
1000	4.2981	-6853.2	-7666.4	7670.698
1001	41.715	-6833.15	-7682.2	7723.915
1002	107.6455	-6819.1	-7699.75	7807.396
1003	202	-6818.8	-7725.3	7927.3
1004	299.09	-6844.15	-7771.1	8070.19
1005	339.8	-6903.85	-7850.55	8190.35
1006	193.855	-6999.75	-7979.05	8172.905
1007	-312.89	-7092.4	-8143.1	7830.21
1008	-1439.6	-7060.25	-8270.85	6831.25
1009	-3347.25	-6269.4	-8278.3	4931.05
1010	-3579.4	-6211.25	-8215.1	4635.7
1011	-1450.5	-7701.5	-8461.1	7010.6
1012	-1126.8	-2816.3	-5473.6	4346.8
1013	12752.2	971.895	-2600.65	15352.85
1014	65717	31762.5	-1528.05	67245.05
1015	3244.25	-4191.3	-26319.5	29563.75
1016	11115.65	-235.77	-3641.2	14756.85
1017	26981.5	18654	-3036.25	30017.75
1018	-125	-7199.6	-7199.6	7074.6
1019	-117.4735	-7171.15	-7231.55	7114.077
1020	-140.373	-7103	-7204	7063.627
1021	-68.0195	-6979	-7127.95	7059.931
Q				0
*****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
1022	-33.7715	-6958.45	-7114.3	7080.529
1023	-14.28959	-6959.15	-7150.85	7136.56
1024	-7.4797	-6953.15	-7180.75	7173.27
1025	-1.2302	-6941.9	-7206.55	7205.32
1026	0.95485	-6929.25	-7231.8	7232.755
1027	2.043375	-6915.5	-7256.7	7258.743
1028	2.09036	-6901.35	-7281.55	7283.64
1029	1.95475	-6886.9	-7306.35	7308.305
1030	1.70555	-6872.3	-7331	7332.706
1031	1.40013	-6857.7	-7355.5	7356.9
1032	0.780605	-6843	-7380.05	7380.831
1033	-0.47375	-6828.4	-7404.55	7404.076
1034	-2.76765	-6813.75	-7429.15	7426.382
1035	-6.2161	-6798.95	-7453.6	7447.384
1036	-10.4188	-6783.6	-7477.75	7467.331
1037	-13.4796	-6767.15	-7500.75	7487.27

1038	-11.8624	-6748.9	-7521.85	7509.988
1039	1.249095	-6728.15	-7539.55	7540.799
1040	33.425	-6705.55	-7553.5	7586.925
1041	94.115	-6682.6	-7564	7658.115
1042	181.01	-6665.85	-7576.4	7757.41
1043	280.88	-6663.75	-7599.15	7880.03
1044	327.505	-6692.85	-7653.35	7980.855
1045	226.165	-6759.85	-7755.85	7982.015
1046	-239.91	-6867.9	-7935.75	7695.84
1047	-1223.52	-6946.6	-8157	6933.48
1048	-2952.4	-6949.25	-8412.15	5459.75
1049	-4069	-7291.15	-8810.8	4741.8
1050	-2949.55	-8231.85	-9223.7	6274.15
1051	-1775.5	-8054.35	-8884.55	7109.05
1052	25918.5	17743	1306.78	24611.72
1053	42713.5	24934.5	1826.95	40886.55
1054	11992.5	4679.4	-18941.5	30934
1055	13288.45	5655.75	-637.195	13925.65
1056	22430	15034	2437.75	19992.25
1057	-96.47	-7007.6	-7007.6	6911.13
1058	-105.3625	-7011.6	-7074.4	6969.038
1059	-7.716	-7002.8	-7119.25	7111.534
1060	-232.395	-6937.35	-7091.5	6859.105

Q

0

0

Q

0

LOAD

0

TIME=

0

Q

0

NODE

0

1061	216.11	-6770	-7202.75	7418.86
1062	131.755	-6852.45	-7090.95	7222.705
1063	100.5975	-6826.6	-7078.4	7178.998
1064	78.4955	-6802.15	-7091.6	7170.096
1065	62.223	-6783.15	-7109.3	7171.523
1066	50.6055	-6766.75	-7129.5	7180.106
1067	41.353	-6751.35	-7150.8	7192.153
1068	34.4665	-6736.1	-7172.65	7207.117
1069	29.032	-6720.85	-7194.75	7223.782
1070	24.7705	-6705.45	-7216.95	7241.721
1071	21.0485	-6690.15	-7239.4	7260.449
1072	17.421	-6675.2	-7262.4	7279.821
1073	13.2845	-6661.15	-7286.35	7299.635
1074	8.49015	-6648.65	-7311.75	7320.24
1075	3.0698	-6638.35	-7339.15	7342.22
1076	-1.103	-6630.15	-7368.2	7367.097
1077	-1.5632	-6622.85	-7397.7	7396.137
1078	-8.8663	-6612.15	-7423.1	7431.966
1079	35.2185	-6590.45	-7437.5	7472.719

1080	90.258	-6544.1	-7428.2	7518.458
1081	166.395	-6458.85	-7384.05	7550.445
1082	265.64	-6320.1	-7293	7558.64
1083	307.26	-6138.55	-7173.6	7480.86
1084	246.08	-5957.65	-7068.75	7314.83
1085	-188.895	-5931.85	-7140.55	6951.655
1086	-996.525	-6349.25	-7633.35	6636.825
1087	-2554.2	-7864.05	-9135.3	6581.1
1088	-4090.4	-10797.2	-12410	8319.6
1089	-6588.45	-13862.55	-17273.5	10685.05
1090	-13184	-17871	-20499	7315
1091	13901.55	13901.55	-377.575	14279.13
1092	14016	13752.55	223.6589	13792.34
1093	13985.3	13501.7	-484.795	14470.1
1094	14291.85	13704.95	470.415	13821.44
1095	14172.3	13383.15	-200.49	14372.79
1096	14255.8	13276.85	5.07405	14250.73
1097	14346.45	13164.55	-15.5161	14361.97
1098	14416	13027.15	-8.09585	14424.1
1099	14508.8	12910.55	-2.00495	14510.8
Q				0
*****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
1100	14589.8	12782	-2.908865	14592.71
1101	14676.35	12659.35	-0.77311	14677.12
1102	14759.2	12533.25	-1.22462	14760.42
1103	14843.3	12408.8	-0.55164	14843.85
1104	14925.75	12283.65	-0.67048	14926.42
1105	15008	12158.7	-0.62378	15008.62
1106	15089.5	12033.45	-1.4732	15090.97
1107	15172	11908.7	-2.771	15174.77
1108	15254.5	11784.65	-5.85515	15260.36
1109	15341.5	11663.65	-8.6356	15350.14
1110	15429	11543.4	-13.3335	15442.33
1111	15528	11432.9	-10.93175	15538.93
1112	15624	11320.35	-7.8529	15631.85
1113	15739	11224.5	24.3075	15714.69
1114	15812	11096.1	54.1965	15757.8
1115	15910	10992.3	157.335	15752.67
1116	15828	10742.05	191.02	15636.98
1117	15829	10565.6	356.56	15472.44
1118	15309	9951.55	138.1535	15170.85
1119	15340.5	9778.05	126.493	15214.01
1120	14155.5	8566.2	-994.785	15150.29
1121	15605	9393.3	-1972.5	17577.5

1122	14566.5	8389.95	-2212.25	16778.75
1123	21766	10764.15	-15162.5	36928.5
1124	45530	22033.5	-1504.415	47034.42
1125	1484.5	-4987.25	-20619	22103.5
1126	10254.35	2140.05	-24617	34871.35
1127	9699.25	1715	-19274	28973.25
1128	7133.1	-240.9	-15865	22998.1
1129	13902.25	13902.25	-377.575	14279.83
1130	14144.75	13900.95	190.7955	13953.95
1131	14171.8	13663.75	-430.785	14602.59
1132	14208.2	13532.6	447.645	13760.56
1133	14289.45	13388.15	-207.76	14497.21
1134	14415.75	13322.4	11.48003	14404.27
1135	14475.65	13181.95	-18.46835	14494.12
1136	14568.15	13077.5	-6.168355	14574.32
1137	14638.5	12950	-2.48515	14640.99
1138	14719.45	12832.5	-2.451965	14721.9
0				0
*****				0
0				0
LOAD				0
TIME=				0
0				0
NODE				0
1139	14796.4	12709.5	-0.837155	14797.24
1140	14877.05	12589	-1.11591	14878.17
1141	14956.9	12467.35	-0.556555	14957.46
1142	15038.25	12346.45	-0.65251	15038.9
1143	15120	12224.85	-0.61762	15120.62
1144	15202	12103	-1.4823	15203.48
1145	15283	11980.7	-2.72225	15285.72
1146	15363.5	11857.15	-5.84965	15369.35
1147	15440.5	11731	-8.43165	15448.93
1148	15515.5	11602.6	-13.2925	15528.79
1149	15581	11467.95	-10.38745	15591.39
1150	15650	11334.9	-8.02525	15658.03
1151	15706.5	11196.4	25.33	15681.17
1152	15804.5	11088.6	52.5325	15751.97
1153	15895	10984.45	158.96	15736.04
1154	16148	10999.15	184.155	15963.85
1155	16350.5	10992	360.87	15989.63
1156	16981	11277	118.339	16862.66
1157	17117	11205	147.1	16969.9
1158	18200.5	11749	-1041.755	19242.26
1159	16723	10341.05	-1883.15	18606.15
1160	17854	10985.4	-2321.25	20175.25
1161	9855.35	3126.95	-15301	25156.35
1162	39701.5	19298.5	-5439.6	45141.1
1163	6295.75	-1158.7	-20466	26761.75

1164	44260.5	26127	20231.5	24029
1165	26238	12836.4	-5887.3	32125.3
1166	14584.5	2414.65	-29284.5	43869
1167	9993.939	9993.939	11.14	9982.799
1168	10083.29	9925.41	-76.4286	10159.71
1169	10331.65	10019.95	-28.58	10360.23
1170	10558.7	10074.9	139.9995	10418.7
1171	10401.95	9848.5	-147.95	10549.9
1172	10360.55	9664.15	-43.109	10403.66
1173	10400.35	9515.3	-26.0054	10426.36
1174	10469.3	9373.55	-26.3995	10495.7
1175	10554.95	9240.75	-13.54215	10568.49
1176	10641	9106.45	-13.2912	10654.29
1177	10725.7	8972.85	-8.8883	10734.59
Q				0
*****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
1178	10806.35	8839	-8.07945	10814.43
1179	10883.95	8705.35	-6.25115	10890.2
1180	10958.6	8571.65	-5.56425	10964.16
1181	11031	8438.25	-4.71525	11035.72
1182	11102.35	8305.5	-4.825	11107.18
1183	11175.9	8175.6	-5.0418	11180.94
1184	11255.9	8051.45	-7.0645	11262.96
1185	11349.5	7939.15	-8.14125	11357.64
1186	11463.8	7844	-12.298	11476.1
1187	11604.8	7770.35	-9.0512	11613.85
1188	11764.25	7711.35	-11.02405	11775.27
1189	11914.5	7646.7	16.0235	11898.48
1190	11983	7513.9	23.2465	11959.75
1191	11849.5	7226.95	112.259	11737.24
1192	11331	6625.6	91.227	11239.77
1193	10269.2	5611.3	264.215	10004.99
1194	8584	4061.3	-48.6275	8632.628
1195	6757	2277.3	150.39	6606.61
1196	5571.18	492.11	-1076.215	6647.395
1197	7032.95	2185.3	-360.415	7393.365
1198	13776	6827.85	-4887.8	18663.8
1199	33630.5	14443	-4668.3	38298.8
1200	55699	28982.5	20496.5	35202.5
1201	64511.5	21703	-14183.5	78695
1202	10034.9	10034.9	21.735	10013.17
1203	10090.05	9913.95	-93.988	10184.04
1204	10149.35	9767.85	108.182	10041.17
1205	10218.6	9584.9	148.585	10070.02

1206	10280.4	9488	-58.657	10339.06
1207	10364.7	9394.85	-9.82815	10374.53
1208	10444.7	9284.35	1.2163	10443.48
1209	10530	9176.9	-4.45776	10534.46
1210	10614.05	9066.65	1.27815	10612.77
1211	10697.35	8955.35	-0.53885	10697.89
1212	10781.65	8844.55	0.65327	10781
1213	10865.05	8733.15	0.1253	10864.92
1214	10949.05	8621.3	0.387485	10948.66
1215	11032.4	8509.9	0.1949	11032.21
1216	11115.75	8398.05	0.16537	11115.58
Q				0
*****				0
Q				0
LOAD				0
TIME=				0
Q				0
NODE				0
1217	11199	8286.65	-0.353495	11199.35
1218	11282.75	8174.75	-0.996567	11283.75
1219	11365.85	8062.85	-2.65995	11368.51
1220	11449	7951	-3.91275	11452.91
1221	11532	7838.6	-6.5771	11538.58
1222	11616.05	7727.85	-4.8787	11620.93
1223	11699.4	7616.4	-4.3504	11703.75
1224	11785.8	7508.45	13.494	11772.31
1225	11869.1	7398.2	24.953	11844.15
1226	11961.4	7298.95	81.133	11880.27
1227	12042	7186.45	81.141	11960.86
1228	12149.5	7104.1	172.175	11977.33
1229	12202.5	6954.35	-0.779	12203.28
1230	12321	6878.25	108.9765	12212.02
1231	12261	6572.1	-747.905	13008.91
1232	12344.5	6513.85	-297.315	12641.82
1233	13099	6572.25	-4134.9	17233.9
1234	13126.5	6472.7	-4135.5	17262
1235	15426	8592.5	-1398.445	16824.45
1236	12223	5459.6	-4969.45	17192.45
1237	7098.45	786.865	-4676.35	11774.8
1238	2933.165	-5138.665	-28951	31884.17
1239	10352.35	10352.35	46.83	10305.52
1240	10446.05	10104.6	-110.6085	10556.66
1241	10461.55	9803.25	167.6035	10293.95
1242	10478.95	9483.65	-53.9675	10532.92
1243	10576.75	9421	-90.0775	10666.83
1244	10748.2	9411.5	-56.917	10805.12
1245	10851.45	9349.25	-24.5106	10875.96
1246	10916.6	9254.75	-22.2996	10938.9
1247	10979.25	9158.15	-14.41285	10993.66

<u>1248</u>	11041.2	9057.9	-11.9153	11053.12
<u>1249</u>	11107.2	8957.2	-9.483	11116.68
<u>1250</u>	11177.4	8856.2	-7.98	11185.38
<u>1251</u>	11252.05	8754.6	-6.76045	11258.81
<u>1252</u>	11330.1	8653.3	-5.8523	11335.95
<u>1253</u>	11410.5	8551.15	-5.1943	11415.69
<u>1254</u>	11491.9	8448.05	-4.8594	11496.76
<u>1255</u>	11571.6	8342.6	-4.885	11576.49
<u>Q</u>				0
<u>*****</u>				0
<u>Q</u>				0
<u>LOAD</u>				0
<u>TIME=</u>				0
<u>Q</u>				0
<u>NODE</u>				0
<u>1256</u>	11644.65	8229.95	-5.3356	11649.99
<u>1257</u>	11704.25	8106.3	-6.01315	11710.26
<u>1258</u>	11742.4	7965.2	-6.5891	11748.99
<u>1259</u>	11755.3	7803.45	-5.83355	11761.13
<u>1260</u>	11749.55	7627.25	-2.44845	11752
<u>1261</u>	11755.15	7461.15	6.7086	11748.44
<u>1262</u>	11845.1	7364.25	22.279	11822.82
<u>1263</u>	12144	7434.95	46.495	12097.51
<u>1264</u>	12833	7815.1	67.6185	12765.38
<u>1265</u>	14080.5	8634.4	79.536	14000.96
<u>1266</u>	15952	9935.4	33.107	15918.89
<u>1267</u>	18089	11438.5	-42.0985	18131.1
<u>1268</u>	19456.5	12310.5	-433.625	19890.13
<u>1269</u>	18311.5	11270	-424.575	18736.08
<u>1270</u>	10683.45	4967.05	-3670.3	14353.75
<u>1271</u>	6052.25	744.68	-11362.15	17414.4
<u>1272</u>	7462.3	1045.15	-14823	22285.3
<u>1273</u>	7401.15	750.3	-11213.8	18614.95
<u>1274</u>	9747.4	2424.695	-8518.2	18265.6
<u>1275</u>	853.75	-6326.7	-22775	23628.75

624	624	1202
-15048.5	-20183	-29550

1014	261	1182
65717	37981	21051

752	752	752
-28537	-35484	-53161

1014	261	357
94055	67363.5	50901.5

78695

BF,1247,TEMP,249.336
BF,1248,TEMP,247.253
BF,1249,TEMP,245.17
BF,1250,TEMP,243.087
BF,1251,TEMP,241.004
BF,1252,TEMP,238.921
BF,1253,TEMP,236.838
BF,1254,TEMP,234.755
BF,1255,TEMP,232.672
BF,1256,TEMP,230.589
BF,1257,TEMP,228.506
BF,1258,TEMP,226.423
BF,1259,TEMP,224.34
BF,1260,TEMP,222.257
BF,1261,TEMP,220.174
BF,1262,TEMP,218.091
BF,1263,TEMP,216.008
BF,1264,TEMP,213.925
BF,1265,TEMP,211.842
BF,1266,TEMP,209.759
BF,1267,TEMP,207.676
BF,1268,TEMP,205.593
BF,1269,TEMP,203.51
BF,1270,TEMP,201.427
BF,1271,TEMP,199.344
BF,1272,TEMP,197.261
BF,1273,TEMP,195.178
BF,1274,TEMP,193.095
BF,1275,TEMP,191.012
SAVE
FINI
/SOLU
ANTYPE,STATIC
SOLVE
SAVE
FINI
/POST1
ALLSEL
/OUT,THER2c,OUT
PRNSOL,S,PRIN
/OUT

HOPPER AND ASSOCIATES
ENGINEERS

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/14/99 PAGE: D1
SUBJECT: APPENDIX D BY: AS CK: SR SHT: 1 OF 172

APPENDIX D

ANSYS DROP LOAD ANALYSIS

```
/FILNAM, TOPDROP2
/PREP7
/TITLE, DSC STRUCTURAL ANALYSIS MODEL
KAN, 0
ET, 1, 42, , , 1
C*** STAINLESS STEEL
EX, 1, 26.5E6
NUXY, 1, 0.3
DENS, 1, 0.283
ALPX, 1, 9.8E-6
C*** CHEMICAL LEAD
EX, 2, 3.0E6
NUXY, 2, 0.4
DENS, 2, 0.411
ALPX, 2, 16.4E-6
c*** KTEMP, -1          *****
C*** NODAL INPUT
C*** BOTTOM DETAIL
N, 1, 0.0, 0.0
N, 7, 6.0, 0.0
FILL
N, 8, 6.625, 0.0
N, 9, 7.25, 0.0
N, 10, 8.0, 0.0
N, 35, 33.0, 0.0
FILL
N, 36, 33.275, 0.0
N, 37, 33.55, 0.0
NGEN, 3, 37, 1, 37, 1, 0.0, 0.5
NGEN, 2, 37, 75, 109, 1, 0.0, 0.75
N, 147, 33.125, 1.75
N, 148, 33.55, 1.75
NGEN, 2, 37, 112, 145
N, 183, 33.125, 1.75
NGEN, 2, 35, 149, 157, 1, 0.0, 1.0
N, 193, 7.25, 2.75
N, 194, 8.0, 2.75
NGEN, 2, 37, 158, 183, 1, 0.0, 1.0
N, 221, 33.125, 2.75
N, 222, 33.55, 2.75
NGEN, 3, 39, 184, 222, 1, 0.0, 1.0
NGEN, 2, 39, 262, 270, 1, 0.0, 1.0
N, 310, 8.0, 6.0
N, 335, 33.125, 6.0
FILL
NGEN, 2, 35, 301, 335, 1, 0.0, 0.0
N, 371, 33.55, 6.0
NGEN, 2, 36, 336, 344, 1, 0.0, 0.75
NGEN, 2, 36, 345, 371, 1, 0.0, 0.5
N, 408, 7.25, 7.75
N, 409, 8.0, 7.75
N, 410, 5.0, 9.0
N, 411, 6.125, 9.0
N, 412, 7.25, 9.0
N, 413, 8.0, 9.0
NGEN, 2, 4, 410, 413, 1, 0.0, 1.0
```

C*** ELEMENT GENERATION

C*** BOTTOM DETAIL

E,1,2,39,38
EGEN,36,1,-1
E,38,39,76,75
EGEN,36,1,-1
E,75,76,113,112
EGEN,36,1,-1
MAT,2
E,149,150,185,184
EGEN,8,1,-1
MAT,1
E,120,121,194,193
MAT,2
E,158,159,196,195
EGEN,24,1,-1
E,182,183,220,219
MAT,1
E,147,148,222,221
MAT,2
E,184,185,224,223
EGEN,8,1,-1
MAT,1
E,193,194,233,232
MAT,2
E,195,196,235,234
EGEN,25,1,-1
MAT,1
E,221,222,261,260
MAT,2
E,223,224,263,262
EGEN,8,1,-1
MAT,1
E,232,233,272,271
MAT,2
E,234,235,274,273
EGEN,25,1,-1
MAT,1
E,260,261,300,299
MAT,2
E,262,263,302,301
EGEN,8,1,-1
MAT,1
E,271,272,345,344
MAT,2
E,273,274,311,310
EGEN,25,1,-1
MAT,1
E,299,300,371,370
E,336,337,373,372
EGEN,35,1,-1
E,380,381,409,408
E,408,409,413,412
E,412,413,417,416
E,411,412,416,415
E,410,411,415,414

C*** DSC SHELL NODES

N,425,33.0,-0.75
N,426,33.275,-0.75
N,427,33.55,-0.75
NGEN,5,3,425,427,1,0.0,-1.0
N,440,33.0,-5.75
N,441,33.55,-5.75
NGEN,148,2,440,441,1,0.0,-1.0
N,736,33.0,-153.75
N,737,33.275,-153.75
N,738,33.55,-153.75
NGEN,6,3,736,738,1,0.0,-1.0

C*** DSC SHELL ELEMENTS

E,425,426,36,35
E,426,427,37,36
E,428,429,426,425
E,429,430,427,426
EGEN,4,3,291,292
E,440,438,437
E,440,441,438
E,441,439,438
E,442,443,441,440
EGEN,147,2,-1
E,736,737,734
E,737,735,734
E,736,738,735
E,739,740,737,736
E,740,741,738,737
EGEN,5,3,452,453,1

C*** BOTTOM DETAIL NODAL INPUT

LOCAL,11,0,0.0,-166,0.0
N,754,32.25,9.25
N,755,32.25,8.25
N,756,32.25,7.25
N,757,0.0,7.25
N,789,32.0,7.25
FILL
N,757,0.0,7.25
FILL,757,789
N,790,32.25,7.25
N,791,33.0,7.25
NGEN,2,35,757,789,1,0.0,-0.5
N,825,32.5,6.75
N,826,33.0,6.75
N,827,33.0,6.75
N,828,33.275,6.75
N,829,33.55,6.75
NGEN,3,38,792,829,1,0.0,-0.5
NGEN,3,38,868,901,1
NGEN,2,34,906,939,1,0.0,-1.0
N,974,32.5,4.75
N,975,33.0,4.75
N,976,33.0,4.75
N,977,33.275,4.75
N,978,33.55,4.75

NGEN,3,39,940,978,1,0.0,-1.0
NGEN,2,39,1018,1051,1,0.0,-1.5
NGEN,2,34,1057,1090,1
N,1125,33.0,1.25
N,1126,33.0,1.25
N,1127,33.275,1.25
N,1128,33.55,1.25
NGEN,2,38,1091,1128,1,0.0,-0.25
NGEN,2,38,1129,1163,1
N,1202,0.0,0.375
N,1234,32.0,0.375
FILL
N,1235,32.5,0.375
N,1236,33.0,0.375
N,1237,33.275,0.375
N,1238,33.55,0.375
NGEN,2,37,1202,1238,1,0.0,-0.625

C*** BOTTOM DETAIL ELEMENT GENERATION

E,755,748,745,754
E,756,751,748,755
E,792,793,758,757
EGEN,33,1,-1
E,825,826,791,790
E,827,828,752,751
E,828,829,753,752
E,830,831,793,792
EGEN,34,1,-1
E,865,866,828,827
E,866,867,829,828
E,868,869,831,830
EGEN,34,1,-1
E,903,904,866,865
E,904,905,867,866
MAT,2
E,940,941,907,906
EGEN,33,1,-1
MAT,1
E,974,975,902,901
E,976,977,904,903
E,977,978,905,904
MAT,2
E,979,980,941,940
EGEN,33,1,-1
MAT,1
E,1013,1014,975,974
E,1015,1016,977,976
E,1016,1017,978,977
MAT,2
E,1018,1019,980,979
EGEN,33,1,-1
MAT,1
E,1052,1053,1014,1013
E,1054,1055,1016,1015
E,1055,1056,1017,1016
MAT,2
E,1057,1058,1019,1018

EGEN,33,1,-1
MAT,1
E,1124,1125,1053,1052
E,1126,1127,1055,1054
E,1127,1128,1056,1055
E,1129,1130,1092,1091
EGEN,34,1,-1
E,1164,1165,1127,1126
E,1165,1166,1128,1127
E,1202,1203,1168,1167
EGEN,34,1,-1
E,1236,1237,1165,1164
E,1237,1238,1166,1165
E,1239,1240,1203,1202
EGEN,36,1,-1
WSORT,Y

C*** AXISYMETRIC BOUNDARY CONDITIONS

c*** SYMBC,,,0.0 *****
csys,0
nsl,s,loc,x,0
dsym,symm,x,0
c*** SYMBC,11,,0.0 *****
c***csys,11
c***nsl,s,loc,y,0
c***dsym,symm,x,11
allsel

C*** CONSTANT COUPLED NODES

CP,1,UX,120,157
CP,2,UX,121,158
CP,3,UX,192,193
CP,4,UX,194,195
CP,5,UX,231,232
CP,6,UX,233,234
CP,7,UX,270,271
CP,8,UX,272,273
CP,9,UX,309,344
CP,10,UX,310,345
CP,12,UX,183,147
CP,13,UX,220,221
CP,14,UX,259,260
CP,15,UX,298,299
CP,16,UX,335,370
CP,17,UX,751,791
CP,18,UX,826,827
CP,19,UX,864,865
CP,20,UX,902,903
CP,21,UX,901,939
CP,22,UX,973,974
CP,23,UX,975,976
CP,24,UX,1012,1013
CP,25,UX,1014,1015
CP,26,UX,1051,1052
CP,27,UX,1053,1054
CP,28,UX,1090,1124
CP,29,UX,1125,1126
CP,30,UX,1164,1201

C*** LOADING CONDITIONS

CP,31,UY,112,149

CPSGEN,34,1,-1

CP,65,UY,147,183

CP,66,UY,868,906

CPSGEN,34,1,-1

CP,100,UY,1057,1091

CPSGEN,34,1,-1

CP,134,UY,1129,1167

CPSGEN,34,1,-1

CP,168,UY,301,336

CPSGEN,35,1,-1

C*** BOUNDARY CONDITIONS

D,1239,UY,0.0,,1275,1

C***

C***INTERNAL CONTENTS ADDITIONAL FORCE

C***

ESEL,S,ELEM,,464,496,1

SFE,ALL,3,PRES,,1000.0

ALLSEL

C***75 G ACCELERATION

ACEL,0.0,75.0,0.0

ALLSEL

SAVE

FINI

/SOLU

ANTYPE,STATIC

SOLVE

SAVE

/POST1

ALLSEL

/OUT, TOPSTR2A, OUT

PRNSTR, ALL

/OUT

/OUT, TOPFOR2A, OUT

PRRFOR

/OUT

PLNSOL, S, INT

/TITLE, DSC TOP DROP ANALYSIS - 0.55" SHELL THICKNESS

PRINT S NODAL SOLUTION PER NODE

*** WARNING ***

CP= 15783.940

TIME= 14:07:29

The selected element set contains mixed materials.

This could invalidate error estimation.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1	7237.6 7441.7	-204.12	7237.6	.00000	.00000	.00000	7237.6	7237.6	-204.12	7441.7
2	7238.2 7050.0	225.08	7198.1	-516.09	.00000	.00000	7275.9	7198.1	187.30	7088.6
3	7057.3 7224.8	-31.998	7058.6	-802.17	.00000	.00000	7146.9	7058.6	-121.63	7268.6
4	6961.7 7046.8	10.919	7040.3	-513.43	.00000	.00000	7040.3	6999.4	-26.801	7067.1
5	6950.2 6992.4	24.178	7015.2	-395.82	.00000	.00000	7015.2	6972.7	1.6306	7015.5
6	6974.9 7013.8	.58979	7008.3	-325.71	.00000	.00000	7008.3	6990.0	-14.588	7022.0
7	7115.5 7082.7	25.112	7052.0	-335.74	.00000	.00000	7131.3	7052.0	9.2492	7122.0
8	7920.3 7418.2	334.09	7402.8	-615.64	.00000	.00000	7970.0	7402.8	284.46	7685.0
9	9858.5 9024.8	250.78	8070.9	-1019.6	.00000	.00000	9965.5	8070.9	143.77	9821.0
10	12860. 11738.	-122.40	9194.5	-1064.4	.00000	.00000	12946.	9194.5	-209.08	13156.0
11	15316. 13881.	-265.24	10585.	-642.19	.00000	.00000	15342.	10585.	-291.66	15634.0
12	15965. 14358.	-88.519	11498.	-252.06	.00000	.00000	15969.	11498.	-92.476	16061.0
13	15472. 14017.	14.538	11892.	-127.97	.00000	.00000	15473.	11892.	13.479	15460.0

*Top Drop
Revised w/
0.55" and SFA wts.*

HABGE-01/99-0745, Revision 2

14	14645. 13543.	-31.853	11980.	-70.877	.00000	.00000	14645.	11980.	-32.195	14677.
15	13755. 12951.	-1.3852	11956.	-13.180	.00000	.00000	13755.	11956.	-1.3979	13756.
16	12776. 12319.	-3.6201	11795.	21.389	.00000	.00000	12776.	11795.	-3.6559	12780.
17	11780. 11669.	-.97085	11551.	49.185	.00000	.00000	11780.	11551.	-1.1762	11782.
18	10771. 11015.	-1.5721	11238.	73.752	.00000	.00000	11238.	10772.	-2.0770	11240.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
19	9746.8 10357.	-1.9253	10868.	97.096	.00000	.00000	10868.	9747.8	-2.8922	10871.
20	8699.8 9697.3	-2.4785	10448.	119.93	.00000	.00000	10448.	8701.5	-4.1311	10452.
21	7623.3 9041.8	-2.9168	9980.6	142.50	.00000	.00000	9980.6	7626.0	-5.5785	9986.2
22	6511.4 8399.4	-3.2856	9470.0	164.85	.00000	.00000	9470.0	6515.6	-7.4542	9477.5
23	5359.2 7785.5	-3.5824	8918.0	186.98	.00000	.00000	8918.0	5365.7	-10.094	8928.
24	4163.1 7222.9	-3.7876	8326.0	208.88	.00000	.00000	8326.0	4173.6	-14.232	8340.
25	2920.8 6743.4	-3.7841	7695.5	230.32	.00000	.00000	7695.5	2938.8	-21.812	7717.
26	1632.3 6387.9	-3.3926	7028.1	250.77	.00000	.00000	7028.1	1669.9	-40.973	7069.
27	302.73 6199.7	-1.9627	6326.9	268.94	.00000	.00000	6326.9	459.48	-158.71	6485.
28	-1055.0 6211.8	.28483	5597.3	282.73	.00000	.00000	5597.3	71.259	-1126.0	6723.
29	-2412.1 6424.9	6.2413	4850.4	288.33	.00000	.00000	4850.4	40.141	-2446.0	7296.

30	-3728.9 6799.6	11.380	4099.8	282.13	.00000	.00000	4099.8	32.541	-3750.0	7849.8
31	-4887.6 7221.3	26.568	3387.5	248.44	.00000	.00000	3387.5	39.096	-4900.2	8287.6
32	-6027.2 7741.0	34.430	2675.5	255.45	.00000	.00000	2675.5	45.176	-6038.0	8713.4
33	-6644.7 7832.6	-158.19	2053.5	110.33	.00000	.00000	2053.5	-156.32	-6646.6	8700.1
34	-6306.7 8141.9	1351.3	2243.5	-76.131	.00000	.00000	2243.5	1352.1	-6307.5	8551.0
35	-3074.3 7768.1	-8941.8	-140.84	-181.39	.00000	.00000	-140.84	-3068.7	-8947.4	8806.6
36	-1322.5 5491.0	-4565.5	1686.2	-524.09	.00000	.00000	1686.2	-1239.9	-4648.1	6334.3

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
37	-992.47 4817.6	3044.7	4024.5	-815.49	.00000	.00000	4024.5	3203.2	-1151.0	5175.5
38	5476.4 5629.8	-153.40	5476.4	.00000	.00000	.00000	5476.4	5476.4	-153.40	5629.8
39	5496.7 5292.3	180.68	5443.7	96.369	.00000	.00000	5498.4	5443.7	178.93	5319.
40	5401.0 5418.9	-28.581	5367.6	146.30	.00000	.00000	5405.0	5367.6	-32.521	5437.
41	5369.0 5366.7	16.455	5391.9	98.163	.00000	.00000	5391.9	5370.8	14.655	5377.
42	5351.7 5335.5	35.023	5387.6	52.040	.00000	.00000	5387.6	5352.2	34.514	5353.
43	5423.9 5381.4	31.182	5401.1	2.3668	.00000	.00000	5423.9	5401.1	31.181	5392.
44	5501.4 5468.5	2.0876	5437.3	-58.474	.00000	.00000	5502.0	5437.3	1.4660	5500.
45	5599.1 5143.4	506.86	5616.7	-379.90	.00000	.00000	5627.3	5616.7	478.68	5148.

HABGE-01/99-0745, Revision 2

46	6244.3 5606.8	770.57	5889.1	-1047.6	.00000	.00000	6437.9	5889.1	576.91	5861.0
47	7106.7 7155.8	-268.44	5944.8	-1159.3	.00000	.00000	7284.7	5944.8	-446.38	7731.1
48	7690.5 7616.1	-502.47	6247.8	-454.37	.00000	.00000	7715.6	6247.8	-527.59	8243.2
49	7879.1 7350.4	-4.1406	6660.7	37.669	.00000	.00000	7879.2	6660.7	-4.3206	7883.6
50	7672.4 7293.4	-47.382	6713.7	164.06	.00000	.00000	7675.9	6713.7	-50.867	7726.8
51	7446.5 7176.4	-40.747	6747.1	250.93	.00000	.00000	7454.9	6747.1	-49.147	7504.1
52	7080.3 6932.5	-14.145	6701.2	302.61	.00000	.00000	7093.2	6701.2	-27.029	7120.3
53	6699.0 6690.3	-10.402	6610.9	330.25	.00000	.00000	6715.2	6610.9	-26.618	6741.8
54	6295.1 6428.1	-7.0747	6486.2	347.20	.00000	.00000	6486.2	6314.2	-26.145	6512.4

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
55	5881.5 6159.6	-6.6741	6335.4	361.12	.00000	.00000	6335.4	5903.6	-28.739	6364.
56	5457.4 5884.6	-6.7690	6162.6	374.71	.00000	.00000	6162.6	5482.9	-32.345	6194.
57	5020.9 5604.5	-7.1359	5970.3	389.00	.00000	.00000	5970.3	5050.9	-37.053	6007.
58	4569.9 5320.3	-7.4882	5759.9	404.19	.00000	.00000	5759.9	4605.3	-42.905	5802.
59	4102.1 5034.3	-7.8073	5532.3	420.23	.00000	.00000	5532.3	4144.6	-50.336	5582.
60	3615.8 4750.0	-8.0847	5288.2	437.00	.00000	.00000	5288.2	3667.7	-60.038	5348.
61	3109.7 4472.3	-8.2728	5028.0	454.31	.00000	.00000	5028.0	3174.6	-73.120	5101.

62	2583.2 4208.1	-8.1880	4752.2	471.76	.00000	.00000	4752.2	2666.5	-91.397	4843.6
63	2036.7 3966.2	-7.4987	4461.5	488.37	.00000	.00000	4461.5	2147.4	-118.18	4579.7
64	1472.6 3757.4	-5.3348	4157.5	502.23	.00000	.00000	4157.5	1627.1	-159.85	4317.4
65	897.83 3593.0	-1.4089	3842.8	509.82	.00000	.00000	3842.8	1128.0	-231.55	4074.4
66	322.08 3480.6	7.4243	3522.0	506.35	.00000	.00000	3522.0	694.98	-365.48	3887.5
67	-222.64 3417.6	15.506	3204.0	482.22	.00000	.00000	3204.0	393.14	-600.27	3804.3
68	-757.71 3406.0	48.053	2892.2	436.21	.00000	.00000	2892.2	238.97	-948.62	3840.8
69	-1084.6 3358.4	24.952	2621.6	375.89	.00000	.00000	2621.6	140.30	-1200.0	3821.5
70	-1605.8 3428.1	-76.642	2280.2	291.31	.00000	.00000	2280.2	-23.027	-1659.4	3939.7
71	-1835.6 3698.9	989.81	2351.0	-12.137	.00000	.00000	2351.0	989.86	-1835.6	4186.7
72	-752.75 4424.8	-2697.6	1431.6	-1502.9	.00000	.00000	1431.6	64.914	-3515.3	4946.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
73	139.64 7112.6	-5529.0	843.05	-2158.2	.00000	.00000	867.81	843.05	-6257.1	7124.
74	247.33 4975.2	-3061.7	1610.9	-1573.9	.00000	.00000	1610.9	876.37	-3690.8	5301.
75	3775.3 3809.0	-33.615	3775.3	.00000	.00000	.00000	3775.3	3775.3	-33.615	3809.
76	3779.4 3745.2	37.832	3750.4	211.86	.00000	.00000	3791.3	3750.4	25.875	3765.
77	3757.3 3736.2	30.422	3729.3	240.32	.00000	.00000	3772.8	3729.3	14.990	3757.

HABCE-01/99-0745, Revision 2

78	3759.3 3733.9	18.167	3741.1	67.022	.00000	.00000	3760.5	3741.1	16.967	3743.5
79	3757.8 3697.5	63.041	3762.7	27.978	.00000	.00000	3762.7	3758.0	62.829	3699.9
80	3762.7 3696.5	69.327	3767.6	-40.119	.00000	.00000	3767.6	3763.1	68.891	3698.7
81	3831.6 3714.4	105.44	3799.8	-100.17	.00000	.00000	3834.3	3799.8	102.75	3731.6
82	3220.5 3179.4	310.69	3694.5	-111.92	.00000	.00000	3694.5	3224.8	306.39	3388.1
83	1786.9 2073.6	2017.4	3627.8	-653.72	.00000	.00000	3627.8	2565.9	1238.3	2389.5
84	1306.7 3169.2	-953.76	2353.3	-700.77	.00000	.00000	2353.3	1506.3	-1153.4	3506.7
85	642.80 2282.1	-360.80	2231.3	-166.35	.00000	.00000	2231.3	669.66	-387.66	2619.0
86	-242.64 1902.7	-86.488	1732.6	29.853	.00000	.00000	1732.6	-80.975	-248.16	1980.7
87	104.09 1665.1	-97.205	1625.4	192.55	.00000	.00000	1625.4	220.71	-213.83	1839.3
88	273.18 1543.5	-62.448	1528.7	301.11	.00000	.00000	1528.7	450.08	-239.35	1768.1
89	465.99 1465.4	-29.634	1478.8	353.00	.00000	.00000	1478.8	649.47	-213.12	1691.9
90	652.99 1435.7	-18.037	1451.1	382.29	.00000	.00000	1451.1	826.12	-191.16	1642.3

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINI
91	837.76 1445.7	-13.730	1445.0	399.65	.00000	.00000	1445.0	995.95	-171.92	1616.
92	1016.1 1488.4	-12.658	1455.0	413.42	.00000	.00000	1455.0	1161.6	-158.21	1613.
93	1191.1 1557.4	-12.996	1478.8	426.81	.00000	.00000	1478.8	1327.0	-148.94	1627.

94	1364.7 1646.8	-13.649	1514.4	440.99	.00000	.00000	1514.4	1493.7	-142.66	1657.1
95	1538.9 1752.3	-14.306	1560.4	456.20	.00000	.00000	1662.9	1560.4	-138.39	1801.3
96	1715.1 1870.9	-14.895	1615.7	472.39	.00000	.00000	1835.7	1615.7	-135.48	1971.2
97	1894.7 2000.5	-15.417	1679.3	489.42	.00000	.00000	2012.8	1679.3	-133.52	2146.3
98	2078.6 2139.8	-15.785	1750.7	507.09	.00000	.00000	2194.9	1750.7	-132.10	2327.0
99	2267.4 2287.2	-15.688	1829.4	524.93	.00000	.00000	2382.3	1829.4	-130.60	2512.9
100	2461.3 2440.6	-14.412	1915.2	541.89	.00000	.00000	2574.7	1915.2	-127.82	2702.6
101	2659.8 2596.6	-10.763	2007.5	555.82	.00000	.00000	2770.8	2007.5	-121.83	2892.7
102	2860.1 2748.8	-2.7381	2105.9	562.89	.00000	.00000	2966.8	2105.9	-109.44	3076.3
103	3061.7 2892.3	11.046	2209.8	557.42	.00000	.00000	3160.3	2209.8	-87.619	3247.9
104	3244.0 3005.3	33.367	2313.7	530.62	.00000	.00000	3329.4	2313.7	-52.056	3381.5
105	3429.7 3095.9	76.225	2425.9	482.15	.00000	.00000	3497.7	2425.9	8.2797	3489.4
106	3554.0 3185.5	50.198	2502.0	387.20	.00000	.00000	3596.3	2502.0	7.9183	3588.3
107	3828.3 3368.0	81.173	2638.1	339.40	.00000	.00000	3858.8	2638.1	50.679	3808.1
108	2614.4 2214.9	395.55	2420.7	353.44	.00000	.00000	2669.3	2420.7	340.61	2328.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINI
109	-1672.4 2338.2	-578.14	816.30	-516.12	.00000	.00000	816.30	-373.12	-1877.4	2693.

HABGE-01/99-0745, Revision 2

110	-2026.2 3702.1	-2995.6	-62.398	-1528.1	.00000	.00000	-62.398	-907.76	-4114.1	4051.7
111	279.45 11195.	-11789.	-2014.2	-833.93	.00000	.00000	336.80	-2014.2	-11847.	12184.
112	1162.4 1126.9	35.451	1162.4	.00000	.00000	.00000	1162.4	1162.4	35.451	1126.9
113	1187.4 1241.5	-68.558	1157.3	16.880	.00000	.00000	1187.6	1157.3	-68.785	1256.4
114	1271.3 1221.2	86.287	1218.6	221.16	.00000	.00000	1311.3	1218.6	46.358	1264.9
115	1341.2 1415.5	13.413	1243.4	346.84	.00000	.00000	1426.3	1243.4	-71.731	1498.0
116	1377.9 1333.3	84.686	1317.4	244.80	.00000	.00000	1422.7	1317.4	39.896	1382.8
117	1261.8 1228.5	75.372	1297.4	139.20	.00000	.00000	1297.4	1277.9	59.257	1238.1
118	972.62 887.42	244.76	1230.5	34.133	.00000	.00000	1230.5	974.21	243.16	987.37
119	1317.3 1490.2	-93.373	1214.5	348.92	.00000	.00000	1398.9	1214.5	-174.96	1573.8
120	-319.20 3353.4	3060.2	1619.8	934.06	.00000	.00000	3301.2	1619.8	-560.19	3861.4
121	-5804.2 4338.8	-1677.4	-1706.8	798.83	.00000	.00000	-1528.2	-1706.8	-5953.5	4425.3
122	-13275. 11537.	-114.76	-4910.9	49.480	.00000	.00000	-114.58	-4910.9	-13276.	13162.7
123	-11922. 10128.	-251.36	-5505.3	-159.89	.00000	.00000	-249.17	-5505.3	-11925.	11675.
124	-11441. 9815.7	-111.71	-6059.8	10.364	.00000	.00000	-111.70	-6059.8	-11441.	11330
125	-10536. 9104.8	-90.215	-6325.7	98.333	.00000	.00000	-89.289	-6325.7	-10537.	10448
126	-9509.6 8355.5	-46.453	-6385.6	147.91	.00000	.00000	-44.142	-6385.6	-9512.0	9467.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

HABGE-01/99-0745, Revision 2

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
127	-8446.2 7585.1	-29.674	-6313.7	180.30	.00000	.00000	-25.813	-6313.7	-8450.0	8424.2
128	-7378.2 6830.6	-23.152	-6141.7	205.37	.00000	.00000	-17.422	-6141.7	-7383.9	7366.5
129	-6308.8 6101.7	-20.866	-5889.1	227.47	.00000	.00000	-12.648	-5889.1	-6317.1	6304.4
130	-5233.9 5406.3	-20.593	-5569.6	249.27	.00000	.00000	-8.7012	-5245.8	-5569.6	5560.9
131	-4144.3 4757.9	-20.900	-5191.4	271.47	.00000	.00000	-3.1038	-4162.1	-5191.4	5188.3
132	-3031.7 4185.0	-21.343	-4760.4	294.21	.00000	.00000	7.1408	-3060.2	-4760.4	4767.5
133	-1888.9 3738.1	-21.798	-4280.5	317.40	.00000	.00000	30.684	-1941.4	-4280.5	4311.2
134	-710.21 3491.0	-22.238	-3755.0	340.94	.00000	.00000	118.10	-850.54	-3755.0	3873.1
135	508.70 3516.9	-22.539	-3186.0	364.68	.00000	.00000	694.24	-208.08	-3186.0	3880.2
136	1770.6 3842.2	-22.303	-2575.4	388.27	.00000	.00000	1851.1	-102.77	-2575.4	4426.5
137	3075.9 4429.3	-20.561	-1925.1	410.89	.00000	.00000	3129.5	-74.159	-1925.1	5054.5
138	4419.6 5210.1	-15.978	-1238.0	430.87	.00000	.00000	4461.0	-57.445	-1238.0	5699.1
139	5789.0 6116.4	-5.3480	-519.07	445.35	.00000	.00000	5823.1	-39.377	-519.07	6342.1
140	7153.9 7083.3	11.002	220.40	448.73	.00000	.00000	7182.0	220.40	-17.077	7199.
141	8480.2 8049.1	44.432	970.16	438.90	.00000	.00000	8503.0	970.16	21.658	8481.
142	9680.4 8927.9	83.268	1696.8	402.02	.00000	.00000	9697.2	1696.8	66.457	9630.
143	10690. 9692.3	79.639	2359.4	340.42	.00000	.00000	10701.	2359.4	68.728	10632
144	11371. 10112.	170.85	2951.4	269.89	.00000	.00000	11377.	2951.4	164.35	11213

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

HABCE-01/99-0745, Revision 2

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
145	13498. 12002.	124.50	3922.7	721.27	.00000	.00000	13537.	3922.7	85.712	13451.
146	18073. 16394.	-267.44	5616.2	1376.9	.00000	.00000	18176.	5616.2	-370.24	18546.
147	8263.9 7292.1	249.89	2875.7	1016.3	.00000	.00000	8390.7	2875.7	123.00	8267.7
148	1966.4 11251.	-10504.	-2219.8	1383.2	.00000	.00000	2118.0	-2219.8	-10656.	12774.
149	522.08 573.22	-51.139	522.08	.00000	.00000	.00000	522.08	522.08	-51.139	573.22
150	509.42 539.17	-23.880	520.79	6.0370	.00000	.00000	520.79	509.48	-23.949	544.73
151	474.04 478.09	7.7103	496.14	-10.177	.00000	.00000	496.14	474.27	7.4883	488.65
152	423.44 409.35	39.832	469.61	-13.807	.00000	.00000	469.61	423.93	39.336	430.27
153	352.98 311.96	94.837	440.20	13.652	.00000	.00000	440.20	353.70	94.117	346.09
154	240.97 215.69	157.18	386.60	45.050	.00000	.00000	386.60	260.59	137.55	249.09
155	16.300 288.80	156.95	255.19	115.69	.00000	.00000	255.19	222.01	-48.762	303.95
156	-355.20 628.60	168.65	60.504	235.00	.00000	.00000	258.62	60.504	-445.17	703.7
157	-597.01 534.40	-560.63	-380.84	286.00	.00000	.00000	-292.24	-380.84	-865.40	573.1
158	5865.0 4789.8	405.60	2571.9	300.49	.00000	.00000	5881.5	2571.9	389.11	5492.
159	5267.6 4821.7	-287.99	2575.3	176.06	.00000	.00000	5273.2	2575.3	-293.57	5566.
160	4356.2 3996.0	-221.63	2559.3	52.969	.00000	.00000	4356.8	2559.3	-222.25	4579.
161	3880.0 3578.6	-164.09	2591.7	25.609	.00000	.00000	3880.1	2591.7	-164.26	4044.
162	3534.6 3260.4	-85.496	2618.3	30.681	.00000	.00000	3534.9	2618.3	-85.756	3620.

HABGE-01/99-0745, Revision 2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
163	3212.9 2996.0	-44.461	2591.2	37.186	.00000	.00000	3213.3	2591.2	-44.885	3258.2
164	2908.8 2765.0	-25.338	2528.8	48.297	.00000	.00000	2909.6	2528.8	-26.133	2935.7
165	2609.3 2548.9	-18.640	2438.2	61.665	.00000	.00000	2610.8	2438.2	-20.087	2630.8
166	2307.2 2337.1	-17.311	2324.9	75.697	.00000	.00000	2324.9	2309.7	-19.774	2344.6
167	1998.4 2125.7	-18.026	2192.2	89.649	.00000	.00000	2192.2	2002.4	-22.004	2214.2
168	1680.7 1915.2	-19.254	2042.5	103.33	.00000	.00000	2042.5	1686.9	-25.511	2068.1
169	1352.5 1709.4	-20.443	1877.4	116.68	.00000	.00000	1877.4	1362.3	-30.288	1907.7
170	1012.8 1515.9	-21.494	1697.9	129.71	.00000	.00000	1697.9	1028.8	-37.513	1735.4
171	660.87 1347.7	-22.419	1504.7	142.46	.00000	.00000	1504.7	689.38	-50.931	1555.6
172	296.04 1224.3	-23.086	1298.5	154.97	.00000	.00000	1298.5	358.92	-85.957	1384.
173	-82.248 1170.3	-22.979	1080.1	167.33	.00000	.00000	1080.1	117.32	-222.55	1302.
174	-474.61 1206.8	-20.927	850.07	179.66	.00000	.00000	850.07	41.604	-537.14	1387.
175	-881.82 1339.1	-14.870	609.35	192.21	.00000	.00000	609.35	25.834	-922.52	1531.
176	-1304.8 1557.1	-1.8465	358.96	205.29	.00000	.00000	358.96	29.733	-1336.4	1695.
177	-1746.3 1847.6	21.420	99.202	220.06	.00000	.00000	99.202	48.402	-1773.3	1872.
178	-2209.2 2201.2	58.302	-169.85	237.47	.00000	.00000	82.906	-169.85	-2233.8	2316

HABGE-01/99-0745, Revision 2

179	-2705.8 2614.8	102.81	-455.68	261.58	.00000	.00000	126.96	-455.68	-2730.0	2857.0
180	-3225.6 3068.3	153.00	-755.77	285.28	.00000	.00000	176.92	-755.77	-3249.5	3426.4

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
181	-3980.0 3646.9	65.747	-1209.4	393.54	.00000	.00000	103.67	-1209.4	-4017.9	4121.6
182	-5646.5 5118.6	10.735	-2035.8	726.90	.00000	.00000	102.64	-2035.8	-5738.4	5841.1
183	-6855.1 4558.9	-2054.8	-3531.1	939.60	.00000	.00000	-1877.5	-3531.1	-7032.4	5155.0
184	77.926 124.30	-46.378	77.926	.00000	.00000	.00000	77.926	77.926	-46.378	124.30
185	72.635 110.32	-27.701	78.548	22.173	.00000	.00000	78.548	77.317	-32.383	110.93
186	56.282 117.28	-.27892	72.371	55.933	.00000	.00000	90.678	72.371	-34.675	125.35
187	26.025 155.00	33.835	61.220	87.558	.00000	.00000	117.57	61.220	-57.715	175.29
188	-17.529 198.17	91.726	48.017	100.33	.00000	.00000	151.34	48.017	-77.140	228.4
189	-57.816 268.36	150.45	30.484	114.36	.00000	.00000	200.99	30.484	-108.35	309.3
190	-34.424 297.63	155.98	18.602	140.97	.00000	.00000	230.88	18.602	-109.32	340.2
191	116.39 280.53	55.375	36.249	156.46	.00000	.00000	245.29	36.249	-73.526	318.8
192	246.36 409.56	-128.58	35.875	143.49	.00000	.00000	294.98	35.875	-177.19	472.1
193	2347.3 2656.5	4.5290	657.14	943.65	.00000	.00000	2680.1	657.14	-328.29	3008.
194	2356.2 1949.7	1040.2	1155.4	857.88	.00000	.00000	2779.4	1155.4	617.05	2162.

HABGE-01/99-0745, Revision 2

D19

195	2164.4 1813.2	179.72	948.64	307.60	.00000	.00000	2210.9	948.64	133.14	2077.8
196	2119.2 2091.6	-228.72	956.20	282.93	.00000	.00000	2152.9	956.20	-262.34	2415.2
197	2126.1 2111.8	-250.10	1121.4	252.42	.00000	.00000	2152.6	1121.4	-276.62	2429.2
198	1906.1 1844.7	-145.28	1191.3	223.90	.00000	.00000	1930.2	1191.3	-169.43	2099.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
199	1692.1 1623.8	-76.903	1204.8	209.65	.00000	.00000	1716.7	1204.8	-101.41	1818.1
200	1516.6 1466.5	-40.056	1194.0	204.69	.00000	.00000	1543.0	1194.0	-66.521	1609.6
201	1356.6 1343.9	-23.454	1163.1	208.97	.00000	.00000	1387.6	1163.1	-54.400	1442.0
202	1200.9 1237.1	-17.106	1116.7	217.80	.00000	.00000	1238.6	1116.7	-54.880	1293.5
203	1043.2 1137.1	-15.711	1057.5	228.27	.00000	.00000	1090.3	1057.5	-62.824	1153.2
204	881.36 1041.1	-16.206	987.53	239.23	.00000	.00000	987.53	941.14	-75.989	1063.
205	714.11 950.02	-17.204	908.34	250.30	.00000	.00000	908.34	791.58	-94.664	1003.
206	540.94 867.41	-18.190	820.86	261.35	.00000	.00000	820.86	644.08	-121.32	942.1
207	361.52 799.16	-19.074	725.74	272.36	.00000	.00000	725.74	503.47	-161.03	886.
208	175.63 753.10	-19.866	623.45	283.34	.00000	.00000	623.45	377.61	-221.85	845.
209	-16.915 737.67	-20.450	514.43	294.36	.00000	.00000	514.43	275.68	-313.05	827.
210	-216.35 759.37	-20.357	399.12	305.53	.00000	.00000	399.12	202.50	-439.21	838.

HABGE-01/99-0745, Revision 2

211	-423.16 820.60	-18.518	278.03	317.12	.00000	.00000	278.03	155.33	-597.01	875.04
212	-638.27 920.40	-13.001	151.73	329.66	.00000	.00000	151.73	128.70	-779.97	931.69
213	-863.63 1057.4	-1.1378	20.532	344.02	.00000	.00000	119.27	20.532	-984.04	1103.3
214	-1102.2 1232.6	20.379	-115.54	361.97	.00000	.00000	126.97	-115.54	-1208.8	1335.8
215	-1361.5 1450.0	51.858	-259.57	386.40	.00000	.00000	150.60	-259.57	-1460.3	1610.9
216	-1647.4 1714.4	94.124	-414.18	421.60	.00000	.00000	190.82	-414.18	-1744.1	1934.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
217	-1984.4 2022.3	123.06	-599.07	464.96	.00000	.00000	221.08	-599.07	-2082.4	2303.5
218	-2276.1 2300.0	116.34	-786.57	551.10	.00000	.00000	237.18	-786.57	-2397.0	2634.1
219	-1953.7 1812.9	-280.95	-881.60	614.40	.00000	.00000	-79.534	-881.60	-2155.1	2075.6
220	-1472.5 1108.5	-1154.5	-1069.0	603.63	.00000	.00000	-689.27	-1069.0	-1937.7	1248.1
221	-2251.7 3731.7	-5552.7	-2440.2	1097.9	.00000	.00000	-1919.9	-2440.2	-5884.5	3964.1
222	-2278.4 2970.6	360.89	-685.79	1084.1	.00000	.00000	749.10	-685.79	-2666.6	3415.1
223	-342.58 304.39	-38.198	-342.58	.00000	.00000	.00000	-38.198	-342.58	-342.58	304.39
224	-341.53 306.70	-39.065	-342.00	28.501	.00000	.00000	-36.403	-342.00	-344.19	307.1
225	-338.37 332.97	-21.662	-326.95	68.429	.00000	.00000	-7.5092	-326.95	-352.53	345.1
226	-332.93 388.29	12.113	-315.00	111.92	.00000	.00000	45.234	-315.00	-366.05	411.1

HABGE-01/99-0745, Revision 2

227	-338.28 458.92	68.598	-305.56	138.21	.00000	.00000	111.10	-305.56	-380.78	491.89
228	-336.04 526.03	144.03	-289.16	148.95	.00000	.00000	186.48	-289.16	-378.49	564.98
229	-281.21 494.75	182.86	-264.66	110.79	.00000	.00000	207.96	-264.66	-306.31	514.26
230	-206.19 356.14	117.74	-256.99	30.946	.00000	.00000	120.67	-209.12	-256.99	377.66
231	-178.71 370.66	170.09	-217.98	-12.729	.00000	.00000	170.55	-179.17	-217.98	388.53
232	-323.66 2221.8	-245.72	-2043.1	-783.10	.00000	.00000	499.38	-1068.8	-2043.1	2542.5
233	-525.44 2740.1	1324.2	-1462.8	-701.13	.00000	.00000	1559.9	-761.17	-1462.8	3022.7
234	-40.137 329.31	-291.27	-326.69	108.36	.00000	.00000	.15656	-326.69	-331.56	331.72

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIMP
235	-64.510 449.42	-268.22	-285.80	228.46	.00000	.00000	83.777	-285.80	-416.50	500.28
236	-68.250 614.74	-215.94	-237.89	342.72	.00000	.00000	208.49	-237.89	-492.68	701.1
237	-90.458 559.79	-100.28	-182.07	319.26	.00000	.00000	223.93	-182.07	-414.67	638.6
238	-124.36 505.75	-53.181	-169.65	286.03	.00000	.00000	199.47	-169.65	-377.01	576.4
239	-138.97 497.32	-31.470	-163.26	278.43	.00000	.00000	198.35	-163.26	-368.79	567.1
240	-151.40 514.17	-20.757	-162.21	286.22	.00000	.00000	207.50	-162.21	-379.66	587.1
241	-165.42 541.27	-16.425	-165.59	300.41	.00000	.00000	218.59	-165.59	-400.44	619.0
242	-180.86 571.81	-15.520	-171.82	316.78	.00000	.00000	229.19	-171.82	-425.58	654.1

243	-197.56 603.43	-15.959	-179.81	333.70	.00000	.00000	239.07	-179.81	-452.59	691.66
244	-215.42 635.34	-16.722	-189.02	350.59	.00000	.00000	248.32	-189.02	-480.46	728.78
245	-234.28 667.32	-17.452	-199.17	367.28	.00000	.00000	257.08	-199.17	-508.81	765.89
246	-253.97 699.33	-18.102	-210.13	383.77	.00000	.00000	265.45	-210.13	-537.52	802.97
247	-274.36 731.38	-18.696	-221.81	400.10	.00000	.00000	273.50	-221.81	-566.55	840.04
248	-295.32 763.64	-19.165	-234.09	416.35	.00000	.00000	281.41	-234.09	-595.89	877.30
249	-316.79 796.53	-19.180	-246.76	432.75	.00000	.00000	289.63	-246.76	-625.61	915.24
250	-338.84 831.16	-17.960	-259.52	449.82	.00000	.00000	299.17	-259.52	-655.98	955.15
251	-361.89 869.75	-14.069	-271.99	468.57	.00000	.00000	311.82	-271.99	-687.78	999.60
252	-386.92 916.16	-5.3603	-283.77	490.74	.00000	.00000	330.38	-283.77	-722.66	1053.0

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
253	-415.20 975.69	10.273	-294.69	518.88	.00000	.00000	358.33	-294.69	-763.26	1121.
254	-447.60 1055.9	32.251	-305.50	557.60	.00000	.00000	399.36	-305.50	-814.70	1214.
255	-487.82 1164.6	55.021	-320.02	612.26	.00000	.00000	453.33	-320.02	-886.12	1339.
256	-533.99 1301.6	72.867	-340.02	684.58	.00000	.00000	518.25	-340.02	-979.37	1497.
257	-457.73 1297.5	74.454	-318.82	696.37	.00000	.00000	553.84	-318.82	-937.12	1491.
258	-219.06 724.18	-187.03	-328.40	411.48	.00000	.00000	208.75	-328.40	-614.84	823.1

259	-82.436 318.66	-193.65	-267.75	158.58	.00000	.00000	30.006	-267.75	-306.09	336.10
260	286.17 5077.0	-5085.3	-2797.7	-1151.6	.00000	.00000	522.65	-2797.7	-5321.7	5844.4
261	261.75 2409.4	-62.188	-1259.9	-1136.9	.00000	.00000	1248.2	-1048.6	-1259.9	2508.1
262	-781.68 756.48	-25.196	-781.68	.00000	.00000	.00000	-25.196	-781.68	-781.68	756.48
263	-775.78 731.56	-48.543	-782.82	19.415	.00000	.00000	-48.025	-776.30	-782.82	734.79
264	-752.77 713.03	-42.935	-746.41	54.826	.00000	.00000	-38.725	-746.41	-756.98	718.25
265	-703.63 712.18	-12.811	-708.59	94.014	.00000	.00000	-.24493	-708.59	-716.19	715.95
266	-653.34 726.70	36.776	-667.76	117.87	.00000	.00000	56.353	-667.76	-672.92	729.27
267	-626.86 791.00	136.03	-616.54	130.95	.00000	.00000	157.88	-616.54	-648.71	806.59
268	-701.22 929.46	253.06	-608.32	105.30	.00000	.00000	264.54	-608.32	-712.70	977.24
269	-886.78 1139.8	341.25	-671.70	54.660	.00000	.00000	343.67	-671.70	-889.21	1232.9
270	-1022.3 1047.2	97.962	-853.96	25.714	.00000	.00000	98.552	-853.96	-1022.9	1121.4

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
271	-1068.8 5988.7	3155.6	-3693.8	113.88	.00000	.00000	3158.6	-1071.9	-3693.8	6852.
272	-1388.9 3333.0	-1730.7	-4878.3	52.904	.00000	.00000	-1380.9	-1738.7	-4878.3	3497.
273	-2086.5 1349.1	-599.78	-1508.7	212.12	.00000	.00000	-570.11	-1508.7	-2116.2	1546.
274	-2091.4 1497.9	-482.29	-1545.2	279.92	.00000	.00000	-434.99	-1545.2	-2138.7	1703..

HABCE-01/99-0745, Revision 2

275	-2208.5 1934.7	-115.28	-1541.5	322.90	.00000	.00000	-66.604	-1541.5	-2257.1	2190.5
276	-2100.4 1903.5	-45.370	-1557.5	271.37	.00000	.00000	-10.139	-1557.5	-2135.7	2125.5
277	-1922.1 1780.0	-30.149	-1536.4	237.79	.00000	.00000	-.72019	-1536.4	-1951.6	1950.9
278	-1776.1 1685.1	-23.558	-1511.5	232.21	.00000	.00000	6.6891	-1511.5	-1806.4	1813.0
279	-1647.1 1606.0	-18.285	-1480.2	238.05	.00000	.00000	15.793	-1480.2	-1681.2	1697.0
280	-1523.1 1529.5	-16.181	-1441.9	247.92	.00000	.00000	23.561	-1441.9	-1562.8	1586.4
281	-1398.5 1452.6	-15.812	-1395.9	259.31	.00000	.00000	31.220	-1395.9	-1445.5	1476.7
282	-1271.4 1374.9	-16.129	-1342.5	271.09	.00000	.00000	39.915	-1327.4	-1342.5	1382.4
283	-1140.6 1297.1	-16.574	-1282.1	282.81	.00000	.00000	50.571	-1207.8	-1282.1	1332.6
284	-1005.6 1220.0	-16.980	-1215.1	294.36	.00000	.00000	64.033	-1086.6	-1215.1	1279.2
285	-865.78 1145.0	-17.336	-1142.1	305.76	.00000	.00000	81.368	-964.48	-1142.1	1223.5
286	-720.99 1074.4	-17.671	-1063.4	317.02	.00000	.00000	104.13	-842.79	-1063.4	1167.5
287	-570.92 1010.7	-17.966	-979.24	328.22	.00000	.00000	134.71	-723.60	-979.24	1113.9
288	-415.27 957.72	-18.064	-889.74	339.54	.00000	.00000	176.69	-610.02	-889.74	1066.4

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
289	-253.52 920.25	-17.554	-794.77	351.43	.00000	.00000	235.17	-506.24	-794.77	1029.
290	-84.939 903.99	-15.666	-693.91	364.86	.00000	.00000	316.20	-416.80	-693.91	1010.

291	91.615 914.95	-11.058	-586.31	381.49	.00000	.00000	425.21	-344.65	-586.31	1011.5
292	277.49 957.98	-2.6002	-471.10	403.55	.00000	.00000	564.61	-289.71	-471.10	1035.7
293	477.86 1037.0	9.6824	-346.32	433.15	.00000	.00000	736.13	-248.59	-346.32	1082.5
294	701.03 1165.9	11.857	-213.86	475.34	.00000	.00000	943.55	-213.86	-230.66	1174.2
295	959.30 1348.0	9.0825	-66.052	528.24	.00000	.00000	1194.7	-66.052	-226.28	1420.9
296	1088.9 1399.6	20.736	40.821	528.80	.00000	.00000	1306.4	40.821	-196.76	1503.2
297	745.74 847.71	333.70	70.419	351.68	.00000	.00000	947.30	132.13	70.419	876.88
298	375.47 543.67	152.68	-125.95	188.18	.00000	.00000	482.75	45.394	-125.95	608.70
299	1074.0 3558.6	1507.2	-2246.3	66.206	.00000	.00000	1517.1	1064.1	-2246.3	3763.4
300	1032.2 6845.8	-6581.7	-4611.2	65.610	.00000	.00000	1032.8	-4611.2	-6582.2	7615.0
301	-1265.7 1250.0	-15.613	-1265.7	.00000	.00000	.00000	-15.613	-1265.7	-1265.7	1250.0
302	-1259.2 1215.3	-48.511	-1268.3	4.5714	.00000	.00000	-48.493	-1259.2	-1268.3	1219.8
303	-1233.7 1187.8	-50.269	-1226.0	-80.231	.00000	.00000	-44.854	-1226.0	-1239.1	1194.3
304	-1169.2 1173.8	-22.382	-1181.2	-127.45	.00000	.00000	-8.3897	-1181.2	-1183.2	1174.8
305	-1057.4 1111.6	21.567	-1113.4	-51.289	.00000	.00000	24.000	-1059.8	-1113.4	1137.
306	-863.72 1043.4	119.00	-975.77	10.561	.00000	.00000	119.11	-863.84	-975.77	1094.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
------	------------	----	----	-----	-----	-----	----	----	----	------

HABGE01/99-0745, Revision 2

D26

307	-581.24 980.61	291.15	-761.90	58.570	.00000	.00000	295.06	-585.16	-761.90	1057.0
308	-254.31 855.80	391.67	-562.09	84.765	.00000	.00000	402.61	-265.25	-562.09	964.69
309	-60.989 631.26	181.08	-518.31	81.732	.00000	.00000	206.09	-86.001	-518.31	724.41
310	-6308.7 4932.6	-616.00	-3327.7	51.315	.00000	.00000	-615.54	-3327.7	-6309.1	5693.6
311	-5880.3 4590.8	-597.80	-3599.6	75.256	.00000	.00000	-596.72	-3599.6	-5881.4	5284.6
312	-5037.3 4353.3	-94.182	-3348.9	63.156	.00000	.00000	-93.375	-3348.9	-5038.1	4944.7
313	-4488.0 4007.5	-17.864	-3289.0	6.2806	.00000	.00000	-17.855	-3289.0	-4488.0	4470.1
314	-4138.8 3759.7	-22.726	-3276.1	-1.6523	.00000	.00000	-22.725	-3276.1	-4138.8	4116.0
315	-3836.8 3554.2	-20.666	-3236.2	10.866	.00000	.00000	-20.635	-3236.2	-3836.9	3816.2
316	-3545.1 3355.9	-17.395	-3169.1	28.763	.00000	.00000	-17.161	-3169.1	-3545.3	3528.2
317	-3251.9 3153.9	-15.753	-3078.0	47.616	.00000	.00000	-15.052	-3078.0	-3252.6	3237.6
318	-2952.7 2946.2	-15.296	-2965.7	66.566	.00000	.00000	-13.788	-2954.2	-2965.7	2951.9
319	-2644.3 2732.9	-15.269	-2834.1	85.001	.00000	.00000	-12.524	-2647.1	-2834.1	-2821.3
320	-2325.4 2515.5	-15.347	-2684.9	102.70	.00000	.00000	-10.790	-2330.0	-2684.9	2674.1
321	-1995.2 2296.9	-15.428	-2519.6	119.67	.00000	.00000	-8.2207	-2002.4	-2519.6	2511.
322	-1653.2 2081.5	-15.510	-2339.6	135.97	.00000	.00000	-4.2972	-1664.4	-2339.6	2335.
323	-1299.0 1876.2	-15.611	-2145.9	151.68	.00000	.00000	2.0714	-1316.7	-2145.9	2148.
324	-932.67 1691.3	-15.726	-1939.3	166.88	.00000	.00000	13.701	-962.09	-1939.3	1953.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

HABGE-01/99-0745, Revision 2

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
325	-553.75 1541.8	-15.773	-1720.4	181.72	.00000	.00000	39.858	-609.38	-1720.4	1760.2
326	-161.68 1447.1	-15.540	-1489.4	196.57	.00000	.00000	121.10	-298.32	-1489.4	1610.5
327	245.37 1427.8	-14.561	-1245.8	212.21	.00000	.00000	364.25	-133.45	-1245.8	1610.1
328	671.34 1498.6	-12.107	-988.24	229.98	.00000	.00000	741.52	-82.287	-988.24	1729.8
329	1123.7 1663.0	-6.8163	-713.17	251.70	.00000	.00000	1177.2	-60.321	-713.17	1890.4
330	1609.1 1915.5	-.31807	-418.44	277.45	.00000	.00000	1655.6	-46.804	-418.44	2074.0
331	2139.9 2258.5	-1.3047	-102.35	310.74	.00000	.00000	2184.0	-45.490	-102.35	2286.4
332	2716.3 2699.0	-35.626	226.74	348.50	.00000	.00000	2759.8	226.74	-79.074	2838.8
333	3442.0 3202.5	52.935	672.14	402.30	.00000	.00000	3489.1	672.14	5.8325	3483.2
334	4477.6 3699.6	495.13	1391.2	444.27	.00000	.00000	4526.6	1391.2	446.18	4080.4
335	5090.8 4237.7	408.82	1748.9	414.73	.00000	.00000	5127.2	1748.9	372.36	4754.9
336	-6105.8 6023.5	-82.298	-6105.8	.00000	.00000	.00000	-82.298	-6105.8	-6105.8	6023.5
337	-6032.2 6114.8	69.811	-6057.8	-2.9471	.00000	.00000	69.812	-6032.2	-6057.8	6127.
338	-5958.4 5771.6	-278.79	-5972.9	569.09	.00000	.00000	-222.33	-5972.9	-6014.8	5792.
339	-5890.1 6118.7	37.131	-5826.9	944.58	.00000	.00000	184.02	-5826.9	-6037.0	6221.
340	-5952.9 6057.2	2.9036	-5892.4	724.53	.00000	.00000	89.776	-5892.4	-6039.8	6129.
341	-6513.7 6483.2	60.763	-6084.5	694.21	.00000	.00000	133.27	-6084.5	-6586.2	6719.
342	-7943.4 7734.2	227.43	-6644.0	813.48	.00000	.00000	307.63	-6644.0	-8023.6	8331.

***** POST1 NODAL STRESS LISTING *****

HABCE-01/99-0745, Revision 2

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SKY	SYZ	SKZ	S1	S2	S3	SINT
343	-10225.9256.8	-127.80	-7658.7	1010.8	.00000	.00000	-27.608	-7658.7	-10325.	10297.
344	-6925.39216.2	2573.9	-6317.2	192.02	.00000	.00000	2577.7	-6317.2	-6929.2	9506.9
345	-1336.04386.5	-2141.6	-6014.9	395.97	.00000	.00000	-1174.0	-2303.6	-6014.9	4840.9
346	2052.94544.3	315.16	-2883.0	784.32	.00000	.00000	2354.6	13.531	-2883.0	5237.6
347	-2059.83368.7	-97.326	-3974.8	154.34	.00000	.00000	-85.262	-2071.9	-3974.8	3889.5
348	-2052.73265.2	38.210	-3717.1	114.43	.00000	.00000	44.453	-2058.9	-3717.1	3761.5
349	-2073.13094.4	-4.7098	-3551.0	136.71	.00000	.00000	4.2863	-2082.1	-3551.0	3555.3
350	-2339.43091.0	.74269	-3491.3	135.67	.00000	.00000	8.5816	-2347.2	-3491.3	3499.9
351	-2644.03158.2	-1.4478	-3487.8	128.30	.00000	.00000	4.7673	-2650.2	-3487.8	3492.6
352	-2945.73273.3	-1.5199	-3515.3	122.59	.00000	.00000	3.5758	-2950.8	-3515.3	3518.9
353	-3251.83426.2	-2.0864	-3570.2	117.98	.00000	.00000	2.1914	-3256.1	-3570.2	3572.
354	-3565.13610.6	-2.4349	-3648.7	114.00	.00000	.00000	1.2093	-3568.7	-3648.7	3649.
355	-3885.73820.4	-2.7214	-3747.1	110.51	.00000	.00000	.42141	-3747.1	-3888.8	3889.
356	-4213.74051.1	-2.9343	-3863.0	107.49	.00000	.00000	-.19235	-3863.0	-4216.5	4216.
357	-4549.94299.8	-3.1028	-3994.2	104.87	.00000	.00000	-.68512	-3994.2	-4552.3	4551.
358	-4894.64564.4	-3.2470	-4139.4	102.61	.00000	.00000	-1.0955	-4139.4	-4896.8	4895
359	-5248.04842.9	-3.3763	-4297.2	100.60	.00000	.00000	-1.4472	-4297.2	-5250.0	5248.

HABGE-01/99-0745, Revision 2

360	-5609.6	-3.5287	-4466.3	98.766	.00000	.00000	-1.7892	-4466.3	-5611.3	5609.6
	5133.7									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
361	-5978.3 5435.0	-3.6097	-4645.6	97.030	.00000	.00000	-2.0343	-4645.6	-5979.9	5977.9
362	-6353.1 5744.8	-3.9071	-4833.9	95.413	.00000	.00000	-2.4736	-4833.9	-6354.6	6352.1
363	-6736.5 6065.4	-3.2006	-5031.0	94.439	.00000	.00000	-1.8763	-5031.0	-6737.9	6736.0
364	-7141.6 6404.3	-4.4891	-5241.3	95.346	.00000	.00000	-3.2156	-5241.3	-7142.9	7139.7
365	-7598.7 6795.7	4.0407	-5470.7	99.806	.00000	.00000	5.3507	-5470.7	-7600.0	7605.3
366	-8045.5 7151.5	-21.230	-5715.0	90.513	.00000	.00000	-20.210	-5715.0	-8046.5	8026.3
367	-8270.9 7391.4	19.944	-5877.3	59.753	.00000	.00000	20.374	-5877.3	-8271.4	8291.7
368	-8871.3 7755.3	-138.94	-6204.1	150.41	.00000	.00000	-136.35	-6204.1	-8873.9	8737.5
369	-13499. 12554.	864.84	-7424.2	737.60	.00000	.00000	902.62	-7424.2	-13537.	14439
370	-6321.1 5949.6	-358.40	-5987.9	757.07	.00000	.00000	-263.78	-5987.9	-6415.7	6152.
371	-680.41 3772.4	-2545.0	-4893.8	534.83	.00000	.00000	-537.90	-2687.5	-4893.8	4355.
372	-8884.5 8802.2	-82.298	-8884.5	.00000	.00000	.00000	-82.298	-8884.5	-8884.5	8802
373	-8921.6 8982.9	85.245	-8873.2	-33.053	.00000	.00000	85.367	-8873.2	-8921.7	9007
374	-9031.6 8766.9	-283.50	-8951.8	-583.34	.00000	.00000	-244.78	-8951.8	-9070.4	8825
375	-8998.0 9113.8	33.771	-8862.7	-947.30	.00000	.00000	132.06	-8862.7	-9096.3	9228.

HABGE-01/99-0745, Revision 2

376	-8903.7 8974.8	-6.7315	-8902.8	-682.71	.00000	.00000	45.352	-8902.8	-8955.7	9001.1
377	-8333.2 8581.2	19.066	-8714.9	-425.65	.00000	.00000	40.702	-8354.8	-8714.9	8755.6
378	-6888.1 7761.5	205.12	-8080.1	-130.64	.00000	.00000	207.52	-6890.5	-8080.1	8287.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
379	-4610.9 6216.2	-178.62	-7274.4	178.99	.00000	.00000	-171.40	-4618.1	-7274.4	7103.0
380	-3330.9 7992.3	3279.6	-5577.8	303.26	.00000	.00000	3293.5	-3344.8	-5577.8	8871.3
381	-7690.6 5170.3	-3005.0	-8412.0	540.36	.00000	.00000	-2943.5	-7752.1	-8412.0	5468.6
382	-12695. 11587.	-50.853	-9769.3	418.04	.00000	.00000	64.549	-9769.3	-12709.	12773.
383	-8775.3 8617.1	-106.59	-8661.8	-160.86	.00000	.00000	-103.61	-8661.8	-8778.3	8674.7
384	-8935.4 8854.6	38.051	-8682.7	-168.53	.00000	.00000	41.215	-8682.7	-8938.6	8979.8
385	-9028.6 8888.7	-13.074	-8764.1	-119.88	.00000	.00000	-11.481	-8764.1	-9030.2	9018.
386	-8852.0 8786.3	-7.5157	-8731.1	-99.417	.00000	.00000	-6.3983	-8731.1	-8853.1	8846.
387	-8618.5 8635.0	-8.0260	-8664.6	-88.594	.00000	.00000	-7.1146	-8619.4	-8664.6	8657.
388	-8374.2 8472.9	-6.9873	-8579.7	-78.808	.00000	.00000	-6.2451	-8374.9	-8579.7	8573.
389	-8115.0 8296.6	-6.7712	-8478.1	-70.029	.00000	.00000	-6.1665	-8115.6	-8478.1	8471.
390	-7840.7 8107.5	-6.5115	-8360.9	-62.328	.00000	.00000	-6.0157	-7841.2	-8360.9	8354.
391	-7552.7 7907.4	-6.3133	-8230.0	-55.527	.00000	.00000	-5.9048	-7553.1	-8230.0	8224.

392	-7252.3 7697.8	-6.1422	-8086.6	-49.418	.00000	.00000	-5.8052	-7252.6	-8086.6	8080.8
393	-6939.7 7479.7	-6.0057	-7931.9	-43.863	.00000	.00000	-5.7282	-6940.0	-7931.9	7926.1
394	-6615.3 7254.1	-5.9034	-7766.5	-38.781	.00000	.00000	-5.6758	-6615.5	-7766.5	7760.8
395	-6279.5 7022.3	-5.8261	-7591.2	-34.141	.00000	.00000	-5.6403	-6279.7	-7591.2	7585.6
396	-5933.3 6785.5	-5.7961	-7406.8	-29.937	.00000	.00000	-5.6449	-5933.4	-7406.8	7401.1

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
397	-5578.0 6545.7	-5.7099	-7214.1	-26.157	.00000	.00000	-5.5871	-5578.2	-7214.1	7208.5
398	-5215.1 6304.4	-5.8576	-7014.0	-22.715	.00000	.00000	-5.7586	-5215.2	-7014.0	7008.2
399	-4842.3 6062.5	-5.0790	-6805.9	-19.034	.00000	.00000	-5.0041	-4842.4	-6805.9	6800.9
400	-4446.6 5813.8	-6.4988	-6587.1	-13.820	.00000	.00000	-6.4558	-4446.6	-6587.1	6580.6
401	-3997.9 5557.6	1.5543	-6344.4	-5.3907	.00000	.00000	1.5616	-3997.9	-6344.4	6346.6
402	-3558.8 5292.6	-22.670	-6107.4	-10.982	.00000	.00000	-22.636	-3558.8	-6107.4	6084.6
403	-3339.9 5154.9	21.585	-5912.9	-38.420	.00000	.00000	22.024	-3340.4	-5912.9	5934.6
404	-2747.6 4792.1	-146.60	-5675.7	56.280	.00000	.00000	-145.38	-2748.8	-5675.7	5530.6
405	1883.0 5416.7	802.08	-3874.2	645.54	.00000	.00000	2184.5	500.63	-3874.2	6058.6
406	3199.3 5853.1	-421.91	-3494.5	439.17	.00000	.00000	3251.8	-474.41	-3494.5	6746.6
407	262.72 4319.4	-66.294	-4195.8	-213.97	.00000	.00000	368.11	-171.69	-4195.8	4563.6

HABGE-01/99-0745, Revision 2

408	1152.3 5081.5	2527.6	-3028.6	483.08	.00000	.00000	2680.3	999.58	-3028.6	5708.9
409	933.07 4516.1	-2640.7	-4058.4	427.07	.00000	.00000	983.39	-2691.0	-4058.4	5041.8
410	-280.19 1630.6	-140.02	-1835.2	32.334	.00000	.00000	-132.92	-287.28	-1835.2	1702.3
411	-367.90 1359.3	91.395	-1436.1	40.247	.00000	.00000	94.896	-371.40	-1436.1	1531.0
412	-422.73 1067.1	-151.60	-1328.0	9.1044	.00000	.00000	-151.29	-423.03	-1328.0	1176.7
413	-545.32 1113.7	101.96	-1183.6	-16.675	.00000	.00000	102.39	-545.75	-1183.6	1286.0
414	274.40 1180.9	45.429	1324.0	-6.8406	.00000	.00000	1324.0	274.60	45.225	1278.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

TIME=0.010000 LOAD CASE= 1000

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
415	285.57 921.86	51.828	1068.0	4.3509	.00000	.00000	1068.0	285.65	51.748	1016.3
416	374.41 975.75	-226.20	893.84	-56.512	.00000	.00000	893.84	379.68	-231.47	1125.3
417	291.99 692.87	283.91	951.68	-114.72	.00000	.00000	951.68	402.74	173.16	778.5
425	604.60 16117.8	-15828.	-109.81	564.02	.00000	.00000	623.94	-109.81	-15847.	16471
426	229.22 7215.4	-5182.8	2960.1	422.04	.00000	.00000	2960.1	261.94	-5215.5	8175.
427	-130.80 5143.3	4059.5	5576.1	282.34	.00000	.00000	5576.1	4078.5	-149.73	5725.
428	-137.17 12383.	-11698.	1352.3	296.06	.00000	.00000	1352.3	-129.59	-11705.	13058
429	-65570 7769.1	-5649.4	3183.7	328.91	.00000	.00000	3183.7	18.431	-5668.4	8852.
430	153.38 4719.5	824.17	5130.4	361.16	.00000	.00000	5130.4	981.65	-4.0953	5134.

HABGE-01/99-0745, Revision 2

431	-64.793 9967.2	-8794.8	2049.7	259.02	.00000	.00000	2049.7	-57.114	-8802.4	10852.
432	-49.416 7468.6	-5483.8	3018.3	234.66	.00000	.00000	3018.3	-39.303	-5493.9	8512.2
433	-26.545 5564.8	-2460.9	3893.3	210.65	.00000	.00000	3893.3	-8.4511	-2479.0	6372.3
434	-18.644 7916.8	-6565.7	2227.5	143.49	.00000	.00000	2227.5	-15.501	-6568.8	8796.3
435	30.319 7212.5	-5616.2	2502.2	151.41	.00000	.00000	2502.2	34.376	-5620.2	8122.4
436	82.210 6407.1	-4486.6	2829.6	159.17	.00000	.00000	2829.6	87.748	-4492.1	7321.7
437	-13.406 6747.2	-5570.7	1936.4	34.979	.00000	.00000	1936.4	-13.186	-5570.9	7507.3
438	84.683 6702.9	-5470.0	1974.2	51.808	.00000	.00000	1974.2	85.166	-5470.5	7444.7
439	101.66 6739.6	-5526.3	1942.3	19.707	.00000	.00000	1942.3	101.72	-5526.3	7468.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
440	-126.26 6054.1	-5267.4	1404.9	42.019	.00000	.00000	1404.9	-125.92	-5267.7	6672.
441	-126.86 6741.5	-6166.5	1105.1	62.183	.00000	.00000	1105.1	-126.22	-6167.2	7272.
442	1.7551 5098.7	-4405.2	1179.2	4.7165	.00000	.00000	1179.2	1.7601	-4405.2	5584.
443	16.061 7085.5	-6852.1	432.33	4.5838	.00000	.00000	432.33	16.064	-6852.1	7284.
444	-4.8479 4884.2	-4452.5	774.47	-13.432	.00000	.00000	774.47	-4.8073	-4452.5	5227.
445	2.7854 6873.6	-6847.4	49.414	-13.253	.00000	.00000	49.414	2.8111	-6847.4	6896.
446	-.12381 4889.9	-4648.7	451.13	-21.560	.00000	.00000	451.13	-.23820E-01	-4648.8	5099..

HABGE-01/99-0745, Revision 2

447	2.9754 6615.4	-6694.6	-164.77	-21.233	.00000	.00000	3.0427	-164.77	-6694.7	6697.7
448	.42138 5013.2	-4903.0	212.87	-23.143	.00000	.00000	212.87	.53060	-4903.1	5116.0
449	.58020 6358.0	-6484.0	-260.86	-22.779	.00000	.00000	.66022	-260.86	-6484.1	6484.7
450	1.2166 5185.9	-5158.1	53.881	-20.914	.00000	.00000	53.881	1.3014	-5158.2	5212.0
451	-.24800 6138.1	-6272.7	-278.51	-20.578	.00000	.00000	-.18049	-278.51	-6272.7	6272.5
452	1.3420 5362.9	-5382.3	-40.565	-16.895	.00000	.00000	1.3951	-40.565	-5382.3	5383.7
453	-.81995 5970.1	-6092.0	-250.99	-16.620	.00000	.00000	-.77460	-250.99	-6092.1	6091.3
454	1.2710 5520.2	-5562.4	-86.930	-12.432	.00000	.00000	1.2988	-86.930	-5562.5	5563.8
455	-.98357 5856.2	-5955.2	-202.32	-12.227	.00000	.00000	-.95847	-202.32	-5955.2	5954.3
456	1.0515 5648.0	-5697.1	-100.74	-8.3215	.00000	.00000	1.0637	-100.74	-5697.2	5698.2
457	-.95262 5790.2	-5863.5	-148.58	-8.1821	.00000	.00000	-.94120	-148.58	-5863.6	5862.6

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
458	.79333 5745.4	-5791.8	-94.839	-4.9543	.00000	.00000	.79757	-94.839	-5791.8	5792.
459	-.80536 5762.4	-5811.8	-99.232	-4.8696	.00000	.00000	-.80127	-99.232	-5811.8	5811.
460	.54488 5815.8	-5854.6	-78.922	-2.4450	.00000	.00000	.54590	-78.922	-5854.6	5855.
461	-.61767 5762.1	-5791.6	-58.898	-2.4016	.00000	.00000	-.61667	-58.898	-5791.6	5791.
462	.33596 5865.0	-5894.4	-59.639	-.74176	.00000	.00000	.33605	-59.639	-5894.4	5894.

463	-.43193 5779.7	-5794.4	-28.900	-.72689	.00000	.00000	-.43183	-28.900	-5794.4	5793.9
464	.17639 5898.8	-5919.1	-41.087	.29159	.00000	.00000	.17641	-41.087	-5919.1	5919.3
465	-.27235 5807.7	-5812.1	-8.5824	.28886	.00000	.00000	-.27233	-8.5824	-5812.1	5811.8
466	.65302E-01 5922.5	-5935.1	-25.418	.81935	.00000	.00000	.65415E-01	-25.418	-5935.1	5935.2
467	-.14839 5840.3	-5838.6	3.7086	.80734	.00000	.00000	3.7086	-.14828	-5838.6	5842.3
468	-.43636E-02 5940.3	-5947.0	-13.425	.99925	.00000	.00000	-.41957E-02	-13.425	-5947.0	5947.0
469	-.60567E-01 5874.1	-5869.1	9.9540	.98375	.00000	.00000	9.9540	-.60402E-01	-5869.1	5879.1
470	-.41988E-01 5955.3	-5957.8	-5.0521	.96429	.00000	.00000	-.41832E-01	-5.0521	-5957.8	5957.8
471	-.42971E-02 5906.7	-5900.6	12.048	.94895	.00000	.00000	12.048	-.41445E-02	-5900.6	5912.7
472	-.57010E-01 5969.6	-5969.5	.21577	.81617	.00000	.00000	.21577	-.56898E-01	-5969.5	5969.8
473	.27139E-01 5937.1	-5931.3	11.586	.80297	.00000	.00000	11.586	.27248E-01	-5931.3	5942.9
474	-.57625E-01 5984.5	-5983.0	3.0762	.62579	.00000	.00000	3.0762	-.57560E-01	-5983.0	5986.1
475	.40752E-01 5965.2	-5960.3	9.7828	.61553	.00000	.00000	9.7828	.40815E-01	-5960.3	5970.1

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
476	-.50257E-01 6000.5	-5998.4	4.2337	.43769	.00000	.00000	4.2337	-.50225E-01	-5998.4	6002
477	.42768E-01 5991.0	-5987.3	7.4858	.43042	.00000	.00000	7.4858	.42799E-01	-5987.3	5994
478	-.39495E-01 6017.9	-6015.7	4.3024	.27600	.00000	.00000	4.3024	-.39482E-01	-6015.7	6020

479	.38155E-01 -6012.4 6015.0	5.2250	.27133	.00000	.00000	5.2250	.38168E-01 -6012.4	6017.6
480	-.28311E-01 -6034.6 6036.4	3.7647	.15041	.00000	.00000	3.7647	-.28307E-01 -6034.6	6038.3
481	.30523E-01 -6036.0 6037.6	3.2862	.14779	.00000	.00000	3.2862	.30527E-01 -6036.0	6039.3
482	-.18391E-01 -6054.6 6056.1	2.9664	.61411E-01	.00000	.00000	2.9664	-.18391E-01 -6054.6	6057.6
483	.22255E-01 -6058.4 6059.3	1.7835	.60276E-01	.00000	.00000	1.7835	.22256E-01 -6058.4	6060.2
484	-.10491E-01 -6075.4 6076.5	2.1319	.43882E-02	.00000	.00000	2.1319	-.10491E-01 -6075.4	6077.5
485	.14745E-01 -6080.0 6080.4	.72078	.42141E-02	.00000	.00000	.72078	.14745E-01 -6080.0	6080.8
486	-.47556E-02 -6096.7 6097.4	1.3891	-.27474E-01	.00000	.00000	1.3891	-.47554E-02 -6096.7	6098.1
487	.86538E-02 -6101.2 6101.2	.41541E-01	-.27097E-01	.00000	.00000	.41541E-01	.86539E-02 -6101.2	6101.2
488	-.97372E-03 -6118.3 6118.7	.79596	-.41275E-01	.00000	.00000	.79596	-.97345E-03 -6118.3	6119.1
489	.41559E-02 -6122.1 6121.9	-.33656	-.40647E-01	.00000	.00000	.41561E-02	-.33656 -6122.1	6122.1
490	.12307E-02 -6140.0 6140.1	.36420	-.43326E-01	.00000	.00000	.36420	.12310E-02 -6140.0	6140.3
491	.11332E-02 -6142.8 6142.6	-.49892	-.42643E-01	.00000	.00000	.11335E-02	-.49892 -6142.8	6142.8
492	.22752E-02 -6161.6 6161.7	.78692E-01	-.38656E-01	.00000	.00000	.78692E-01	.22754E-02 -6161.6	6161.7
493	-.67621E-03 -6163.6 6163.4	-.52126	-.38036E-01	.00000	.00000	-.67598E-03	-.52126 -6163.6	6163.4

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
494	.25438E-02 -6183.2 6183.2	-.88423E-01	-.30926E-01	.00000	.00000	.25439E-02	-.88423E-01	-6183.2	6183.2	6183.2

495	-.15782E-02 -6184.5 6184.2	-.46381	-.30422E-01 .00000	.00000	-.15780E-02 -.46381	-6184.5	6184.5
496	.23510E-02 -6204.7 6204.6	-.16826	-.22551E-01 .00000	.00000	.23510E-02 -.16826	-6204.7	6204.7
497	-.18618E-02 -6205.4 6205.2	-.37027	-.22179E-01 .00000	.00000	-.18617E-02 -.37027	-6205.4	6205.4
498	.19308E-02 -6226.2 6226.1	-.18954	-.14942E-01 .00000	.00000	.19309E-02 -.18954	-6226.2	6226.2
499	-.17684E-02 -6226.4 6226.3	-.26946	-.14691E-01 .00000	.00000	-.17684E-02 -.26946	-6226.4	6226.4
500	.14422E-02 -6247.5 6247.4	-.17587	-.87706E-02 .00000	.00000	.14422E-02 -.17587	-6247.5	6247.5
501	-.14807E-02 -6247.5 6247.4	-.17814	-.86203E-02 .00000	.00000	-.14807E-02 -.17814	-6247.5	6247.5
502	.98135E-03 -6268.8 6268.7	-.14485	-.42129E-02 .00000	.00000	.98135E-03 -.14485	-6268.8	6268.8
503	-.11249E-02 -6268.7 6268.6	-.10423	-.41378E-02 .00000	.00000	-.11249E-02 -.10423	-6268.7	6268.7
504	.59736E-03 -6290.1 6290.0	-.10847	-.11498E-02 .00000	.00000	.59736E-03 -.10847	-6290.1	6290.1
505	-.77936E-03 -6289.9 6289.9	-.49751E-01	-.11260E-02 .00000	.00000	-.77936E-03 -.49751E-01	-6289.9	6289.9
506	.30687E-03 -6311.3 6311.3	-.74013E-01	.68392E-03 .00000	.00000	.30687E-03 -.74013E-01	-6311.3	6311.3
507	-.48561E-03 -6311.1 6311.1	-.13221E-01	.67645E-03 .00000	.00000	-.48561E-03 -.13221E-01	-6311.1	6311.1
508	.10652E-03 -6332.5 6332.5	-.45216E-01	.15982E-02 .00000	.00000	.10652E-03 -.45216E-01	-6332.5	6332.5
509	-.25955E-03 -6332.3 6332.3	.85826E-02	.15746E-02 .00000	.00000	.85826E-02 -.25955E-03	-6332.3	6332.3
510	.00000 -6353.7 6353.7	-.23376E-01	.18860E-02 .00000	.00000	.56009E-09 -.23376E-01	-6353.7	6353.7
511	-.10087E-03 -6353.6 6353.6	.19393E-01	.18566E-02 .00000	.00000	.19393E-01 -.10087E-03	-6353.6	6353.6

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
512	-.83343E-04 6374.9	-6374.9	-.82711E-02	.17916E-02	.00000	.00000	-.83343E-04	-.82711E-02	-6374.9	6374.9
513	.00000 6374.8	-6374.8	.22729E-01	.17630E-02	.00000	.00000	.22729E-01	.48728E-09	-6374.8	6374.8
514	-.10825E-03 6396.1	-6396.1	.11194E-02	.15002E-02	.00000	.00000	.11194E-02	-.10825E-03	-6396.1	6396.1
515	.00000 6396.1	-6396.1	.21520E-01	.14759E-02	.00000	.00000	.21520E-01	.34085E-09	-6396.1	6396.1
516	-.10743E-03 6417.3	-6417.3	.61201E-02	.11398E-02	.00000	.00000	.61201E-02	-.10743E-03	-6417.3	6417.4
517	.77769E-04 6417.3	-6417.3	.17979E-01	.11211E-02	.00000	.00000	.17979E-01	.77769E-04	-6417.3	6417.3
518	-.92618E-04 6438.6	-6438.6	.80444E-02	.78975E-03	.00000	.00000	.80444E-02	-.92618E-04	-6438.6	6438.6
519	.79946E-04 6438.5	-6438.5	.13632E-01	.77660E-03	.00000	.00000	.13632E-01	.79947E-04	-6438.5	6438.6
520	-.72108E-04 6459.8	-6459.8	.80241E-02	.49213E-03	.00000	.00000	.80241E-02	-.72108E-04	-6459.8	6459.8
521	.70450E-04 6459.8	-6459.8	.94255E-02	.48379E-03	.00000	.00000	.94255E-02	.70450E-04	-6459.8	6459.8
522	.00000 6481.0	-6481.0	.69399E-02	.26308E-03	.00000	.00000	.69399E-02	.10793E-10	-6481.0	6481.0
523	.00000 6481.0	-6481.0	.58578E-02	.25850E-03	.00000	.00000	.58578E-02	.10073E-10	-6481.0	6481.0
524	.00000 6502.2	-6502.2	.54173E-02	.10228E-03	.00000	.00000	.54173E-02	.18047E-11	-6502.2	6502.2
525	.00000 6502.2	-6502.2	.31177E-02	.10037E-03	.00000	.00000	.31177E-02	.14438E-11	-6502.2	6502.
526	.00000 6523.4	-6523.4	.38578E-02	.00000	.00000	.00000	.38578E-02	.00000	-6523.4	6523.
527	.00000 6523.5	-6523.5	.11980E-02	.00000	.00000	.00000	.11980E-02	.00000	-6523.5	6523.
528	.00000 6544.7	-6544.7	.24866E-02	.00000	.00000	.00000	.24866E-02	.00000	-6544.7	6544.
529	.00000 6544.7	-6544.7	.00000	.00000	.00000	.00000	.00000	.00000	-6544.7	6544.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

HABGE-01/99-0745, Revision 2

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
530	.00000 6565.9	-6565.9	.14020E-02	-.78770E-04	.00000	.00000	.14020E-02	.10934E-11	-6565.9	6565.9
531	.00000 6565.9	-6565.9	-.67845E-03	-.77565E-04	.00000	.00000	.72896E-12	-.67845E-03	-6565.9	6565.9
532	.00000 6587.1	-6587.1	.61965E-03	-.80989E-04	.00000	.00000	.61965E-03	.73132E-12	-6587.1	6587.1
533	.00000 6587.1	-6587.1	-.95154E-03	-.79710E-04	.00000	.00000	.73132E-12	-.95154E-03	-6587.1	6587.1
534	.00000 6608.3	-6608.3	.10771E-03	-.71376E-04	.00000	.00000	.10771E-03	.73367E-12	-6608.3	6608.3
535	.00000 6608.4	-6608.4	-.97408E-03	-.70227E-04	.00000	.00000	.73367E-12	-.97408E-03	-6608.4	6608.4
536	.00000 6629.6	-6629.6	-.18748E-03	.00000	.00000	.00000	.00000	-.18748E-03	-6629.6	6629.6
537	.00000 6629.6	-6629.6	-.85619E-03	.00000	.00000	.00000	.00000	-.85619E-03	-6629.6	6629.6
538	.00000 6650.8	-6650.8	-.32431E-03	.00000	.00000	.00000	.00000	-.32431E-03	-6650.8	6650.8
539	.00000 6650.8	-6650.8	-.67704E-03	.00000	.00000	.00000	.00000	-.67704E-03	-6650.8	6650.8
540	.00000 6672.0	-6672.0	-.35599E-03	.00000	.00000	.00000	.00000	-.35599E-03	-6672.0	6672.0
541	.00000 6672.0	-6672.0	-.48824E-03	.00000	.00000	.00000	.00000	-.48824E-03	-6672.0	6672.0
542	.00000 6693.2	-6693.2	-.32576E-03	.00000	.00000	.00000	.00000	-.32576E-03	-6693.2	6693.2
543	.00000 6693.2	-6693.2	-.31941E-03	.00000	.00000	.00000	.00000	-.31941E-03	-6693.2	6693.2
544	.00000 6714.5	-6714.5	-.26562E-03	.00000	.00000	.00000	.00000	-.26562E-03	-6714.5	6714.5
545	.00000 6714.5	-6714.5	-.18409E-03	.00000	.00000	.00000	.00000	-.18409E-03	-6714.5	6714.5
546	.00000 6735.7	-6735.7	-.19712E-03	.00000	.00000	.00000	.00000	-.19712E-03	-6735.7	6735.7
547	.00000 6735.7	-6735.7	-.85262E-04	.00000	.00000	.00000	.00000	-.85262E-04	-6735.7	6735.7

HABCE-01/99-0745, Revision 2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
548	.00000 6756.9	-6756.9	-.13318E-03	.00000	.00000	.00000	.00000	-.13318E-03	-6756.9	6756.9
549	.00000 6756.9	-6756.9	.00000	.00000	.00000	.00000	.00000	.00000	-6756.9	6756.9
550	.00000 6778.1	-6778.1	-.80310E-04	.00000	.00000	.00000	.00000	-.80310E-04	-6778.1	6778.1
551	.00000 6778.1	-6778.1	.00000	.00000	.00000	.00000	.00000	.00000	-6778.1	6778.1
552	.00000 6799.4	-6799.4	.00000	.00000	.00000	.00000	.00000	.00000	-6799.4	6799.4
553	.00000 6799.4	-6799.4	.00000	.00000	.00000	.00000	.00000	.00000	-6799.4	6799.4
554	.00000 6820.6	-6820.6	.00000	.00000	.00000	.00000	.00000	.00000	-6820.6	6820.6
555	.00000 6820.6	-6820.6	.00000	.00000	.00000	.00000	.00000	.00000	-6820.6	6820.6
556	.00000 6841.8	-6841.8	.00000	.00000	.00000	.00000	.00000	.00000	-6841.8	6841.8
557	.00000 6841.8	-6841.8	.00000	.00000	.00000	.00000	.00000	.00000	-6841.8	6841.8
558	.00000 6863.0	-6863.0	.00000	.00000	.00000	.00000	.00000	.00000	-6863.0	6863.0
559	.00000 6863.0	-6863.0	.00000	.00000	.00000	.00000	.00000	.00000	-6863.0	6863.0
560	.00000 6884.3	-6884.3	.00000	.00000	.00000	.00000	.00000	.00000	-6884.3	6884.3
561	.00000 6884.3	-6884.3	.00000	.00000	.00000	.00000	.00000	.00000	-6884.3	6884.3
562	.00000 6905.5	-6905.5	.00000	.00000	.00000	.00000	.00000	.00000	-6905.5	6905.5
563	.00000 6905.5	-6905.5	.00000	.00000	.00000	.00000	.00000	.00000	-6905.5	6905.5

564	.00000	-6926.7	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-6926.7	6926.7
	6926.7										
565	.00000	-6926.7	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-6926.7	6926.7
	6926.7										

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
566	.00000	-6947.9	.00000	.00000	.00000	.00000	.00000	.00000	-6947.9	6947.9
	6947.9									
567	.00000	-6947.9	.00000	.00000	.00000	.00000	.00000	.00000	-6947.9	6947.9
	6947.9									
568	.00000	-6969.2	.00000	.00000	.00000	.00000	.00000	.00000	-6969.2	6969.2
	6969.2									
569	.00000	-6969.2	.00000	.00000	.00000	.00000	.00000	.00000	-6969.2	6969.2
	6969.2									
570	.00000	-6990.4	.00000	.00000	.00000	.00000	.00000	.00000	-6990.4	6990.4
	6990.4									
571	.00000	-6990.4	.00000	.00000	.00000	.00000	.00000	.00000	-6990.4	6990.4
	6990.4									
572	.00000	-7011.6	.00000	.00000	.00000	.00000	.00000	.00000	-7011.6	7011.6
	7011.6									
573	.00000	-7011.6	.00000	.00000	.00000	.00000	.00000	.00000	-7011.6	7011.6
	7011.6									
574	.00000	-7032.8	.00000	.00000	.00000	.00000	.00000	.00000	-7032.8	7032.8
	7032.8									
575	.00000	-7032.8	.00000	.00000	.00000	.00000	.00000	.00000	-7032.8	7032.8
	7032.8									
576	.00000	-7054.1	.00000	.00000	.00000	.00000	.00000	.00000	-7054.1	7054.1
	7054.1									
577	.00000	-7054.1	.00000	.00000	.00000	.00000	.00000	.00000	-7054.1	7054.1
	7054.1									
578	.00000	-7075.3	.00000	.00000	.00000	.00000	.00000	.00000	-7075.3	7075.3
	7075.3									
579	.00000	-7075.3	.00000	.00000	.00000	.00000	.00000	.00000	-7075.3	7075.3
	7075.3									

HABGE-01/99-0745, Revision 2

580	.00000	-7096.5	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7096.5	7096.5
	7096.5										
581	.00000	-7096.5	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7096.5	7096.5
	7096.5										
582	.00000	-7117.7	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7117.7	7117.7
	7117.7										
583	.00000	-7117.7	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7117.7	7117.7
	7117.7										

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SEQV	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
584	.00000	-7139.0	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7139.0	7139.0
	7139.0										
585	.00000	-7139.0	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7139.0	7139.0
	7139.0										
586	.00000	-7160.2	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7160.2	7160.2
	7160.2										
587	.00000	-7160.2	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7160.2	7160.2
	7160.2										
588	.00000	-7181.4	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7181.4	7181.4
	7181.4										
589	.00000	-7181.4	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7181.4	7181.4
	7181.4										
590	.00000	-7202.6	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7202.6	7202.6
	7202.6										
591	.00000	-7202.6	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7202.6	7202.6
	7202.6										
592	.00000	-7223.9	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7223.9	7223.9
	7223.9										
593	.00000	-7223.9	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7223.9	7223.9
	7223.9										
594	.00000	-7245.1	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7245.1	7245.1
	7245.1										
595	.00000	-7245.1	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7245.1	7245.1
	7245.1										

596	.00000 7266.3	-7266.3	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7266.3	7266.3
597	.00000 7266.3	-7266.3	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7266.3	7266.3
598	.00000 7287.5	-7287.5	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7287.5	7287.5
599	.00000 7287.5	-7287.5	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7287.5	7287.5
600	.00000 7308.8	-7308.8	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7308.8	7308.8
601	.00000 7308.8	-7308.8	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7308.8	7308.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SEQV SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
602	.00000 7330.0	-7330.0	.00000	.00000	.00000	.00000	.00000	.00000	-7330.0	7330.0
603	.00000 7330.0	-7330.0	.00000	.00000	.00000	.00000	.00000	.00000	-7330.0	7330.0
604	.00000 7351.2	-7351.2	.00000	.00000	.00000	.00000	.00000	.00000	-7351.2	7351.2
605	.00000 7351.2	-7351.2	.00000	.00000	.00000	.00000	.00000	.00000	-7351.2	7351.2
606	.00000 7372.4	-7372.4	.00000	.00000	.00000	.00000	.00000	.00000	-7372.4	7372.4
607	.00000 7372.4	-7372.4	.00000	.00000	.00000	.00000	.00000	.00000	-7372.4	7372.4
608	.00000 7393.7	-7393.7	.00000	.00000	.00000	.00000	.00000	.00000	-7393.7	7393.7
609	.00000 7393.7	-7393.7	.00000	.00000	.00000	.00000	.00000	.00000	-7393.7	7393.7
610	.00000 7414.9	-7414.9	.00000	.00000	.00000	.00000	.00000	.00000	-7414.9	7414.9
611	.00000 7414.9	-7414.9	.00000	.00000	.00000	.00000	.00000	.00000	-7414.9	7414.9

612	.00000	-7436.1	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7436.1	7436.1
	7436.1										
613	.00000	-7436.1	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7436.1	7436.1
	7436.1										
614	.00000	-7457.3	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7457.3	7457.3
	7457.3										
615	.00000	-7457.3	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7457.3	7457.3
	7457.3										
616	.00000	-7478.6	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7478.6	7478.6
	7478.6										
617	.00000	-7478.6	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7478.6	7478.6
	7478.6										
618	.00000	-7499.8	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7499.8	7499.8
	7499.8										
619	.00000	-7499.8	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7499.8	7499.8
	7499.8										

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
620	.00000	-7521.0	.00000	.00000	.00000	.00000	.00000	.00000	-7521.0	7521.0
	7521.0									
621	.00000	-7521.0	.00000	.00000	.00000	.00000	.00000	.00000	-7521.0	7521.0
	7521.0									
622	.00000	-7542.2	.00000	.00000	.00000	.00000	.00000	.00000	-7542.2	7542.2
	7542.2									
623	.00000	-7542.2	.00000	.00000	.00000	.00000	.00000	.00000	-7542.2	7542.2
	7542.2									
624	.00000	-7563.5	.00000	.00000	.00000	.00000	.00000	.00000	-7563.5	7563.5
	7563.5									
625	.00000	-7563.5	.00000	.00000	.00000	.00000	.00000	.00000	-7563.5	7563.5
	7563.5									
626	.00000	-7584.7	.00000	.00000	.00000	.00000	.00000	.00000	-7584.7	7584.7
	7584.7									
627	.00000	-7584.7	.00000	.00000	.00000	.00000	.00000	.00000	-7584.7	7584.7
	7584.7									

628	.00000 7605.9	-7605.9	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7605.9	7605.9
629	.00000 7605.9	-7605.9	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7605.9	7605.9
630	.00000 7627.1	-7627.1	.78708E-04	.00000	.00000	.00000	.78708E-04	.00000	.00000	-7627.1	7627.1
631	.00000 7627.1	-7627.1	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7627.1	7627.1
632	.00000 7648.4	-7648.4	.11507E-03	.00000	.00000	.00000	.11507E-03	.00000	.00000	-7648.4	7648.4
633	.00000 7648.4	-7648.4	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7648.4	7648.4
634	.00000 7669.6	-7669.6	.15330E-03	.00000	.00000	.00000	.15330E-03	.00000	.00000	-7669.6	7669.6
635	.00000 7669.6	-7669.6	.11136E-03	.00000	.00000	.00000	.11136E-03	.00000	.00000	-7669.6	7669.6
636	.00000 7690.8	-7690.8	.18564E-03	.00000	.00000	.00000	.18564E-03	.00000	.00000	-7690.8	7690.8
637	.00000 7690.8	-7690.8	.18961E-03	.00000	.00000	.00000	.18961E-03	.00000	.00000	-7690.8	7690.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
638	.00000 7712.0	-7712.0	.19933E-03	.00000	.00000	.00000	.19933E-03	.00000	-7712.0	7712.
639	.00000 7712.0	-7712.0	.28605E-03	.00000	.00000	.00000	.28605E-03	.00000	-7712.0	7712.
640	.00000 7733.3	-7733.3	.17570E-03	.00000	.00000	.00000	.17570E-03	.00000	-7733.3	7733.
641	.00000 7733.3	-7733.3	.39216E-03	.00000	.00000	.00000	.39216E-03	.00000	-7733.3	7733.
642	.00000 7754.5	-7754.5	.89779E-04	.00000	.00000	.00000	.89779E-04	.00000	-7754.5	7754.
643	.00000 7754.5	-7754.5	.49000E-03	.00000	.00000	.00000	.49000E-03	.00000	-7754.5	7754.

644	.00000 7775.7	-7775.7	-.88768E-04	.00000	.00000	.00000	.00000	-.88768E-04	-7775.7	7775.7
645	.00000 7775.7	-7775.7	.54892E-03	.00000	.00000	.00000	.54892E-03	.00000	-7775.7	7775.7
646	.00000 7797.0	-7797.0	-.39266E-03	.00000	.00000	.00000	.00000	-.39266E-03	-7797.0	7797.0
647	.00000 7796.9	-7796.9	.52252E-03	.00000	.00000	.00000	.52252E-03	.00000	-7796.9	7796.9
648	.00000 7818.2	-7818.2	-.85101E-03	.00000	.00000	.00000	.00000	-.85101E-03	-7818.2	7818.2
649	.00000 7818.2	-7818.2	.34699E-03	.00000	.00000	.00000	.34699E-03	.00000	-7818.2	7818.2
650	.00000 7839.4	-7839.4	-.14792E-02	.00000	.00000	.00000	.00000	-.14792E-02	-7839.4	7839.4
651	.00000 7839.4	-7839.4	.00000	.00000	.00000	.00000	.00000	.00000	-7839.4	7839.4
652	.00000 7860.6	-7860.6	-.22639E-02	.00000	.00000	.00000	.00000	-.22639E-02	-7860.6	7860.6
653	.00000 7860.6	-7860.6	-.78137E-03	.00000	.00000	.00000	.00000	-.78137E-03	-7860.6	7860.6
654	.00000 7881.8	-7881.9	-.31427E-02	.00000	.00000	.00000	.00000	-.31427E-02	-7881.9	7881.9
655	.00000 7881.8	-7881.8	-.19104E-02	.00000	.00000	.00000	.00000	-.19104E-02	-7881.8	7881.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
656	.00000 7903.1	-7903.1	-.39788E-02	.16109E-03	.00000	.00000	.35097E-11	-.39788E-02	-7903.1	7903.1
657	.00000 7903.1	-7903.1	-.35031E-02	.15829E-03	.00000	.00000	.35097E-11	-.35031E-02	-7903.1	7903.1
658	.00000 7924.3	-7924.3	-.45330E-02	.29419E-03	.00000	.00000	.10557E-10	-.45330E-02	-7924.3	7924.3
659	.00000 7924.3	-7924.3	-.55530E-02	.28922E-03	.00000	.00000	.10557E-10	-.55530E-02	-7924.3	7924.3

660	.00000 7945.5	-7945.5	-.44384E-02	.46515E-03	.00000	.00000	.27346E-10	-.44384E-02	-7945.5	7945.5
661	.00000 7945.5	-7945.5	-.79365E-02	.45741E-03	.00000	.00000	.26023E-10	-.79365E-02	-7945.5	7945.5
662	.00000 7966.7	-7966.7	-.31837E-02	.66344E-03	.00000	.00000	.54838E-10	-.31837E-02	-7966.7	7966.7
663	.00000 7966.8	-7966.8	-.10347E-01	.65256E-03	.00000	.00000	.53069E-10	-.10347E-01	-7966.8	7966.8
664	.00000 7988.0	-7988.0	-.11981E-03	.86322E-03	.00000	.00000	.93118E-10	-.11981E-03	-7988.0	7988.0
665	.00000 7988.0	-7988.0	-.12220E-01	.84927E-03	.00000	.00000	.90458E-10	-.12220E-01	-7988.0	7988.0
666	.00000 8009.2	-8009.2	.54956E-02	.10170E-02	.00000	.00000	.54956E-02	.12893E-09	-8009.2	8009.2
667	.00000 8009.2	-8009.2	-.12655E-01	.10009E-02	.00000	.00000	.12538E-09	-.12655E-01	-8009.2	8009.2
668	.00000 8030.4	-8030.4	.14394E-01	.10495E-02	.00000	.00000	.14394E-01	.13685E-09	-8030.4	8030.4
669	.00000 8030.5	-8030.5	-.10363E-01	.10332E-02	.00000	.00000	.13329E-09	-.10363E-01	-8030.5	8030.5
670	.00000 8051.6	-8051.6	.27109E-01	.85277E-03	.00000	.00000	.27109E-01	.90285E-10	-8051.6	8051.6
671	.15893E-03 8051.7	-8051.7	-.36577E-02	.84030E-03	.00000	.00000	.15893E-03	-.36577E-02	-8051.7	8051.7
672	-.18917E-03 8072.8	-8072.8	.43682E-01	.28621E-03	.00000	.00000	.43682E-01	-.18917E-03	-8072.8	-8072.8
673	.29029E-03 8072.9	-8072.9	.94604E-02	.28370E-03	.00000	.00000	.94604E-02	.29029E-03	-8072.9	8072.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
674	-.35834E-03 8094.1	-8094.0	.63250E-01	-.81656E-03	.00000	.00000	.63250E-01	-.35834E-03	-8094.0	8094.1
675	.45903E-03 8094.2	-8094.2	.31071E-01	-.80030E-03	.00000	.00000	.31071E-01	.45903E-03	-8094.2	8094.2

HABGE-01/99-0745, Revision 2

676	-.57940E-03 -8115.3 8115.3	.83505E-01 -.26281E-02 .00000	.00000	.83505E-01 -.57940E-03 -8115.3	8115.4
677	.65477E-03 -8115.4 8115.4	.62899E-01 -.25816E-02 .00000	.00000	.62899E-01 .65477E-03 -8115.4	8115.4
678	-.84120E-03 -8136.6 8136.6	.10008 -.52903E-02 .00000	.00000	.10008 -.84120E-03 -8136.6	8136.7
679	.85200E-03 -8136.5 8136.6	.10559 -.52000E-02 .00000	.00000	.10559 .85201E-03 -8136.5	8136.6
680	-.11134E-02 -8157.9 8157.9	.10589 -.88543E-02 .00000	.00000	.10589 -.11134E-02 -8157.9	8158.0
681	.10039E-02 -8157.7 8157.8	.15769 -.87061E-02 .00000	.00000	.15769 .10039E-02 -8157.7	8157.8
682	-.13383E-02 -8179.2 8179.3	.90673E-01 -.13194E-01 .00000	.00000	.90673E-01 -.13383E-02 -8179.2	8179.3
683	.10361E-02 -8178.8 8178.9	.21423 -.12976E-01 .00000	.00000	.21423 .10361E-02 -8178.8	8179.0
684	-.14221E-02 -8200.6 8200.6	.40821E-01 -.17889E-01 .00000	.00000	.40821E-01 -.14220E-02 -8200.6	8200.6
685	.84212E-03 -8199.8 8200.0	.26509 -.17598E-01 .00000	.00000	.26509 .84216E-03 -8199.8	8200.1
686	-.12280E-02 -8222.0 8222.0	-.60023E-01 -.22088E-01 .00000	.00000	-.12279E-02 -.60023E-01 -8222.0	8222.0
687	.28319E-03 -8220.9 8221.0	.29318 -.21734E-01 .00000	.00000	.29318 .28324E-03 -8220.9	8221.2
688	-.57480E-03 -8243.5 8243.4	-.22926 -.24358E-01 .00000	.00000	-.57472E-03 -.22926 -8243.5	8243.5
689	-.80494E-03 -8241.8 8242.0	.27293 -.23976E-01 .00000	.00000	.27293 -.80487E-03 -8241.8	8242.1
690	.75631E-03 -8265.0 8264.7	-.48192 -.22559E-01 .00000	.00000	.75637E-03 -.48192 -8265.0	8265.
691	-.25926E-02 -8262.8 8262.9	.16945 -.22218E-01 .00000	.00000	.16945 -.25926E-02 -8262.8	8263.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINI
------	------------	----	----	-----	-----	-----	----	----	----	------

692	.29989E-02 -8286.4 8286.0	-.82509	-.13778E-01	.00000	.00000	.29989E-02 -.82509	-8286.4	8286.4
693	-.52200E-02 -8283.9 8283.8	-.60526E-01	-.13596E-01	.00000	.00000	-.52199E-02 -.60526E-01	-8283.9	8283.9
694	.63565E-02 -8307.6 8307.0	-1.2496	.55900E-02	.00000	.00000	.63565E-02 -1.2496	-8307.6	8307.6
695	-.87376E-02 -8305.1 8304.8	-.46508	.54392E-02	.00000	.00000	-.87376E-02 -.46508	-8305.1	8305.1
696	.10929E-01 -8328.6 8327.7	-1.7190	.39541E-01	.00000	.00000	.10929E-01 -1.7190	-8328.6	8328.6
697	-.13021E-01 -8326.6 8326.0	-1.0893	.38819E-01	.00000	.00000	-.13021E-01 -1.0893	-8326.6	8326.6
698	.16600E-01 -8349.1 8348.0	-2.1556	.91802E-01	.00000	.00000	.16601E-01 -2.1556	-8349.1	8349.1
699	-.17656E-01 -8348.5 8347.5	-1.9618	.90214E-01	.00000	.00000	-.17655E-01 -1.9618	-8348.5	8348.5
700	.22894E-01 -8368.9 8367.7	-2.4262	.16470	.00000	.00000	.22897E-01 -2.4262	-8368.9	8368.9
701	-.21802E-01 -8371.2 8369.6	-3.0744	.16193	.00000	.00000	-.21798E-01 -3.0744	-8371.2	8371.2
702	.28786E-01 -8387.8 8386.6	-2.3280	.25747	.00000	.00000	.28794E-01 -2.3280	-8387.8	8387.8
703	-.24045E-01 -8394.7 8392.5	-4.3533	.25320	.00000	.00000	-.24038E-01 -4.3533	-8394.7	8394.7
704	.32513E-01 -8405.6 8404.8	-1.5813	.36383	.00000	.00000	.32529E-01 -1.5813	-8405.6	8405.6
705	-.22273E-01 -8419.3 8416.5	-5.6236	.35788	.00000	.00000	-.22258E-01 -5.6236	-8419.3	8419.3
706	.31377E-01 -8422.4 8422.4	.16558	.46905	.00000	.00000	.16558 .31404E-01	-8422.4	8422.
707	-.13614E-01 -8445.0 8441.7	-6.5688	.46148	.00000	.00000	-.13589E-01 -6.5688	-8445.0	8445.
708	.21667E-01 -8438.2 8439.8	3.3103	.54653	.00000	.00000	3.3103 .21703E-01	-8438.2	8441.
709	.55030E-02 -8471.6 8468.3	-6.6905	.53786	.00000	.00000	.55372E-02 -6.6905	-8471.6	8471.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

HABCE-01/99-0745, Revision 2

D50

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
710	-.13575E-02 8457.7	-8453.6	8.2368	.55455	.00000	.00000	8.2368	-.13211E-02	-8453.6	8461.8
711	.38979E-01 8496.0	-8498.6	-5.2811	.54599	.00000	.00000	.39014E-01	-5.2811	-8498.6	8498.6
712	-.42867E-01 8477.3	-8469.8	15.211	.43396	.00000	.00000	15.211	-.42844E-01	-8469.8	8485.0
713	.90653E-01 8524.2	-8524.8	-1.4239	.42769	.00000	.00000	.90674E-01	-1.4239	-8524.8	8524.9
714	-.10862 8500.6	-8488.5	24.218	.10830	.00000	.00000	24.218	-.10862	-8488.5	8512.7
715	.16223 8551.6	-8548.5	5.9558	.10772	.00000	.00000	5.9558	.16224	-8548.5	8554.5
716	-.20007 8529.8	-8512.5	34.736	-.51188	.00000	.00000	34.736	-.20004	-8512.5	8547.2
717	.25518 8576.1	-8567.0	17.960	-.50193	.00000	.00000	17.960	.25521	-8567.0	8585.0
718	-.32531 8568.1	-8545.5	45.442	-1.5178	.00000	.00000	45.442	-.32504	-8545.5	8590.9
719	.35501 8594.5	-8576.5	35.465	-1.4911	.00000	.00000	35.465	.35527	-8576.5	8612.0
720	-.44719 8618.8	-8591.9	53.891	-2.9819	.00000	.00000	53.891	-.44616	-8591.9	8645.8
721	.47814 8602.4	-8572.7	58.743	-2.9311	.00000	.00000	58.743	.47914	-8572.7	8631.4
722	-.66170 8684.7	-8656.8	56.126	-4.9240	.00000	.00000	56.126	-.65890	-8656.8	8712.
723	.48282 8594.5	-8550.5	86.831	-4.8417	.00000	.00000	86.831	.48556	-8550.5	8637.
724	-.51331 8767.8	-8744.6	46.628	-7.2658	.00000	.00000	46.628	-.50728	-8744.6	8791.
725	.75897 8565.0	-8505.5	116.99	-7.1462	.00000	.00000	116.99	.76497	-8505.5	8622.
726	-1.5290 8866.0	-8858.0	17.532	-9.7586	.00000	.00000	17.532	-1.5183	-8858.0	8875.
727	-.36079 8507.3	-8435.1	143.01	-9.5999	.00000	.00000	143.01	-.34987	-8435.1	8578.

***** POST1 NODAL STRESS LISTING *****

HABGE-01/99-0745, Revision 2

051

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
728	2.2597 8977.7	-8995.6	-38.267	-11.945	.00000	.00000	2.2755	-38.267	-8995.6	8997.9
729	3.0534 8421.8	-8340.6	157.26	-11.754	.00000	.00000	157.26	3.0700	-8340.6	8497.8
730	-11.045 9075.7	-9148.7	-136.36	-12.942	.00000	.00000	-11.026	-136.36	-9148.7	9137.7
731	-11.500 8295.3	-8230.6	138.66	-12.738	.00000	.00000	138.66	-11.481	-8230.6	8369.3
732	40.772 9192.7	-9299.0	-260.74	-11.893	.00000	.00000	40.787	-260.74	-9299.0	9339.8
733	39.542 8190.5	-8123.5	94.179	-11.716	.00000	.00000	94.179	39.559	-8123.5	8217.7
734	65.409 8327.0	-8344.2	-124.19	242.47	.00000	.00000	72.394	-124.19	-8351.2	8423.6
735	231.60 7381.5	-7116.4	297.74	-31.527	.00000	.00000	297.74	231.74	-7116.5	7414.3
736	-94.621 7896.8	-8102.8	-328.33	-124.26	.00000	.00000	-92.694	-328.33	-8104.7	8012.0
737	-425.78 7630.6	-8042.1	-409.50	176.51	.00000	.00000	-409.50	-421.69	-8046.2	7636.7
738	-440.62 6933.0	-7193.8	-170.22	-432.68	.00000	.00000	-170.22	-413.01	-7221.4	7051.
739	75.403 9188.4	-9637.7	-1085.6	61.926	.00000	.00000	75.798	-1085.6	-9638.1	9713.
740	168.46 8446.1	-8707.3	-769.00	8.9093	.00000	.00000	168.47	-769.00	-8707.3	8875.
741	265.31 7964.1	-8070.7	-540.51	-43.231	.00000	.00000	265.53	-540.51	-8070.9	8336.
742	88.959 8702.6	-9261.4	-1398.4	-4.7708	.00000	.00000	88.961	-1398.4	-9261.4	9350.
743	.88210 8256.6	-8819.8	-1276.8	39.291	.00000	.00000	1.0571	-1276.8	-8820.0	8821.
744	-87.302 7746.8	-8303.7	-1136.0	82.622	.00000	.00000	-86.471	-1136.0	-8304.5	8218.

HABGE-01/99-0745, Revision 2

745	296.13	-6048.0	-864.52	-52.114	.00000	.00000	296.55	-864.52	-6048.4	6345.0
	5851.5									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
746	125.43	-8129.6	-1519.5	-35.288	.00000	.00000	125.58	-1519.5	-8129.8	8255.4
	7568.1									
747	4.7847	-9667.0	-1999.1	93.888	.00000	.00000	5.6961	-1999.1	-9667.9	9673.6
	8843.3									
748	-481.66	-4145.6	-852.51	59.547	.00000	.00000	-480.69	-852.51	-4146.5	3665.8
	3494.8									
749	-307.97	-7853.0	-1903.9	105.67	.00000	.00000	-306.49	-1903.9	-7854.5	7548.0
	6889.6									
750	-18.739	-10902.	-2704.7	99.031	.00000	.00000	-17.838	-2704.7	-10903.	10885.
	9821.1									
751	457.11	-5131.3	-887.04	108.45	.00000	.00000	459.21	-887.04	-5133.4	5592.6
	5055.7									
752	341.29	-8228.7	-1828.5	80.966	.00000	.00000	342.05	-1828.5	-8229.5	8574.5
	7718.6									
753	172.71	-11207.	-2746.1	-77.562	.00000	.00000	173.24	-2746.1	-11208.	11381.
	10238.									
754	393.09	2509.0	1730.2	180.98	.00000	.00000	2524.4	1730.2	377.72	2146.
	1879.9									
755	-366.52	2435.5	1175.8	6.8720	.00000	.00000	2435.5	1175.8	-366.54	2802.
	2430.7									
756	355.51	2355.3	1324.3	-162.65	.00000	.00000	2368.4	1324.3	342.37	2026.
	1754.9									
757	673.03	-1027.3	673.03	.00000	.00000	.00000	673.03	673.03	-1027.3	1700.
	1700.3									
758	669.81	-983.61	667.37	53.079	.00000	.00000	671.52	667.37	-985.31	1656.
	1654.8									
759	653.47	-1005.6	652.51	86.653	.00000	.00000	657.99	652.51	-1010.1	1668.
	1665.4									
760	656.68	-1005.1	655.64	58.112	.00000	.00000	658.71	655.64	-1007.1	1665.
	1664.3									

HABGE-01/99-0745, Revision 2

761	663.62 1669.1	-1005.8	659.62	43.140	.00000	.00000	664.73	659.62	-1006.9	1671.6
762	667.15 1671.3	-1005.4	662.55	34.097	.00000	.00000	667.84	662.55	-1006.1	1674.0
763	668.48 1672.5	-1005.4	664.28	28.130	.00000	.00000	668.96	664.28	-1005.9	1674.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
764	668.48 1672.7	-1005.4	665.19	23.882	.00000	.00000	668.82	665.19	-1005.7	1674.6
765	667.74 1672.4	-1005.3	665.56	20.743	.00000	.00000	668.00	665.56	-1005.6	1673.6
766	666.70 1671.7	-1005.3	665.57	18.365	.00000	.00000	666.90	665.57	-1005.5	1672.4
767	665.70 1671.1	-1005.3	665.41	16.504	.00000	.00000	665.86	665.41	-1005.5	1671.3
768	664.89 1670.5	-1005.3	665.19	15.019	.00000	.00000	665.19	665.03	-1005.4	1670.6
769	664.43 1670.2	-1005.3	665.02	13.827	.00000	.00000	665.02	664.54	-1005.4	1670.4
770	664.50 1670.1	-1005.2	665.01	12.883	.00000	.00000	665.01	664.60	-1005.3	1670.1
771	665.39 1670.6	-1005.2	665.26	12.167	.00000	.00000	665.47	665.26	-1005.3	1670.1
772	667.46 1672.0	-1005.1	665.97	11.672	.00000	.00000	667.55	665.97	-1005.2	1672.1
773	671.21 1674.5	-1005.1	667.32	11.391	.00000	.00000	671.29	667.32	-1005.2	1676.1
774	677.12 1678.5	-1005.0	669.54	11.304	.00000	.00000	677.20	669.54	-1005.1	1682.1
775	685.58 1684.3	-1005.0	672.82	11.360	.00000	.00000	685.65	672.82	-1005.1	1690.1
776	696.61 1692.2	-1005.0	677.22	11.444	.00000	.00000	696.69	677.22	-1005.1	1701.1

HABGE-01/99-0745, Revision 2

777	709.48 1701.5	-1005.2	682.57	11.345	.00000	.00000	709.56	682.57	-1005.3	1714.9
778	722.13 1711.1	-1005.6	688.20	10.707	.00000	.00000	722.20	688.20	-1005.7	1727.9
779	730.31 1718.2	-1006.3	692.68	8.9763	.00000	.00000	730.35	692.68	-1006.4	1736.7
780	726.52 1717.7	-1007.5	693.40	5.3464	.00000	.00000	726.54	693.40	-1007.5	1734.0
781	698.72 1701.7	-1009.3	686.06	-1.2964	.00000	.00000	698.72	686.06	-1009.3	1708.0

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SKY	SYZ	SKZ	S1	S2	S3	SINT
782	628.84 1658.7	-1011.8	664.19	-12.360	.00000	.00000	664.19	628.94	-1011.9	1676.1
783	491.98 1575.1	-1015.2	618.66	-29.372	.00000	.00000	618.66	492.55	-1015.7	1634.4
784	256.32 1439.7	-1018.9	537.74	-53.742	.00000	.00000	537.74	258.58	-1021.1	1558.9
785	-111.83 1263.1	-1022.6	408.36	-84.814	.00000	.00000	408.36	-104.00	-1030.4	1438.8
786	-612.46 1117.9	-1015.5	230.03	-112.26	.00000	.00000	230.03	-583.30	-1044.7	1274.
787	-1224.6 1156.9	-1005.4	4.5044	-127.96	.00000	.00000	4.5044	-946.52	-1283.5	1288.
788	-1592.0 1251.2	-956.40	-152.01	-32.776	.00000	.00000	-152.01	-954.72	-1593.7	1441.
789	-1343.5 1231.9	-814.74	-94.435	335.86	.00000	.00000	-94.435	-651.68	-1506.5	1412.
790	-276.69 959.04	-151.88	412.16	414.58	.00000	.00000	412.16	204.97	-633.54	1045.
791	461.95 1113.1	-308.32	581.48	424.00	.00000	.00000	649.61	581.48	-495.98	1145.
792	667.73 1696.2	-1028.5	667.73	.00000	.00000	.00000	667.73	667.73	-1028.5	1696.

793	668.95 1660.1	-994.39	662.35	-4.4658	.00000	.00000	668.96	662.35	-994.40	1663.4
794	660.45 1665.8	-1007.2	656.81	-.49466	.00000	.00000	660.45	656.81	-1007.2	1667.6
795	661.03 1671.1	-1010.9	659.40	2.3243	.00000	.00000	661.03	659.40	-1010.9	1671.9
796	662.29 1672.7	-1011.1	661.07	1.5641	.00000	.00000	662.29	661.07	-1011.1	1673.3
797	663.53 1673.7	-1010.8	662.34	.77125	.00000	.00000	663.53	662.34	-1010.8	1674.3
798	664.00 1674.3	-1010.8	662.95	.27674	.00000	.00000	664.00	662.95	-1010.8	1674.8
799	664.11 1674.5	-1010.8	663.34	-.81484E-01	.00000	.00000	664.11	663.34	-1010.8	1674.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
800	663.91 1674.4	-1010.7	663.50	-.26382	.00000	.00000	663.91	663.50	-1010.7	1674.6
801	663.63 1674.2	-1010.6	663.52	-.31950	.00000	.00000	663.63	663.52	-1010.6	1674.3
802	663.33 1674.0	-1010.6	663.48	-.30336	.00000	.00000	663.48	663.33	-1010.6	1674.
803	663.10 1673.8	-1010.6	663.42	-.23856	.00000	.00000	663.42	663.10	-1010.6	1674.
804	662.98 1673.7	-1010.5	663.38	-.12250	.00000	.00000	663.38	662.98	-1010.5	1673.
805	663.04 1673.7	-1010.5	663.39	.63942E-01	.00000	.00000	663.39	663.04	-1010.5	1673.
806	663.38 1673.9	-1010.4	663.50	.34986	.00000	.00000	663.50	663.38	-1010.4	1673.
807	664.12 1674.3	-1010.3	663.76	.76603	.00000	.00000	664.12	663.76	-1010.3	1674
808	665.42 1675.1	-1010.2	664.24	1.3338	.00000	.00000	665.42	664.24	-1010.2	1675..

HABGE-01/99-0745, Revision 2

809	667.43 1676.4	-1010.2	665.01	2.0479	.00000	.00000	667.43	665.01	-1010.2	1677.6
810	670.26 1678.3	-1010.1	666.12	2.8507	.00000	.00000	670.27	666.12	-1010.1	1680.4
811	673.91 1680.9	-1010.2	667.56	3.5951	.00000	.00000	673.92	667.56	-1010.2	1684.1
812	678.08 1684.1	-1010.4	669.25	3.9950	.00000	.00000	678.09	669.25	-1010.4	1688.5
813	682.04 1687.5	-1011.0	670.91	3.5621	.00000	.00000	682.05	670.91	-1011.0	1693.0
814	684.30 1690.2	-1012.0	672.01	1.5325	.00000	.00000	684.30	672.01	-1012.0	1696.3
815	682.26 1690.7	-1013.8	671.59	-3.2091	.00000	.00000	682.27	671.59	-1013.8	1696.1
816	671.83 1686.6	-1016.5	668.13	-12.191	.00000	.00000	671.92	668.13	-1016.6	1688.5
817	646.92 1674.3	-1020.5	659.38	-27.351	.00000	.00000	659.38	647.37	-1020.9	1680.3

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
818	599.19 1649.2	-1025.7	642.31	-50.782	.00000	.00000	642.31	600.78	-1027.3	1669.
819	518.46 1606.3	-1031.7	613.20	-84.232	.00000	.00000	613.20	523.02	-1036.3	1649.
820	396.64 1543.7	-1038.2	568.72	-126.22	.00000	.00000	568.72	407.66	-1049.2	1618.
821	225.45 1447.9	-1030.2	509.79	-165.42	.00000	.00000	509.79	246.88	-1051.6	1561.
822	65.590 1346.6	-1011.0	452.23	-171.91	.00000	.00000	452.23	92.376	-1037.7	1490.
823	-47.111 1220.3	-965.48	414.31	-54.930	.00000	.00000	414.31	-43.837	-968.75	1383.
824	-74.159 1043.0	-555.74	506.85	282.00	.00000	.00000	506.85	55.868	-685.76	1192.

825	-262.92 1060.6	-148.49	558.68	420.66	.00000	.00000	558.68	218.83	-630.23	1188.9
826	-483.45 1223.3	-936.00	238.00	385.04	.00000	.00000	238.00	-263.12	-1156.3	1394.3
827	-246.96 6693.7	-7537.8	-1673.5	-67.845	.00000	.00000	-246.33	-1673.5	-7538.5	7292.1
828	-204.80 7869.2	-8824.5	-2029.9	-95.038	.00000	.00000	-203.75	-2029.9	-8825.5	8621.8
829	-166.49 9407.6	-10520.	-2505.2	-121.78	.00000	.00000	-165.05	-2505.2	-10522.	10357.
830	667.77 1703.5	-1035.7	667.77	.00000	.00000	.00000	667.77	667.77	-1035.7	1703.5
831	669.05 1678.6	-1013.5	661.14	-4.0536	.00000	.00000	669.06	661.14	-1013.5	1682.5
832	660.56 1670.9	-1011.1	659.06	-.72146E-02	.00000	.00000	660.56	659.06	-1011.1	1671.6
833	661.34 1683.5	-1023.2	659.18	2.3477	.00000	.00000	661.34	659.18	-1023.2	1684.6
834	659.34 1681.3	-1021.4	660.38	1.4489	.00000	.00000	660.38	659.35	-1021.4	1681.8
835	657.84 1680.3	-1021.6	659.73	.80176	.00000	.00000	659.73	657.85	-1021.6	1681.3

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
836	657.62 1680.1	-1021.6	659.44	.27421	.00000	.00000	659.44	657.62	-1021.6	1681.
837	657.63 1679.9	-1021.5	659.25	-.84672E-01	.00000	.00000	659.25	657.63	-1021.5	1680.
838	657.93 1679.9	-1021.3	659.21	-.26380	.00000	.00000	659.21	657.93	-1021.3	1680.
839	658.31 1680.0	-1021.3	659.24	-.31891	.00000	.00000	659.24	658.31	-1021.3	1680
840	658.69 1680.2	-1021.2	659.30	-.30319	.00000	.00000	659.30	658.69	-1021.2	1680..

841	659.00 1680.4	-1021.2	659.38	-.23830	.00000	.00000	659.38	659.00	-1021.2	1680.6
842	659.18 1680.4	-1021.1	659.44	-.12235	.00000	.00000	659.44	659.18	-1021.1	1680.6
843	659.17 1680.3	-1021.0	659.46	.63998E-01	.00000	.00000	659.46	659.17	-1021.0	1680.5
844	658.88 1680.1	-1020.9	659.38	.34976	.00000	.00000	659.38	658.88	-1020.9	1680.3
845	658.18 1679.4	-1020.8	659.17	.76568	.00000	.00000	659.17	658.18	-1020.8	1679.9
846	656.92 1678.4	-1020.6	658.75	1.3331	.00000	.00000	658.75	656.92	-1020.6	1679.3
847	654.94 1676.9	-1020.4	658.03	2.0466	.00000	.00000	658.03	654.95	-1020.4	1678.5
848	652.13 1674.9	-1020.3	656.93	2.8486	.00000	.00000	656.93	652.14	-1020.3	1677.3
849	648.50 1672.4	-1020.4	655.42	3.5920	.00000	.00000	655.42	648.50	-1020.4	1675.8
850	644.32 1669.7	-1020.8	653.52	3.9906	.00000	.00000	653.52	644.33	-1020.8	1674.3
851	640.32 1667.6	-1021.7	651.40	3.5563	.00000	.00000	651.40	640.33	-1021.7	1673.1
852	638.00 1667.2	-1023.4	649.48	1.5257	.00000	.00000	649.48	638.00	-1023.4	1672.9
853	639.90 1670.6	-1026.4	648.54	-3.2173	.00000	.00000	648.54	639.91	-1026.4	1674.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINI
854	650.14 1681.1	-1030.9	649.92	-12.198	.00000	.00000	650.23	649.92	-1031.0	1681.
855	674.85 1703.6	-1037.5	655.71	-27.341	.00000	.00000	675.29	655.71	-1038.0	1713.
856	722.19 1744.7	-1046.3	668.91	-50.805	.00000	.00000	723.65	668.91	-1047.7	1771.

857	803.14 1813.6	-1056.8	693.73	-84.045	.00000	.00000	806.93	693.73	-1060.6	1867.5
858	926.89 1917.6	-1067.1	734.57	-125.74	.00000	.00000	934.79	734.57	-1075.0	2009.8
859	1093.7 2042.5	-1059.9	797.68	-166.85	.00000	.00000	1106.6	797.68	-1072.8	2179.4
860	1285.3 2159.0	-1028.8	880.01	-162.89	.00000	.00000	1296.7	880.01	-1040.2	2337.0
861	1382.6 2113.8	-905.58	965.42	-65.496	.00000	.00000	1384.5	965.42	-907.46	2291.9
862	882.76 1364.6	-435.10	970.74	23.473	.00000	.00000	970.74	883.18	-435.52	1406.3
863	423.19 826.86	18.603	956.71	80.640	.00000	.00000	956.71	438.67	3.1220	953.59
864	473.87 2158.1	-1683.2	455.41	120.89	.00000	.00000	480.62	455.41	-1689.9	2170.6
865	26.591 7109.6	-7718.8	-1489.8	-9.5141	.00000	.00000	26.603	-1489.8	-7718.8	7745.4
866	42.208 8218.3	-8953.0	-1837.0	-3.2779	.00000	.00000	42.210	-1837.0	-8953.0	8995.2
867	55.902 9275.4	-10128.	-2163.3	2.8522	.00000	.00000	55.903	-2163.3	-10128.	10184.
868	656.99 1698.6	-1041.6	656.99	.00000	.00000	.00000	656.99	656.99	-1041.6	1698.6
869	669.32 1688.6	-1023.9	653.91	-58.556	.00000	.00000	671.34	653.91	-1025.9	1697.3
870	670.80 1687.5	-1012.1	666.47	-87.363	.00000	.00000	675.32	666.47	-1016.6	1691.9
871	663.55 1695.1	-1029.2	662.73	-54.928	.00000	.00000	665.33	662.73	-1031.0	1696.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
872	657.13 1687.4	-1026.6	661.49	-40.958	.00000	.00000	661.49	658.12	-1027.6	1689.

873	654.46 1684.9	-1027.0	659.58	-32.617	.00000	.00000	659.58	655.10	-1027.6	1687.2
874	653.06 1683.2	-1027.0	658.10	-27.359	.00000	.00000	658.10	653.51	-1027.4	1685.5
875	653.23 1682.6	-1026.8	657.38	-23.602	.00000	.00000	657.38	653.56	-1027.2	1684.6
876	654.12 1682.7	-1026.7	657.15	-20.753	.00000	.00000	657.15	654.37	-1026.9	1684.1
877	655.25 1683.1	-1026.6	657.19	-18.491	.00000	.00000	657.19	655.45	-1026.8	1684.0
878	656.33 1683.6	-1026.5	657.38	-16.648	.00000	.00000	657.38	656.49	-1026.7	1684.1
879	657.20 1684.1	-1026.5	657.60	-15.106	.00000	.00000	657.60	657.34	-1026.6	1684.2
880	657.72 1684.3	-1026.4	657.79	-13.780	.00000	.00000	657.83	657.79	-1026.5	1684.4
881	657.70 1684.2	-1026.3	657.83	-12.594	.00000	.00000	657.83	657.79	-1026.4	1684.2
882	656.86 1683.5	-1026.2	657.61	-11.486	.00000	.00000	657.61	656.94	-1026.2	1683.8
883	654.83 1682.0	-1026.0	656.96	-10.402	.00000	.00000	656.96	654.89	-1026.0	1683.0
884	651.13 1679.2	-1025.8	655.67	-9.3026	.00000	.00000	655.67	651.18	-1025.8	1681.5
885	645.28 1675.0	-1025.6	653.50	-8.1715	.00000	.00000	653.50	645.32	-1025.6	1679.1
886	636.88 1669.1	-1025.4	650.26	-7.0340	.00000	.00000	650.26	636.91	-1025.5	1675.7
887	625.93 1661.5	-1025.5	645.81	-5.9820	.00000	.00000	645.81	625.95	-1025.5	1671.1
888	613.13 1652.9	-1026.0	640.28	-5.2092	.00000	.00000	640.28	613.15	-1026.0	1666.1
889	600.57 1644.7	-1027.1	634.24	-5.0558	.00000	.00000	634.24	600.59	-1027.1	1661.1

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
890	592.48 1640.2	-1029.1	628.99	-6.0628	.00000	.00000	628.99	592.50	-1029.2	1658.2
891	596.31 1644.6	-1032.7	626.99	-9.0270	.00000	.00000	626.99	596.36	-1032.7	1659.7
892	624.10 1666.6	-1038.2	632.31	-15.046	.00000	.00000	632.31	624.24	-1038.3	1670.6
893	693.72 1719.6	-1046.2	651.26	-25.496	.00000	.00000	694.10	651.26	-1046.6	1740.7
894	830.36 1823.8	-1056.8	692.98	-42.034	.00000	.00000	831.30	692.98	-1057.8	1889.1
895	1064.2 2006.0	-1069.9	768.95	-65.476	.00000	.00000	1066.2	768.95	-1071.9	2138.1
896	1426.7 2294.5	-1081.6	892.70	-95.490	.00000	.00000	1430.3	892.70	-1085.3	2515.6
897	1934.3 2695.7	-1076.5	1077.3	-126.42	.00000	.00000	1939.6	1077.3	-1081.8	3021.4
898	2482.3 3114.4	-1043.2	1297.4	-120.99	.00000	.00000	2486.4	1297.4	-1047.3	3533.8
899	2882.7 3263.6	-836.82	1535.2	-64.771	.00000	.00000	2883.9	1535.2	-837.95	3721.8
900	3564.2 3542.4	-480.84	1903.4	-220.62	.00000	.00000	3576.2	1903.4	-492.84	4069.1
901	1742.5 1806.7	-82.527	1512.8	-316.12	.00000	.00000	1795.8	1512.8	-135.73	1931.5
902	571.52 1853.9	-1063.2	858.46	-266.64	.00000	.00000	858.46	613.92	-1105.6	1964.1
903	308.71 8142.3	-8572.0	-1471.5	-153.25	.00000	.00000	311.35	-1471.5	-8574.6	8886.
904	209.11 8420.8	-8964.7	-1599.3	-153.86	.00000	.00000	211.69	-1599.3	-8967.3	9179.
905	109.62 8660.6	-9313.4	-1714.2	-154.45	.00000	.00000	112.15	-1714.2	-9315.9	9428.
906	-420.07 637.56	-1057.6	-420.07	.00000	.00000	.00000	-420.07	-420.07	-1057.6	637.5
907	-421.02 637.68	-1058.6	-420.83	-.66402	.00000	.00000	-420.83	-421.02	-1058.6	637.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

HABCE-01/99-0745, Revision 2

062

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
908	-421.47 641.51	-1053.6	-410.45	-40.329	.00000	.00000	-410.45	-418.91	-1056.2	645.70
909	-415.03 647.55	-1047.3	-406.83	-69.161	.00000	.00000	-406.83	-407.55	-1054.7	647.91
910	-412.75 642.27	-1047.4	-410.12	-51.653	.00000	.00000	-408.58	-410.12	-1051.6	643.04
911	-411.82 640.30	-1047.9	-411.43	-41.163	.00000	.00000	-409.17	-411.43	-1050.6	641.43
912	-411.27 639.20	-1047.9	-411.77	-34.374	.00000	.00000	-409.42	-411.77	-1049.8	640.37
913	-411.04 638.27	-1047.6	-411.75	-29.501	.00000	.00000	-409.67	-411.75	-1049.0	639.30
914	-411.08 637.57	-1047.4	-411.79	-25.806	.00000	.00000	-410.03	-411.79	-1048.5	638.44
915	-411.15 637.07	-1047.3	-411.81	-22.934	.00000	.00000	-410.32	-411.81	-1048.1	637.81
916	-411.21 636.71	-1047.2	-411.83	-20.624	.00000	.00000	-410.55	-411.83	-1047.9	637.35
917	-411.24 636.45	-1047.1	-411.81	-18.716	.00000	.00000	-410.69	-411.81	-1047.7	637.01
918	-411.17 636.28	-1047.0	-411.73	-17.101	.00000	.00000	-410.71	-411.73	-1047.5	636.79
919	-410.96 636.20	-1046.9	-411.58	-15.702	.00000	.00000	-410.57	-411.58	-1047.3	636.7
920	-410.55 636.25	-1046.7	-411.30	-14.465	.00000	.00000	-410.22	-411.30	-1047.0	636.7
921	-409.88 636.47	-1046.4	-410.88	-13.354	.00000	.00000	-409.60	-410.88	-1046.7	637.1
922	-408.91 636.91	-1046.2	-410.30	-12.353	.00000	.00000	-408.67	-410.30	-1046.4	637.7
923	-407.63 637.62	-1045.9	-409.58	-11.467	.00000	.00000	-407.43	-409.58	-1046.1	638.6
924	-406.13 638.64	-1045.8	-408.79	-10.727	.00000	.00000	-405.95	-408.79	-1046.0	640.0
925	-404.64 639.97	-1046.1	-408.08	-10.203	.00000	.00000	-404.48	-408.08	-1046.2	641.7

HABGE-01/99-0745, Revision 2

D63

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
926	-403.60 641.50	-1046.9	-407.74	-9.9990	.00000	.00000	-403.45	-407.74	-1047.1	643.64
927	-403.79 642.99	-1048.8	-408.25	-10.264	.00000	.00000	-403.63	-408.25	-1048.9	645.29
928	-406.37 643.99	-1052.0	-410.31	-11.171	.00000	.00000	-406.18	-410.31	-1052.2	646.05
929	-412.94 643.82	-1057.3	-414.85	-12.885	.00000	.00000	-412.68	-414.85	-1057.6	644.90
930	-425.45 641.57	-1065.2	-422.99	-15.485	.00000	.00000	-422.99	-425.08	-1065.6	642.61
931	-445.94 636.17	-1076.2	-435.87	-18.843	.00000	.00000	-435.87	-445.37	-1076.7	640.87
932	-475.84 626.55	-1090.1	-454.21	-22.415	.00000	.00000	-454.21	-475.03	-1090.9	636.70
933	-515.29 611.52	-1105.6	-477.68	-25.176	.00000	.00000	-477.68	-514.22	-1106.6	628.97
934	-562.56 588.26	-1117.4	-503.71	-25.961	.00000	.00000	-503.71	-561.34	-1118.7	614.95
935	-618.79 547.29	-1113.0	-527.88	-26.196	.00000	.00000	-527.88	-617.41	-1114.4	586.5
936	-703.85 457.21	-1054.6	-543.80	-37.637	.00000	.00000	-543.80	-699.86	-1058.6	514.8
937	-870.82 350.19	-860.63	-543.01	-78.333	.00000	.00000	-543.01	-787.23	-944.22	401.2
938	-1100.6 606.25	-535.46	-525.41	-118.91	.00000	.00000	-511.46	-525.41	-1124.6	613.1
939	-1217.9 654.85	-595.64	-610.55	-130.04	.00000	.00000	-569.56	-610.55	-1243.9	674.3
940	-428.93 642.77	-1071.7	-428.93	.00000	.00000	.00000	-428.93	-428.93	-1071.7	642.7
941	-430.00 645.25	-1075.2	-429.99	-1.1997	.00000	.00000	-429.99	-430.00	-1075.2	645.2

HABGE-01/99-0745, Revision 2

942	-431.18 644.82	-1070.3	-420.00	-1.8204	.00000	.00000	-420.00	-431.18	-1070.3	650.33
943	-423.86 641.88	-1061.1	-414.77	-1.5659	.00000	.00000	-414.77	-423.86	-1061.1	646.38

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
944	-422.92 641.55	-1062.9	-419.69	-.53074	.00000	.00000	-419.69	-422.92	-1062.9	643.16
945	-422.17 641.92	-1063.7	-421.40	-.49018	.00000	.00000	-421.40	-422.17	-1063.7	642.31
946	-421.75 641.57	-1063.3	-421.71	-.62282	.00000	.00000	-421.71	-421.74	-1063.3	641.58
947	-421.70 641.24	-1063.1	-421.95	-.59875	.00000	.00000	-421.70	-421.95	-1063.1	641.37
948	-421.61 641.05	-1062.9	-422.01	-.55581	.00000	.00000	-421.61	-422.01	-1062.9	641.25
949	-421.56 640.94	-1062.7	-422.02	-.50986	.00000	.00000	-421.56	-422.02	-1062.7	641.18
950	-421.51 640.88	-1062.6	-422.01	-.45172	.00000	.00000	-421.50	-422.01	-1062.6	641.13
951	-421.44 640.83	-1062.5	-421.96	-.37381	.00000	.00000	-421.44	-421.96	-1062.5	641.0
952	-421.35 640.80	-1062.4	-421.87	-.26954	.00000	.00000	-421.35	-421.87	-1062.4	641.0
953	-421.19 640.77	-1062.2	-421.73	-.13415	.00000	.00000	-421.19	-421.73	-1062.2	641.0
954	-420.95 640.76	-1062.0	-421.53	.33614E-01	.00000	.00000	-420.95	-421.53	-1062.0	641.0
955	-420.63 640.79	-1061.7	-421.27	.22716	.00000	.00000	-420.63	-421.27	-1061.7	641.1
956	-420.21 640.87	-1061.5	-420.95	.42545	.00000	.00000	-420.21	-420.95	-1061.5	641.2
957	-419.76 641.04	-1061.2	-420.64	.58417	.00000	.00000	-419.76	-420.64	-1061.2	641.4

958	-419.35 641.35	-1061.2	-420.41	.62524	.00000	.00000	-419.35	-420.41	-1061.2	641.88
959	-419.16 641.83	-1061.6	-420.42	.42656	.00000	.00000	-419.16	-420.42	-1061.6	642.46
960	-419.46 642.53	-1062.7	-420.90	-.18441	.00000	.00000	-419.46	-420.90	-1062.7	643.25
961	-420.66 643.50	-1064.9	-422.16	-1.4258	.00000	.00000	-420.66	-422.16	-1064.9	644.25

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
962	-423.26 644.78	-1068.7	-424.63	-3.5339	.00000	.00000	-423.24	-424.63	-1068.7	645.47
963	-427.81 646.42	-1074.6	-428.73	-6.6931	.00000	.00000	-427.74	-428.73	-1074.7	646.91
964	-434.73 648.54	-1083.1	-434.86	-10.903	.00000	.00000	-434.55	-434.86	-1083.2	648.69
965	-443.96 651.35	-1094.3	-443.07	-15.760	.00000	.00000	-443.07	-443.58	-1094.7	651.61
966	-454.45 655.15	-1107.8	-452.75	-20.150	.00000	.00000	-452.75	-453.83	-1108.4	655.69
967	-463.21 660.07	-1121.5	-461.82	-22.042	.00000	.00000	-461.82	-462.48	-1122.2	660.3
968	-465.13 665.34	-1130.1	-466.08	-19.062	.00000	.00000	-464.58	-466.08	-1130.7	666.0
969	-453.34 666.27	-1121.5	-457.78	-12.091	.00000	.00000	-453.12	-457.78	-1121.7	668.5
970	-428.43 642.02	-1068.8	-426.45	-16.821	.00000	.00000	-426.45	-427.99	-1069.2	642.7
971	-392.82 552.53	-914.50	-351.06	-56.600	.00000	.00000	-351.06	-386.75	-920.57	569.5
972	-314.34 371.68	-575.72	-188.16	-83.525	.00000	.00000	-188.16	-289.93	-600.13	411.5
973	-254.66 282.56	-364.87	-82.892	-80.131	.00000	.00000	-82.892	-212.51	-407.01	324.7

HABGE-01/99-0745, Revision 2

DCC

974	-563.36 2166.2	-1677.7	787.70	-199.91	.00000	.00000	787.70	-528.59	-1712.5	2500.2
975	-547.90 1870.0	881.74	1526.2	-196.85	.00000	.00000	1526.2	908.35	-574.51	2100.7
976	-180.00 9574.2	-10440.	-1759.5	-194.20	.00000	.00000	-176.33	-1759.5	-10443.	10267.
977	-130.45 8316.7	-8958.2	-1286.0	-185.73	.00000	.00000	-126.54	-1286.0	-8962.1	8835.6
978	-76.681 7132.9	-7553.1	-838.25	-177.36	.00000	.00000	-72.476	-838.25	-7557.3	7484.8
979	-451.68 651.54	-1103.2	-451.68	.00000	.00000	.00000	-451.68	-451.68	-1103.2	651.54

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
980	-449.77 654.70	-1105.2	-451.26	-.52051E-01	.00000	.00000	-449.77	-451.26	-1105.2	655.44
981	-449.37 663.15	-1107.3	-439.20	-3.9092	.00000	.00000	-439.20	-449.35	-1107.4	668.17
982	-445.87 646.96	-1086.1	-432.67	-2.1520	.00000	.00000	-432.67	-445.87	-1086.1	653.46
983	-442.62 653.73	-1095.1	-440.22	-.13828	.00000	.00000	-440.22	-442.62	-1095.1	654.9
984	-442.28 652.67	-1094.4	-441.23	-.47945	.00000	.00000	-441.23	-442.28	-1094.4	653.1
985	-442.58 651.85	-1094.2	-442.11	-.46766	.00000	.00000	-442.11	-442.58	-1094.2	652.0
986	-442.41 651.54	-1093.9	-442.37	-.43521	.00000	.00000	-442.37	-442.41	-1093.9	651.1
987	-442.26 651.36	-1093.7	-442.46	-.42294	.00000	.00000	-442.26	-442.46	-1093.7	651.1
988	-442.15 651.26	-1093.6	-442.48	-.40205	.00000	.00000	-442.15	-442.48	-1093.6	651.1
989	-442.07 651.18	-1093.4	-442.46	-.35879	.00000	.00000	-442.07	-442.46	-1093.4	651.1

990	-442.00 651.09	-1093.3	-442.42	-.28090	.00000	.00000	-442.00	-442.42	-1093.3	651.30
991	-441.96 650.98	-1093.1	-442.35	-.16186	.00000	.00000	-441.96	-442.35	-1093.1	651.17
992	-441.92 650.81	-1092.9	-442.26	.23341E-02	.00000	.00000	-441.92	-442.26	-1092.9	650.98
993	-441.90 650.60	-1092.6	-442.15	.20966	.00000	.00000	-441.90	-442.15	-1092.6	650.73
994	-441.90 650.35	-1092.3	-442.04	.44667	.00000	.00000	-441.90	-442.04	-1092.3	650.42
995	-441.93 650.09	-1092.0	-441.96	.67948	.00000	.00000	-441.93	-441.96	-1092.0	650.11
996	-442.02 649.90	-1091.9	-441.96	.84193	.00000	.00000	-441.96	-442.02	-1091.9	649.93
997	-442.19 649.90	-1092.1	-442.13	.82261	.00000	.00000	-442.13	-442.19	-1092.1	649.94

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIWT
998	-442.48 650.29	-1092.8	-442.56	.45242	.00000	.00000	-442.48	-442.56	-1092.8	650.33
999	-442.92 651.35	-1094.5	-443.41	-.49925	.00000	.00000	-442.92	-443.41	-1094.5	651.5
1000	-443.50 653.44	-1097.6	-444.84	-2.3126	.00000	.00000	-443.49	-444.84	-1097.6	654.1
1001	-444.19 657.04	-1102.6	-446.98	-5.2651	.00000	.00000	-444.14	-446.98	-1102.6	658.4
1002	-444.84 662.64	-1109.8	-449.92	-9.5239	.00000	.00000	-444.71	-449.92	-1109.9	665.1
1003	-445.13 670.67	-1119.4	-453.51	-14.926	.00000	.00000	-444.80	-453.51	-1119.8	674.1
1004	-444.42 681.26	-1131.1	-457.30	-20.654	.00000	.00000	-443.80	-457.30	-1131.7	687.1
1005	-441.53 693.65	-1142.9	-460.04	-24.748	.00000	.00000	-440.66	-460.04	-1143.8	703.1

HABCE-01/99-0745, Revision 2

1006	-434.44 706.16	-1151.6	-459.54	-23.714	.00000	.00000	-433.66	-459.54	-1152.4	718.74
1007	-418.50 716.09	-1150.0	-451.08	-12.596	.00000	.00000	-418.28	-451.08	-1150.2	731.93
1008	-382.08 726.24	-1129.2	-426.40	12.130	.00000	.00000	-381.88	-426.40	-1129.4	747.48
1009	-288.86 754.59	-1074.9	-365.00	43.422	.00000	.00000	-286.47	-365.00	-1077.2	790.78
1010	-115.03 812.54	-983.62	-253.96	48.801	.00000	.00000	-112.30	-253.96	-986.35	874.05
1011	5.5492 645.94	-676.49	-75.526	16.226	.00000	.00000	5.9350	-75.526	-676.87	682.81
1012	18.612 239.05	-125.40	150.26	-6.1607	.00000	.00000	150.26	18.875	-125.66	275.92
1013	188.86 3612.0	-3044.9	852.79	-22.896	.00000	.00000	852.79	189.02	-3045.1	3897.9
1014	213.84 2096.6	2199.7	2405.3	-22.531	.00000	.00000	2405.3	2199.9	213.59	2191.7
1015	118.61 11125.	-11856.	-1841.6	-67.690	.00000	.00000	118.99	-1841.6	-11856.	11975.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1016	19.558 8577.0	-9022.5	-1004.6	-75.886	.00000	.00000	20.195	-1004.6	-9023.1	9043.
1017	-73.836 5997.8	-6109.0	-152.75	-83.931	.00000	.00000	-72.669	-152.75	-6110.1	6037.
1018	-474.43 663.98	-1138.4	-474.43	.00000	.00000	.00000	-474.43	-474.43	-1138.4	663.9
1019	-474.05 662.91	-1137.0	-474.10	3.0090	.00000	.00000	-474.04	-474.10	-1137.0	662.9
1020	-472.50 669.19	-1138.7	-468.20	19.225	.00000	.00000	-468.20	-471.95	-1139.3	671.0
1021	-469.11 668.60	-1132.1	-458.45	10.134	.00000	.00000	-458.45	-468.95	-1132.2	673.7

1022	-466.38 668.09	-1129.8	-458.21	-15.043	.00000	.00000	-458.21	-466.04	-1130.2	671.97
1023	-465.43 666.04	-1129.0	-461.27	-12.512	.00000	.00000	-461.27	-465.19	-1129.3	668.00
1024	-465.03 665.22	-1128.9	-462.91	-10.437	.00000	.00000	-462.91	-464.87	-1129.1	666.19
1025	-464.86 664.53	-1128.6	-463.71	-9.0049	.00000	.00000	-463.71	-464.74	-1128.8	665.05
1026	-464.81 664.09	-1128.5	-464.20	-7.9384	.00000	.00000	-464.20	-464.72	-1128.5	664.34
1027	-464.80 663.74	-1128.3	-464.49	-7.1006	.00000	.00000	-464.49	-464.73	-1128.3	663.85
1028	-464.82 663.46	-1128.1	-464.67	-6.4049	.00000	.00000	-464.67	-464.75	-1128.2	663.50
1029	-464.85 663.18	-1127.9	-464.78	-5.8019	.00000	.00000	-464.78	-464.80	-1128.0	663.19
1030	-464.93 662.87	-1127.7	-464.85	-5.2573	.00000	.00000	-464.85	-464.89	-1127.7	662.89
1031	-465.05 662.50	-1127.4	-464.89	-4.7499	.00000	.00000	-464.89	-465.02	-1127.5	662.57
1032	-465.23 662.05	-1127.1	-464.93	-4.2684	.00000	.00000	-464.93	-465.21	-1127.1	662.19
1033	-465.50 661.54	-1126.8	-464.99	-3.8144	.00000	.00000	-464.99	-465.48	-1126.8	661.78

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
1034	-465.85 661.02	-1126.5	-465.13	-3.4078	.00000	.00000	-465.13	-465.83	-1126.5	661.3
1035	-466.26 660.62	-1126.4	-465.38	-3.0937	.00000	.00000	-465.38	-466.25	-1126.4	661.0
1036	-466.70 660.57	-1126.8	-465.82	-2.9516	.00000	.00000	-465.82	-466.69	-1126.8	661.0
1037	-467.06 661.20	-1128.0	-466.52	-3.1014	.00000	.00000	-466.52	-467.05	-1128.0	661.4

1038	-467.15 663.01	-1130.3	-467.55	-3.7052	.00000	.00000	-467.13	-467.55	-1130.4	663.22
1039	-466.69 666.62	-1134.4	-468.93	-4.9501	.00000	.00000	-466.66	-468.93	-1134.4	667.75
1040	-465.28 672.74	-1140.6	-470.65	-7.0102	.00000	.00000	-465.21	-470.65	-1140.7	675.45
1041	-462.42 681.97	-1149.2	-472.50	-9.9405	.00000	.00000	-462.28	-472.50	-1149.3	687.02
1042	-457.61 694.59	-1159.9	-474.13	-13.527	.00000	.00000	-457.35	-474.13	-1160.2	702.83
1043	-450.49 709.70	-1171.4	-474.73	-16.966	.00000	.00000	-450.09	-474.73	-1171.8	721.70
1044	-441.21 724.90	-1180.9	-473.26	-18.554	.00000	.00000	-440.74	-473.26	-1181.4	740.62
1045	-430.60 734.27	-1182.2	-467.67	-15.071	.00000	.00000	-430.30	-467.67	-1182.5	752.24
1046	-420.39 730.37	-1167.8	-455.83	-1.4522	.00000	.00000	-420.39	-455.83	-1167.8	747.44
1047	-409.49 705.54	-1124.3	-432.45	30.378	.00000	.00000	-408.20	-432.45	-1125.6	717.35
1048	-385.03 678.87	-1048.9	-391.80	90.459	.00000	.00000	-372.92	-391.80	-1061.0	688.11
1049	-282.94 708.52	-943.97	-309.01	164.91	.00000	.00000	-244.09	-309.01	-982.83	738.74
1050	-69.576 746.21	-810.45	-167.81	153.91	.00000	.00000	-38.873	-167.81	-841.15	802.28
1051	62.025 614.59	-555.97	-10.560	108.61	.00000	.00000	80.558	-10.560	-574.50	655.06

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1052	-138.98 3041.6	-2549.9	865.08	58.536	.00000	.00000	865.08	-137.56	-2551.3	3416.
1053	-116.44 2036.5	1659.5	2102.7	57.668	.00000	.00000	2102.7	1661.4	-118.31	2221.

1054	186.36 10788.	-11432.	-1733.5	90.959	.00000	.00000	187.07	-1733.5	-11433.	11620.
1055	80.362 8612.3	-9031.7	-1029.6	90.603	.00000	.00000	81.263	-1029.6	-9032.6	9113.8
1056	-22.332 6438.2	-6605.3	-326.43	90.244	.00000	.00000	-21.095	-326.43	-6606.5	6585.4
1057	-484.71 671.48	-1156.2	-484.71	.00000	.00000	.00000	-484.71	-484.71	-1156.2	671.48
1058	-487.13 669.67	-1156.0	-485.62	.89164	.00000	.00000	-485.62	-487.13	-1156.1	670.43
1059	-486.94 662.08	-1148.5	-485.99	.21807	.00000	.00000	-485.99	-486.94	-1148.5	662.55
1060	-482.44 693.87	-1167.7	-476.80	51.617	.00000	.00000	-476.80	-478.58	-1171.6	694.76
1061	-479.75 692.63	-1147.6	-465.37	89.221	.00000	.00000	-465.37	-468.04	-1159.3	693.96
1062	-478.33 685.01	-1148.6	-471.36	71.444	.00000	.00000	-470.79	-471.36	-1156.1	685.30
1063	-477.23 680.75	-1148.2	-473.50	59.846	.00000	.00000	-471.93	-473.50	-1153.5	681.53
1064	-477.05 677.83	-1147.9	-474.86	51.361	.00000	.00000	-473.15	-474.86	-1151.8	678.69
1065	-477.07 675.86	-1147.7	-475.71	44.960	.00000	.00000	-474.07	-475.71	-1150.7	676.68
1066	-477.17 674.39	-1147.5	-476.26	39.960	.00000	.00000	-474.79	-476.26	-1149.9	675.12
1067	-477.28 673.29	-1147.4	-476.65	35.967	.00000	.00000	-475.36	-476.65	-1149.3	673.93
1068	-477.43 672.38	-1147.2	-476.91	32.716	.00000	.00000	-475.83	-476.91	-1148.8	672.9
1069	-477.61 671.57	-1146.9	-477.11	30.031	.00000	.00000	-476.26	-477.11	-1148.3	671.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
------	------------	----	----	-----	-----	-----	----	----	----	-----

HABGE-01/99-0745, Revision 2

D72

1070	-477.86 670.77	-1146.6	-477.28	27.788	.00000	.00000	-476.71	-477.28	-1147.8	671.06
1071	-478.20 669.95	-1146.3	-477.44	25.894	.00000	.00000	-477.19	-477.44	-1147.3	670.07
1072	-478.64 669.09	-1145.9	-477.64	24.276	.00000	.00000	-477.64	-477.76	-1146.8	669.15
1073	-479.18 668.27	-1145.6	-477.92	22.868	.00000	.00000	-477.92	-478.39	-1146.4	668.51
1074	-479.77 667.63	-1145.6	-478.33	21.600	.00000	.00000	-478.33	-479.07	-1146.3	668.00
1075	-480.30 667.46	-1146.1	-478.91	20.390	.00000	.00000	-478.91	-479.68	-1146.8	667.84
1076	-480.58 668.16	-1147.5	-479.70	19.138	.00000	.00000	-479.70	-480.03	-1148.0	668.33
1077	-480.26 670.38	-1150.2	-480.72	17.722	.00000	.00000	-479.79	-480.72	-1150.6	670.84
1078	-478.90 674.81	-1154.6	-481.91	16.015	.00000	.00000	-478.52	-481.91	-1155.0	676.50
1079	-475.89 682.36	-1161.4	-483.15	13.894	.00000	.00000	-475.60	-483.15	-1161.7	686.11
1080	-470.62 693.55	-1170.5	-484.11	11.341	.00000	.00000	-470.44	-484.11	-1170.7	700.28
1081	-462.71 708.63	-1181.8	-484.46	8.4855	.00000	.00000	-462.61	-484.46	-1181.9	719.30
1082	-452.50 725.56	-1192.9	-483.34	5.9295	.00000	.00000	-452.45	-483.34	-1193.0	740.51
1083	-441.90 740.92	-1201.3	-480.51	4.7814	.00000	.00000	-441.87	-480.51	-1201.3	759.48
1084	-435.98 743.83	-1198.3	-474.73	7.5154	.00000	.00000	-435.90	-474.73	-1198.4	762.4
1085	-445.85 721.69	-1178.0	-468.59	17.947	.00000	.00000	-445.41	-468.59	-1178.4	732.9
1086	-496.09 644.10	-1119.1	-464.69	45.139	.00000	.00000	-464.69	-492.84	-1122.4	657.7
1087	-641.57 514.51	-1029.5	-490.08	104.10	.00000	.00000	-490.08	-615.40	-1055.7	565.6

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

HABGE-01/99-0745, Revision 2

D 73

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1088	-967.84 505.59	-883.03	-573.31	205.13	.00000	.00000	-573.31	-715.96	-1134.9	561.59
1089	-1376.3 701.48	-882.97	-760.66	240.45	.00000	.00000	-760.66	-785.15	-1474.1	713.40
1090	-1564.7 717.34	-1016.0	-904.73	216.09	.00000	.00000	-904.73	-941.11	-1639.6	734.84
1091	1053.2 2256.5	-1203.3	1053.2	.00000	.00000	.00000	1053.2	1053.2	-1203.3	2256.5
1092	1050.1 2211.0	-1157.3	1054.7	42.626	.00000	.00000	1054.7	1050.9	-1158.1	2212.9
1093	1045.6 2246.6	-1202.5	1035.9	70.801	.00000	.00000	1047.8	1035.9	-1204.7	2252.6
1094	1055.4 2198.0	-1137.5	1062.8	44.636	.00000	.00000	1062.8	1056.3	-1138.4	2201.3
1095	1047.7 2231.8	-1184.6	1045.2	33.123	.00000	.00000	1048.2	1045.2	-1185.1	2233.3
1096	1048.3 2221.1	-1171.9	1049.1	26.798	.00000	.00000	1049.1	1048.6	-1172.3	2221.4
1097	1050.3 2224.4	-1174.1	1049.6	21.828	.00000	.00000	1050.5	1049.6	-1174.3	2224.8
1098	1049.0 2223.2	-1173.8	1049.2	18.934	.00000	.00000	1049.2	1049.2	-1174.0	2223.2
1099	1049.7 2223.3	-1173.4	1049.6	16.411	.00000	.00000	1049.8	1049.6	-1173.6	2223.3
1100	1049.3 2223.0	-1173.4	1049.5	14.649	.00000	.00000	1049.5	1049.4	-1173.5	2223.0
1101	1049.5 2222.8	-1173.1	1049.7	13.140	.00000	.00000	1049.7	1049.6	-1173.2	2222.8
1102	1049.4 2222.6	-1172.9	1049.7	11.960	.00000	.00000	1049.7	1049.5	-1173.0	2222.6
1103	1049.5 2222.4	-1172.6	1049.8	10.951	.00000	.00000	1049.8	1049.6	-1172.7	2222.4
1104	1049.5 2222.1	-1172.3	1049.8	10.111	.00000	.00000	1049.8	1049.6	-1172.4	2222.1
1105	1049.6 2221.7	-1171.9	1049.9	9.3868	.00000	.00000	1049.9	1049.6	-1172.0	2221.7

HABGE-01/99-0745, Revision 2

074

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1106	1049.6 2221.4	-1171.6	1050.0	8.7599	.00000	.00000	1050.0	1049.6	-1171.6	2221.6
1107	1049.7 2221.2	-1171.3	1050.1	8.2157	.00000	.00000	1050.1	1049.7	-1171.3	2221.4
1108	1049.7 2221.3	-1171.4	1050.1	7.7251	.00000	.00000	1050.1	1049.8	-1171.4	2221.5
1109	1049.9 2221.9	-1171.9	1049.9	7.3081	.00000	.00000	1049.9	1049.9	-1172.0	2221.9
1110	1049.9 2223.2	-1173.6	1049.5	6.8960	.00000	.00000	1049.9	1049.5	-1173.6	2223.4
1111	1050.1 2225.8	-1176.4	1048.7	6.5908	.00000	.00000	1050.1	1048.7	-1176.5	2226.5
1112	1049.8 2230.1	-1181.5	1047.2	6.1838	.00000	.00000	1049.8	1047.2	-1181.6	2231.3
1113	1050.2 2236.3	-1188.5	1045.4	6.0406	.00000	.00000	1050.2	1045.4	-1188.5	2238.7
1114	1048.8 2244.4	-1198.8	1042.3	5.4731	.00000	.00000	1048.8	1042.3	-1198.8	2247.7
1115	1049.9 2254.0	-1209.1	1039.9	5.7364	.00000	.00000	1049.9	1039.9	-1209.1	2259.0
1116	1045.3 2262.6	-1222.2	1035.4	4.5089	.00000	.00000	1045.3	1035.4	-1222.2	2267.
1117	1049.8 2267.4	-1224.3	1036.3	6.0844	.00000	.00000	1049.8	1036.3	-1224.3	2274.
1118	1036.0 2260.0	-1225.5	1032.9	2.5606	.00000	.00000	1036.0	1032.9	-1225.5	2261.
1119	1054.9 2233.1	-1180.0	1051.2	8.5836	.00000	.00000	1054.9	1051.2	-1180.0	2234.
1120	1004.4 2164.6	-1136.8	1050.5	-3.6371	.00000	.00000	1050.5	1004.5	-1136.8	2187.
1121	1075.8 2043.0	-942.41	1124.0	18.891	.00000	.00000	1124.0	1076.0	-942.59	2066.
1122	971.43 1940.1	-895.72	1109.5	-18.907	.00000	.00000	1109.5	971.62	-895.92	2005.

HABCE-01/99-0745, Revision 2

1123	3004.8	-604.30	1791.1	444.16	.00000	.00000	3058.6	1791.1	-658.16	3716.8
	3272.6									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1124	1263.6	-2066.8	901.39	191.82	.00000	.00000	1274.7	901.39	-2077.8	3352.5
	3182.3									
1125	-757.87	936.31	1172.5	-194.68	.00000	.00000	1172.5	958.39	-779.95	1952.4
	1854.7									
1126	-770.70	-8338.8	-1615.4	1103.0	.00000	.00000	-613.23	-1615.4	-8496.2	7883.0
	7432.8									
1127	-646.12	-9208.6	-1830.5	904.47	.00000	.00000	-551.62	-1830.5	-9303.1	8751.5
	8187.3									
1128	-516.96	-9401.5	-1837.2	709.14	.00000	.00000	-460.71	-1837.2	-9457.8	8997.1
	8393.9									
1129	1043.4	-1203.3	1043.4	.00000	.00000	.00000	1043.4	1043.4	-1203.3	2246.8
	2246.8									
1130	1055.7	-1159.4	1050.1	-46.357	.00000	.00000	1056.6	1050.1	-1160.4	2217.0
	2213.8									
1131	1050.0	-1199.4	1046.0	-68.703	.00000	.00000	1052.1	1046.0	-1201.5	2253.6
	2250.6									
1132	1042.9	-1138.9	1056.5	-45.497	.00000	.00000	1056.5	1043.9	-1139.8	2196.
	2190.0									
1133	1052.3	-1184.8	1045.2	-33.556	.00000	.00000	1052.8	1045.2	-1185.3	2238.
	2234.4									
1134	1050.6	-1171.5	1050.7	-26.158	.00000	.00000	1050.9	1050.7	-1171.8	2222.
	2222.6									
1135	1048.7	-1174.3	1048.7	-22.203	.00000	.00000	1048.9	1048.7	-1174.6	2223.
	2223.4									
1136	1049.9	-1173.7	1049.6	-18.735	.00000	.00000	1050.0	1049.6	-1173.9	2223.
	2223.7									
1137	1049.2	-1173.5	1049.4	-16.515	.00000	.00000	1049.4	1049.3	-1173.6	2223.
	2223.0									
1138	1049.6	-1173.4	1049.6	-14.596	.00000	.00000	1049.7	1049.6	-1173.5	2223.1
	2223.1									

HABGE-01/99-0745, Revision 2

1139	1049.4 2222.7	-1173.1	1049.6	-13.167	.00000	.00000	1049.6	1049.5	-1173.2	2222.8
1140	1049.5 2222.6	-1172.9	1049.7	-11.946	.00000	.00000	1049.7	1049.6	-1173.0	2222.7
1141	1049.5 2222.3	-1172.6	1049.8	-10.957	.00000	.00000	1049.8	1049.6	-1172.7	2222.5

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1142	1049.5 2222.1	-1172.3	1049.9	-10.108	.00000	.00000	1049.9	1049.6	-1172.4	2222.2
1143	1049.6 2221.7	-1171.9	1049.9	-9.3860	.00000	.00000	1049.9	1049.6	-1172.0	2221.9
1144	1049.6 2221.4	-1171.6	1050.0	-8.7598	.00000	.00000	1050.0	1049.6	-1171.6	2221.6
1145	1049.6 2221.2	-1171.3	1050.1	-8.2074	.00000	.00000	1050.1	1049.6	-1171.3	2221.4
1146	1049.6 2221.2	-1171.4	1050.0	-7.7294	.00000	.00000	1050.0	1049.6	-1171.4	2221.4
1147	1049.5 2221.6	-1171.9	1049.8	-7.2835	.00000	.00000	1049.8	1049.5	-1172.0	2221.8
1148	1049.5 2223.0	-1173.6	1049.3	-6.9200	.00000	.00000	1049.5	1049.3	-1173.6	2223.0
1149	1049.2 2225.2	-1176.4	1048.4	-6.5225	.00000	.00000	1049.2	1048.4	-1176.4	2225.2
1150	1049.3 2229.7	-1181.5	1047.0	-6.2875	.00000	.00000	1049.3	1047.0	-1181.6	2230.0
1151	1048.6 2235.2	-1188.5	1044.9	-5.8401	.00000	.00000	1048.6	1044.9	-1188.5	2237.0
1152	1049.5 2244.8	-1198.9	1042.3	-5.8624	.00000	.00000	1049.5	1042.3	-1198.9	2248.0
1153	1047.7 2252.5	-1209.0	1039.3	-5.0956	.00000	.00000	1047.7	1039.3	-1209.0	2256.0
1154	1051.4 2266.5	-1222.4	1036.7	-5.8646	.00000	.00000	1051.4	1036.7	-1222.4	2273.0

1155	1046.0 2264.9	-1224.0	1035.7	-3.8807	.00000	.00000	1046.0	1035.7	-1224.0	2270.0
1156	1058.8 2275.1	-1226.1	1039.0	-7.0668	.00000	.00000	1058.9	1039.0	-1226.1	2284.9
1157	1039.6 2223.3	-1179.1	1048.8	-7.78947	.00000	.00000	1048.8	1039.6	-1179.1	2227.9
1158	1090.5 2221.1	-1138.5	1074.2	-12.893	.00000	.00000	1090.6	1074.2	-1138.6	2229.2
1159	1022.1 2010.1	-939.43	1115.8	9.6564	.00000	.00000	1115.8	1022.1	-939.48	2055.3

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1160	1131.3 2042.4	-900.45	1151.2	-28.177	.00000	.00000	1151.2	1131.7	-900.84	2052.0
1161	-893.91 1597.5	-583.97	643.46	435.43	.00000	.00000	643.46	-276.76	-1201.1	1844.6
1162	-2268.3 1945.9	-2164.6	-301.80	193.89	.00000	.00000	-301.80	-2015.7	-2417.1	2115.3
1163	-1269.4 2362.7	880.43	880.48	-565.83	.00000	.00000	1020.3	880.48	-1409.2	2429.5
1164	2837.7 7952.2	-6078.2	-28.324	600.92	.00000	.00000	2878.0	-28.324	-6118.5	8996.7
1165	1881.6 9928.4	-9183.0	-1211.5	517.87	.00000	.00000	1905.8	-1211.5	-9207.2	11113
1166	920.33 11442.	-11743.	-2237.8	436.14	.00000	.00000	935.33	-2237.8	-11758.	12693
1167	701.38 1888.8	-1187.5	701.38	.00000	.00000	.00000	701.38	701.38	-1187.5	1888.
1168	701.62 1891.7	-1190.4	701.10	.88286	.00000	.00000	701.62	701.10	-1190.4	1892.
1169	708.57 1888.7	-1182.7	700.00	46.851	.00000	.00000	709.73	700.00	-1183.8	1893.
1170	710.15 1873.5	-1159.8	708.39	74.281	.00000	.00000	713.10	708.39	-1162.7	1875.8

HABGE-01/99-0745, Revision 2

1171	703.17 1891.1	-1187.1	700.18	54.504	.00000	.00000	704.74	700.18	-1188.6	1893.4
1172	701.35 1886.5	-1183.5	701.44	44.958	.00000	.00000	702.42	701.44	-1184.6	1887.0
1173	703.42 1887.1	-1182.9	702.81	36.920	.00000	.00000	704.14	702.81	-1183.6	1887.8
1174	703.36 1887.3	-1183.3	703.01	31.510	.00000	.00000	703.89	703.01	-1183.8	1887.7
1175	703.29 1886.6	-1182.7	703.34	27.588	.00000	.00000	703.69	703.34	-1183.1	1886.7
1176	703.30 1886.5	-1182.7	703.41	24.493	.00000	.00000	703.62	703.41	-1183.0	1886.6
1177	703.31 1886.2	-1182.4	703.55	22.044	.00000	.00000	703.56	703.55	-1182.6	1886.2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1178	703.33 1886.0	-1182.2	703.63	20.028	.00000	.00000	703.63	703.55	-1182.4	1886.1
1179	703.35 1885.7	-1181.9	703.73	18.359	.00000	.00000	703.73	703.53	-1182.1	1885.8
1180	703.40 1885.4	-1181.6	703.82	16.947	.00000	.00000	703.82	703.55	-1181.8	1885.5
1181	703.46 1885.1	-1181.2	703.94	15.741	.00000	.00000	703.94	703.59	-1181.4	1885.2
1182	703.55 1884.8	-1180.9	704.05	14.698	.00000	.00000	704.05	703.66	-1181.0	1885.0
1183	703.68 1884.7	-1180.6	704.14	13.787	.00000	.00000	704.14	703.78	-1180.7	1884.8
1184	703.85 1884.8	-1180.7	704.16	12.989	.00000	.00000	704.16	703.94	-1180.7	1884.8
1185	704.07 1885.4	-1181.2	704.05	12.271	.00000	.00000	704.15	704.05	-1181.3	1885.4
1186	704.31 1886.9	-1182.8	703.66	11.635	.00000	.00000	704.39	703.66	-1182.9	1887.0

1187	704.52 1889.5	-1185.7	702.95	11.026	.00000	.00000	704.58	702.95	-1185.8	1890.3
1188	704.65 1894.1	-1190.9	701.58	10.489	.00000	.00000	704.71	701.58	-1190.9	1895.6
1189	704.45 1899.9	-1197.7	699.71	9.8811	.00000	.00000	704.50	699.71	-1197.8	1902.3
1190	703.87 1908.7	-1208.3	696.71	9.3991	.00000	.00000	703.91	696.71	-1208.4	1912.3
1191	702.17 1916.2	-1218.2	693.67	8.6012	.00000	.00000	702.21	693.67	-1218.3	1920.5
1192	699.71 1926.7	-1232.1	689.28	8.2698	.00000	.00000	699.75	689.28	-1232.1	1931.9
1193	695.00 1924.5	-1232.9	688.15	7.0727	.00000	.00000	695.03	688.15	-1232.9	1927.9
1194	690.75 1924.9	-1236.5	686.08	7.6096	.00000	.00000	690.78	686.08	-1236.5	1927.3
1195	675.29 1873.7	-1188.0	695.88	2.5796	.00000	.00000	695.88	675.30	-1188.0	1883.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1196	649.99 1831.2	-1157.8	695.95	2.2503	.00000	.00000	695.95	650.00	-1157.8	1853.
1197	666.95 1634.1	-912.35	770.79	19.873	.00000	.00000	770.79	667.20	-912.60	1683.
1198	1222.4 1980.2	-844.46	954.54	-209.26	.00000	.00000	1243.4	954.54	-865.43	2108.
1199	2455.8 2461.2	-246.17	1523.9	368.05	.00000	.00000	2505.0	1523.9	-295.41	2800.
1200	3853.3 5371.6	-2218.0	1387.6	542.47	.00000	.00000	3901.4	1387.6	-2266.1	6167.
1201	4552.7 4382.5	-297.38	2230.3	719.47	.00000	.00000	4657.2	2230.3	-401.86	5059.
1202	703.92 1899.5	-1195.6	703.92	.00000	.00000	.00000	703.92	703.92	-1195.6	1899

HABGE-01/99-0745, Revision 2

1203	704.43 1901.3	-1197.2	703.91	1.0228	.00000	.00000	704.43	703.91	-1197.2	1901.6
1204	703.47 1888.5	-1186.2	701.06	1.8966	.00000	.00000	703.47	701.06	-1186.2	1889.7
1205	699.73 1870.8	-1170.4	701.03	-1.1247	.00000	.00000	701.03	699.73	-1170.4	1871.4
1206	701.82 1891.1	-1191.5	697.33	-1.2293	.00000	.00000	701.82	697.33	-1191.5	1893.3
1207	701.35 1891.1	-1190.7	699.36	.31675	.00000	.00000	701.35	699.36	-1190.7	1892.1
1208	700.34 1889.7	-1189.6	699.92	-.44569E-01	.00000	.00000	700.34	699.92	-1189.6	1889.9
1209	700.50 1890.2	-1189.8	700.21	-.16805	.00000	.00000	700.50	700.21	-1189.8	1890.3
1210	700.46 1889.8	-1189.4	700.49	-.10471	.00000	.00000	700.49	700.46	-1189.4	1889.8
1211	700.47 1889.8	-1189.3	700.59	-.10325	.00000	.00000	700.59	700.47	-1189.3	1889.9
1212	700.50 1889.6	-1189.0	700.73	-.87619E-01	.00000	.00000	700.73	700.50	-1189.0	1889.8
1213	700.52 1889.5	-1188.8	700.81	-.82947E-01	.00000	.00000	700.81	700.52	-1188.8	1889.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 1

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1214	700.55 1889.3	-1188.6	700.91	-.73283E-01	.00000	.00000	700.91	700.55	-1188.6	1889.
1215	700.58 1889.0	-1188.2	701.00	-.65784E-01	.00000	.00000	701.00	700.58	-1188.2	1889.
1216	700.61 1888.7	-1187.9	701.11	-.56658E-01	.00000	.00000	701.11	700.61	-1187.9	1889.
1217	700.63 1888.4	-1187.5	701.19	-.46559E-01	.00000	.00000	701.19	700.63	-1187.5	1888.
1218	700.65 1888.2	-1187.2	701.25	-.35829E-01	.00000	.00000	701.25	700.65	-1187.2	1888.

1219	700.66 1888.2	-1187.3	701.20	-.22496E-01	.00000	.00000	701.20	700.66	-1187.3	1888.5
1220	700.65 1888.7	-1187.9	701.00	-.12659E-01	.00000	.00000	701.00	700.65	-1187.9	1888.9
1221	700.60 1890.0	-1189.5	700.50	.51543E-04	.00000	.00000	700.60	700.50	-1189.5	1890.1
1222	700.53 1892.5	-1192.4	699.64	-.66209E-02	.00000	.00000	700.53	699.64	-1192.4	1892.9
1223	700.38 1896.7	-1197.4	698.18	-.98120E-02	.00000	.00000	700.38	698.18	-1197.4	1897.8
1224	700.26 1902.7	-1204.5	696.21	-.80087E-01	.00000	.00000	700.26	696.21	-1204.5	1904.8
1225	700.03 1911.4	-1214.7	693.39	-.12990	.00000	.00000	700.03	693.39	-1214.7	1914.8
1226	700.04 1920.7	-1225.3	690.64	-.37555	.00000	.00000	700.04	690.64	-1225.3	1925.4
1227	699.80 1931.6	-1238.0	687.38	-.45094	.00000	.00000	699.80	687.38	-1238.0	1937.8
1228	700.58 1935.1	-1241.1	687.34	-.91469	.00000	.00000	700.58	687.34	-1241.1	1941.6
1229	699.94 1934.2	-1240.1	688.16	-.78223	.00000	.00000	699.94	688.16	-1240.1	1940.0
1230	704.16 1903.6	-1200.7	701.49	-3.9159	.00000	.00000	704.17	701.49	-1200.7	1904.9
1231	703.89 1864.8	-1155.1	715.26	-6.8912	.00000	.00000	715.26	703.92	-1155.2	1870.4

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1232	726.26 1710.3	-956.34	779.83	18.030	.00000	.00000	779.83	726.45	-956.54	1736.
1233	641.21 1488.3	-716.01	823.68	175.03	.00000	.00000	823.68	663.42	-738.22	1561.
1234	450.15 1233.7	-352.83	860.71	355.44	.00000	.00000	860.71	584.88	-487.56	1348.

HABGE-01/99-0745, Revision 2

D&Z

1235	-38.447 1918.0	-1651.9	317.49	353.32	.00000	.00000	317.49	35.533	-1725.9	2043.4
1236	-492.75 3619.8	-4141.5	-578.88	-179.27	.00000	.00000	-483.96	-578.88	-4150.2	3666.3
1237	-320.39 7630.6	-8556.2	-1845.6	-458.82	.00000	.00000	-294.91	-1845.6	-8581.7	8286.8
1238	-120.77 10472.	-11626.	-2684.0	-265.26	.00000	.00000	-114.66	-2684.0	-11632.	11517.
1239	704.18 1907.8	-1203.7	704.18	.00000	.00000	.00000	704.18	704.18	-1203.7	1907.8
1240	702.09 1906.4	-1203.6	703.50	-.41911E-01	.00000	.00000	703.50	702.09	-1203.6	1907.1
1241	699.11 1890.8	-1190.9	697.82	-42.903	.00000	.00000	700.08	697.82	-1191.9	1892.0
1242	697.18 1882.1	-1180.3	697.44	-74.905	.00000	.00000	700.16	697.44	-1183.3	1883.5
1243	698.45 1895.0	-1195.7	695.03	-56.036	.00000	.00000	700.11	695.03	-1197.4	1897.5
1244	698.76 1897.1	-1198.1	696.15	-43.687	.00000	.00000	699.76	696.15	-1199.1	1898.9
1245	698.01 1894.9	-1196.2	697.29	-36.401	.00000	.00000	698.71	697.29	-1196.9	1895.6
1246	697.52 1894.5	-1196.3	697.36	-31.337	.00000	.00000	698.04	697.36	-1196.8	1894.9
1247	697.63 1894.3	-1196.0	697.64	-27.354	.00000	.00000	698.02	697.64	-1196.4	1894.5
1248	697.64 1894.1	-1195.9	697.77	-24.305	.00000	.00000	697.95	697.77	-1196.2	1894.2
1249	697.66 1893.8	-1195.7	697.89	-21.864	.00000	.00000	697.91	697.89	-1195.9	1893.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
1250	697.69 1893.6	-1195.5	697.98	-19.871	.00000	.00000	697.98	697.90	-1195.7	1893.

1251	697.72 1893.3	-1195.2	698.07	-18.210	.00000	.00000	698.07	697.89	-1195.4	1893.4
1252	697.74 1893.0	-1194.9	698.17	-16.805	.00000	.00000	698.17	697.89	-1195.0	1893.2
1253	697.76 1892.7	-1194.5	698.27	-15.600	.00000	.00000	698.27	697.89	-1194.6	1892.9
1254	697.76 1892.3	-1194.1	698.35	-14.554	.00000	.00000	698.35	697.88	-1194.2	1892.6
1255	697.74 1892.1	-1193.9	698.38	-13.635	.00000	.00000	698.38	697.84	-1194.0	1892.3
1256	697.69 1892.0	-1193.9	698.32	-12.822	.00000	.00000	698.32	697.78	-1194.0	1892.3
1257	697.60 1892.5	-1194.5	698.08	-12.094	.00000	.00000	698.08	697.68	-1194.6	1892.7
1258	697.47 1893.7	-1196.1	697.56	-11.440	.00000	.00000	697.56	697.53	-1196.1	1893.7
1259	697.29 1896.1	-1199.0	696.63	-10.852	.00000	.00000	697.35	696.63	-1199.1	1896.4
1260	697.12 1900.2	-1204.0	695.17	-10.328	.00000	.00000	697.17	695.17	-1204.1	1901.2
1261	696.96 1906.4	-1211.3	693.13	-9.8679	.00000	.00000	697.01	693.13	-1211.3	1908.3
1262	697.05 1915.0	-1221.1	690.48	-9.4938	.00000	.00000	697.09	690.48	-1221.2	1918.3
1263	697.36 1925.0	-1232.4	687.65	-9.2029	.00000	.00000	697.41	687.65	-1232.5	1929.9
1264	698.53 1935.8	-1243.9	685.16	-9.0401	.00000	.00000	698.57	685.16	-1243.9	1942.5
1265	699.75 1941.5	-1249.2	684.71	-8.8058	.00000	.00000	699.79	684.71	-1249.2	1949.
1266	703.47 1939.7	-1243.8	688.17	-9.0994	.00000	.00000	703.52	688.17	-1243.8	1947.
1267	709.74 1918.2	-1213.3	699.90	-10.423	.00000	.00000	709.79	699.90	-1213.3	1923.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

HABGE-01/99-0745, Revision 2

D84

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1268	736.42 1884.4	-1152.8	726.30	-16.182	.00000	.00000	736.56	726.30	-1152.9	1889.5
1269	680.33 1719.0	-999.39	756.05	15.582	.00000	.00000	756.05	680.47	-999.53	1755.6
1270	308.44 1215.9	-591.49	758.37	142.81	.00000	.00000	758.37	330.55	-613.60	1372.0
1271	-517.92 1179.6	-459.20	521.87	350.20	.00000	.00000	521.87	-137.13	-839.98	1361.9
1272	-934.86 1238.9	-1092.3	175.69	184.37	.00000	.00000	175.69	-813.12	-1214.1	1389.7
1273	-688.49 4277.4	-5054.1	-952.09	-326.37	.00000	.00000	-664.22	-952.09	-5078.3	4414.1
1274	-413.92 7255.7	-8229.7	-1814.0	-424.33	.00000	.00000	-390.96	-1814.0	-8252.7	7861.8
1275	-266.93 9758.2	-10956.	-2566.6	-292.79	.00000	.00000	-258.92	-2566.6	-10964.	10705.

MINIMUM VALUES

NODE	369 185	425	382	73	1	1	381	382	425	185
VALUE	-13499. 110.32	-15828.	-9769.3	-2158.2	.00000	.00000	-2943.5	-9769.3	-15847.	110.93

MAXIMUM VALUES

NODE	146 146	427	14	148	1	1	146	14	83	146
VALUE	18073. 16394.	4059.5	11980.	1383.2	.00000	.00000	18176.	11980.	1238.3	18546.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
***** ESTIMATED BOUNDS CONSIDERING THE EFFECT OF DISCRETIZATION ERROR *****										

MINIMUM VALUES

NODE	369	425	382	110	147	147	221	382	425	83
VALUE	-22039. .00000	-22893.	-16251.	-9401.5	.00000	.00000	-9831.7	-16251.	-22912.	.00000

MAXIMUM VALUES

NODE	146	147	146	147	147	147	146	146	147	146
VALUE	27118. 25439.	9757.9	14661.	10524.	.00000	.00000	27221.	14661.	9631.0	27591.

```
/FILNAM,BOTDROP2
/PREP7
/TITLE,DSC STRUCTURAL ANALYSIS MODEL
KAN,0
ET,1,42,,,1
C*** STAINLESS STEEL
EX,1,26.5E6
NUXY,1,0.3
DENS,1,0.283
ALPX,1,9.8E-6
C*** CHEMICAL LEAD
EX,2,3.0E6
NUXY,2,0.4
DENS,2,0.411
ALPX,2,16.4E-6
C*** KTEMP,-1 *****
C*** NODAL INPUT
C*** BOTTOM DETAIL
N,1,0.0,0.0
N,7,6.0,0.0
FILL
N,8,6.625,0.0
N,9,7.25,0.0
N,10,8.0,0.0
N,35,33.0,0.0
FILL
N,36,33.275,0.0
N,37,33.55,0.0
NGEN,3,37,1,37,1,0.0,0.5
NGEN,2,37,75,109,1,0.0,0.75
N,147,33.125,1.75
N,148,33.55,1.75
NGEN,2,37,112,145
N,183,33.125,1.75
NGEN,2,35,149,157,1,0.0,1.0
N,193,7.25,2.75
N,194,8.0,2.75
NGEN,2,37,158,183,1,0.0,1.0
N,221,33.125,2.75
N,222,33.55,2.75
NGEN,3,39,184,222,1,0.0,1.0
NGEN,2,39,262,270,1,0.0,1.0
N,310,8.0,6.0
N,335,33.125,6.0
FILL
NGEN,2,35,301,335,1,0.0,0.0
N,371,33.55,6.0
NGEN,2,36,336,344,1,0.0,0.75
NGEN,2,36,345,371,1,0.0,0.5
N,408,7.25,7.75
N,409,8.0,7.75
N,410,5.0,9.0
N,411,6.125,9.0
N,412,7.25,9.0
N,413,8.0,9.0
NGEN,2,4,410,413,1,0.0,1.0
```


C*** ELEMENT GENERATION

C*** BOTTOM DETAIL

E, 1, 2, 39, 38
EGEN, 36, 1, -1
E, 38, 39, 76, 75
EGEN, 36, 1, -1
E, 75, 76, 113, 112
EGEN, 36, 1, -1
MAT, 2
E, 149, 150, 185, 184
EGEN, 8, 1, -1
MAT, 1
E, 120, 121, 194, 193
MAT, 2
E, 158, 159, 196, 195
EGEN, 24, 1, -1
E, 182, 183, 220, 219
MAT, 1
E, 147, 148, 222, 221
MAT, 2
E, 184, 185, 224, 223
EGEN, 8, 1, -1
MAT, 1
E, 193, 194, 233, 232
MAT, 2
E, 195, 196, 235, 234
EGEN, 25, 1, -1
MAT, 1
E, 221, 222, 261, 260
MAT, 2
E, 223, 224, 263, 262
EGEN, 8, 1, -1
MAT, 1
E, 232, 233, 272, 271
MAT, 2
E, 234, 235, 274, 273
EGEN, 25, 1, -1
MAT, 1
E, 260, 261, 300, 299
MAT, 2
E, 262, 263, 302, 301
EGEN, 8, 1, -1
MAT, 1
E, 271, 272, 345, 344
MAT, 2
E, 273, 274, 311, 310
EGEN, 25, 1, -1
MAT, 1
E, 299, 300, 371, 370
E, 336, 337, 373, 372
EGEN, 35, 1, -1
E, 380, 381, 409, 408
E, 408, 409, 413, 412
E, 412, 413, 417, 416
E, 411, 412, 416, 415
E, 410, 411, 415, 414

C*** DSC SHELL NODES

N,425,33.0,-0.75
N,426,33.275,-0.75
N,427,33.55,-0.75
NGEN,5,3,425,427,1,0.0,-1.0
N,440,33.0,-5.75
N,441,33.55,-5.75
NGEN,148,2,440,441,1,0.0,-1.0
N,736,33.0,-153.75
N,737,33.275,-153.75
N,738,33.55,-153.75
NGEN,6,3,736,738,1,0.0,-1.0

C*** DSC SHELL ELEMENTS

E,425,426,36,35
E,426,427,37,36
E,428,429,426,425
E,429,430,427,426
EGEN,4,3,291,292
E,440,438,437
E,440,441,438
E,441,439,438
E,442,443,441,440
EGEN,147,2,-1
E,736,737,734
E,737,735,734
E,736,738,735
E,739,740,737,736
E,740,741,738,737
EGEN,5,3,452,453,1

C*** BOTTOM DETAIL NODAL INPUT

LOCAL,11,0,0.0,-166,0.0
N,754,32.25,9.25
N,755,32.25,8.25
N,756,32.25,7.25
N,757,0.0,7.25
N,789,32.0,7.25
FILL
N,757,0.0,7.25
FILL,757,789
N,790,32.25,7.25
N,791,33.0,7.25
NGEN,2,35,757,789,1,0.0,-0.5
N,825,32.5,6.75
N,826,33.0,6.75
N,827,33.0,6.75
N,828,33.275,6.75
N,829,33.55,6.75
NGEN,3,38,792,829,1,0.0,-0.5
NGEN,3,38,868,901,1
NGEN,2,34,906,939,1,0.0,-1.0
N,974,32.5,4.75
N,975,33.0,4.75
N,976,33.0,4.75
N,977,33.275,4.75
N,978,33.55,4.75

NGEN,3,39,940,978,1,0.0,-1.0
NGEN,2,39,1018,1051,1,0.0,-1.5
NGEN,2,34,1057,1090,1
N,1125,33.0,1.25
N,1126,33.0,1.25
N,1127,33.275,1.25
N,1128,33.55,1.25
NGEN,2,38,1091,1128,1,0.0,-0.25
NGEN,2,38,1129,1163,1
N,1202,0.0,0.375
N,1234,32.0,0.375
FILL
N,1235,32.5,0.375
N,1236,33.0,0.375
N,1237,33.275,0.375
N,1238,33.55,0.375
NGEN,2,37,1202,1238,1,0.0,-0.625

C*** BOTTOM DETAIL ELEMENT GENERATION

E,755,748,745,754
E,756,751,748,755
E,792,793,758,757
EGEN,33,1,-1
E,825,826,791,790
E,827,828,752,751
E,828,829,753,752
E,830,831,793,792
EGEN,34,1,-1
E,865,866,828,827
E,866,867,829,828
E,868,869,831,830
EGEN,34,1,-1
E,903,904,866,865
E,904,905,867,866
MAT,2
E,940,941,907,906
EGEN,33,1,-1
MAT,1
E,974,975,902,901
E,976,977,904,903
E,977,978,905,904
MAT,2
E,979,980,941,940
EGEN,33,1,-1
MAT,1
E,1013,1014,975,974
E,1015,1016,977,976
E,1016,1017,978,977
MAT,2
E,1018,1019,980,979
EGEN,33,1,-1
MAT,1
E,1052,1053,1014,1013
E,1054,1055,1016,1015
E,1055,1056,1017,1016
MAT,2
E,1057,1058,1019,1018

```
EGEN,33,1,-1
MAT,1
E,1124,1125,1053,1052
E,1126,1127,1055,1054
E,1127,1128,1056,1055
E,1129,1130,1092,1091
EGEN,34,1,-1
E,1164,1165,1127,1126
E,1165,1166,1128,1127
E,1202,1203,1168,1167
EGEN,34,1,-1
E,1236,1237,1165,1164
E,1237,1238,1166,1165
E,1239,1240,1203,1202
EGEN,36,1,-1
WSORT,Y
C*** AXISYMETRIC BOUNDARY CONDITIONS
c*** SYMBC,,0.0 *****
csys,0
nsel,s,loc,x,0
dsym,symm,x,0
c*** SYMBC,11,,0.0 *****
c***csys,11
c***nsel,s,loc,y,0
c***dsym,symm,x,11
allsel
C*** CONSTANT COUPLED NODES
CP,1,UX,120,157
CP,2,UX,121,158
CP,3,UX,192,193
CP,4,UX,194,195
CP,5,UX,231,232
CP,6,UX,233,234
CP,7,UX,270,271
CP,8,UX,272,273
CP,9,UX,309,344
CP,10,UX,310,345
CP,12,UX,183,147
CP,13,UX,220,221
CP,14,UX,259,260
CP,15,UX,298,299
CP,16,UX,335,370
CP,17,UX,751,791
CP,18,UX,826,827
CP,19,UX,864,865
CP,20,UX,902,903
CP,21,UX,901,939
CP,22,UX,973,974
CP,23,UX,975,976
CP,24,UX,1012,1013
CP,25,UX,1014,1015
CP,26,UX,1051,1052
CP,27,UX,1053,1054
CP,28,UX,1090,1124
CP,29,UX,1125,1126
CP,30,UX,1164,1201
C*** LOADING CONDITIONS
```

CP,31,UY,112,149
CPSGEN,34,1,-1
CP,65,UY,147,183
CP,66,UY,868,906
CPSGEN,34,1,-1
CP,100,UY,1057,1091
CPSGEN,34,1,-1
CP,134,UY,1129,1167
CPSGEN,34,1,-1
CP,168,UY,301,336
CPSGEN,35,1,-1
C*** LOADING CONDITIONS
ESEL,S,ELEM,,1,34,1
SFE,ALL,1,PRES,,1000.0
D,372,UY,0.0,,407,1
C***
C***BOTTOM PLATE HANDLE?
C***D,414,UY,0.0,,417,1
C***
C***
ACEL,0.0,-75.0,0.0
ALLSEL
SAVE
FINI
/SOLU
ANTYPE,STATIC
SOLVE
SAVE
/POST1
/TITLE,DSC SHELL BOTTOM DROP - 0.55" SHELL THICKNESS
/OUT,BOTSTR2A,OUT
PRNSTR,ALL
/OUT
/OUT,BOTFOR2A,OUT
PRRFOR
/OUT
PLNSOL,S,INT
ALLSEL
/OUT

PRINT S NODAL SOLUTION PER NODE

*** WARNING ***

CP= 14402.020

TIME= 13:44:27

The selected element set contains mixed materials.

This could invalidate error estimation.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1	223.91 1237.2	-1013.3	223.91	.00000	.00000	.00000	223.91	223.91	-1013.3	1237.2
2	235.55 1220.7	-988.34	225.33	-38.871	.00000	.00000	236.78	225.33	-989.57	1226.4
3	264.45 1258.3	-1000.5	239.43	-69.067	.00000	.00000	268.21	239.43	-1004.3	1272.5
4	361.68 1323.4	-989.71	290.98	-72.065	.00000	.00000	365.52	290.98	-993.54	1359.1
5	563.88 1479.1	-983.79	392.59	-96.895	.00000	.00000	569.92	392.59	-989.83	1559.8
6	979.90 1808.2	-970.14	589.10	-159.31	.00000	.00000	992.83	589.10	-983.07	1975.9
7	1582.2 2305.6	-951.03	899.36	-232.42	.00000	.00000	1603.3	899.36	-972.18	2575.
8	2168.0 2866.3	-1034.9	1159.8	-237.93	.00000	.00000	2185.6	1159.8	-1052.5	3238.
9	2485.7 3191.5	-1107.5	1367.2	-119.65	.00000	.00000	2489.6	1367.2	-1111.5	3601.
10	2224.0 3023.2	-1115.9	1424.6	73.407	.00000	.00000	2225.6	1424.6	-1117.5	3343
11	1446.6 2373.5	-976.82	1312.2	150.84	.00000	.00000	1455.9	1312.2	-986.17	2442
12	737.01 1891.0	-952.78	1081.2	82.744	.00000	.00000	1081.2	741.05	-956.82	2038
13	429.99 1710.9	-981.38	921.29	11.795	.00000	.00000	921.29	430.09	-981.48	1902.

Bottom Drop

Revised w/

0.55" + New SFA wbs.

HABCE-01/99-0745, Revision 2

14	389.66 1665.6	-999.11	847.09	-17.800	.00000	.00000	847.09	389.89	-999.34	1846.4
15	455.98 1671.5	-1000.7	823.17	-27.961	.00000	.00000	823.17	456.51	-1001.3	1824.4
16	548.08 1706.0	-1005.7	818.51	-30.914	.00000	.00000	818.51	548.69	-1006.3	1824.8
17	640.18 1747.7	-1006.6	825.74	-28.731	.00000	.00000	825.74	640.68	-1007.1	1832.8
18	715.24 1786.1	-1007.1	835.62	-24.910	.00000	.00000	835.62	715.60	-1007.5	1843.1

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
19	770.76 1816.2	-1006.8	844.98	-21.009	.00000	.00000	844.98	771.00	-1007.1	1852.0
20	809.70 1838.1	-1006.3	852.68	-17.950	.00000	.00000	852.68	809.87	-1006.4	1859.1
21	838.10 1854.5	-1005.5	859.26	-16.211	.00000	.00000	859.26	838.25	-1005.7	1864.9
22	863.30 1869.7	-1004.7	866.26	-16.021	.00000	.00000	866.26	863.44	-1004.9	1871.1
23	892.99 1888.6	-1003.9	875.79	-17.460	.00000	.00000	893.15	875.79	-1004.1	1897.1
24	934.57 1916.3	-1003.2	890.20	-20.460	.00000	.00000	934.78	890.20	-1003.4	1938.1
25	994.38 1957.5	-1002.7	911.79	-24.740	.00000	.00000	994.68	911.79	-1003.0	1997.1
26	1076.4 2015.9	-1002.6	942.21	-29.672	.00000	.00000	1076.8	942.21	-1003.0	2079.1
27	1180.3 2092.1	-1003.1	981.90	-34.121	.00000	.00000	1180.8	981.90	-1003.6	2184.1
28	1297.9 2181.9	-1005.3	1028.4	-36.055	.00000	.00000	1298.5	1028.4	-1005.9	2304.1
29	1411.0 2270.7	-1007.7	1076.6	-32.667	.00000	.00000	1411.4	1076.6	-1008.1	2419.1

HABCE-01/99-0745, Revision 2

30	1478.3 2333.6	-1016.8	1111.2	-19.189	.00000	.00000	1478.5	1111.2	-1016.9	2495.4
31	1480.1 2339.7	-1015.4	1128.9	1.1634	.00000	.00000	1480.1	1128.9	-1015.4	2495.4
32	1159.0 2156.6	-1050.6	1036.7	88.844	.00000	.00000	1162.5	1036.7	-1054.2	2216.7
33	785.25 1964.9	-1114.7	902.39	70.357	.00000	.00000	902.39	787.85	-1117.3	2019.7
34	1237.8 1480.3	-201.91	1297.8	-97.455	.00000	.00000	1297.8	1244.4	-208.48	1506.3
35	1116.3 6206.9	-5682.3	-353.22	212.63	.00000	.00000	1123.0	-353.22	-5688.9	6811.9
36	528.40 8704.1	-9007.8	-1507.6	176.19	.00000	.00000	531.65	-1507.6	-9011.0	9542.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SKY	SYZ	SKZ	S1	S2	S3	SINT
37	254.79 10213.	-10946.	-2148.8	-47.701	.00000	.00000	254.99	-2148.8	-10946.	11201.7
38	608.88 1637.7	-1028.8	608.88	.00000	.00000	.00000	608.88	608.88	-1028.8	1637.7
39	618.04 1598.4	-984.40	609.00	-22.028	.00000	.00000	618.34	609.00	-984.70	1603.
40	631.83 1626.1	-1001.0	614.55	-44.659	.00000	.00000	633.05	614.55	-1002.2	1635.
41	677.47 1649.2	-983.56	645.82	-64.674	.00000	.00000	679.98	645.82	-986.08	1666
42	781.52 1724.4	-972.90	697.48	-109.22	.00000	.00000	788.29	697.48	-979.68	1768
43	952.59 1855.9	-949.75	790.44	-189.34	.00000	.00000	971.26	790.44	-968.42	1939
44	1191.4 2027.2	-890.32	924.96	-294.27	.00000	.00000	1232.2	924.96	-931.11	2163
45	1426.8 2350.9	-1045.6	996.09	-312.47	.00000	.00000	1465.7	996.09	-1084.5	2550.

HABGE-01/99-0745, Revision 2

46	1538.8 2551.0	-1218.1	1034.8	-118.87	.00000	.00000	1543.9	1034.8	-1223.2	2767.1
47	1421.3 2525.1	-1245.2	1056.3	188.06	.00000	.00000	1434.5	1056.3	-1258.4	2692.9
48	1099.6 2096.9	-946.64	1079.8	288.76	.00000	.00000	1139.5	1079.8	-986.61	2126.2
49	823.35 1856.6	-922.15	991.34	161.87	.00000	.00000	991.34	838.24	-937.03	1928.4
50	689.90 1794.4	-985.51	904.47	49.282	.00000	.00000	904.47	691.35	-986.96	1891.4
51	671.02 1775.7	-995.71	871.89	2.3358	.00000	.00000	871.89	671.02	-995.71	1867.6
52	688.80 1782.1	-1004.1	854.98	-18.427	.00000	.00000	854.98	689.00	-1004.3	1859.2
53	727.84 1803.1	-1010.0	851.01	-24.282	.00000	.00000	851.01	728.17	-1010.4	1861.4
54	765.63 1823.1	-1012.2	852.40	-22.571	.00000	.00000	852.40	765.91	-1012.4	1864.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
55	797.65 1840.6	-1012.9	855.83	-17.907	.00000	.00000	855.83	797.83	-1013.1	1869.
56	821.72 1853.7	-1012.7	859.46	-12.999	.00000	.00000	859.46	821.81	-1012.8	1872.
57	839.01 1863.0	-1011.9	862.69	-9.2742	.00000	.00000	862.69	839.06	-1012.0	1874.
58	851.95 1869.7	-1010.8	865.62	-7.4761	.00000	.00000	865.62	851.98	-1010.9	1876.
59	863.57 1875.9	-1009.6	868.85	-7.9475	.00000	.00000	868.85	863.61	-1009.7	1878.
60	877.12 1883.6	-1008.3	873.23	-10.786	.00000	.00000	877.19	873.23	-1008.4	1885.
61	895.69 1895.1	-1007.1	879.71	-15.866	.00000	.00000	895.82	879.71	-1007.3	1903.1

62	921.85 1912.3	-1006.2	889.17	-22.736	.00000	.00000	922.12	889.17	-1006.4	1928.6
63	957.15 1936.9	-1005.9	902.19	-30.424	.00000	.00000	957.62	902.19	-1006.4	1964.0
64	1001.0 1968.9	-1006.7	918.71	-37.159	.00000	.00000	1001.7	918.71	-1007.3	2009.0
65	1050.2 2007.1	-1009.6	937.51	-40.054	.00000	.00000	1051.0	937.51	-1010.4	2061.4
66	1094.0 2043.6	-1014.5	955.48	-34.246	.00000	.00000	1094.6	955.48	-1015.1	2109.6
67	1124.9 2077.9	-1026.8	968.12	-15.492	.00000	.00000	1125.0	968.12	-1026.9	2151.9
68	1083.1 2054.2	-1028.2	962.45	26.908	.00000	.00000	1083.4	962.45	-1028.6	2112.0
69	1052.8 2082.1	-1072.5	943.78	112.30	.00000	.00000	1058.7	943.78	-1078.5	2137.2
70	770.91 2022.4	-1199.3	828.11	175.68	.00000	.00000	828.11	786.45	-1214.8	2042.9
71	-44.899 995.32	-115.33	887.37	130.28	.00000	.00000	887.37	54.845	-215.07	1102.4
72	-540.68 3495.6	-3976.4	-452.93	-187.86	.00000	.00000	-452.93	-530.44	-3986.7	3533.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
73	-391.63 7316.9	-8267.8	-1690.6	124.60	.00000	.00000	-389.66	-1690.6	-8269.8	7880.
74	-267.29 10561.	-11832.	-2701.5	-46.604	.00000	.00000	-267.10	-2701.5	-11832.	11561.
75	998.85 2023.6	-1024.7	998.85	.00000	.00000	.00000	998.85	998.85	-1024.7	2023.
76	991.48 2005.1	-1013.1	991.52	26.946	.00000	.00000	991.84	991.52	-1013.4	2005
77	976.77 1950.9	-970.94	982.52	-21.308	.00000	.00000	982.52	977.00	-971.18	1953.

78	963.61 1955.2	-979.88	971.41	-100.44	.00000	.00000	971.41	968.79	-985.06	1956.5
79	931.65 1914.0	-947.71	968.51	-142.14	.00000	.00000	968.51	942.34	-958.40	1926.9
80	861.19 1837.7	-892.24	949.09	-216.66	.00000	.00000	949.09	887.57	-918.61	1867.7
81	717.05 1727.6	-824.07	899.99	-313.20	.00000	.00000	899.99	778.27	-885.28	1785.3
82	747.06 1803.1	-835.90	870.21	-422.46	.00000	.00000	870.21	852.74	-941.59	1811.8
83	854.07 2444.6	-1652.9	669.35	-200.27	.00000	.00000	869.97	669.35	-1668.8	2538.8
84	800.66 2388.7	-1591.1	695.79	274.14	.00000	.00000	831.68	695.79	-1622.1	2453.8
85	753.25 1705.8	-747.88	931.30	345.19	.00000	.00000	931.30	828.82	-823.45	1754.8
86	803.67 1770.9	-913.48	868.47	155.12	.00000	.00000	868.47	817.57	-927.38	1795.8
87	914.65 1873.6	-970.09	887.87	51.923	.00000	.00000	916.08	887.87	-971.52	1887.6
88	915.34 1895.0	-995.23	883.88	-1.0893	.00000	.00000	915.34	883.88	-995.23	1910.6
89	912.20 1909.1	-1011.5	881.66	-24.796	.00000	.00000	912.52	881.66	-1011.8	1924.3
90	901.07 1911.5	-1021.1	878.10	-30.745	.00000	.00000	901.56	878.10	-1021.6	1923.2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
91	889.67 1908.5	-1025.4	875.12	-28.628	.00000	.00000	890.10	875.12	-1025.8	1915
92	879.75 1903.4	-1026.7	872.65	-23.250	.00000	.00000	880.03	872.65	-1027.0	1907
93	872.34 1898.2	-1026.3	870.88	-17.614	.00000	.00000	872.50	870.88	-1026.5	1899

94	867.07 1893.4	-1024.9	869.67	-13.311	.00000	.00000	869.67	867.16	-1025.0	1894.7
95	863.17 1889.0	-1022.9	868.81	-11.156	.00000	.00000	868.81	863.24	-1023.0	1891.8
96	859.66 1884.6	-1020.7	867.99	-11.521	.00000	.00000	867.99	859.73	-1020.7	1888.7
97	855.46 1879.6	-1018.3	866.84	-14.508	.00000	.00000	866.84	855.57	-1018.4	1885.2
98	849.53 1873.6	-1016.0	864.97	-19.969	.00000	.00000	864.97	849.74	-1016.2	1881.1
99	841.03 1866.3	-1014.2	861.94	-27.400	.00000	.00000	861.94	841.43	-1014.6	1876.5
100	829.46 1858.1	-1013.5	857.35	-35.722	.00000	.00000	857.35	830.15	-1014.2	1871.5
101	815.05 1849.7	-1015.0	850.92	-42.954	.00000	.00000	850.92	816.06	-1016.0	1866.9
102	798.66 1842.4	-1019.7	842.55	-45.914	.00000	.00000	842.55	799.82	-1020.9	1863.4
103	785.78 1841.6	-1030.4	833.17	-39.553	.00000	.00000	833.17	786.64	-1031.2	1864.4
104	772.81 1846.2	-1048.1	821.75	-17.952	.00000	.00000	821.75	772.99	-1048.3	1870.1
105	785.59 1866.6	-1063.5	818.56	32.683	.00000	.00000	818.56	786.17	-1064.0	1882.6
106	841.24 1974.4	-1140.8	811.88	95.036	.00000	.00000	845.78	811.88	-1145.4	1991.2
107	918.48 2081.5	-1166.4	830.23	232.62	.00000	.00000	944.12	830.23	-1192.0	2136.1
108	78.392 1500.2	-632.78	737.59	529.59	.00000	.00000	737.59	360.69	-915.09	1652.1

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
109	-1526.3 2238.0	-3094.9	-532.14	-8.5607	.00000	.00000	-532.14	-1526.2	-3095.0	2562.8

110	-1078.1 6104.7	-7423.3	-1707.2	-447.90	.00000	.00000	-1046.7	-1707.2	-7454.8	6408.1
111	38.578 11719.	-12894.	-2985.1	-93.763	.00000	.00000	39.258	-2985.1	-12895.	12934.
112	1556.4 2561.6	-1005.2	1556.4	.00000	.00000	.00000	1556.4	1556.4	-1005.2	2561.6
113	1550.3 2597.0	-1047.8	1548.0	4.2527	.00000	.00000	1550.3	1548.0	-1047.8	2598.2
114	1524.6 2478.5	-937.62	1548.8	82.496	.00000	.00000	1548.8	1527.3	-940.38	2489.2
115	1412.4 2432.7	-978.06	1479.6	113.16	.00000	.00000	1479.6	1417.7	-983.40	2463.0
116	1194.3 2231.2	-931.48	1391.2	25.858	.00000	.00000	1391.2	1194.6	-931.79	2323.0
117	818.32 1905.5	-846.55	1226.3	-67.586	.00000	.00000	1226.3	821.06	-849.29	2075.5
118	347.09 1601.1	-824.58	973.10	-147.48	.00000	.00000	973.10	365.36	-842.86	1816.0
119	-382.66 1370.9	-596.83	713.96	-363.31	.00000	.00000	713.96	-110.98	-868.51	1582.5
120	-737.81 2084.8	-2395.4	-67.670	-113.52	.00000	.00000	-67.670	-730.08	-2403.2	2335.5
121	-591.58 2228.6	-2503.0	-111.23	233.93	.00000	.00000	-111.23	-563.37	-2531.2	2420.0
122	212.89 1209.2	-605.95	595.69	332.55	.00000	.00000	595.69	330.93	-723.99	-1319.7
123	1017.4 1846.1	-932.45	749.68	137.26	.00000	.00000	1027.0	749.68	-942.07	1969.1
124	1243.7 2034.3	-951.82	856.81	77.369	.00000	.00000	1246.4	856.81	-954.55	2200.
125	1308.3 2134.4	-996.22	910.65	30.990	.00000	.00000	1308.7	910.65	-996.64	2305.
126	1255.4 2125.0	-1014.2	928.19	10.426	.00000	.00000	1255.4	928.19	-1014.2	2269.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

HABGE-01/99-0745, Revision 2

D 100

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
127	1166.5	-1026.6	925.34	3.4272	.00000	.00000	1166.5	925.34	-1026.6	2193.1
	2083.0									
128	1077.9	-1032.2	914.98	3.0740	.00000	.00000	1077.9	914.98	-1032.2	2110.1
	2033.5									
129	1004.8	-1034.1	903.30	5.4320	.00000	.00000	1004.8	903.30	-1034.1	2038.9
	1990.1									
130	950.52	-1033.7	893.14	8.2724	.00000	.00000	950.55	893.14	-1033.7	1984.3
	1956.2									
131	912.37	-1032.0	885.17	10.281	.00000	.00000	912.43	885.17	-1032.1	1944.5
	1931.0									
132	884.52	-1029.6	878.64	10.779	.00000	.00000	884.58	878.64	-1029.6	1914.2
	1911.2									
133	859.76	-1026.7	871.88	9.4219	.00000	.00000	871.88	859.80	-1026.7	1898.6
	1892.6									
134	830.48	-1023.6	862.70	6.0801	.00000	.00000	862.70	830.50	-1023.7	1886.3
	1870.5									
135	789.37	-1020.7	848.64	.82425	.00000	.00000	848.64	789.37	-1020.7	1869.3
	1840.4									
136	730.21	-1018.4	827.28	-5.9898	.00000	.00000	827.28	730.23	-1018.4	1845.7
	1799.1									
137	649.15	-1017.4	796.68	-13.545	.00000	.00000	796.68	649.26	-1017.5	1814.2
	1745.2									
138	546.72	-1019.3	756.08	-20.308	.00000	.00000	756.08	546.98	-1019.5	1775.6
	1680.9									
139	431.28	-1025.1	707.36	-23.661	.00000	.00000	707.36	431.66	-1025.5	1732.9
	1612.8									
140	319.93	-1039.0	654.65	-20.405	.00000	.00000	654.65	320.24	-1039.3	1694.
	1554.0									
141	256.31	-1059.7	612.35	-2.3899	.00000	.00000	612.35	256.32	-1059.7	1672.
	1525.6									
142	290.45	-1085.2	598.84	33.509	.00000	.00000	598.84	291.27	-1086.0	1684.
	1554.1									
143	446.88	-1190.8	603.08	74.283	.00000	.00000	603.08	450.24	-1194.2	1797.
	1725.9									
144	959.88	-1046.8	795.93	203.14	.00000	.00000	980.23	795.93	-1067.2	2047
	1961.7									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

HABCE-01/99-0745, Revision 2

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
145	3122.9 4021.1	-1252.9	1402.8	727.97	.00000	.00000	3240.8	1402.8	-1370.9	4611.7
146	6280.4 6153.4	-812.46	2579.4	-190.47	.00000	.00000	6285.5	2579.4	-817.57	7103.1
147	2938.8 10002.	-8363.9	-658.58	-10.508	.00000	.00000	2938.8	-658.58	-8363.9	11303.
148	596.99 10854.	-11356.	-2213.0	458.91	.00000	.00000	614.58	-2213.0	-11373.	11988.
149	-549.13 494.98	-1044.1	-549.13	.00000	.00000	.00000	-549.13	-549.13	-1044.1	494.98
150	-545.24 494.07	-1039.7	-546.03	-3.7367	.00000	.00000	-545.21	-546.03	-1039.7	494.48
151	-531.54 496.41	-1018.1	-520.62	37.637	.00000	.00000	-520.62	-528.64	-1021.0	500.37
152	-496.54 487.72	-966.79	-487.52	64.332	.00000	.00000	-487.52	-487.90	-975.43	487.92
153	-452.33 460.55	-908.52	-451.57	34.893	.00000	.00000	-449.68	-451.57	-911.17	461.49
154	-391.58 439.71	-834.06	-398.41	13.237	.00000	.00000	-391.19	-398.41	-834.46	443.27
155	-314.17 423.66	-745.91	-330.99	-4.7094	.00000	.00000	-314.12	-330.99	-745.96	431.84
156	-225.63 470.62	-717.69	-278.59	-29.525	.00000	.00000	-223.87	-278.59	-719.46	495.51
157	-167.34 346.45	-504.49	-163.87	-41.515	.00000	.00000	-162.30	-163.87	-509.53	347.2
158	-156.83 349.03	-475.00	-163.18	86.731	.00000	.00000	-134.73	-163.18	-497.11	362.3
159	-225.99 531.28	-777.47	-300.28	67.303	.00000	.00000	-217.90	-300.28	-785.56	567.6
160	-347.28 508.33	-862.54	-375.42	46.940	.00000	.00000	-343.04	-375.42	-866.79	523.7
161	-407.11 533.16	-948.12	-430.75	35.582	.00000	.00000	-404.78	-430.75	-950.45	545.6
162	-436.93 552.69	-999.00	-460.27	26.540	.00000	.00000	-435.68	-460.27	-1000.3	564.5

HABCE-01/99-0745, Revision 2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
	SEQV									
163	-448.78 570.35	-1030.8	-475.07	19.628	.00000	.00000	-448.12	-475.07	-1031.5	583.35
164	-449.29 585.22	-1048.4	-479.43	15.308	.00000	.00000	-448.90	-479.43	-1048.8	599.89
165	-444.69 596.77	-1057.0	-477.98	12.829	.00000	.00000	-444.43	-477.98	-1057.3	612.84
166	-438.54 604.89	-1059.9	-473.58	11.494	.00000	.00000	-438.33	-473.58	-1060.1	621.74
167	-432.63 610.04	-1059.3	-468.00	10.726	.00000	.00000	-432.45	-468.00	-1059.5	627.04
168	-427.47 612.96	-1056.8	-462.13	10.121	.00000	.00000	-427.31	-462.13	-1056.9	629.63
169	-422.80 614.52	-1053.1	-456.25	9.4203	.00000	.00000	-422.66	-456.25	-1053.3	630.62
170	-417.91 615.65	-1048.9	-450.27	8.4860	.00000	.00000	-417.80	-450.27	-1049.0	631.24
171	-411.97 617.31	-1044.5	-443.96	7.2887	.00000	.00000	-411.88	-443.96	-1044.6	632.72
172	-404.23 620.46	-1040.4	-437.14	5.9095	.00000	.00000	-404.17	-437.14	-1040.5	636.2
173	-394.34 626.06	-1037.4	-429.88	4.5654	.00000	.00000	-394.31	-429.88	-1037.4	643.0
174	-382.70 634.93	-1036.7	-422.72	3.6496	.00000	.00000	-382.68	-422.72	-1036.7	654.0
175	-370.92 647.49	-1040.2	-416.98	3.7960	.00000	.00000	-370.90	-416.98	-1040.2	669.3
176	-362.39 663.47	-1050.5	-415.00	5.8972	.00000	.00000	-362.34	-415.00	-1050.6	688.2
177	-363.26 681.08	-1070.9	-420.54	11.297	.00000	.00000	-363.08	-420.54	-1071.1	707.5
178	-383.38 696.50	-1105.1	-439.29	21.738	.00000	.00000	-382.73	-439.29	-1105.8	723.0

HABCE-01/99-0745, Revision 2

179	-439.39 703.35	-1159.0	-480.59	40.122	.00000	.00000	-437.16	-480.59	-1161.2	724.06
180	-569.76 678.22	-1229.3	-559.48	77.807	.00000	.00000	-559.48	-560.70	-1238.3	678.82

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
181	-903.96 610.35	-1329.4	-735.38	174.51	.00000	.00000	-735.38	-841.54	-1391.8	656.46
182	-1607.3 701.47	-1434.5	-1072.9	299.43	.00000	.00000	-1072.9	-1209.2	-1832.5	759.63
183	-2085.4 798.31	-2005.2	-1525.1	347.30	.00000	.00000	-1525.1	-1695.7	-2394.9	869.82
184	-479.26 576.33	-1055.6	-479.26	.00000	.00000	.00000	-479.26	-479.26	-1055.6	576.33
185	-475.78 575.32	-1051.3	-476.43	-5.9002	.00000	.00000	-475.72	-476.43	-1051.4	575.67
186	-466.10 566.53	-1024.8	-451.93	-14.759	.00000	.00000	-451.93	-465.71	-1025.2	573.20
187	-445.55 540.08	-975.17	-428.04	-23.106	.00000	.00000	-428.04	-444.55	-976.18	548.14
188	-426.57 502.71	-916.52	-406.75	-29.271	.00000	.00000	-406.75	-424.83	-918.26	511.5
189	-408.72 453.50	-842.66	-378.73	-33.912	.00000	.00000	-378.73	-406.09	-845.29	466.5
190	-398.46 392.06	-759.43	-351.58	-37.829	.00000	.00000	-351.58	-394.53	-763.35	411.7
191	-417.68 338.35	-708.21	-346.07	-37.133	.00000	.00000	-346.07	-413.00	-712.88	366.8
192	-441.27 256.59	-618.37	-331.61	-31.762	.00000	.00000	-331.61	-435.74	-623.89	292.2
193	-213.06 3114.5	-3365.5	-291.11	30.443	.00000	.00000	-212.77	-291.11	-3365.7	3153.
194	-191.31 3486.4	-3771.9	-388.91	27.420	.00000	.00000	-191.10	-388.91	-3772.1	3581.

HABGE-01/99-0745, Revision 2

195	-380.83 263.16	-564.07	-288.90	58.830	.00000	.00000	-288.90	-363.57	-581.33	292.43
196	-364.90 418.22	-778.08	-375.02	52.507	.00000	.00000	-358.33	-375.02	-784.65	426.32
197	-358.21 504.00	-879.48	-406.26	40.939	.00000	.00000	-355.01	-406.26	-882.68	527.66
198	-383.35 549.28	-956.97	-440.06	25.692	.00000	.00000	-382.20	-440.06	-958.11	575.91

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
199	-403.51 579.65	-1009.8	-462.17	13.028	.00000	.00000	-403.23	-462.17	-1010.1	606.88
200	-416.93 599.41	-1042.9	-474.26	3.9355	.00000	.00000	-416.90	-474.26	-1042.9	626.02
201	-424.88 611.72	-1062.0	-479.30	-1.2746	.00000	.00000	-424.88	-479.30	-1062.0	637.11
202	-428.89 618.87	-1071.6	-479.67	-3.6521	.00000	.00000	-428.87	-479.67	-1071.6	642.71
203	-430.55 622.43	-1075.0	-477.33	-4.3185	.00000	.00000	-430.52	-477.33	-1075.0	644.57
204	-430.88 623.60	-1074.7	-473.57	-4.1807	.00000	.00000	-430.86	-473.57	-1074.7	643.8
205	-430.50 623.27	-1072.2	-469.17	-3.8721	.00000	.00000	-430.47	-469.17	-1072.2	641.7
206	-429.61 622.09	-1068.4	-464.54	-3.7839	.00000	.00000	-429.58	-464.54	-1068.4	638.8
207	-428.23 620.56	-1064.0	-459.85	-4.1072	.00000	.00000	-428.20	-459.85	-1064.0	635.7
208	-426.31 619.15	-1059.3	-455.20	-4.8613	.00000	.00000	-426.28	-455.20	-1059.4	633.1
209	-423.86 618.35	-1055.1	-450.73	-5.8924	.00000	.00000	-423.80	-450.73	-1055.2	631.3
210	-421.07 618.75	-1052.2	-446.83	-6.8426	.00000	.00000	-421.00	-446.83	-1052.3	631.26

HABGE-01/99-0745, Revision 2

211	-418.55 621.07	-1051.9	-444.21	-7.0930	.00000	.00000	-418.47	-444.21	-1052.0	633.54
212	-417.45 626.16	-1056.4	-444.10	-5.6907	.00000	.00000	-417.40	-444.10	-1056.5	639.08
213	-419.78 634.96	-1068.5	-448.36	-1.2917	.00000	.00000	-419.78	-448.36	-1068.5	648.77
214	-428.42 648.38	-1091.6	-459.48	7.9370	.00000	.00000	-428.33	-459.48	-1091.7	663.39
215	-447.37 667.95	-1130.1	-480.78	24.256	.00000	.00000	-446.51	-480.78	-1130.9	684.42
216	-481.55 695.69	-1188.2	-515.99	51.079	.00000	.00000	-477.88	-515.99	-1191.8	713.96

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
217	-536.12 737.40	-1269.0	-568.50	99.006	.00000	.00000	-522.98	-568.50	-1282.1	759.11
218	-591.08 846.42	-1387.2	-636.41	197.13	.00000	.00000	-544.95	-636.41	-1433.4	888.44
219	-497.24 1108.6	-1581.1	-673.21	267.02	.00000	.00000	-435.03	-673.21	-1643.4	1208.3
220	-371.28 1247.7	-1639.3	-633.36	266.17	.00000	.00000	-317.67	-633.36	-1692.9	1375.
221	-722.84 8575.2	-9681.5	-1601.6	354.10	.00000	.00000	-708.87	-1601.6	-9695.5	8986.
222	-742.65 6947.6	-7805.3	-1035.0	349.58	.00000	.00000	-725.38	-1035.0	-7822.6	7097.
223	-450.75 627.58	-1078.3	-450.75	.00000	.00000	.00000	-450.75	-450.75	-1078.3	627.5
224	-450.22 621.28	-1070.6	-448.70	-8.2954	.00000	.00000	-448.70	-450.11	-1070.7	621.5
225	-449.11 600.96	-1039.5	-429.90	-16.705	.00000	.00000	-429.90	-448.64	-1040.0	610.1
226	-440.74 565.39	-990.95	-414.74	-25.574	.00000	.00000	-414.74	-439.55	-992.13	577.3

HABCE-01/99-0745, Revision 2

227	-439.47 514.27	-932.28	-404.72	-33.018	.00000	.00000	-404.72	-437.27	-934.48	529.77
228	-443.03 452.07	-863.72	-392.79	-35.231	.00000	.00000	-392.79	-440.10	-866.65	473.86
229	-458.23 378.58	-792.07	-385.55	-27.840	.00000	.00000	-385.55	-455.92	-794.38	408.83
230	-463.92 323.89	-735.34	-378.06	-13.641	.00000	.00000	-378.06	-463.24	-736.02	357.97
231	-448.66 329.89	-741.37	-384.10	-5.0970	.00000	.00000	-384.10	-448.57	-741.46	357.36
232	-479.77 3061.0	-3499.0	-397.88	.77496	.00000	.00000	-397.88	-479.77	-3499.0	3101.1
233	-477.94 3215.9	-3684.5	-459.41	.88257	.00000	.00000	-459.41	-477.94	-3684.5	3225.1
234	-438.64 323.05	-720.08	-374.12	30.755	.00000	.00000	-374.12	-435.32	-723.40	349.28

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
235	-428.45 389.38	-800.85	-409.28	42.515	.00000	.00000	-409.28	-423.66	-805.65	396.37
236	-415.75 481.48	-903.64	-444.80	48.695	.00000	.00000	-410.94	-444.80	-908.45	497.5
237	-408.36 544.22	-975.01	-464.03	34.292	.00000	.00000	-406.29	-464.03	-977.08	570.7
238	-413.00 587.14	-1030.0	-480.20	18.610	.00000	.00000	-412.44	-480.20	-1030.5	618.0
239	-419.32 615.32	-1066.6	-489.57	6.8984	.00000	.00000	-419.24	-489.57	-1066.7	647.4
240	-426.16 631.54	-1088.9	-493.99	-.28985	.00000	.00000	-426.16	-493.99	-1088.9	662.1
241	-432.42 639.33	-1100.7	-494.90	-3.8794	.00000	.00000	-432.40	-494.90	-1100.7	668.1
242	-437.68 641.63	-1105.4	-493.55	-5.1762	.00000	.00000	-437.64	-493.55	-1105.4	667.7

HABCE-01/99-0745, Revision 2

243	-441.90 640.63	-1105.5	-490.88	-5.3160	.00000	.00000	-441.85	-490.88	-1105.6	663.73
244	-445.20 637.74	-1103.0	-487.55	-5.1232	.00000	.00000	-445.16	-487.55	-1103.0	657.88
245	-447.79 633.82	-1098.9	-483.99	-5.1183	.00000	.00000	-447.75	-483.99	-1098.9	651.16
246	-449.91 629.38	-1094.0	-480.50	-5.5590	.00000	.00000	-449.86	-480.50	-1094.0	644.14
247	-451.80 624.82	-1088.9	-477.33	-6.4685	.00000	.00000	-451.74	-477.33	-1089.0	637.22
248	-453.70 620.62	-1084.5	-474.82	-7.6334	.00000	.00000	-453.61	-474.82	-1084.6	630.96
249	-455.83 617.57	-1081.8	-473.44	-8.5640	.00000	.00000	-455.72	-473.44	-1082.0	626.24
250	-458.40 616.93	-1082.8	-473.88	-8.4249	.00000	.00000	-458.29	-473.88	-1082.9	624.58
251	-461.55 620.63	-1089.7	-477.08	-5.9586	.00000	.00000	-461.50	-477.08	-1089.8	628.27
252	-465.27 631.49	-1106.0	-484.19	.58161	.00000	.00000	-465.27	-484.19	-1106.0	640.74

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
253	-469.14 653.67	-1135.6	-496.43	13.356	.00000	.00000	-468.87	-496.43	-1135.9	667.0
254	-471.49 693.37	-1182.8	-514.55	34.603	.00000	.00000	-469.81	-514.55	-1184.5	714.0
255	-466.04 761.04	-1251.5	-537.25	65.917	.00000	.00000	-460.55	-537.25	-1257.0	796.0
256	-423.53 883.72	-1345.8	-553.74	105.77	.00000	.00000	-411.55	-553.74	-1357.7	946.0
257	-250.31 1145.9	-1484.5	-532.03	139.25	.00000	.00000	-234.79	-532.03	-1500.0	1265
258	1.1203 1533.7	-1707.2	-501.16	115.10	.00000	.00000	8.8405	-501.16	-1714.9	1723.0

HABGE-01/99-0745, Revision 2

259	107.90 1199.7	-1219.6	-240.84	78.633	.00000	.00000	112.54	-240.84	-1224.2	1336.7
260	371.85 11190.	-11660.	-1566.1	-78.696	.00000	.00000	372.37	-1566.1	-11661.	12033.
261	363.07 6154.2	-5877.4	-183.65	-77.715	.00000	.00000	364.04	183.65	-5878.4	6242.4
262	-448.25 654.46	-1102.7	-448.25	.00000	.00000	.00000	-448.25	-448.25	-1102.7	654.46
263	-448.57 641.37	-1088.4	-445.63	-5.9015	.00000	.00000	-445.63	-448.52	-1088.4	642.81
264	-451.76 617.65	-1058.0	-429.97	-10.143	.00000	.00000	-429.97	-451.59	-1058.1	628.17
265	-451.67 572.69	-1007.0	-419.44	-15.176	.00000	.00000	-419.44	-451.25	-1007.4	587.93
266	-459.29 514.78	-950.32	-416.71	-19.754	.00000	.00000	-416.71	-458.50	-951.11	534.40
267	-466.50 452.96	-887.98	-411.23	-19.847	.00000	.00000	-411.23	-465.57	-888.91	477.68
268	-464.33 403.74	-834.83	-404.98	-8.6849	.00000	.00000	-404.98	-464.13	-835.03	430.05
269	-471.94 379.13	-814.48	-407.54	8.2103	.00000	.00000	-407.54	-471.74	-814.68	407.14
270	-481.20 307.89	-730.25	-387.59	15.199	.00000	.00000	-387.59	-480.28	-731.17	343.59

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
271	-642.05 3089.5	-3633.2	-453.97	7.0561	.00000	.00000	-453.97	-642.04	-3633.2	3179
272	-613.19 3058.1	-3588.0	-452.86	6.7898	.00000	.00000	-452.86	-613.18	-3588.0	3135
273	-486.35 357.21	-808.02	-425.75	17.938	.00000	.00000	-425.75	-485.35	-809.01	383.
274	-473.76 404.81	-863.34	-449.95	27.429	.00000	.00000	-449.95	-471.84	-865.26	415.5

275	-459.86 464.61	-925.76	-470.46	34.737	.00000	.00000	-457.28	-470.46	-928.34	471.06
276	-446.33 532.04	-996.76	-489.92	27.016	.00000	.00000	-445.01	-489.92	-998.08	553.07
277	-436.89 587.01	-1052.9	-501.69	16.486	.00000	.00000	-436.45	-501.69	-1053.4	616.90
278	-435.77 623.79	-1092.9	-509.28	8.3132	.00000	.00000	-435.66	-509.28	-1093.0	657.33
279	-439.32 645.28	-1118.3	-513.09	3.0121	.00000	.00000	-439.30	-513.09	-1118.3	679.00
280	-445.22 655.35	-1132.3	-514.10	.14962	.00000	.00000	-445.22	-514.10	-1132.3	687.07
281	-451.77 657.94	-1138.3	-513.22	-1.1030	.00000	.00000	-451.77	-513.22	-1138.3	686.51
282	-458.04 656.02	-1139.0	-511.17	-1.4944	.00000	.00000	-458.04	-511.17	-1139.0	680.97
283	-463.68 651.52	-1136.5	-508.52	-1.5906	.00000	.00000	-463.68	-508.52	-1136.5	672.79
284	-468.72 645.62	-1132.0	-505.69	-1.7532	.00000	.00000	-468.72	-505.69	-1132.0	663.32
285	-473.39 638.98	-1126.7	-503.05	-2.1613	.00000	.00000	-473.39	-503.05	-1126.7	653.30
286	-478.00 632.10	-1121.2	-500.95	-2.8268	.00000	.00000	-477.98	-500.95	-1121.3	643.27
287	-482.78 625.66	-1116.7	-499.78	-3.5913	.00000	.00000	-482.76	-499.78	-1116.8	634.01
288	-487.80 620.80	-1114.6	-500.06	-4.1005	.00000	.00000	-487.77	-500.06	-1114.6	626.86

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
289	-492.80 619.45	-1117.0	-502.40	-3.7616	.00000	.00000	-492.77	-502.40	-1117.0	624.
290	-496.99 624.59	-1126.8	-507.50	-1.6950	.00000	.00000	-496.99	-507.50	-1126.8	629...

291	-498.83 640.58	-1147.8	-516.00	3.2603	.00000	.00000	-498.82	-516.00	-1147.8	649.00
292	-495.77 673.35	-1184.4	-528.26	12.422	.00000	.00000	-495.54	-528.26	-1184.7	689.12
293	-483.80 730.12	-1240.6	-543.77	26.581	.00000	.00000	-482.86	-543.77	-1241.5	758.66
294	-456.50 818.03	-1317.8	-559.94	43.823	.00000	.00000	-454.27	-559.94	-1320.0	865.73
295	-405.48 940.69	-1414.2	-571.89	50.340	.00000	.00000	-402.97	-571.89	-1416.7	1013.7
296	-324.89 1082.5	-1508.3	-567.90	.79994	.00000	.00000	-324.89	-567.90	-1508.3	1183.4
297	-163.82 1299.5	-1598.1	-526.14	-81.459	.00000	.00000	-159.21	-526.14	-1602.7	1443.5
298	-48.021 1211.5	-1370.2	-370.37	-118.18	.00000	.00000	-37.541	-370.37	-1380.7	1343.1
299	-229.28 9395.9	-10139.	-1362.9	-99.329	.00000	.00000	-228.28	-1362.9	-10140.	9911.7
300	-243.83 7049.6	-7437.1	-544.86	-98.020	.00000	.00000	-242.50	-544.86	-7438.5	7196.0
301	-448.32 667.48	-1115.8	-448.32	.00000	.00000	.00000	-448.32	-448.32	-1115.8	667.48
302	-450.12 649.58	-1097.5	-445.69	.18024	.00000	.00000	-445.69	-450.12	-1097.5	651.78
303	-457.07 629.41	-1069.5	-433.93	-45.905	.00000	.00000	-433.93	-453.64	-1073.0	639.04
304	-458.74 592.62	-1016.4	-424.20	-81.252	.00000	.00000	-424.20	-447.15	-1028.0	603.76
305	-469.09 528.25	-961.13	-423.99	-65.114	.00000	.00000	-423.99	-460.62	-969.60	545.1
306	-481.84 461.09	-900.54	-422.43	-54.443	.00000	.00000	-422.43	-474.88	-907.50	485.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
------	------------	----	----	-----	-----	-----	----	----	----	-----

HABCE-01/99-0745, Revision 2

D III

307	-487.43 411.60	-857.58	-424.63	-41.714	.00000	.00000	-424.63	-482.79	-862.22	437.59
308	-470.24 418.39	-864.76	-427.33	-14.508	.00000	.00000	-427.33	-469.71	-865.29	437.96
309	-445.88 302.75	-692.96	-355.28	2.5550	.00000	.00000	-355.28	-445.85	-692.98	337.70
310	-543.32 353.43	-839.20	-452.55	-27.505	.00000	.00000	-452.55	-540.79	-841.74	389.19
311	-525.79 396.35	-895.84	-479.89	-18.832	.00000	.00000	-479.89	-524.83	-896.80	416.90
312	-493.27 450.09	-940.71	-488.87	-11.398	.00000	.00000	-488.87	-492.98	-941.00	452.13
313	-465.30 525.71	-1007.9	-502.25	-14.291	.00000	.00000	-464.92	-502.25	-1008.3	543.38
314	-450.31 586.87	-1065.0	-512.73	-18.243	.00000	.00000	-449.77	-512.73	-1065.6	615.81
315	-444.73 628.27	-1105.7	-518.80	-21.299	.00000	.00000	-444.05	-518.80	-1106.4	662.31
316	-446.23 652.58	-1132.2	-522.05	-22.818	.00000	.00000	-445.47	-522.05	-1133.0	687.49
317	-451.55 663.73	-1146.8	-522.83	-23.010	.00000	.00000	-450.79	-522.83	-1147.6	696.82
318	-458.44 666.38	-1153.2	-522.01	-22.359	.00000	.00000	-457.72	-522.01	-1153.9	696.20
319	-465.55 663.86	-1154.0	-520.15	-21.300	.00000	.00000	-464.89	-520.15	-1154.6	689.76
320	-472.25 658.42	-1151.3	-517.78	-20.171	.00000	.00000	-471.65	-517.78	-1151.9	680.27
321	-478.46 651.41	-1146.7	-515.30	-19.184	.00000	.00000	-477.91	-515.30	-1147.2	669.30
322	-484.37 643.58	-1141.0	-513.09	-18.442	.00000	.00000	-483.85	-513.09	-1141.6	657.70
323	-490.26 635.53	-1135.4	-511.50	-17.943	.00000	.00000	-489.76	-511.50	-1135.9	646.13
324	-496.29 628.06	-1130.8	-510.95	-17.584	.00000	.00000	-495.80	-510.95	-1131.3	635.49

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

HABGE-01/99-0745, Revision 2

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
325	-502.34 622.54	-1128.9	-511.88	-17.146	.00000	.00000	-501.87	-511.88	-1129.4	627.49
326	-507.74 621.28	-1131.9	-514.82	-16.269	.00000	.00000	-507.32	-514.82	-1132.3	625.00
327	-511.07 627.90	-1143.0	-520.23	-14.425	.00000	.00000	-510.74	-520.23	-1143.3	632.59
328	-509.93 647.52	-1166.2	-528.45	-10.950	.00000	.00000	-509.74	-528.45	-1166.4	656.67
329	-500.91 686.57	-1205.9	-539.38	-5.1504	.00000	.00000	-500.87	-539.38	-1205.9	705.02
330	-480.95 751.81	-1266.1	-552.91	3.0164	.00000	.00000	-480.94	-552.91	-1266.1	785.20
331	-452.62 840.44	-1344.8	-568.55	10.568	.00000	.00000	-452.49	-568.55	-1344.9	892.44
332	-444.67 928.46	-1439.7	-596.49	3.2655	.00000	.00000	-444.66	-596.49	-1439.7	995.02
333	-557.48 890.00	-1484.7	-652.19	-61.035	.00000	.00000	-553.48	-652.19	-1488.7	935.24
334	-874.66 717.96	-1484.9	-778.13	-157.98	.00000	.00000	-778.13	-836.19	-1523.4	745.22
335	-1101.2 714.05	-1617.7	-930.71	-204.88	.00000	.00000	-930.71	-1029.8	-1689.1	758.41
336	743.74 1875.8	-1132.1	743.74	.00000	.00000	.00000	743.74	743.74	-1132.1	1875.8
337	752.13 1882.8	-1133.1	747.08	-10.132	.00000	.00000	752.18	747.08	-1133.2	1885.4
338	767.51 1809.3	-1036.7	771.20	-62.944	.00000	.00000	771.20	769.70	-1038.9	1810.1
339	761.24 1810.5	-1040.7	762.40	-98.179	.00000	.00000	766.58	762.40	-1046.0	1812.6
340	761.33 1756.8	-981.91	778.91	-74.078	.00000	.00000	778.91	764.47	-985.05	1764.0
341	776.85 1716.8	-927.48	794.63	-63.506	.00000	.00000	794.63	779.21	-929.85	1724.5
342	900.02 1736.0	-852.57	850.52	-94.009	.00000	.00000	905.05	850.52	-857.60	1762.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
343	700.22 1600.7	-841.09	798.83	90.853	.00000	.00000	798.83	705.56	-846.43	1645.3
344	275.74 3138.1	-2969.2	30.643	133.09	.00000	.00000	281.19	30.643	-2974.7	3255.9
345	727.88 3129.2	-2581.8	328.48	-3.3262	.00000	.00000	727.88	328.48	-2581.8	3309.7
346	1705.3 2282.1	-766.46	1254.7	-55.279	.00000	.00000	1706.5	1254.7	-767.69	2474.2
347	1724.8 2503.8	-976.00	1267.3	-18.498	.00000	.00000	1725.0	1267.3	-976.13	2701.1
348	1633.6 2507.2	-1035.5	1268.5	-33.955	.00000	.00000	1634.0	1268.5	-1035.9	2669.9
349	1624.3 2557.2	-1082.2	1292.7	-25.134	.00000	.00000	1624.5	1292.7	-1082.4	2706.9
350	1591.7 2589.3	-1130.5	1300.4	-25.526	.00000	.00000	1592.0	1300.4	-1130.8	2722.7
351	1573.7 2609.7	-1155.8	1314.1	-23.315	.00000	.00000	1573.9	1314.1	-1156.0	2729.9
352	1556.3 2621.2	-1172.2	1326.0	-22.116	.00000	.00000	1556.5	1326.0	-1172.4	2728.9
353	1542.6 2625.4	-1178.8	1338.1	-20.877	.00000	.00000	1542.7	1338.1	-1179.0	2721.7
354	1531.0 2625.1	-1179.9	1349.5	-19.815	.00000	.00000	1531.1	1349.5	-1180.1	2711.2
355	1521.3 2621.9	-1177.3	1360.1	-18.855	.00000	.00000	1521.4	1360.1	-1177.4	2698.8
356	1513.1 2617.2	-1172.6	1369.8	-17.985	.00000	.00000	1513.2	1369.8	-1172.7	2685.9
357	1506.2 2611.7	-1166.8	1378.5	-17.192	.00000	.00000	1506.3	1378.5	-1166.9	2673.3
358	1500.4 2606.4	-1161.1	1386.2	-16.464	.00000	.00000	1500.5	1386.2	-1161.2	2661.7
359	1495.5 2602.3	-1156.6	1392.6	-15.788	.00000	.00000	1495.6	1392.6	-1156.7	2652.2

360	1491.3	-1155.0	1397.5	-15.161	.00000	.00000	1491.4	1397.5	-1155.1	2646.5
	2600.8									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
361	1487.6	-1158.8	1400.3	-14.545	.00000	.00000	1487.7	1400.3	-1158.9	2646.6
	2604.0									
362	1484.5	-1171.4	1400.1	-14.001	.00000	.00000	1484.6	1400.1	-1171.5	2656.1
	2614.9									
363	1481.3	-1196.9	1395.8	-13.324	.00000	.00000	1481.4	1395.8	-1197.0	2678.3
	2636.6									
364	1478.3	-1241.0	1386.0	-12.883	.00000	.00000	1478.4	1386.0	-1241.1	2719.5
	2674.5									
365	1475.9	-1299.5	1372.3	-12.257	.00000	.00000	1475.9	1372.3	-1299.6	2775.5
	2725.2									
366	1461.1	-1402.3	1342.4	-9.7203	.00000	.00000	1461.1	1342.4	-1402.3	2863.4
	2806.0									
367	1497.2	-1405.8	1356.8	-19.746	.00000	.00000	1497.3	1356.8	-1405.9	2908.2
	2835.6									
368	1306.2	-1648.5	1236.3	29.171	.00000	.00000	1306.5	1236.3	-1648.8	2955.3
	2920.8									
369	2041.0	-762.62	1711.2	-174.50	.00000	.00000	2051.8	1711.2	-773.44	2825.1
	2671.3									
370	1190.1	-5504.4	86.259	-268.90	.00000	.00000	1200.8	86.259	-5515.2	6716.1
	6233.9									
371	253.26	-10505.	-1672.8	-189.90	.00000	.00000	256.61	-1672.8	-10509.	10761
	9942.1									
372	772.85	-1132.1	772.85	.00000	.00000	.00000	772.85	772.85	-1132.1	1904
	1904.9									
373	763.68	-1130.7	770.38	2.6729	.00000	.00000	770.38	763.69	-1130.7	1901
	1897.7									
374	760.79	-1038.5	771.80	64.061	.00000	.00000	771.80	763.06	-1040.7	1812
	1808.2									
375	765.28	-1041.0	766.06	98.971	.00000	.00000	770.69	766.06	-1046.4	1817.1
	1814.8									

376	770.56 1764.6	-981.94	785.14	74.569	.00000	.00000	785.14	773.73	-985.11	1770.2
377	764.17 1709.3	-926.36	795.54	57.051	.00000	.00000	795.54	766.09	-928.29	1723.8
378	652.37 1565.2	-847.76	775.09	9.0404	.00000	.00000	775.09	652.42	-847.81	1622.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
379	862.25 1714.6	-856.61	801.66	169.28	.00000	.00000	878.76	801.66	-873.12	1751.9
380	800.29 2641.5	-1967.5	526.25	14.080	.00000	.00000	800.36	526.25	-1967.5	2767.9
381	1049.7 2085.7	-1116.4	854.43	-119.76	.00000	.00000	1056.3	854.43	-1123.0	2179.3
382	1763.3 2321.4	-758.14	1290.3	9.5327	.00000	.00000	1763.4	1290.3	-758.17	2521.5
383	1652.5 2453.0	-980.42	1237.2	44.690	.00000	.00000	1653.2	1237.2	-981.18	2634.4
384	1666.2 2529.6	-1033.9	1280.1	23.928	.00000	.00000	1666.4	1280.1	-1034.1	2700.5
385	1614.3 2550.2	-1082.6	1288.5	28.573	.00000	.00000	1614.6	1288.5	-1082.9	2697.1
386	1597.1 2592.8	-1130.4	1301.9	24.510	.00000	.00000	1597.3	1301.9	-1130.6	2727.1
387	1574.1 2609.9	-1155.8	1314.0	23.560	.00000	.00000	1574.3	1314.0	-1156.0	2730.1
388	1557.6 2622.1	-1172.2	1326.3	22.027	.00000	.00000	1557.8	1326.3	-1172.4	2730.1
389	1543.2 2625.9	-1178.8	1338.3	20.867	.00000	.00000	1543.4	1338.3	-1179.0	2722.1
390	1531.4 2625.5	-1179.9	1349.7	19.798	.00000	.00000	1531.6	1349.7	-1180.1	2711.1
391	1521.5 2622.1	-1177.3	1360.3	18.843	.00000	.00000	1521.7	1360.3	-1177.4	2699.1

392	1513.2 2617.3	-1172.6	1369.9	17.975	.00000	.00000	1513.4	1369.9	-1172.7	2686.0
393	1506.2 2611.7	-1166.8	1378.6	17.181	.00000	.00000	1506.3	1378.6	-1166.9	2673.3
394	1500.3 2606.3	-1161.1	1386.2	16.448	.00000	.00000	1500.4	1386.2	-1161.2	2661.5
395	1495.1 2602.1	-1156.6	1392.5	15.767	.00000	.00000	1495.2	1392.5	-1156.7	2651.9
396	1490.6 2600.3	-1155.0	1397.3	15.121	.00000	.00000	1490.7	1397.3	-1155.1	2645.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
397	1486.6 2603.3	-1158.8	1399.9	14.524	.00000	.00000	1486.7	1399.9	-1158.9	2645.6
398	1482.7 2613.6	-1171.4	1399.5	13.891	.00000	.00000	1482.8	1399.5	-1171.5	2654.3
399	1479.4 2635.2	-1196.9	1395.1	13.403	.00000	.00000	1479.4	1395.1	-1197.0	2676.4
400	1475.7 2672.6	-1241.0	1385.0	12.676	.00000	.00000	1475.7	1385.0	-1241.1	2716.8
401	1471.1 2721.8	-1299.5	1370.6	12.100	.00000	.00000	1471.2	1370.6	-1299.6	2770.
402	1477.9 2817.3	-1402.5	1346.9	13.517	.00000	.00000	1478.0	1346.9	-1402.6	2880.
403	1433.7 2792.3	-1404.9	1338.7	2.3469	.00000	.00000	1433.7	1338.7	-1404.9	2838
404	1614.1 3132.6	-1652.5	1323.2	51.090	.00000	.00000	1614.9	1323.2	-1653.3	3268
405	878.36 1947.7	-746.72	1385.4	-154.46	.00000	.00000	1385.4	892.91	-761.27	2146
406	-116.67 3742.1	-3688.8	164.42	-231.32	.00000	.00000	164.42	-101.76	-3703.7	3868
407	-114.69 11461.	-12576.	-2488.3	-57.513	.00000	.00000	-114.42	-2488.3	-12576.	12462.

408	-349.40 784.32	-212.99	474.23	-100.89	.00000	.00000	474.23	-159.41	-402.98	877.21
409	-331.80 834.64	400.73	554.32	-89.320	.00000	.00000	554.32	411.47	-342.53	896.85
410	59.573 205.79	29.953	245.83	-20.534	.00000	.00000	245.83	70.081	19.446	226.38
411	141.88 232.41	-42.223	210.97	-29.602	.00000	.00000	210.97	146.52	-46.866	257.83
412	175.77 100.04	179.25	275.61	-11.207	.00000	.00000	275.61	188.85	166.17	109.44
413	183.40 307.34	-128.27	174.51	2.1638	.00000	.00000	183.41	174.51	-128.28	311.69
414	-57.104 68.218	18.047	-38.083	-4.9596	.00000	.00000	18.373	-38.083	-57.430	75.802

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
415	-109.24 70.026	-34.255	-68.241	-14.996	.00000	.00000	-31.367	-68.241	-112.12	780.757
416	-153.99 237.10	113.87	-61.739	14.911	.00000	.00000	114.70	-61.739	-154.82	269.51
417	-120.74 82.624	-129.43	-131.26	47.371	.00000	.00000	-77.514	-131.26	-172.65	95.13
425	-97.262 8769.7	-9503.0	-1551.8	-37.335	.00000	.00000	-97.114	-1551.8	-9503.2	9406.
426	-113.69 8679.8	-9407.1	-1513.4	-83.751	.00000	.00000	-112.94	-1513.4	-9407.8	9294.
427	-130.44 9112.5	-9905.7	-1653.3	-129.39	.00000	.00000	-128.73	-1653.3	-9907.4	9778.
428	69.183 9429.0	-9935.7	-1215.1	-56.049	.00000	.00000	69.497	-1215.1	-9936.0	1000.
429	52.017 9106.7	-9574.8	-1098.2	-43.747	.00000	.00000	52.216	-1098.2	-9575.0	9627
430	35.895 8655.2	-9065.0	-938.15	-31.638	.00000	.00000	36.005	-938.15	-9065.1	9101.

431	-19.729 9858.2	-10325.	-984.63	-10.591	.00000	.00000	-19.718	-984.63	-10325.	10305.
432	-28.751 9136.3	-9495.4	-729.90	-16.552	.00000	.00000	-28.722	-729.90	-9495.5	9466.7
433	-35.794 8493.6	-8753.5	-503.58	-22.413	.00000	.00000	-35.736	-503.58	-8753.5	8717.8
434	39.104 10063.	-10370.	-691.66	-2.2533	.00000	.00000	39.105	-691.66	-10370.	10409.
435	15.872 9308.2	-9509.0	-433.80	.78811	.00000	.00000	15.872	-433.80	-9509.0	9524.9
436	-5.4573 8514.4	-8597.7	-163.46	3.7803	.00000	.00000	-5.4556	-163.46	-8597.7	8592.3
437	-23.519 9805.8	-10015.	-407.54	65.446	.00000	.00000	-23.090	-407.54	-10015.	9992.4
438	-32.135 9348.1	-9486.7	-249.20	32.783	.00000	.00000	-32.021	-249.20	-9486.8	9454.7
439	-25.119 8925.4	-8984.3	-94.412	61.657	.00000	.00000	-24.695	-94.412	-8984.7	8960.1

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
440	53.199 9641.6	-9684.0	-140.95	10.430	.00000	.00000	53.210	-140.95	-9684.0	9737.
441	10.197 9178.3	-9172.2	1.9691	17.319	.00000	.00000	10.230	1.9691	-9172.2	9182.
442	-4.2849 9899.8	-9968.3	-134.09	16.246	.00000	.00000	-4.2584	-134.09	-9968.3	9964.
443	-4.2775 8988.2	-8895.2	187.19	15.989	.00000	.00000	187.19	-4.2487	-8895.2	9082.
444	.15795 9770.5	-9783.8	-26.855	14.459	.00000	.00000	.17931	-26.855	-9783.8	9784.
445	1.3074 9136.5	-9036.3	195.94	14.226	.00000	.00000	195.94	1.3298	-9036.3	9232
446	-1.2291 9639.6	-9622.9	34.450	11.530	.00000	.00000	34.450	-1.2153	-9622.9	9657.

HABCE-01/99-0745, Revision 2

447	.32077 9242.1	-9154.0	173.33	11.342	.00000	.00000	173.33	.33482	-9154.0	9327.4
448	-.80665 9525.3	-9493.6	63.762	8.3862	.00000	.00000	63.762	-.79924	-9493.6	9557.4
449	.77496 9310.4	-9240.2	138.08	8.2476	.00000	.00000	138.08	.78232	-9240.2	9378.3
450	-.74006 9431.6	-9396.1	71.233	5.5393	.00000	.00000	71.233	-.73679	-9396.1	9467.4
451	.64228 9345.7	-9294.8	100.19	5.4463	.00000	.00000	100.19	.64547	-9294.8	9395.0
452	-.53143 9359.1	-9326.3	65.827	3.2374	.00000	.00000	65.827	-.53031	-9326.3	9392.1
453	.55815 9355.4	-9322.0	66.036	3.1819	.00000	.00000	66.036	.55923	-9322.0	9388.0
454	-.36554 9305.1	-9278.1	54.053	1.5420	.00000	.00000	54.053	-.36528	-9278.1	9332.2
455	.41740 9347.0	-9327.5	38.467	1.5144	.00000	.00000	38.467	.41764	-9327.5	9366.0
456	-.22042 9265.6	-9245.4	40.369	.40586	.00000	.00000	40.369	-.22040	-9245.4	9285.8
457	.28974 9327.0	-9317.7	18.204	.39734	.00000	.00000	18.204	.28975	-9317.7	9335.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINI
458	-.11276 9236.5	-9222.8	27.465	-.27153	.00000	.00000	27.465	-.11275	-9222.8	9250.
459	.17954 9300.3	-9297.9	4.6557	-.26847	.00000	.00000	4.6557	.17955	-9297.9	9302.
460	-.38257E-01 9214.1	-9205.8	16.715	-.60674	.00000	.00000	16.715	-.38217E-01	-9205.8	9222.
461	.95478E-01 9270.8	-9272.5	-3.3975	-.59775	.00000	.00000	.95516E-01	-3.3975	-9272.5	9272.
462	.76204E-02 9195.7	-9191.4	8.5841	-.70946	.00000	.00000	8.5841	.76752E-02	-9191.4	9199.

463	.36502E-01 -9244.5 9240.8	-7.3602	-.69841	.00000	.00000	.36554E-01 -7.3602	-9244.5	9244.5
464	.31791E-01 -9177.4 9178.9	2.9765	-.67093	.00000	.00000	2.9765 .31840E-01 -9177.4		9180.4
465	-.69834E-03 -9216.0 9211.7	-8.5493	-.66023	.00000	.00000	-.65104E-03 -8.5493	-9216.0	9216.0
466	.40789E-01 -9162.8 9162.6	-.49708	-.56008	.00000	.00000	.40823E-01 -.49708	-9162.8	9162.8
467	-.21015E-01 -9188.2 9184.2	-8.0583	-.55100	.00000	.00000	-.20982E-01 -8.0583	-9188.2	9188.2
468	.40272E-01 -9146.9 9145.7	-2.3358	-.42438	.00000	.00000	.40292E-01 -2.3358	-9146.9	9146.9
469	-.29346E-01 -9161.7 9158.3	-6.7114	-.41741	.00000	.00000	-.29327E-01 -6.7114	-9161.7	9161.7
470	.34602E-01 -9129.6 9128.1	-3.0319	-.29321	.00000	.00000	.34612E-01 -3.0319	-9129.6	9129.6
471	-.29992E-01 -9136.6 9134.0	-5.0752	-.28832	.00000	.00000	-.29983E-01 -5.0752	-9136.6	9136.6
472	.26866E-01 -9111.0 9109.5	-3.0082	-.18206	.00000	.00000	.26870E-01 -3.0082	-9111.0	9111.0
473	-.26335E-01 -9112.8 9111.0	-3.4992	-.17897	.00000	.00000	-.26332E-01 -3.4992	-9112.8	9112.7
474	.19030E-01 -9091.3 9090.0	-2.5930	-.96749E-01	.00000	.00000	.19031E-01 -2.5930	-9091.3	9091.3
475	-.20808E-01 -9090.0 9088.9	-2.1668	-.95060E-01	.00000	.00000	-.20807E-01 -2.1668	-9090.0	9090.0

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
476	SEQV .12188E-01 -9070.8 9069.8		-2.0185	-.37022E-01	.00000	.00000	.12188E-01 -2.0185		-9070.8	9070.
477	-.14994E-01 -9068.0 9067.4		-1.1463	-.36326E-01	.00000	.00000	-.14994E-01 -1.1463		-9068.0	9068
478	.68051E-02 -9049.8 9049.1		-1.4335	.68639E-03	.00000	.00000	.68051E-02 -1.4335		-9049.8	9049.8

479	-.98003E-02 -9046.6 9046.3	-.43333	.74466E-03	.00000	.00000	-.98003E-02 -.43333	-9046.6	9046.5
480	.29429E-02 -9028.5 9028.1	-.92097	.21277E-01	.00000	.00000	.29430E-02 -.92097	-9028.5	9028.5
481	-.56411E-02 -9025.4 9025.4	.15667E-01	.20977E-01	.00000	.00000	.15667E-01 -.56411E-02	-9025.4	9025.4
482	.43111E-03 -9007.0 9006.8	-.51670	.29724E-01	.00000	.00000	.43120E-03 -.51670	-9007.0	9007.0
483	-.26056E-02 -9004.5 9004.6	.25983	.29269E-01	.00000	.00000	.25983 -.26056E-02	-9004.5	9004.7
484	-.10042E-02 -8985.5 8985.4	-.22587	.30383E-01	.00000	.00000	-.10041E-02 -.22587	-8985.5	8985.5
485	-.59235E-03 -8983.5 8983.7	.35901	.29903E-01	.00000	.00000	.35901 -.59225E-03	-8983.5	8983.9
486	-.16571E-02 -8964.0 8963.9	-.36163E-01	.26681E-01	.00000	.00000	-.16570E-02 -.36163E-01	-8964.0	8964.0
487	.59109E-03 -8962.6 8962.8	.36539	.26252E-01	.00000	.00000	.36539 .59117E-03	-8962.6	8963.0
488	-.17936E-02 -8942.5 8942.5	.72723E-01	.21083E-01	.00000	.00000	.72723E-01 -.17936E-02	-8942.5	8942.6
489	.11611E-02 -8941.7 8941.8	.32003	.20739E-01	.00000	.00000	.32003 .11612E-02	-8941.7	8942.0
490	-.16287E-02 -8921.1 8921.1	.12272	.15193E-01	.00000	.00000	.12272 -.16286E-02	-8921.1	8921.2
491	.13185E-02 -8920.6 8920.7	.25236	.14942E-01	.00000	.00000	.25236 .13185E-02	-8920.6	8920.9
492	-.13204E-02 -8899.7 8899.8	.13373	.99315E-02	.00000	.00000	.13373 -.13204E-02	-8899.7	8899.8
493	.12285E-02 -8899.5 8899.6	.18150	.97645E-02	.00000	.00000	.18150 .12285E-02	-8899.5	8899.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
494	-.97475E-03 -8878.4 8878.5		.12189	.57174E-02	.00000	.00000	.12189	-.97474E-03	-8878.4	8878.5

HABGE-01/99-0745, Revision 2

495	.10149E-02 -8878.4 8878.5	.11836	.56191E-02 .00000	.00000	.11836	.10149E-02 -8878.4	8878.5
496	-.65483E-03 -8857.1 8857.2	.99091E-01	.26415E-02 .00000	.00000	.99091E-01	-.65483E-03 -8857.1	8857.2
497	.76198E-03 -8857.2 8857.3	.67905E-01	.25941E-02 .00000	.00000	.67905E-01	.76198E-03 -8857.2	8857.3
498	-.39180E-03 -8835.9 8835.9	.73338E-01	.60133E-03 .00000	.00000	.73338E-01	-.39180E-03 -8835.9	8835.9
499	.52139E-03 -8836.0 8836.0	.31152E-01	.58806E-03 .00000	.00000	.31152E-01	.52139E-03 -8836.0	8836.0
500	-.19514E-03 -8814.6 8814.7	.49407E-01	-.59808E-03 .00000	.00000	.49407E-01	-.19514E-03 -8814.6	8814.7
501	.31971E-03 -8814.8 8814.8	.68279E-02	-.59080E-03 .00000	.00000	.68279E-02	.31971E-03 -8814.8	8814.8
502	.00000 -8793.4 8793.4	.29674E-01	-.11759E-02 .00000	.00000	.29674E-01	.15718E-09 -8793.4	8793.5
503	.16634E-03 -8793.6 8793.6	-.74259E-02	-.11584E-02 .00000	.00000	.16634E-03	-.74259E-02 -8793.6	8793.6
504	.00000 -8772.2 8772.2	.14884E-01	-.13356E-02 .00000	.00000	.14884E-01	.20355E-09 -8772.2	8772.2
505	.00000 -8772.3 8772.3	-.14251E-01	-.13148E-02 .00000	.00000	.19673E-09	-.14251E-01 -8772.3	8772.3
506	.00000 -8751.0 8751.0	.47812E-02	-.12446E-02 .00000	.00000	.47812E-02	.17682E-09 -8751.0	8751.0
507	.00000 -8751.1 8751.1	-.16088E-01	-.12247E-02 .00000	.00000	.17100E-09	-.16088E-01 -8751.1	8751.1
508	.00000 -8729.8 8729.8	-.13991E-02	-.10282E-02 .00000	.00000	.12115E-09	-.13991E-02 -8729.8	8729.8
509	.00000 -8729.8 8729.8	-.14945E-01	-.10116E-02 .00000	.00000	.11727E-09	-.14945E-01 -8729.8	8729.8
510	.00000 -8708.6 8708.6	-.46016E-02	-.77209E-03 .00000	.00000	.68646E-10	-.46016E-02 -8708.6	8708.6
511	.00000 -8708.6 8708.6	-.12319E-01	-.75939E-03 .00000	.00000	.65746E-10	-.12319E-01 -8708.6	8708.6

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

HABGE-01/99-0745, Revision 2

D123

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
512	.00000 8687.4	-8687.4	-.57428E-02	-.52835E-03	.00000	.00000	.31828E-10	-.57428E-02	-8687.4	8687.4
513	.00000 8687.4	-8687.4	-.92316E-02	-.51953E-03	.00000	.00000	.30864E-10	-.92316E-02	-8687.4	8687.4
514	.00000 8666.1	-8666.1	-.56007E-02	-.32401E-03	.00000	.00000	.12508E-10	-.56007E-02	-8666.1	8666.1
515	.00000 8666.1	-8666.1	-.63038E-02	-.31850E-03	.00000	.00000	.11546E-10	-.63038E-02	-8666.1	8666.1
516	.00000 8644.9	-8644.9	-.47739E-02	-.16861E-03	.00000	.00000	.28793E-11	-.47739E-02	-8644.9	8644.9
517	.00000 8644.9	-8644.9	-.38550E-02	-.16566E-03	.00000	.00000	.28793E-11	-.38550E-02	-8644.9	8644.9
518	.00000 8623.7	-8623.7	-.36820E-02	.00000	.00000	.00000	.00000	-.36820E-02	-8623.7	8623.7
519	.00000 8623.7	-8623.7	-.19965E-02	.00000	.00000	.00000	.00000	-.19965E-02	-8623.7	8623.7
520	.00000 8602.5	-8602.5	-.25908E-02	.00000	.00000	.00000	.00000	-.25908E-02	-8602.5	8602.5
521	.00000 8602.5	-8602.5	-.71014E-03	.00000	.00000	.00000	.00000	-.71014E-03	-8602.5	8602.5
522	.00000 8581.2	-8581.2	-.16458E-02	.00000	.00000	.00000	.00000	-.16458E-02	-8581.2	8581.2
523	.00000 8581.2	-8581.2	.90335E-04	.00000	.00000	.00000	.90335E-04	.00000	-8581.2	8581.2
524	.00000 8560.0	-8560.0	-.90748E-03	.00000	.00000	.00000	.00000	-.90748E-03	-8560.0	8560.0
525	.00000 8560.0	-8560.0	.51729E-03	.00000	.00000	.00000	.51729E-03	.00000	-8560.0	8560.0
526	.00000 8538.8	-8538.8	-.38117E-03	.00000	.00000	.00000	.00000	-.38117E-03	-8538.8	8538.8
527	.00000 8538.8	-8538.8	.68229E-03	.00000	.00000	.00000	.68229E-03	.00000	-8538.8	8538.8
528	.00000 8517.6	-8517.6	.00000	.00000	.00000	.00000	.00000	.00000	-8517.6	8517.6
529	.00000 8517.6	-8517.6	.68154E-03	.00000	.00000	.00000	.68154E-03	.00000	-8517.6	8517.6

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

HABCE-01/99-0745, Revision 2

0124

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
530	.00000 8496.3	-8496.3	.15030E-03	.00000	.00000	.00000	.15030E-03	.00000	-8496.3	8496.3
531	.00000 8496.3	-8496.3	.59000E-03	.00000	.00000	.00000	.59000E-03	.00000	-8496.3	8496.3
532	.00000 8475.1	-8475.1	.23542E-03	.00000	.00000	.00000	.23542E-03	.00000	-8475.1	8475.1
533	.00000 8475.1	-8475.1	.46090E-03	.00000	.00000	.00000	.46090E-03	.00000	-8475.1	8475.1
534	.00000 8453.9	-8453.9	.25062E-03	.00000	.00000	.00000	.25062E-03	.00000	-8453.9	8453.9
535	.00000 8453.9	-8453.9	.32845E-03	.00000	.00000	.00000	.32845E-03	.00000	-8453.9	8453.9
536	.00000 8432.7	-8432.7	.22544E-03	.00000	.00000	.00000	.22544E-03	.00000	-8432.7	8432.7
537	.00000 8432.7	-8432.7	.21189E-03	.00000	.00000	.00000	.21189E-03	.00000	-8432.7	8432.7
538	.00000 8411.4	-8411.4	.18149E-03	.00000	.00000	.00000	.18149E-03	.00000	-8411.4	8411.4
539	.00000 8411.4	-8411.4	.11963E-03	.00000	.00000	.00000	.11963E-03	.00000	-8411.4	8411.4
540	.00000 8390.2	-8390.2	.13311E-03	.00000	.00000	.00000	.13311E-03	.00000	-8390.2	8390.2
541	.00000 8390.2	-8390.2	.00000	.00000	.00000	.00000	.00000	.00000	-8390.2	8390.2
542	.00000 8369.0	-8369.0	.88780E-04	.00000	.00000	.00000	.88780E-04	.00000	-8369.0	8369.0
543	.00000 8369.0	-8369.0	.00000	.00000	.00000	.00000	.00000	.00000	-8369.0	8369.0
544	.00000 8347.8	-8347.8	.00000	.00000	.00000	.00000	.00000	.00000	-8347.8	8347.8
545	.00000 8347.8	-8347.8	.00000	.00000	.00000	.00000	.00000	.00000	-8347.8	8347.8
546	.00000 8326.5	-8326.5	.00000	.00000	.00000	.00000	.00000	.00000	-8326.5	8326.5
547	.00000 8326.5	-8326.5	.00000	.00000	.00000	.00000	.00000	.00000	-8326.5	8326.5

HABGE-01/99-0745, Revision 2

596	.00000	-7795.9	.00000	.00000	.00000	.00000	.00000	.00000	-7795.9	7795.9
	7795.9									
597	.00000	-7795.9	.00000	.00000	.00000	.00000	.00000	.00000	-7795.9	7795.9
	7795.9									
598	.00000	-7774.7	.00000	.00000	.00000	.00000	.00000	.00000	-7774.7	7774.7
	7774.7									
599	.00000	-7774.7	.00000	.00000	.00000	.00000	.00000	.00000	-7774.7	7774.7
	7774.7									
600	.00000	-7753.5	.00000	.00000	.00000	.00000	.00000	.00000	-7753.5	7753.5
	7753.5									
601	.00000	-7753.5	.00000	.00000	.00000	.00000	.00000	.00000	-7753.5	7753.5
	7753.5									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SEQV	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
602	.00000	-7732.2	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7732.2	7732.2
	7732.2										
603	.00000	-7732.2	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7732.2	7732.2
	7732.2										
604	.00000	-7711.0	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7711.0	7711.0
	7711.0										
605	.00000	-7711.0	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7711.0	7711.0
	7711.0										
606	.00000	-7689.8	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7689.8	7689.8
	7689.8										
607	.00000	-7689.8	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7689.8	7689.8
	7689.8										
608	.00000	-7668.6	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7668.6	7668.6
	7668.6										
609	.00000	-7668.6	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7668.6	7668.6
	7668.6										
610	.00000	-7647.3	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7647.3	7647.3
	7647.3										
611	.00000	-7647.3	.00000	.00000	.00000	.00000	.00000	.00000	.00000	-7647.3	7647.3
	7647.3										

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
	SEQV									
548	.00000	-8305.3	.00000	.00000	.00000	.00000	.00000	.00000	-8305.3	8305.3
	8305.3									
549	.00000	-8305.3	.00000	.00000	.00000	.00000	.00000	.00000	-8305.3	8305.3
	8305.3									
550	.00000	-8284.1	.00000	.00000	.00000	.00000	.00000	.00000	-8284.1	8284.1
	8284.1									
551	.00000	-8284.1	.00000	.00000	.00000	.00000	.00000	.00000	-8284.1	8284.1
	8284.1									
552	.00000	-8262.9	.00000	.00000	.00000	.00000	.00000	.00000	-8262.9	8262.9
	8262.9									
553	.00000	-8262.9	.00000	.00000	.00000	.00000	.00000	.00000	-8262.9	8262.9
	8262.9									
554	.00000	-8241.6	.00000	.00000	.00000	.00000	.00000	.00000	-8241.6	8241.6
	8241.6									
555	.00000	-8241.6	.00000	.00000	.00000	.00000	.00000	.00000	-8241.6	8241.6
	8241.6									
556	.00000	-8220.4	.00000	.00000	.00000	.00000	.00000	.00000	-8220.4	8220.4
	8220.4									
557	.00000	-8220.4	.00000	.00000	.00000	.00000	.00000	.00000	-8220.4	8220.4
	8220.4									
558	.00000	-8199.2	.00000	.00000	.00000	.00000	.00000	.00000	-8199.2	8199.2
	8199.2									
559	.00000	-8199.2	.00000	.00000	.00000	.00000	.00000	.00000	-8199.2	8199.2
	8199.2									
560	.00000	-8178.0	.00000	.00000	.00000	.00000	.00000	.00000	-8178.0	8178.0
	8178.0									
561	.00000	-8178.0	.00000	.00000	.00000	.00000	.00000	.00000	-8178.0	8178.0
	8178.0									
562	.00000	-8156.7	.00000	.00000	.00000	.00000	.00000	.00000	-8156.7	8156.7
	8156.7									
563	.00000	-8156.7	.00000	.00000	.00000	.00000	.00000	.00000	-8156.7	8156.7
	8156.7									

564	.00000	-8135.5	.00000	.00000	.00000	.00000	.00000	.00000	-8135.5	8135.5
	8135.5									
565	.00000	-8135.5	.00000	.00000	.00000	.00000	.00000	.00000	-8135.5	8135.5
	8135.5									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
566	.00000	-8114.3	.00000	.00000	.00000	.00000	.00000	.00000	-8114.3	8114.3
	8114.3									
567	.00000	-8114.3	.00000	.00000	.00000	.00000	.00000	.00000	-8114.3	8114.3
	8114.3									
568	.00000	-8093.1	.00000	.00000	.00000	.00000	.00000	.00000	-8093.1	8093.1
	8093.1									
569	.00000	-8093.1	.00000	.00000	.00000	.00000	.00000	.00000	-8093.1	8093.1
	8093.1									
570	.00000	-8071.8	.00000	.00000	.00000	.00000	.00000	.00000	-8071.8	8071.8
	8071.8									
571	.00000	-8071.8	.00000	.00000	.00000	.00000	.00000	.00000	-8071.8	8071.8
	8071.8									
572	.00000	-8050.6	.00000	.00000	.00000	.00000	.00000	.00000	-8050.6	8050.6
	8050.6									
573	.00000	-8050.6	.00000	.00000	.00000	.00000	.00000	.00000	-8050.6	8050.6
	8050.6									
574	.00000	-8029.4	.00000	.00000	.00000	.00000	.00000	.00000	-8029.4	8029.4
	8029.4									
575	.00000	-8029.4	.00000	.00000	.00000	.00000	.00000	.00000	-8029.4	8029.4
	8029.4									
576	.00000	-8008.2	.00000	.00000	.00000	.00000	.00000	.00000	-8008.2	8008.2
	8008.2									
577	.00000	-8008.2	.00000	.00000	.00000	.00000	.00000	.00000	-8008.2	8008.2
	8008.2									
578	.00000	-7986.9	.00000	.00000	.00000	.00000	.00000	.00000	-7986.9	7986.9
	7986.9									
579	.00000	-7986.9	.00000	.00000	.00000	.00000	.00000	.00000	-7986.9	7986.9
	7986.9									

HABCE-01/99-0745, Revision 2

580	.00000	-7965.7	.00000	.00000	.00000	.00000	.00000	.00000	-7965.7	7965.7
	7965.7									
581	.00000	-7965.7	.00000	.00000	.00000	.00000	.00000	.00000	-7965.7	7965.7
	7965.7									
582	.00000	-7944.5	.00000	.00000	.00000	.00000	.00000	.00000	-7944.5	7944.5
	7944.5									
583	.00000	-7944.5	.00000	.00000	.00000	.00000	.00000	.00000	-7944.5	7944.5
	7944.5									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
584	.00000	-7923.3	.00000	.00000	.00000	.00000	.00000	.00000	-7923.3	7923.3
	7923.3									
585	.00000	-7923.3	.00000	.00000	.00000	.00000	.00000	.00000	-7923.3	7923.3
	7923.3									
586	.00000	-7902.0	.00000	.00000	.00000	.00000	.00000	.00000	-7902.0	7902.0
	7902.0									
587	.00000	-7902.0	.00000	.00000	.00000	.00000	.00000	.00000	-7902.0	7902.0
	7902.0									
588	.00000	-7880.8	.00000	.00000	.00000	.00000	.00000	.00000	-7880.8	7880.8
	7880.8									
589	.00000	-7880.8	.00000	.00000	.00000	.00000	.00000	.00000	-7880.8	7880.8
	7880.8									
590	.00000	-7859.6	.00000	.00000	.00000	.00000	.00000	.00000	-7859.6	7859.6
	7859.6									
591	.00000	-7859.6	.00000	.00000	.00000	.00000	.00000	.00000	-7859.6	7859.6
	7859.6									
592	.00000	-7838.4	.00000	.00000	.00000	.00000	.00000	.00000	-7838.4	7838.4
	7838.4									
593	.00000	-7838.4	.00000	.00000	.00000	.00000	.00000	.00000	-7838.4	7838.4
	7838.4									
594	.00000	-7817.1	.00000	.00000	.00000	.00000	.00000	.00000	-7817.1	7817.1
	7817.1									
595	.00000	-7817.1	.00000	.00000	.00000	.00000	.00000	.00000	-7817.1	7817.1
	7817.1									

612	.00000	-7626.1	.00000	.00000	.00000	.00000	.00000	.00000	-7626.1	7626.1
	7626.1									
613	.00000	-7626.1	.00000	.00000	.00000	.00000	.00000	.00000	-7626.1	7626.1
	7626.1									
614	.00000	-7604.9	.00000	.00000	.00000	.00000	.00000	.00000	-7604.9	7604.9
	7604.9									
615	.00000	-7604.9	.00000	.00000	.00000	.00000	.00000	.00000	-7604.9	7604.9
	7604.9									
616	.00000	-7583.7	.00000	.00000	.00000	.00000	.00000	.00000	-7583.7	7583.7
	7583.7									
617	.00000	-7583.7	.00000	.00000	.00000	.00000	.00000	.00000	-7583.7	7583.7
	7583.7									
618	.00000	-7562.4	.00000	.00000	.00000	.00000	.00000	.00000	-7562.4	7562.4
	7562.4									
619	.00000	-7562.4	.00000	.00000	.00000	.00000	.00000	.00000	-7562.4	7562.4
	7562.4									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	VSIM
620	.00000	-7541.2	.00000	.00000	.00000	.00000	.00000	.00000	-7541.2	7541.2
	7541.2									
621	.00000	-7541.2	.00000	.00000	.00000	.00000	.00000	.00000	-7541.2	7541.2
	7541.2									
622	.00000	-7520.0	.00000	.00000	.00000	.00000	.00000	.00000	-7520.0	7520.0
	7520.0									
623	.00000	-7520.0	.00000	.00000	.00000	.00000	.00000	.00000	-7520.0	7520.0
	7520.0									
624	.00000	-7498.8	.00000	.00000	.00000	.00000	.00000	.00000	-7498.8	7498.8
	7498.8									
625	.00000	-7498.8	.00000	.00000	.00000	.00000	.00000	.00000	-7498.8	7498.8
	7498.8									
626	.00000	-7477.5	-.98061E-04	.00000	.00000	.00000	.00000	-.98061E-04	-7477.5	7477.5
	7477.5									
627	.00000	-7477.5	.00000	.00000	.00000	.00000	.00000	.00000	-7477.5	7477.5
	7477.5									

HABGE-01/99-0745, Revision 2

628	.00000 7456.3	-7456.3	-.13792E-03	.00000	.00000	.00000	.00000	-.13792E-03	-7456.3	7456.3
629	.00000 7456.3	-7456.3	-.78756E-04	.00000	.00000	.00000	.00000	-.78756E-04	-7456.3	7456.3
630	.00000 7435.1	-7435.1	-.17698E-03	.00000	.00000	.00000	.00000	-.17698E-03	-7435.1	7435.1
631	.00000 7435.1	-7435.1	-.14850E-03	.00000	.00000	.00000	.00000	-.14850E-03	-7435.1	7435.1
632	.00000 7413.9	-7413.9	-.20504E-03	.00000	.00000	.00000	.00000	-.20504E-03	-7413.9	7413.9
633	.00000 7413.9	-7413.9	-.23945E-03	.00000	.00000	.00000	.00000	-.23945E-03	-7413.9	7413.9
634	.00000 7392.6	-7392.6	-.20620E-03	.00000	.00000	.00000	.00000	-.20620E-03	-7392.6	7392.6
635	.00000 7392.6	-7392.6	-.34690E-03	.00000	.00000	.00000	.00000	-.34690E-03	-7392.6	7392.6
636	.00000 7371.4	-7371.4	-.15806E-03	.00000	.00000	.00000	.00000	-.15806E-03	-7371.4	7371.4
637	.00000 7371.4	-7371.4	-.45823E-03	.00000	.00000	.00000	.00000	-.45823E-03	-7371.4	7371.4

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
638	.00000 7350.2	-7350.2	.00000	.00000	.00000	.00000	.00000	.00000	-7350.2	7350.
639	.00000 7350.2	-7350.2	-.54950E-03	.00000	.00000	.00000	.00000	-.54950E-03	-7350.2	7350.
640	.00000 7329.0	-7329.0	.20632E-03	.00000	.00000	.00000	.20632E-03	.00000	-7329.0	7329.
641	.00000 7329.0	-7329.0	-.58193E-03	.00000	.00000	.00000	.00000	-.58193E-03	-7329.0	7329.
642	.00000 7307.7	-7307.7	.59005E-03	.00000	.00000	.00000	.59005E-03	.00000	-7307.7	7307.
643	.00000 7307.7	-7307.7	-.49918E-03	.00000	.00000	.00000	.00000	-.49918E-03	-7307.7	7307.

644	.00000	-7286.5	.11458E-02	.00000	.00000	.00000	.11458E-02	.00000	-7286.5	7286.5
	7286.5									
645	.00000	-7286.5	-.22659E-03	.00000	.00000	.00000	.00000	-.22659E-03	-7286.5	7286.5
	7286.5									
646	.00000	-7265.3	.18798E-02	.00000	.00000	.00000	.18798E-02	.00000	-7265.3	7265.3
	7265.3									
647	.00000	-7265.3	.32566E-03	.00000	.00000	.00000	.32566E-03	.00000	-7265.3	7265.3
	7265.3									
648	.00000	-7244.1	.27597E-02	.00000	.00000	.00000	.27597E-02	.00000	-7244.1	7244.1
	7244.1									
649	.00000	-7244.1	.12532E-02	.00000	.00000	.00000	.12532E-02	.00000	-7244.1	7244.1
	7244.1									
650	.00000	-7222.8	.36912E-02	-.10613E-03	.00000	.00000	.36912E-02	.12028E-11	-7222.8	7222.8
	7222.8									
651	.00000	-7222.8	.26387E-02	-.10424E-03	.00000	.00000	.26387E-02	.16038E-11	-7222.8	7222.8
	7222.8									
652	.00000	-7201.6	.44896E-02	-.22206E-03	.00000	.00000	.44896E-02	.71959E-11	-7201.6	7201.6
	7201.6									
653	.00000	-7201.6	.45215E-02	-.21826E-03	.00000	.00000	.45215E-02	.63963E-11	-7201.6	7201.6
	7201.6									
654	.00000	-7180.4	.48506E-02	-.37928E-03	.00000	.00000	.48506E-02	.19930E-10	-7180.4	7180.4
	7180.4									
655	.00000	-7180.4	.68521E-02	-.37292E-03	.00000	.00000	.68521E-02	.19132E-10	-7180.4	7180.4
	7180.4									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
656	.00000	-7159.2	.43262E-02	-.57347E-03	.00000	.00000	.43262E-02	.46100E-10	-7159.2	7159.
	7159.2									
657	.00000	-7159.2	.94307E-02	-.56399E-03	.00000	.00000	.94307E-02	.44510E-10	-7159.2	7159.
	7159.2									
658	.00000	-7138.0	.23153E-02	-.78770E-03	.00000	.00000	.23153E-02	.86776E-10	-7138.0	7138.
	7138.0									
659	.00000	-7137.9	.11833E-01	-.77486E-03	.00000	.00000	.11833E-01	.84398E-10	-7137.9	7137.
	7137.9									

660	.00000	-7116.7	-.19156E-02	-.98625E-03	.00000	.00000	.13669E-09	-.19156E-02	-7116.7	7116.7
	7116.7									
661	.00000	-7116.7	.13328E-01	-.97041E-03	.00000	.00000	.13328E-01	.13195E-09	-7116.7	7116.7
	7116.7									
662	.00000	-7095.5	-.91626E-02	-.11078E-02	.00000	.00000	.17331E-09	-.91626E-02	-7095.5	7095.5
	7095.5									
663	.00000	-7095.5	.12803E-01	-.10904E-02	.00000	.00000	.12803E-01	.16779E-09	-7095.5	7095.5
	7095.5									
664	.00000	-7074.3	-.20142E-01	-.10593E-02	.00000	.00000	.15865E-09	-.20142E-01	-7074.3	7074.3
	7074.3									
665	-.10470E-03	-7074.2	.87263E-02	-.10432E-02	.00000	.00000	.87263E-02	-.10470E-03	-7074.2	7074.2
	7074.2									
666	.11961E-03	-7053.1	-.35249E-01	-.71269E-03	.00000	.00000	.11961E-03	-.35249E-01	-7053.1	7053.1
	7053.1									
667	-.21910E-03	-7053.0	-.83498E-03	-.70287E-03	.00000	.00000	-.21910E-03	-.83498E-03	-7053.0	7053.0
	7053.0									
668	.26546E-03	-7031.9	-.54199E-01	.93116E-04	.00000	.00000	.26546E-03	-.54199E-01	-7031.9	7031.9
	7031.8									
669	-.37428E-03	-7031.8	-.18064E-01	.88988E-04	.00000	.00000	-.37428E-03	-.18064E-01	-7031.8	7031.8
	7031.7									
670	.46666E-03	-7010.6	-.75536E-01	.15396E-02	.00000	.00000	.46666E-03	-.75536E-01	-7010.6	7010.6
	7010.6									
671	-.56595E-03	-7010.5	-.45073E-01	.15111E-02	.00000	.00000	-.56595E-03	-.45073E-01	-7010.5	7010.5
	7010.5									
672	.71972E-03	-6989.4	-.96023E-01	.38016E-02	.00000	.00000	.71972E-03	-.96023E-01	-6989.4	6989.4
	6989.3									
673	-.77743E-03	-6989.3	-.83329E-01	.37355E-02	.00000	.00000	-.77743E-03	-.83329E-01	-6989.3	6989.3
	6989.3									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
	SEQV									
674	.10056E-02	-6968.1	-.10996	.69988E-02	.00000	.00000	.10057E-02	-.10996	-6968.1	6968.
	6968.0									
675	-.97347E-03	-6968.2	-.13276	.68804E-02	.00000	.00000	-.97346E-03	-.13276	-6968.2	6968.
	6968.1									

676	.12818E-02 -6946.8 6946.7	-.10857	.11122E-01 .00000	.00000	.12818E-02 -.10857 -6946.8	6946.8
677	-.10936E-02 -6947.1 6947.0	-.19052	.10937E-01 .00000	.00000	-.10935E-02 -.19052 -6947.1	6947.1
678	.14727E-02 -6925.4 6925.4	-.79561E-01	.15928E-01 .00000	.00000	.14728E-02 -.79561E-01 -6925.4	6925.4
679	-.10459E-02 -6926.0 6925.9	-.24939	.15667E-01 .00000	.00000	-.10459E-02 -.24939 -6926.0	6926.0
680	.14618E-02 -6904.0 6904.0	-.72707E-02	.20807E-01 .00000	.00000	.14619E-02 -.72707E-02 -6904.0	6904.0
681	-.70399E-03 -6905.0 6904.8	-.29590	.20470E-01 .00000	.00000	-.70393E-03 -.29590 -6905.0	6905.0
682	.10855E-02 -6882.5 6882.6	.12631	.24629E-01 .00000	.00000	.12631 .10856E-02 -6882.5	6882.6
683	.91042E-04 -6884.0 6883.8	-.30857	.24238E-01 .00000	.00000	.91127E-04 -.30857 -6884.0	6884.0
684	.13473E-03 -6861.0 6861.2	.33906	.25594E-01 .00000	.00000	.33906 .13483E-03 -6861.0	6861.4
685	.15184E-02 -6863.0 6862.9	-.25644	.25197E-01 .00000	.00000	.15185E-02 -.25644 -6863.0	6863.0
686	-.16316E-02 -6839.6 6839.9	.64430	.21113E-01 .00000	.00000	.64430 -.16316E-02 -6839.6	6840.2
687	.37506E-02 -6842.0 6842.0	-.98869E-01	.20803E-01 .00000	.00000	.37507E-02 -.98869E-01 -6842.0	6842.0
688	-.44544E-02 -6818.2 6818.7	1.0437	.77957E-02 .00000	.00000	1.0437 -.44543E-02 -6818.2	6819.2
689	.69061E-02 -6820.9 6821.0	.21254	.77203E-02 .00000	.00000	.21254 .69062E-02 -6820.9	6821.1
690	-.85149E-02 -6797.1 6797.8	1.5176	-.18387E-01 .00000	.00000	1.5176 -.85149E-02 -6797.1	6798.
691	.10976E-01 -6799.6 6800.0	.72849	-.18016E-01 .00000	.00000	.72849 .10976E-01 -6799.6	6800.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SKY	SYZ	SXZ	S1	S2	S3	SIN1
------	------------	----	----	-----	-----	-----	----	----	----	------

692	-.13842E-01 -6776.3 6777.3	2.0114	-.61641E-01 .00000	.00000	2.0114	-.13842E-01 -6776.3	6778.3
693	.15720E-01 -6777.9 6778.7	1.4916	-.60547E-01 .00000	.00000	1.4916	.15720E-01 -6777.9	6779.4
694	-.20181E-01 -6756.1 6757.3	2.4215	-.12548 .00000	.00000	2.4215	-.20178E-01 -6756.1	6758.5
695	.20536E-01 -6755.7 6756.9	2.5193	-.12333 .00000	.00000	2.5193	.20539E-01 -6755.7	6758.2
696	-.26817E-01 -6736.8 6738.0	2.5788	-.21127 .00000	.00000	2.5788	-.26810E-01 -6736.8	6739.3
697	.24311E-01 -6732.6 6734.5	3.7788	-.20773 .00000	.00000	3.7788	.24318E-01 -6732.6	6736.4
698	-.32379E-01 -6718.4 6719.5	2.2369	-.31619 .00000	.00000	2.2369	-.32364E-01 -6718.4	6720.7
699	.25267E-01 -6708.5 6711.1	5.1539	-.31097 .00000	.00000	5.1539	.25282E-01 -6708.5	6713.6
700	-.34624E-01 -6701.2 6701.8	1.0680	-.43040 .00000	.00000	1.0680	-.34597E-01 -6701.2	6702.3
701	.20849E-01 -6683.2 6686.5	6.4045	-.42339 .00000	.00000	6.4045	.20876E-01 -6683.2	6689.6
702	-.30277E-01 -6685.2 6684.5	-1.3235	-.53368 .00000	.00000	-.30235E-01 -1.3235	-6685.2	6685.2
703	.77110E-02 -6656.9 6660.4	7.1232	-.52512 .00000	.00000	7.1232	.77524E-02 -6656.9	6664.0
704	-.14969E-01 -6669.9 6667.3	-5.3612	-.59189 .00000	.00000	-.14916E-01 -5.3612	-6669.9	6669.9
705	-.18123E-01 -6629.7 6633.0	6.6968	-.58258 .00000	.00000	6.6968	-.18072E-01 -6629.7	6636.4
706	.16590E-01 -6654.7 6649.0	-11.416	-.55370 .00000	.00000	.16636E-01 -11.416	-6654.7	6654.7
707	-.60809E-01 -6602.5 6604.6	4.2867	-.54531 .00000	.00000	4.2867	-.60764E-01 -6602.5	6606.6
708	.70094E-01 -6638.0 6628.2	-19.672	-.34908 .00000	.00000	.70112E-01 -19.672	-6638.0	6638.0
709	-.12380 -6576.8 6576.2	-1.1527	-.34439 .00000	.00000	-.12378 -1.1527	-6576.8	6576.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
710	.15052 6602.7	-6617.5	-29.928	.10912	.00000	.00000	.15052	-29.928	-6617.5	6617.7
711	-.20851 6549.3	-6554.8	-10.789	.10590	.00000	.00000	-.20850	-10.789	-6554.8	6554.6
712	.26059 6569.6	-6590.0	-41.332	.91792	.00000	.00000	.26072	-41.332	-6590.0	6590.3
713	-.31197 6526.9	-6539.8	-25.728	.90108	.00000	.00000	-.31185	-25.728	-6539.8	6539.5
714	.39726 6525.6	-6551.2	-52.046	2.1688	.00000	.00000	.39798	-52.046	-6551.2	6551.6
715	-.42506 6512.7	-6536.1	-46.694	2.1312	.00000	.00000	-.42437	-46.694	-6536.1	6535.7
716	.55141 6467.1	-6496.1	-58.892	3.9207	.00000	.00000	.55378	-58.892	-6496.1	6496.7
717	-.52575 6511.9	-6548.6	-73.534	3.8545	.00000	.00000	-.52348	-73.534	-6548.6	6548.1
718	.69121 6391.5	-6419.5	-57.016	6.1589	.00000	.00000	.69711	-57.016	-6419.5	6420.2
719	-.58810 6530.5	-6582.4	-104.55	6.0566	.00000	.00000	-.58253	-104.55	-6582.4	6581.9
720	.80303 6297.9	-6317.2	-39.689	8.7382	.00000	.00000	.81511	-39.689	-6317.2	6318.0
721	-.53245 6574.8	-6641.8	-135.59	8.5950	.00000	.00000	-.52133	-135.59	-6641.8	6641.3
722	.71609 6189.0	-6187.9	1.5539	11.311	.00000	.00000	1.5539	.73676	-6187.9	6189.
723	-.39800 6649.8	-6728.1	-159.16	11.128	.00000	.00000	-.37960	-159.16	-6728.1	6727.
724	.73767 6074.6	-6035.6	76.474	13.242	.00000	.00000	76.474	.76672	-6035.6	6112.
725	.30558 6757.3	-6837.3	-163.23	13.032	.00000	.00000	.33042	-163.23	-6837.3	6837.
726	-.72661 5972.4	-5873.3	194.04	13.540	.00000	.00000	194.04	-.69539	-5873.4	6067.
727	.16500 6891.7	-6956.3	-131.25	13.331	.00000	.00000	.19054	-131.25	-6956.3	6956.

***** POST1 NODAL STRESS LISTING *****

HABCE-01/99-0745, Revision 2

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
728	1.7215 5917.8	-5727.4	362.53	10.763	.00000	.00000	362.53	1.7417	-5727.5	6090.0
729	4.9029 7041.9	-7059.0	-39.399	10.606	.00000	.00000	4.9188	-39.399	-7059.0	7064.0
730	-12.675 5945.1	-5641.5	575.99	3.1475	.00000	.00000	575.99	-12.673	-5641.5	6217.5
731	-6.4440 7165.9	-7102.2	131.85	3.1253	.00000	.00000	131.85	-6.4426	-7102.2	7234.0
732	32.990 6160.7	-5681.6	844.67	-11.776	.00000	.00000	844.67	33.015	-5681.6	6526.3
733	44.568 7267.0	-7020.0	433.72	-11.547	.00000	.00000	433.72	44.587	-7020.0	7453.7
734	-45.089 6371.0	-5730.8	1148.3	132.84	.00000	.00000	1148.3	-41.987	-5733.9	6882.2
735	47.999 6333.1	-5641.9	1179.3	-75.378	.00000	.00000	1179.3	48.997	-5642.9	6822.1
736	-13.527 6685.5	-5824.3	1478.0	-115.77	.00000	.00000	1478.0	-11.222	-5826.6	7304.6
737	-194.72 6447.8	-5655.2	1456.8	61.241	.00000	.00000	1456.8	-194.03	-5655.9	7112.7
738	-222.43 6007.7	-5082.3	1594.8	-337.02	.00000	.00000	1594.8	-199.17	-5105.5	6700.
739	-105.19 8463.0	-7904.8	1091.2	-92.598	.00000	.00000	1091.2	-104.09	-7905.9	8997.
740	74.986 7236.9	-6258.7	1623.1	-136.23	.00000	.00000	1623.1	77.914	-6261.6	7884.
741	262.05 6143.1	-4729.6	2119.8	-179.13	.00000	.00000	2119.8	268.47	-4736.1	6855.
742	487.44 10285.	-9591.4	872.71	-235.47	.00000	.00000	872.71	492.94	-9596.9	10470
743	193.59 7381.0	-6262.1	1773.7	-188.31	.00000	.00000	1773.7	199.07	-6267.6	8041.
744	-97.851 4873.6	-2971.0	2649.0	-141.87	.00000	.00000	2649.0	-90.863	-2977.9	5626.

HABGE-01/99-0745, Revision 2

745 -857.36 -5942.7 1330.3 -249.18 .00000 .00000 1330.3 -845.18 -5954.9 7285.2
6477.5

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
746	-563.89 6053.0	-5220.6	1621.3	23.653	.00000	.00000	1621.3	-563.77	-5220.8	6842.1
747	-301.80 5224.5	-3904.5	2068.8	227.80	.00000	.00000	2068.8	-287.45	-3918.9	5987.6
748	1146.0 5846.8	-4211.9	2001.3	-233.68	.00000	.00000	2001.3	1156.2	-4222.1	6223.4
749	1082.3 6089.6	-4521.2	1896.3	-391.61	.00000	.00000	1896.3	1109.5	-4548.4	6444.8
750	887.78 5278.5	-3653.1	2092.1	-328.59	.00000	.00000	2092.1	911.43	-3676.7	5768.8
751	-2321.6 7395.1	-8698.3	-703.76	603.27	.00000	.00000	-703.76	-2265.0	-8754.8	8051.1
752	-2102.5 4597.5	-4709.5	547.25	370.70	.00000	.00000	547.25	-2050.9	-4761.1	5308.4
753	-1138.0 2943.3	-255.41	2145.1	28.098	.00000	.00000	2145.1	-254.51	-1138.9	3284.1
754	-979.85 3910.5	982.23	3458.0	-389.29	.00000	.00000	3458.0	1056.6	-1054.3	4512.
755	943.86 2534.3	1316.0	3643.6	-11.945	.00000	.00000	3643.6	1316.4	943.48	2700.
756	-893.56 3410.4	1673.9	2890.4	381.10	.00000	.00000	2890.4	1729.2	-948.94	3839.
757	13456. 13791.	-335.35	13456.	.00000	.00000	.00000	13456.	13456.	-335.35	13791
758	13516. 13175.	373.87	13423.	830.46	.00000	.00000	13568.	13423.	321.60	13246
759	13309. 13532.	-67.073	13260.	1270.6	.00000	.00000	13429.	13260.	-186.70	13615
760	13155. 13272.	6.8707	13258.	796.61	.00000	.00000	13258.	13203.	-41.218	13295.

HABGE-01/99-0745, Revision 2

761	12976. 13109.	-2.0715	13162.	568.78	.00000	.00000	13162.	13001.	-26.951	13189.
762	12763. 12927.	-2.2715	13039.	431.01	.00000	.00000	13039.	12778.	-16.808	13055.
763	12512. 12722.	-2.8487	12891.	333.83	.00000	.00000	12891.	12521.	-11.747	12902.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
764	12213. 12483.	-2.4475	12716.	260.93	.00000	.00000	12716.	12219.	-8.0183	12724.
765	11867. 12211.	-2.3350	12515.	203.40	.00000	.00000	12515.	11870.	-5.8197	12521.
766	11475. 11908.	-2.1846	12288.	156.11	.00000	.00000	12288.	11477.	-4.3074	12292.
767	11039. 11573.	-2.1656	12035.	115.89	.00000	.00000	12035.	11040.	-3.3818	12038.
768	10558. 11208.	-2.1699	11756.	80.716	.00000	.00000	11756.	10559.	-2.7868	11759.
769	10033. 10815.	-2.1927	11452.	49.272	.00000	.00000	11452.	10033.	-2.4346	11454.
770	9462.9 10394.	-2.2185	11122.	20.665	.00000	.00000	11122.	9462.9	-2.2636	11124.
771	8847.5 9948.4	-2.2427	10766.	-5.7301	.00000	.00000	10766.	8847.5	-2.2464	10768.
772	8186.8 9480.5	-2.2615	10384.	-30.361	.00000	.00000	10384.	8186.9	-2.3741	10386.
773	7480.4 8994.2	-2.2677	9975.6	-53.548	.00000	.00000	9975.6	7480.8	-2.6509	9978.
774	6728.4 8495.1	-2.2482	9541.5	-75.513	.00000	.00000	9541.5	6729.2	-3.0953	9544.
775	5931.0 7990.5	-2.1842	9081.4	-96.385	.00000	.00000	9081.4	5932.5	-3.7496	9085
776	5088.9 7490.4	-2.0561	8595.5	-116.21	.00000	.00000	8595.5	5091.6	-4.7075	8600.

777	4203.5 7008.5	-1.8583	8084.1	-134.99	.00000	.00000	8084.1	4207.8	-6.1868	8090.3
778	3276.5 6562.4	-1.6206	7548.0	-152.71	.00000	.00000	7548.0	3283.6	-8.7191	7556.8
779	2310.0 6174.6	-1.4595	6988.0	-169.50	.00000	.00000	6988.0	2322.3	-13.823	7001.8
780	1304.9 5871.7	-1.5234	6404.3	-185.76	.00000	.00000	6404.3	1330.8	-27.424	6431.7
781	259.14 5683.4	-2.2250	5796.5	-202.39	.00000	.00000	5796.5	369.37	-112.46	5909.0

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
782	-833.99 5640.5	-3.2882	5162.7	-220.56	.00000	.00000	5162.7	51.643	-888.92	6051.6
783	-1986.6 5771.5	-5.3632	4498.7	-241.25	.00000	.00000	4498.7	23.589	-2015.6	6514.3
784	-3211.1 6097.3	-4.6549	3801.1	-264.05	.00000	.00000	3801.1	16.944	-3232.7	7033.8
785	-4508.7 6617.8	-6.7194	3066.9	-283.83	.00000	.00000	3066.9	11.104	-4526.6	7593.5
786	-5798.3 7271.8	22.814	2330.0	-283.06	.00000	.00000	2330.0	36.546	-5812.0	8142.1
787	-7233.6 8102.1	-38.936	1512.0	-325.94	.00000	.00000	1512.0	-24.200	-7248.3	8760.1
788	-8292.0 8753.3	26.517	825.41	-215.38	.00000	.00000	825.41	32.090	-8297.5	9122.1
789	-8413.7 8940.9	492.69	548.37	198.73	.00000	.00000	548.37	497.12	-8418.1	8966.1
790	-8011.2 7876.2	-641.24	230.31	422.41	.00000	.00000	230.31	-617.11	-8035.3	8265.1
791	-7624.0 7823.6	63.696	327.67	-51.570	.00000	.00000	327.67	64.042	-7624.4	7952.1
792	6326.2 6502.2	-176.05	6326.2	.00000	.00000	.00000	6326.2	6326.2	-176.05	6502.1

793	6368.4 6112.9	245.06	6301.4	-304.55	.00000	.00000	6383.6	6301.4	229.95	6153.6
794	6265.5 6357.5	-62.216	6208.1	-496.07	.00000	.00000	6304.1	6208.1	-100.87	6405.0
795	6215.9 6255.5	5.4139	6245.5	-354.30	.00000	.00000	6245.5	6236.0	-14.733	6260.3
796	6154.6 6206.5	-1.6482	6215.4	-284.89	.00000	.00000	6215.4	6167.8	-14.803	6230.2
797	6086.5 6152.0	-4.4718	6176.9	-250.57	.00000	.00000	6176.9	6096.8	-14.762	6191.7
798	6002.5 6084.6	-4.3465	6128.8	-234.88	.00000	.00000	6128.8	6011.7	-13.516	6142.3
799	5903.0 6006.2	-4.2919	6071.3	-228.18	.00000	.00000	6071.3	5911.8	-13.092	6084.4

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
800	SEQV 5788.1 5916.4	-3.9827	6004.8	-226.56	.00000	.00000	6004.8	5796.9	-12.831	6017.6
801	5657.8 5815.6	-3.8165	5929.3	-228.16	.00000	.00000	5929.3	5666.9	-12.997	5942.3
802	5512.5 5704.1	-3.7764	5845.1	-232.13	.00000	.00000	5845.1	5522.3	-13.527	5858.
803	5352.4 5582.2	-3.7836	5752.3	-237.92	.00000	.00000	5752.3	5363.0	-14.331	5766.
804	5177.4 5450.0	-3.8169	5650.9	-245.13	.00000	.00000	5650.9	5189.0	-15.389	5666.
805	4987.4 5308.0	-3.8564	5540.9	-253.49	.00000	.00000	5540.9	5000.3	-16.697	5557.
806	4782.4 5156.3	-3.8951	5422.3	-262.75	.00000	.00000	5422.3	4796.8	-18.276	5440.
807	4562.2 4995.6	-3.9270	5295.0	-272.73	.00000	.00000	5295.0	4578.4	-20.160	5315.
808	4326.8 4826.3	-3.9412	5159.0	-283.29	.00000	.00000	5159.0	4345.2	-22.394	5181.

809	4076.1 4649.2	-3.9175	5014.4	-294.27	.00000	.00000	5014.4	4097.3	-25.032	5039.4
810	3810.4 4465.4	-3.8256	4861.0	-305.49	.00000	.00000	4861.0	3834.7	-28.138	4889.2
811	3529.8 4276.1	-3.6330	4699.1	-316.74	.00000	.00000	4699.1	3558.0	-31.801	4730.9
812	3234.8 4083.2	-3.3250	4528.8	-327.79	.00000	.00000	4528.8	3267.7	-36.173	4565.0
813	2926.0 3888.8	-2.9431	4350.3	-338.47	.00000	.00000	4350.3	2964.6	-41.547	4391.8
814	2603.9 3695.6	-2.6444	4163.7	-348.80	.00000	.00000	4163.7	2649.8	-48.512	4212.2
815	2268.8 3507.1	-2.7047	3969.1	-359.26	.00000	.00000	3969.1	2324.2	-58.171	4027.2
816	1919.9 3327.6	-3.6000	3766.2	-370.97	.00000	.00000	3766.2	1988.9	-72.665	3838.8
817	1554.7 3161.9	-5.5217	3554.2	-385.56	.00000	.00000	3554.2	1644.8	-95.597	3649.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
818	1170.0 3016.6	-8.0613	3332.1	-404.11	.00000	.00000	3332.1	1295.3	-133.35	3465.
819	761.47 2899.0	-9.0300	3099.1	-426.05	.00000	.00000	3099.1	950.62	-198.18	3297.
820	337.62 2816.1	-9.5256	2857.1	-442.59	.00000	.00000	2857.1	639.45	-311.36	3168.
821	-127.44 2771.8	25.759	2608.9	-443.88	.00000	.00000	2608.9	399.60	-501.28	3110.
822	-474.54 2752.4	-20.423	2365.6	-444.55	.00000	.00000	2365.6	251.70	-746.67	3112.
823	-1053.3 2840.0	-81.533	2053.6	-403.27	.00000	.00000	2053.6	64.022	-1198.8	3252.
824	-1355.9 2966.4	674.05	2042.2	99.609	.00000	.00000	2042.2	678.92	-1360.8	3403.

HABGE-01/99-0745, Revision 2

D142

825	-725.96 2735.4	77.496	1982.3	747.95	.00000	.00000	1982.3	524.77	-1173.2	3155.5
826	-125.99 2977.3	-1314.4	1706.2	799.47	.00000	.00000	1706.2	275.91	-1716.3	3422.6
827	853.50 11228.	-10584.	-764.50	1927.7	.00000	.00000	1169.7	-764.50	-10900.	12070..
828	195.85 6859.9	-5794.8	483.16	1767.0	.00000	.00000	678.19	483.16	-6277.2	6955.3
829	-463.55 4238.8	-2397.7	1289.2	1608.7	.00000	.00000	1289.2	446.41	-3307.7	4596.9
830	-784.49 842.62	58.134	-784.49	.00000	.00000	.00000	58.134	-784.49	-784.49	842.62
831	-771.78 935.60	20.882	-774.53	-285.68	.00000	.00000	113.11	-774.53	-864.01	977.12
832	-737.94 1102.4	-62.369	-766.82	-496.14	.00000	.00000	200.06	-766.82	-1000.4	1200.4
833	-707.28 956.42	12.313	-727.98	-356.65	.00000	.00000	159.13	-727.98	-854.09	1013.2
834	-647.43 833.35	-3.9850	-703.58	-283.53	.00000	.00000	103.12	-703.58	-754.54	857.66
835	-574.39 754.66	-5.8274	-661.92	-250.88	.00000	.00000	89.042	-661.92	-669.26	758.30

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
836	-490.75 688.63	-6.5044	-613.12	-234.86	.00000	.00000	88.691	-585.95	-613.12	701.1
837	-390.71 627.79	-6.3004	-555.00	-228.18	.00000	.00000	99.840	-496.85	-555.00	654.1
838	-275.24 573.81	-5.7381	-488.02	-226.57	.00000	.00000	123.12	-404.10	-488.02	611.1
839	-144.51 533.38	-5.5055	-412.40	-228.16	.00000	.00000	163.50	-313.52	-412.40	575.1
840	1.1137 517.67	-5.4226	-328.19	-232.13	.00000	.00000	230.00	-234.31	-328.19	558.1

841	161.52 537.57	-5.4360	-235.43	-237.92	.00000	.00000	330.18	-174.09	-235.43	565.61
842	336.77 598.31	-5.4867	-134.10	-245.13	.00000	.00000	464.60	-133.31	-134.10	598.70
843	526.96 697.57	-5.5497	-24.180	-253.49	.00000	.00000	628.33	-24.180	-106.92	735.25
844	732.18 829.26	-5.6127	94.374	-262.75	.00000	.00000	816.19	94.374	-89.618	905.80
845	952.53 987.51	-5.6661	221.60	-272.73	.00000	.00000	1024.7	221.60	-77.856	1102.6
846	1188.1 1168.0	-5.6918	357.53	-283.29	.00000	.00000	1251.9	357.53	-69.508	1321.4
847	1438.8 1367.7	-5.6562	502.18	-294.27	.00000	.00000	1496.4	502.18	-63.305	1559.7
848	1704.6 1584.6	-5.5072	655.54	-305.49	.00000	.00000	1757.5	655.54	-58.440	1816.0
849	1985.3 1817.2	-5.1893	817.56	-316.74	.00000	.00000	2034.5	817.56	-54.377	2088.8
850	2280.3 2064.2	-4.6696	988.09	-327.79	.00000	.00000	2326.4	988.09	-50.763	2377.2
851	2589.2 2324.5	-4.0175	1166.9	-338.47	.00000	.00000	2632.7	1166.9	-47.467	2680.2
852	2911.3 2597.5	-3.4656	1353.7	-348.81	.00000	.00000	2952.5	1353.7	-44.625	2997.1
853	3246.5 2883.5	-3.5391	1548.1	-359.28	.00000	.00000	3285.7	1548.1	-42.782	3328.6

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
854	3595.4 3183.8	-4.8758	1750.3	-370.96	.00000	.00000	3633.2	1750.3	-42.701	3675
855	3960.7 3501.6	-8.2981	1960.7	-385.51	.00000	.00000	3997.8	1960.7	-45.396	4043
856	4345.3 3838.1	-12.210	2180.9	-404.17	.00000	.00000	4382.5	2180.9	-49.381	4431

857	4756.1 4198.0	-15.825	2413.3	-425.41	.00000	.00000	4793.7	2413.3	-53.453	4847.1
858	5181.1 4562.3	-11.342	2657.3	-442.81	.00000	.00000	5218.6	2657.3	-48.834	5267.4
859	5619.0 4903.7	29.891	2919.9	-450.58	.00000	.00000	5655.1	2919.9	-6.2003	5661.3
860	6067.7 5322.2	-19.704	3163.2	-414.10	.00000	.00000	6095.7	3163.2	-47.744	6143.5
861	6494.7 5668.1	18.288	3430.5	-461.63	.00000	.00000	6527.4	3430.5	-14.450	6541.9
862	4726.6 4095.7	333.80	3123.8	-806.19	.00000	.00000	4869.9	3123.8	190.52	4679.3
863	2987.2 919.40	2265.1	3172.6	-227.73	.00000	.00000	3172.6	3053.0	2199.3	973.32
864	3245.8 6519.5	-3909.2	1412.0	596.55	.00000	.00000	3295.2	1412.0	-3958.6	7253.9
865	731.29 3749.6	-2290.9	1142.8	1082.1	.00000	.00000	1142.8	1078.8	-2638.4	3781.2
866	879.21 7114.3	-6386.5	-38.477	1102.8	.00000	.00000	1042.9	-38.477	-6550.2	7593.1
867	1031.4 9795.7	-9378.7	-873.05	1123.1	.00000	.00000	1151.2	-873.05	-9498.5	10650.
868	-7846.7 7979.8	133.02	-7846.7	.00000	.00000	.00000	133.02	-7846.7	-7846.7	7979.8
869	-7896.1 7821.9	-67.510	-7826.6	380.29	.00000	.00000	-49.080	-7826.6	-7914.6	-7865.5
870	-7818.8 7805.1	-78.289	-7833.9	543.72	.00000	.00000	-40.282	-7833.9	-7856.8	7816.5
871	-7650.2 7736.0	18.544	-7743.8	320.91	.00000	.00000	31.950	-7663.6	-7743.8	7775.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
872	-7459.9 7557.6	-7.3446	-7647.0	221.13	.00000	.00000	-.78908	-7466.5	-7647.0	7646.

873	-7254.6 7391.3	-6.3625	-7524.0	151.93	.00000	.00000	-3.1793	-7257.8	-7524.0	7520.8
874	-7000.6 7188.9	-8.5551	-7375.3	102.41	.00000	.00000	-7.0556	-7002.1	-7375.3	7368.2
875	-6700.9 6956.8	-8.0168	-7200.1	62.901	.00000	.00000	-7.4256	-6701.5	-7200.1	7192.7
876	-6354.1 6692.4	-7.4107	-6998.5	30.313	.00000	.00000	-7.2659	-6354.3	-6998.5	6991.2
877	-5962.0 6397.8	-7.1361	-6771.0	2.3912	.00000	.00000	-7.1352	-5962.0	-6771.0	6763.9
878	-5525.4 6075.8	-7.0320	-6517.9	-22.380	.00000	.00000	-6.9412	-5525.5	-6517.9	6510.9
879	-5044.4 5729.5	-7.0500	-6239.2	-44.927	.00000	.00000	-6.6493	-5044.8	-6239.2	6232.5
880	-4518.8 5363.0	-7.1107	-5934.8	-65.861	.00000	.00000	-6.1495	-4519.8	-5934.8	5928.7
881	-3948.5 4982.7	-7.1877	-5604.8	-85.583	.00000	.00000	-5.3301	-3950.3	-5604.8	5599.4
882	-3333.0 4597.3	-7.2651	-5248.9	-104.37	.00000	.00000	-3.9931	-3336.3	-5248.9	5244.9
883	-2672.1 4220.5	-7.3316	-4867.0	-122.41	.00000	.00000	-1.7207	-2677.7	-4867.0	4865.3
884	-1965.6 3872.2	-7.3652	-4459.1	-139.83	.00000	.00000	2.5687	-1975.5	-4459.1	4461.6
885	-1213.5 3581.1	-7.3254	-4025.0	-156.71	.00000	.00000	12.702	-1233.5	-4025.0	4037.7
886	-416.02 3385.2	-7.1483	-3564.9	-173.06	.00000	.00000	56.268	-479.43	-3564.9	3621.1
887	426.13 3325.9	-6.7661	-3078.8	-188.85	.00000	.00000	496.94	-77.571	-3078.8	3575.
888	1311.7 3434.5	-6.1357	-2567.2	-204.00	.00000	.00000	1342.5	-36.992	-2567.2	3909.
889	2238.8 3718.6	-5.3407	-2030.9	-218.44	.00000	.00000	2259.9	-26.405	-2030.9	4290

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

HABGE-01/99-0745, Revision 2

D 146

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
325	-502.34 622.54	-1128.9	-511.88	-17.146	.00000	.00000	-501.87	-511.88	-1129.4	627.49
326	-507.74 621.28	-1131.9	-514.82	-16.269	.00000	.00000	-507.32	-514.82	-1132.3	625.00
327	-511.07 627.90	-1143.0	-520.23	-14.425	.00000	.00000	-510.74	-520.23	-1143.3	632.59
328	-509.93 647.52	-1166.2	-528.45	-10.950	.00000	.00000	-509.74	-528.45	-1166.4	656.67
329	-500.91 686.57	-1205.9	-539.38	-5.1504	.00000	.00000	-500.87	-539.38	-1205.9	705.02
330	-480.95 751.81	-1266.1	-552.91	3.0164	.00000	.00000	-480.94	-552.91	-1266.1	785.20
331	-452.62 840.44	-1344.8	-568.55	10.568	.00000	.00000	-452.49	-568.55	-1344.9	892.44
332	-444.67 928.46	-1439.7	-596.49	3.2655	.00000	.00000	-444.66	-596.49	-1439.7	995.02
333	-557.48 890.00	-1484.7	-652.19	-61.035	.00000	.00000	-553.48	-652.19	-1488.7	935.24
334	-874.66 717.96	-1484.9	-778.13	-157.98	.00000	.00000	-778.13	-836.19	-1523.4	745.22
335	-1101.2 714.05	-1617.7	-930.71	-204.88	.00000	.00000	-930.71	-1029.8	-1689.1	758.41
336	743.74 1875.8	-1132.1	743.74	.00000	.00000	.00000	743.74	743.74	-1132.1	1875.8
337	752.13 1882.8	-1133.1	747.08	-10.132	.00000	.00000	752.18	747.08	-1133.2	1885.
338	767.51 1809.3	-1036.7	771.20	-62.944	.00000	.00000	771.20	769.70	-1038.9	1810.
339	761.24 1810.5	-1040.7	762.40	-98.179	.00000	.00000	766.58	762.40	-1046.0	1812.
340	761.33 1756.8	-981.91	778.91	-74.078	.00000	.00000	778.91	764.47	-985.05	1764.
341	776.85 1716.8	-927.48	794.63	-63.506	.00000	.00000	794.63	779.21	-929.85	1724.
342	900.02 1736.0	-852.57	850.52	-94.009	.00000	.00000	905.05	850.52	-857.60	1762.

***** POST1 NODAL STRESS LISTING *****

HABCE-01/99-0745, Revision 2

D 147

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
890	3205.5 4162.0	-4.6504	-1470.6	-232.25	.00000	.00000	3222.3	-21.366	-1470.6	4692.8
891	4210.9 4738.2	-4.7173	-886.95	-245.79	.00000	.00000	4225.2	-19.000	-886.95	5112.2
892	5256.8 5423.8	-6.2964	-279.87	-259.87	.00000	.00000	5269.6	-19.097	-279.87	5549.5
893	6349.6 6205.0	-10.371	352.33	-275.65	.00000	.00000	6361.5	352.33	-22.296	6383.8
894	7502.3 7077.8	-15.312	1014.4	-294.42	.00000	.00000	7513.9	1014.4	-26.825	7540.7
895	8722.0 8036.7	-19.857	1709.6	-313.82	.00000	.00000	8733.3	1709.6	-31.108	8764.4
896	10017. 9072.9	-12.537	2444.4	-333.52	.00000	.00000	10028.	2444.4	-23.615	10052.
897	11362. 10139.	30.366	3219.1	-344.17	.00000	.00000	11372.	3219.1	19.922	11352.
898	12594. 11203.	-41.546	3939.3	-311.09	.00000	.00000	12602.	3939.3	-49.201	12651.
899	13955. 12121.	231.32	4804.7	-375.37	.00000	.00000	13965.	4804.7	221.06	13744.
900	18094. 16449.	-378.86	6265.1	-1623.9	.00000	.00000	18236.	6265.1	-520.52	18756.
901	9144.3 5250.5	4597.6	5320.0	-1794.2	.00000	.00000	9767.0	5320.0	3974.8	5792.2
902	3000.5 5362.9	-2476.0	1357.9	-1299.4	.00000	.00000	3293.2	1357.9	-2768.7	6061.9
903	1388.8 3571.8	-2326.5	929.63	-387.08	.00000	.00000	1428.7	929.63	-2366.4	3795.
904	997.83 6566.4	-6085.3	-305.50	-399.57	.00000	.00000	1020.3	-305.50	-6107.8	7128.
905	603.43 9626.5	-9890.0	-1548.7	-411.80	.00000	.00000	619.56	-1548.7	-9906.2	10526
906	4116.1 4124.8	-8.7007	4116.1	.00000	.00000	.00000	4116.1	4116.1	-8.7007	4124.
907	4100.9 4076.8	31.567	4115.9	-4.3726	.00000	.00000	4115.9	4100.9	31.562	4084.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

HABGE-01/99-0745, Revision 2

D 148

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
908	4070.7 3987.3	96.957	4033.3	291.48	.00000	.00000	4092.0	4033.3	75.691	4016.3
909	3984.7 4057.8	2.7298	3952.6	495.48	.00000	.00000	4045.5	3952.6	-57.996	4103.5
910	3913.9 3974.6	.34263	3941.4	352.70	.00000	.00000	3945.4	3941.4	-31.190	3976.6
911	3832.9 3899.6	-5.9784	3900.2	262.52	.00000	.00000	3900.2	3850.8	-23.847	3924.1
912	3737.6 3814.8	-7.1116	3844.6	197.89	.00000	.00000	3844.6	3748.1	-17.540	3862.1
913	3625.3 3717.5	-5.7713	3775.8	149.04	.00000	.00000	3775.8	3631.4	-11.878	3787.6
914	3495.2 3608.6	-5.0397	3693.7	110.02	.00000	.00000	3693.7	3498.6	-8.4947	3702.1
915	3348.1 3487.8	-4.6052	3599.6	77.290	.00000	.00000	3599.6	3349.9	-6.3860	3606.0
916	3184.0 3355.2	-4.4774	3493.9	48.962	.00000	.00000	3493.9	3184.7	-5.2291	3499.1
917	3002.7 3210.9	-4.4939	3376.8	23.825	.00000	.00000	3376.8	3002.9	-4.6827	3381.5
918	2804.3 3055.2	-4.5746	3248.4	1.0821	.00000	.00000	3248.4	2804.3	-4.5750	3252.9
919	2588.6 2888.9	-4.6755	3108.7	-19.822	.00000	.00000	3108.7	2588.8	-4.8270	3113.
920	2355.7 2713.1	-4.7766	2957.9	-39.284	.00000	.00000	2957.9	2356.4	-5.4302	2963.
921	2105.6 2529.3	-4.8619	2795.9	-57.594	.00000	.00000	2795.9	2107.1	-6.4325	2802.
922	1838.1 2340.0	-4.9013	2622.8	-74.966	.00000	.00000	2622.8	1841.2	-7.9455	2630.
923	1553.4 2148.5	-4.8374	2438.5	-91.562	.00000	.00000	2438.5	1558.8	-10.199	2448.
924	1251.5 1959.9	-4.5851	2243.1	-107.50	.00000	.00000	2243.1	1260.7	-13.719	2256.
925	932.45 1782.1	-4.0467	2036.7	-122.86	.00000	.00000	2036.7	948.30	-19.897	2056.

HABCE-01/99-0745, Revision 2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
926	596.37 1626.5	-3.1754	1819.4	-137.71	.00000	.00000	1819.4	626.49	-33.292	1852.7
927	243.50 1508.9	-2.0693	1591.2	-152.07	.00000	.00000	1591.2	316.17	-74.733	1665.9
928	-125.92 1448.5	-1.1535	1352.0	-166.00	.00000	.00000	1352.0	113.79	-240.87	1592.9
929	-511.78 1461.8	-1.2726	1101.7	-179.60	.00000	.00000	1101.7	55.582	-568.64	1670.3
930	-914.51 1555.8	-3.7580	839.47	-193.19	.00000	.00000	839.47	35.528	-953.80	1793.3
931	-1335.7 1725.8	-9.6894	564.43	-207.43	.00000	.00000	564.43	22.003	-1367.4	1931.8
932	-1779.5 1963.0	-18.925	274.91	-223.68	.00000	.00000	274.91	9.0493	-1807.5	2082.4
933	-2253.5 2264.8	-26.627	-30.408	-244.10	.00000	.00000	-1.18376	-30.408	-2279.9	-2279.9
934	-2769.7 2639.9	-22.605	-352.91	-271.22	.00000	.00000	3.9163	-352.91	-2796.2	2800.1
935	-3335.8 3096.8	4.3440	-692.42	-302.98	.00000	.00000	31.605	-692.42	-3363.1	3394.1
936	-3952.5 3628.8	52.589	-1051.2	-331.76	.00000	.00000	79.884	-1051.2	-3979.8	4059.1
937	-4839.7 4329.4	-14.043	-1571.6	-426.99	.00000	.00000	23.447	-1571.6	-4877.2	4900.1
938	-5971.5 5031.8	-366.57	-2322.4	-589.02	.00000	.00000	-305.34	-2322.4	-6032.8	5727.1
939	-6539.8 4441.4	-1713.4	-3170.0	-668.43	.00000	.00000	-1622.6	-3170.0	-6630.7	5008.1
940	2266.5 2266.2	.32848	2266.5	.00000	.00000	.00000	2266.5	2266.5	.32848	2266.1
941	2251.5 2234.7	24.100	2264.2	-36.787	.00000	.00000	2264.2	2252.1	23.492	2240.1

HABGE-01/99-0745, Revision 2

942	2223.9 2165.7	54.638	2194.1	-126.84	.00000	.00000	2231.3	2194.1	47.247	2184.1
943	2179.3 2179.1	13.365	2155.6	-189.81	.00000	.00000	2195.8	2155.6	-3.1432	2198.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
944	2139.6 2162.5	.68254	2149.1	-164.45	.00000	.00000	2152.2	2149.1	-11.888	2164.1
945	2095.6 2135.9	-6.4569	2128.2	-157.07	.00000	.00000	2128.2	2107.2	-18.128	2146.3
946	2043.0 2095.1	-5.2783	2099.9	-157.23	.00000	.00000	2099.9	2055.0	-17.277	2117.2
947	1979.9 2045.7	-4.4378	2062.2	-160.35	.00000	.00000	2062.2	1992.8	-17.311	2079.6
948	1908.2 1989.6	-3.6064	2017.5	-165.91	.00000	.00000	2017.5	1922.5	-17.899	2035.4
949	1826.9 1926.9	-3.2200	1965.8	-173.27	.00000	.00000	1965.8	1843.2	-19.481	1986.3
950	1736.2 1857.9	-3.0901	1907.6	-181.90	.00000	.00000	1907.6	1755.0	-21.911	1929.5
951	1635.8 1782.7	-3.1060	1842.8	-191.45	.00000	.00000	1842.8	1657.8	-25.174	1868.
952	1525.7 1701.9	-3.1848	1771.8	-201.68	.00000	.00000	1771.8	1551.9	-29.342	1801.
953	1406.1 1615.9	-3.2840	1694.4	-212.44	.00000	.00000	1694.4	1437.4	-34.611	1729.
954	1276.8 1525.8	-3.3852	1610.8	-223.62	.00000	.00000	1610.8	1314.8	-41.320	1652.
955	1138.0 1432.6	-3.4716	1520.9	-235.12	.00000	.00000	1520.9	1184.5	-50.007	1570.
956	989.50 1338.2	-3.5127	1424.9	-246.90	.00000	.00000	1424.9	1047.5	-61.513	1486.
957	831.45 1244.8	-3.4505	1322.6	-258.90	.00000	.00000	1322.6	905.22	-77.215	1399.

958	663.81 1155.6	-3.1953	1214.2	-271.07	.00000	.00000	1214.2	760.08	-99.464	1313.7
959	486.56 1075.3	-2.6471	1099.7	-283.38	.00000	.00000	1099.7	616.30	-132.39	1232.1
960	299.68 1009.8	-1.7447	979.13	-295.77	.00000	.00000	979.13	480.92	-182.98	1162.1
961	103.17 966.81	-.58967	852.37	-308.18	.00000	.00000	852.37	363.80	-261.22	1113.6

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
962	-102.96 954.00	.41368	719.32	-320.57	.00000	.00000	719.32	273.44	-375.98	1095.3
963	-318.68 977.11	.33920	579.61	-332.97	.00000	.00000	579.61	210.04	-528.38	1108.0
964	-543.95 1037.7	-2.2058	432.75	-345.68	.00000	.00000	432.75	166.08	-712.24	1145.0
965	-779.21 1133.4	-8.8277	278.01	-359.56	.00000	.00000	278.01	132.91	-920.95	1199.0
966	-1025.9 1261.4	-19.837	114.75	-376.67	.00000	.00000	114.75	105.56	-1151.3	1266.0
967	-1288.4 1424.4	-32.168	-57.641	-400.88	.00000	.00000	84.852	-57.641	-1405.5	1490.1
968	-1574.9 1634.1	-35.862	-238.73	-436.99	.00000	.00000	79.563	-238.73	-1690.3	1769.1
969	-1898.4 1907.6	-17.427	-429.22	-485.01	.00000	.00000	100.27	-429.22	-2016.1	2116.1
970	-2248.3 2229.5	35.184	-621.60	-524.31	.00000	.00000	149.82	-621.60	-2362.9	2512.1
971	-2386.1 2329.2	47.233	-750.58	-519.35	.00000	.00000	153.45	-750.58	-2492.3	2645.1
972	-2113.1 1737.4	-338.93	-862.68	-418.64	.00000	.00000	-245.10	-862.68	-2206.9	1961.1
973	-1880.3 1212.3	-725.08	-946.65	-337.70	.00000	.00000	-633.61	-946.65	-1971.7	1338.1

974	-3216.8 4670.3	1813.3	450.13	-708.98	.00000	.00000	1911.4	450.13	-3314.8	5226.2
975	-3205.8 6582.4	4234.7	1100.7	-698.37	.00000	.00000	4299.7	1100.7	-3270.8	7570.5
976	-722.13 6751.8	-7876.2	-1785.0	-541.42	.00000	.00000	-681.38	-1785.0	-7917.0	7235.6
977	-703.59 5263.9	-6131.4	-1246.7	-547.84	.00000	.00000	-648.85	-1246.7	-6186.2	5537.3
978	-685.45 3686.9	-4237.3	-669.72	-554.01	.00000	.00000	-601.04	-669.72	-4321.8	3720.7
979	424.22 424.13	.90162E-01	424.22	.00000	.00000	.00000	424.22	424.22	.90162E-01	424.13

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
980	434.35 436.92	1.5027	428.35	-45.131	.00000	.00000	439.00	428.35	-3.1528	442.15
981	433.00 529.87	-37.617	418.83	-148.05	.00000	.00000	475.70	418.83	-80.316	556.01
982	405.87 520.09	41.039	427.18	-207.50	.00000	.00000	499.73	427.18	-52.825	552.56
983	409.67 531.37	-12.948	405.77	-187.42	.00000	.00000	480.81	405.77	-84.089	564.9
984	401.01 528.45	-9.5505	405.91	-190.32	.00000	.00000	475.66	405.91	-84.203	559.8
985	387.45 527.03	-8.5870	399.18	-196.74	.00000	.00000	468.58	399.18	-89.709	558.2
986	375.30 530.30	-7.4631	392.10	-206.56	.00000	.00000	465.50	392.10	-97.671	563.1
987	361.54 536.75	-6.7076	383.56	-219.01	.00000	.00000	463.54	383.56	-108.71	572.2
988	345.86 545.74	-6.3638	373.55	-233.28	.00000	.00000	462.04	373.55	-122.54	584.5
989	328.14 556.83	-6.2286	362.13	-248.82	.00000	.00000	460.72	362.13	-138.81	599.5

HABGE-01/99-0745, Revision 2

990	308.37 569.76	-6.2395	349.35	-265.25	.00000	.00000	459.45	349.35	-157.32	616.77
991	286.57 584.43	-6.3014	335.26	-282.34	.00000	.00000	458.20	335.26	-177.92	636.12
992	262.79 600.81	-6.3896	319.88	-299.94	.00000	.00000	456.95	319.88	-200.55	657.50
993	237.05 618.89	-6.4812	303.23	-317.92	.00000	.00000	455.73	303.23	-225.16	680.88
994	209.37 638.70	-6.5630	285.33	-336.22	.00000	.00000	454.54	285.33	-251.73	706.26
995	179.77 660.25	-6.6050	266.19	-354.79	.00000	.00000	453.40	266.19	-280.24	733.64
996	148.24 683.57	-6.5466	245.85	-373.57	.00000	.00000	452.35	245.85	-310.66	763.01
997	114.76 708.68	-6.3014	224.32	-392.56	.00000	.00000	451.43	224.32	-342.97	794.40

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
998	79.277 735.61	-5.7492	201.61	-411.71	.00000	.00000	450.67	201.61	-377.14	827.80
999	41.686 764.38	-4.8330	177.71	-431.00	.00000	.00000	450.06	177.71	-413.20	863.2
1000	1.8828 795.00	-3.5857	152.54	-450.36	.00000	.00000	449.52	152.54	-451.22	900.7
1001	-40.237 827.42	-2.4662	125.86	-469.71	.00000	.00000	448.74	125.86	-491.44	940.1
1002	-84.584 861.48	-2.3021	97.376	-488.96	.00000	.00000	447.24	97.376	-534.13	981.3
1003	-130.82 897.20	-5.0078	66.507	-508.27	.00000	.00000	444.24	66.507	-580.07	1024.
1004	-177.92 935.29	-12.514	32.982	-528.46	.00000	.00000	439.67	32.982	-630.11	1069.
1005	-224.57 979.06	-27.816	-3.6769	-552.12	.00000	.00000	434.62	-3.6769	-687.01	1121.

HABGE-01/99-0745, Revision 2

1006	-268.88 1037.2	-49.487	-41.933	-584.78	.00000	.00000	435.80	-41.933	-754.16	1190.0
1007	-313.00 1125.9	-74.253	-81.081	-635.67	.00000	.00000	453.16	-81.081	-840.41	1293.6
1008	-364.64 1260.5	-77.716	-114.73	-710.83	.00000	.00000	503.99	-114.73	-946.34	1450.3
1009	-449.25 1412.1	-34.453	-143.75	-786.44	.00000	.00000	571.48	-143.75	-1055.2	1626.7
1010	-518.71 1319.7	132.39	-121.58	-687.65	.00000	.00000	567.66	-121.58	-953.98	1521.6
1011	-467.82 756.54	198.72	-93.130	-281.32	.00000	.00000	301.58	-93.130	-570.68	872.27
1012	-402.96 466.73	134.15	-100.21	-9.9787	.00000	.00000	134.33	-100.21	-403.15	537.48
1013	-290.42 2118.6	1722.2	509.42	684.98	.00000	.00000	1933.2	509.42	-501.43	2434.7
1014	-264.81 4247.8	4367.7	1287.4	674.57	.00000	.00000	4463.9	1287.4	-361.04	4825.0
1015	-265.43 6041.5	-6869.3	-2089.7	732.13	.00000	.00000	-185.24	-2089.7	-6949.5	6764.3

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1016	-335.12 5205.6	-5951.5	-1819.1	749.88	.00000	.00000	-236.73	-1819.1	-6049.9	5813.
1017	-408.55 4780.4	-5506.7	-1695.3	767.14	.00000	.00000	-295.61	-1695.3	-5619.6	5324.
1018	-1391.7 1384.8	-6.9265	-1391.7	.00000	.00000	.00000	-6.9265	-1391.7	-1391.7	1384.
1019	-1383.3 1366.8	-20.565	-1390.4	-21.616	.00000	.00000	-20.222	-1383.6	-1390.4	1370.
1020	-1366.3 1302.8	-72.698	-1382.2	-30.916	.00000	.00000	-71.959	-1367.1	-1382.2	1310.
1021	-1351.5 1330.6	-35.576	-1321.2	-161.03	.00000	.00000	-16.156	-1321.2	-1370.9	1354.

HABGE-01/99-0745, Revision 2

1022	-1318.1 1376.7	-19.848	-1296.4	-281.43	.00000	.00000	38.534	-1296.4	-1376.5	1415.1
1023	-1289.0 1353.4	-13.889	-1293.6	-257.99	.00000	.00000	36.330	-1293.6	-1339.3	1375.6
1024	-1255.9 1325.0	-12.902	-1281.2	-244.08	.00000	.00000	33.309	-1281.2	-1302.1	1335.4
1025	-1217.6 1296.0	-11.475	-1261.0	-238.52	.00000	.00000	33.984	-1261.0	-1263.0	1297.0
1026	-1174.0 1264.3	-11.025	-1235.7	-238.33	.00000	.00000	35.920	-1221.0	-1235.7	1271.6
1027	-1125.0 1230.3	-10.659	-1205.7	-241.75	.00000	.00000	39.530	-1175.1	-1205.7	1245.3
1028	-1070.3 1193.6	-10.572	-1171.6	-247.66	.00000	.00000	44.451	-1125.3	-1171.6	1216.0
1029	-1009.9 1154.5	-10.549	-1133.3	-255.36	.00000	.00000	50.918	-1071.4	-1133.3	1184.3
1030	-943.85 1113.5	-10.597	-1091.2	-264.38	.00000	.00000	59.093	-1013.5	-1091.2	1150.3
1031	-872.06 1071.0	-10.658	-1045.1	-274.41	.00000	.00000	69.332	-952.05	-1045.1	1114.4
1032	-794.51 1027.6	-10.733	-995.24	-285.25	.00000	.00000	82.086	-887.33	-995.24	1077.3
1033	-711.21 984.43	-10.803	-941.56	-296.72	.00000	.00000	97.998	-820.01	-941.56	1039.6

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1034	-622.14 942.52	-10.842	-884.08	-308.72	.00000	.00000	117.94	-750.92	-884.08	1002.
1035	-527.30 903.42	-10.802	-822.80	-321.18	.00000	.00000	143.07	-681.18	-822.80	965.8
1036	-426.71 869.00	-10.583	-757.69	-334.03	.00000	.00000	174.88	-612.17	-757.69	932.5
1037	-320.39 841.44	-10.098	-688.76	-347.25	.00000	.00000	215.09	-545.58	-688.76	903.8

HABCE-01/99-0745, Revision 2

D 156

1038	-208.41 823.12	-9.2074	-615.98	-360.81	.00000	.00000	265.50	-483.11	-615.98	881.47
1039	-90.892 816.30	-8.0169	-539.47	-374.65	.00000	.00000	327.48	-426.39	-539.47	866.95
1040	32.024 822.85	-6.6993	-459.36	-388.65	.00000	.00000	401.80	-376.47	-459.36	861.16
1041	160.20 844.09	-6.4307	-376.19	-402.65	.00000	.00000	488.07	-334.30	-376.19	864.26
1042	293.86 881.10	-8.5221	-290.38	-416.43	.00000	.00000	585.69	-290.38	-300.36	886.05
1043	433.85 936.50	-16.961	-203.07	-430.22	.00000	.00000	694.14	-203.07	-277.25	971.38
1044	583.16 1015.5	-34.140	-113.87	-445.18	.00000	.00000	816.22	-113.87	-267.20	1083.4
1045	747.28 1131.2	-67.316	-23.037	-465.50	.00000	.00000	958.51	-23.037	-278.55	1237.1
1046	936.43 1296.8	-109.93	76.694	-499.05	.00000	.00000	1136.3	76.694	-309.77	1446.1
1047	1154.7 1523.8	-156.61	190.06	-558.84	.00000	.00000	1360.5	190.06	-362.46	1723.0
1048	1368.1 1735.3	-127.55	335.32	-646.09	.00000	.00000	1608.6	335.32	-367.99	1976.5
1049	1261.1 1591.3	81.507	425.63	-690.00	.00000	.00000	1579.1	425.63	-236.41	1815.5
1050	642.65 925.73	991.87	566.17	-483.90	.00000	.00000	1331.7	566.17	302.82	1028.9
1051	228.88 1022.9	1223.1	488.50	-287.76	.00000	.00000	1300.4	488.50	151.60	1148.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
1052	818.64 5276.9	6282.6	1229.1	147.18	.00000	.00000	6286.5	1229.1	814.68	5471.
1053	805.09 1327.6	-121.84	-685.58	144.95	.00000	.00000	827.23	-143.97	-685.58	1512.

1054	-526.17 1977.6	-2751.0	-1865.4	221.42	.00000	.00000	-504.35	-1865.4	-2772.8	2268.5
1055	-56.412 5203.6	-6034.2	-2685.5	221.47	.00000	.00000	-48.218	-2685.5	-6042.4	5994.2
1056	420.82 8497.9	-9318.4	-3485.7	221.46	.00000	.00000	425.86	-3485.7	-9323.4	9749.3
1057	-4138.1 4133.5	-4.6756	-4138.1	.00000	.00000	.00000	-4.6756	-4138.1	-4138.1	4133.5
1058	-4136.6 4104.4	-34.841	-4141.8	-3.7112	.00000	.00000	-34.838	-4136.7	-4141.8	4107.0
1059	-4107.8 4070.8	-48.954	-4131.5	-12.935	.00000	.00000	-48.913	-4107.8	-4131.5	4082.6
1060	-4053.3 3943.2	-132.29	-4046.6	258.62	.00000	.00000	-115.31	-4046.6	-4070.3	3955.0
1061	-3976.0 4022.0	-14.188	-3943.2	450.71	.00000	.00000	36.440	-3943.2	-4026.7	4063.1
1062	-3885.3 3931.6	-15.833	-3924.3	333.08	.00000	.00000	12.628	-3913.7	-3924.3	3936.9
1063	-3779.8 3839.4	-12.778	-3872.9	252.42	.00000	.00000	4.0610	-3796.6	-3872.9	3877.0
1064	-3663.8 3740.1	-11.575	-3806.5	189.83	.00000	.00000	-1.7348	-3673.7	-3806.5	3804.8
1065	-3532.9 3630.5	-11.229	-3726.7	139.01	.00000	.00000	-5.7508	-3538.4	-3726.7	3720.9
1066	-3385.9 3509.8	-10.847	-3634.3	96.007	.00000	.00000	-8.1180	-3388.6	-3634.3	3620.2
1067	-3222.0 3377.3	-10.815	-3530.0	58.623	.00000	.00000	-9.7451	-3223.1	-3530.0	3520.2
1068	-3041.0 3233.2	-10.771	-3413.9	25.338	.00000	.00000	-10.559	-3041.2	-3413.9	3403.
1069	-2842.8 3077.8	-10.824	-3286.4	-4.8380	.00000	.00000	-10.815	-2842.8	-3286.4	3275.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
------	------------	----	----	-----	-----	-----	----	----	----	------

HABGE-01/99-0745, Revision 2

1070	-2627.3 2912.1	-10.871	-3147.4	-32.616	.00000	.00000	-10.464	-2627.8	-3147.4	3137.0
1071	-2394.7 2737.1	-10.939	-2997.1	-58.502	.00000	.00000	-9.5041	-2396.1	-2997.1	2987.6
1072	-2144.7 2554.4	-11.004	-2835.6	-82.876	.00000	.00000	-7.7897	-2147.9	-2835.6	2827.8
1073	-1877.6 2366.5	-11.041	-2662.9	-106.03	.00000	.00000	-5.0372	-1883.6	-2662.9	2657.8
1074	-1593.2 2176.8	-11.018	-2478.9	-128.19	.00000	.00000	-.69933	-1603.5	-2478.9	2478.2
1075	-1291.6 1990.5	-10.814	-2283.6	-149.55	.00000	.00000	6.4160	-1308.8	-2283.6	2290.0
1076	-972.46 1815.2	-10.396	-2077.0	-170.28	.00000	.00000	18.853	-1001.7	-2077.0	2095.8
1077	-635.74 1662.2	-9.5235	-1858.9	-190.51	.00000	.00000	43.879	-689.15	-1858.9	1902.7
1078	-281.17 1546.6	-8.4516	-1629.2	-210.34	.00000	.00000	105.86	-395.48	-1629.2	1735.1
1079	91.441 1487.0	-6.9793	-1388.0	-229.73	.00000	.00000	277.18	-192.71	-1388.0	1665.1
1080	482.00 1500.2	-6.8246	-1135.7	-248.64	.00000	.00000	586.24	-111.06	-1135.7	1722.0
1081	889.79 1594.9	-8.1842	-872.82	-266.64	.00000	.00000	963.00	-81.390	-872.82	1835.8
1082	1313.3 1770.0	-17.342	-602.34	-283.78	.00000	.00000	1371.3	-75.334	-602.34	1973.7
1083	1750.4 2014.2	-33.710	-324.89	-299.87	.00000	.00000	1799.4	-82.763	-324.89	2124.3
1084	2200.0 2326.6	-73.544	-47.148	-317.93	.00000	.00000	2243.7	-47.148	-117.17	2360.
1085	2667.7 2692.6	-120.19	239.77	-342.35	.00000	.00000	2709.1	239.77	-161.62	2870.
1086	3179.4 3149.0	-197.10	537.84	-390.00	.00000	.00000	3223.9	537.84	-241.56	3465.
1087	3814.3 3658.1	-169.52	933.22	-478.89	.00000	.00000	3871.0	933.22	-226.28	4097.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

HABGE-01/99-0745, Revision 2

P 154

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1088	4848.3 4447.7	-.43348	1555.9	-682.32	.00000	.00000	4942.4	1555.9	-94.622	5037.1
1089	6124.0 4509.1	1279.0	2732.8	-772.03	.00000	.00000	6244.0	2732.8	1159.0	5085.0
1090	6731.2 4042.4	2466.4	3527.2	-719.10	.00000	.00000	6849.2	3527.2	2348.4	4500.8
1091	-252.42 251.90	-.51509	-252.42	.00000	.00000	.00000	-.51509	-252.42	-252.42	251.90
1092	-323.72 350.14	2.6296	-269.50	-101.41	.00000	.00000	31.573	-269.50	-352.67	384.24
1093	-347.73 307.07	-156.24	-375.68	-131.01	.00000	.00000	-89.717	-375.68	-414.25	324.53
1094	-274.88 457.83	172.31	-237.79	-91.000	.00000	.00000	190.12	-237.79	-292.69	482.81
1095	-352.82 303.91	-69.314	-343.52	-69.609	.00000	.00000	-53.145	-343.52	-368.98	315.84
1096	-401.72 391.91	2.7318	-349.67	-52.771	.00000	.00000	9.5039	-349.67	-408.49	417.99
1097	-436.18 409.80	-6.9814	-373.68	-47.046	.00000	.00000	-1.8851	-373.68	-441.28	439.39
1098	-494.70 456.41	-6.1343	-407.41	-39.351	.00000	.00000	-2.9851	-407.41	-497.84	494.86
1099	-548.26 502.12	-4.5289	-439.23	-35.933	.00000	.00000	-2.1645	-439.23	-550.62	548.46
1100	-615.20 557.17	-5.2763	-478.54	-32.195	.00000	.00000	-3.5816	-478.54	-616.89	613.3
1101	-686.48 617.99	-4.6059	-520.21	-29.906	.00000	.00000	-3.2968	-520.21	-687.79	684.4
1102	-766.84 685.98	-4.8857	-567.04	-27.792	.00000	.00000	-3.8733	-567.04	-767.85	763.9
1103	-854.00 760.57	-4.7349	-617.67	-26.261	.00000	.00000	-3.9236	-617.67	-854.81	850.8
1104	-949.08 841.97	-4.8431	-672.82	-24.938	.00000	.00000	-4.1849	-672.82	-949.74	945.5
1105	-1051.5 930.04	-4.8557	-732.15	-23.909	.00000	.00000	-4.3098	-732.15	-1052.1	1047.

***** POST1 NODAL STRESS LISTING *****

HABGE-01/99-0745, Revision 2

D160

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1106	-1161.5 1024.8	-4.9063	-795.81	-23.030	.00000	.00000	-4.4479	-795.81	-1162.0	1157.6
1107	-1279.1 1126.1	-4.9712	-863.77	-22.348	.00000	.00000	-4.5793	-863.77	-1279.5	1274.9
1108	-1403.9 1234.1	-4.8875	-935.94	-21.733	.00000	.00000	-4.5499	-935.94	-1404.3	1399.7
1109	-1536.6 1348.9	-4.8723	-1012.5	-21.328	.00000	.00000	-4.5754	-1012.5	-1536.9	1532.3
1110	-1676.3 1470.3	-4.2514	-1093.1	-20.838	.00000	.00000	-3.9918	-1093.1	-1676.5	1672.5
1111	-1824.9 1599.3	-3.9878	-1178.5	-20.773	.00000	.00000	-3.7508	-1178.5	-1825.2	1821.4
1112	-1979.9 1735.4	-2.0534	-1267.5	-20.187	.00000	.00000	-1.8474	-1267.5	-1980.1	1978.3
1113	-2147.8 1880.5	-2.3322	-1363.0	-20.819	.00000	.00000	-2.1302	-1363.0	-2148.0	2145.9
1114	-2318.4 2031.8	1.2980	-1460.7	-19.454	.00000	.00000	1.4611	-1460.7	-2318.5	2320.0
1115	-2512.0 2193.2	-5.5923	-1570.1	-21.955	.00000	.00000	-5.4000	-1570.1	-2512.2	2506.8
1116	-2689.7 2350.3	-2.7251	-1675.4	-17.292	.00000	.00000	-2.6138	-1675.4	-2689.8	2687.1
1117	-2914.8 2511.6	-40.180	-1806.5	-25.396	.00000	.00000	-39.956	-1806.5	-2915.1	2875.1
1118	-3044.6 2625.2	-42.159	-1904.7	-8.4833	.00000	.00000	-42.135	-1904.7	-3044.6	3002.1
1119	-3292.0 2719.1	-176.95	-2069.8	-35.055	.00000	.00000	-176.55	-2069.8	-3292.4	3115.1
1120	-3165.8 2673.8	-120.06	-2078.9	24.096	.00000	.00000	-119.87	-2078.9	-3165.9	3046.1
1121	-3481.4 2625.3	-477.97	-2312.2	-72.420	.00000	.00000	-476.22	-2312.2	-3483.2	3007.1
1122	-2491.2 2652.9	421.31	-1822.0	136.87	.00000	.00000	427.73	-1822.0	-2497.6	2925.4

HABCE-01/99-0745, Revision 2

1123	-9527.1	-672.57	-4228.5	-1753.4	.00000	.00000	-337.99	-4228.5	-9861.7	9523.7
	8293.7									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1124	-3683.2 10760.	8390.7	-41.694	-482.98	.00000	.00000	8410.0	-41.694	-3702.5	12112.
1125	3661.7 5573.2	-1915.9	-887.98	1242.0	.00000	.00000	3925.8	-887.98	-2180.0	6105.8
1126	3629.8 13622.	-9793.2	-3247.6	-4098.5	.00000	.00000	4782.3	-3247.6	-10946.	15728.
1127	3170.3 10957.	-6916.0	-2443.5	-3805.1	.00000	.00000	4444.7	-2443.5	-8190.5	12635.
1128	2712.9 6913.6	-511.65	-604.05	-3516.3	.00000	.00000	4968.9	-604.05	-2767.7	7736.6
1129	-3903.3 3902.8	-.51509	-3903.3	.00000	.00000	.00000	-.51509	-3903.3	-3903.3	3902.8
1130	-3831.2 3836.9	-17.364	-3872.9	72.524	.00000	.00000	-15.986	-3832.6	-3872.9	3857.0
1131	-3814.6 3697.2	-131.63	-3825.9	145.37	.00000	.00000	-125.90	-3820.3	-3825.9	3700.0
1132	-3870.4 4001.5	163.98	-3798.3	85.399	.00000	.00000	165.78	-3798.3	-3872.2	4038.
1133	-3784.6 3743.7	-73.630	-3846.2	61.726	.00000	.00000	-72.604	-3785.6	-3846.2	3773.
1134	-3742.0 3771.2	4.3711	-3789.0	52.124	.00000	.00000	5.0962	-3742.8	-3789.0	3794.
1135	-3707.1 3732.1	-9.0100	-3772.9	39.899	.00000	.00000	-8.5796	-3707.5	-3772.9	3764.
1136	-3649.0 3688.5	-6.2751	-3737.9	35.055	.00000	.00000	-5.9378	-3649.3	-3737.9	3731.
1137	-3595.6 3646.5	-5.5332	-3705.3	29.084	.00000	.00000	-5.2976	-3595.8	-3705.3	3700.
1138	-3528.7 3593.9	-5.9182	-3666.4	25.549	.00000	.00000	-5.7329	-3528.9	-3666.4	3660.

HABCE-01/99-0745, Revision 2

1139	-3457.5 3538.7	-5.4298	-3624.3	22.033	.00000	.00000	-5.2891	-3457.7	-3624.3	3619.0
1140	-3377.2 3476.3	-5.6408	-3577.7	19.404	.00000	.00000	-5.5291	-3377.3	-3577.7	3572.1
1141	-3290.1 3409.3	-5.5324	-3526.9	16.988	.00000	.00000	-5.4445	-3290.2	-3526.9	3521.5

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1142	-3195.1 3336.5	-5.6263	-3471.8	14.974	.00000	.00000	-5.5560	-3195.1	-3471.8	3466.3
1143	-3092.7 3258.8	-5.6516	-3412.5	13.144	.00000	.00000	-5.5956	-3092.7	-3412.5	3406.9
1144	-2982.7 3176.0	-5.6953	-3348.9	11.547	.00000	.00000	-5.6505	-2982.7	-3348.9	3343.2
1145	-2865.2 3088.4	-5.7698	-3280.9	10.064	.00000	.00000	-5.7344	-2865.2	-3280.9	3275.2
1146	-2740.3 2996.5	-5.6726	-3208.7	8.7690	.00000	.00000	-5.6445	-2740.4	-3208.7	3203.0
1147	-2607.7 2900.0	-5.6812	-3132.1	7.4754	.00000	.00000	-5.6597	-2607.7	-3132.1	3126.5
1148	-2468.0 2800.5	-5.0245	-3051.2	6.4460	.00000	.00000	-5.0077	-2468.1	-3051.2	3046.
1149	-2319.4 2696.4	-4.8360	-2965.6	5.1424	.00000	.00000	-4.8246	-2319.4	-2965.6	2960.
1150	-2164.4 2591.4	-2.7961	-2875.5	4.4893	.00000	.00000	-2.7867	-2164.4	-2875.5	2872.
1151	-1996.4 2479.8	-3.3037	-2780.3	2.7309	.00000	.00000	-3.2999	-1996.4	-2780.3	2777.
1152	-1825.7 2372.1	.67133	-2680.3	3.0716	.00000	.00000	.67649	-1825.8	-2680.3	2681.
1153	-1632.0 2250.4	-6.8873	-2575.4	-3.6353	.00000	.00000	-6.8873	-1632.0	-2575.4	2568.
1154	-1454.4 2146.1	-2.8456	-2468.0	3.4634	.00000	.00000	-2.8374	-1454.4	-2468.0	2465.

HABCE-01/99-0745, Revision 2

1155	-1229.6 2007.1	-42.257	-2359.5	-5.3881	.00000	.00000	-42.233	-1229.7	-2359.5	2317.3
1156	-1100.6 1923.7	-40.297	-2260.7	10.900	.00000	.00000	-40.185	-1100.7	-2260.7	2220.5
1157	-855.43 1757.8	-181.10	-2176.0	-16.231	.00000	.00000	-180.71	-855.82	-2176.0	1995.3
1158	-984.14 1751.8	-111.49	-2126.6	42.501	.00000	.00000	-109.42	-986.21	-2126.6	2017.1
1159	-674.62 1536.8	-489.89	-2107.8	-54.792	.00000	.00000	-474.86	-689.65	-2107.8	1632.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1160	-1663.8 2345.7	451.41	-2047.0	153.72	.00000	.00000	462.53	-1674.9	-2047.0	2509.5
1161	5367.8 6638.9	-748.26	-321.88	-1741.1	.00000	.00000	5828.7	-321.88	-1209.2	7037.9
1162	10420. 5617.0	9286.1	4411.5	-570.89	.00000	.00000	10657.	9048.5	4411.5	6245.9
1163	6464.4 9933.8	-3287.4	-459.38	2778.7	.00000	.00000	7200.6	-459.38	-4023.6	11224.
1164	-9798.9 14778.	-23663.	-11223.	-3824.5	.00000	.00000	-8813.9	-11223.	-24648.	15834
1165	-7317.6 6087.4	-4948.6	-4889.2	-3230.1	.00000	.00000	-2692.7	-4889.2	-9573.5	6880.
1166	-4807.3 13261.	9344.6	109.26	-2645.2	.00000	.00000	9822.9	109.26	-5285.5	15108
1167	5872.1 5815.3	56.744	5872.1	.00000	.00000	.00000	5872.1	5872.1	56.744	5815.
1168	5831.1 5871.3	-34.115	5843.2	-13.283	.00000	.00000	5843.2	5831.2	-34.145	5877.
1169	5826.7 5860.9	-41.435	5806.6	103.96	.00000	.00000	5828.5	5806.6	-43.277	5871.
1170	5812.3 5747.1	87.036	5847.5	126.88	.00000	.00000	5847.5	5815.1	84.225	5763.

HABGE-01/99-0745, Revision 2

D164

1171	5626.7 5714.3	-30.145	5738.5	54.408	.00000	.00000	5738.5	5627.2	-30.668	5769.2
1172	5396.8 5520.9	-5.2215	5626.9	31.585	.00000	.00000	5626.9	5396.9	-5.4062	5632.3
1173	5174.8 5344.5	-.69467	5498.1	6.0749	.00000	.00000	5498.1	5174.9	-.70180	5498.8
1174	4919.5 5151.6	-5.3713	5346.3	-15.062	.00000	.00000	5346.3	4919.5	-5.4173	5351.7
1175	4631.9 4930.2	-2.2074	5177.9	-33.973	.00000	.00000	5177.9	4632.1	-2.4565	5180.3
1176	4307.9 4689.2	-3.5724	4987.6	-51.523	.00000	.00000	4987.6	4308.5	-4.1880	4991.8
1177	3946.5 4424.9	-2.7503	4777.0	-67.729	.00000	.00000	4777.0	3947.6	-3.9115	4780.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1178	3547.5 4142.8	-3.1009	4544.8	-83.165	.00000	.00000	4544.8	3549.4	-5.0478	4542.9
1179	3110.6 3846.2	-2.9143	4291.4	-97.852	.00000	.00000	4291.4	3113.7	-5.9866	4297.4
1180	2636.0 3542.7	-3.0186	4016.4	-112.02	.00000	.00000	4016.4	2640.7	-7.7652	4024.1
1181	2123.6 3242.4	-3.0108	3720.0	-125.72	.00000	.00000	3720.0	2131.0	-10.418	3730.1
1182	1573.7 2961.3	-3.0372	3402.0	-139.07	.00000	.00000	3402.0	1585.9	-15.210	3417.1
1183	986.38 2722.7	-3.1035	3062.5	-152.11	.00000	.00000	3062.5	1009.2	-25.958	3088.1
1184	361.65 2558.0	-3.0017	2701.6	-164.95	.00000	.00000	2701.6	425.19	-66.542	2768.1
1185	-300.68 2503.4	-3.0965	2319.1	-177.65	.00000	.00000	2319.1	79.838	-383.61	2702.1
1186	-1001.4 2588.2	-2.5270	1915.0	-190.47	.00000	.00000	1915.0	32.560	-1036.5	2951.1

1187	-1741.8 2822.2	-2.7029	1488.3	-203.48	.00000	.00000	1488.3	20.786	-1765.3	3253.6
1188	-2524.8 3196.5	-.85434	1039.0	-217.25	.00000	.00000	1039.0	17.709	-2543.3	3582.3
1189	-3353.1 3689.0	-2.1472	564.36	-231.37	.00000	.00000	564.36	13.752	-3369.0	3933.3
1190	-4230.5 4286.2	2.3313	65.655	-246.63	.00000	.00000	65.655	16.654	-4244.8	4310.4
1191	-5154.3 4956.6	-5.7509	-462.19	-259.81	.00000	.00000	7.3268	-462.19	-5167.4	5174.7
1192	-6115.6 5700.8	3.5083	-1007.6	-271.13	.00000	.00000	15.498	-1007.6	-6127.6	6143.1
1193	-7072.7 6425.8	-32.766	-1576.3	-267.09	.00000	.00000	-22.647	-1576.3	-7082.8	7060.2
1194	-7957.6 7145.3	-9.9471	-2114.1	-248.19	.00000	.00000	-2.2044	-2114.1	-7965.4	7963.2
1195	-8602.8 7542.2	-136.40	-2627.8	-174.01	.00000	.00000	-132.82	-2627.8	-8606.4	8473.6

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1196	-8857.9 7792.4	-29.093	-2946.5	-80.423	.00000	.00000	-28.360	-2946.5	-8858.6	8830.1
1197	-8401.5 7041.2	-399.17	-3172.7	119.60	.00000	.00000	-397.38	-3172.7	-8403.3	8005.1
1198	-7710.7 7119.6	468.81	-2915.5	65.327	.00000	.00000	469.33	-2915.5	-7711.3	8180.1
1199	-7535.0 5658.4	-1073.1	-3497.4	128.72	.00000	.00000	-1070.5	-3497.4	-7537.6	6467.1
1200	-11190. 14304.	4774.6	-2935.1	-2112.9	.00000	.00000	5049.5	-2935.1	-11465.	16514
1201	-14838. 19928.	6288.7	-3796.3	-4552.2	.00000	.00000	7227.8	-3796.3	-15777.	23005
1202	-2996.7 3006.6	9.8781	-2996.7	.00000	.00000	.00000	9.8781	-2996.7	-2996.7	3006.6

HABGE-01/99-0745, Revision 2

D ILC

1203	-2972.3 2988.6	7.7785	-2989.2	-2.5916	.00000	.00000	7.7807	-2972.3	-2989.2	2997.0
1204	-2967.4 2883.1	-122.31	-2967.0	-270.17	.00000	.00000	-96.884	-2967.0	-2992.8	2895.9
1205	-2972.1 3140.5	76.826	-2917.5	-493.22	.00000	.00000	154.63	-2917.5	-3049.9	3204.6
1206	-2958.2 3016.4	-22.655	-2960.3	-397.89	.00000	.00000	30.321	-2960.3	-3011.1	3041.5
1207	-2954.9 3003.6	-3.7160	-2954.0	-323.84	.00000	.00000	31.402	-2954.0	-2990.0	3021.4
1208	-2959.0 2998.1	.30640	-2956.7	-281.44	.00000	.00000	26.834	-2956.7	-2985.5	3012.4
1209	-2957.2 2987.5	-2.9299	-2958.0	-254.85	.00000	.00000	18.894	-2958.0	-2979.0	2997.9
1210	-2957.6 2985.3	-.83985	-2958.0	-236.94	.00000	.00000	18.027	-2958.0	-2976.5	2994.5
1211	-2957.7 2982.1	-1.6487	-2958.6	-225.19	.00000	.00000	15.408	-2958.6	-2974.7	2990.2
1212	-2957.7 2980.9	-1.1772	-2958.7	-217.39	.00000	.00000	14.722	-2958.7	-2973.6	2988.4
1213	-2957.9 2979.8	-1.3706	-2958.9	-212.56	.00000	.00000	13.833	-2958.9	-2973.1	2986.9

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1214	-2957.9 2979.4	-1.2775	-2958.9	-209.84	.00000	.00000	13.540	-2958.9	-2972.8	2986.
1215	-2958.0 2979.2	-1.3410	-2959.0	-208.75	.00000	.00000	13.324	-2959.0	-2972.7	2986.
1216	-2958.1 2979.3	-1.3460	-2959.0	-208.91	.00000	.00000	13.341	-2959.0	-2972.8	2986.
1217	-2958.1 2979.5	-1.3696	-2959.0	-210.07	.00000	.00000	13.480	-2959.0	-2973.0	2986.
1218	-2958.2 2979.9	-1.4092	-2959.1	-212.03	.00000	.00000	13.718	-2959.1	-2973.3	2987.1

1219	-2958.2 2980.6	-1.3533	-2959.0	-214.69	.00000	.00000	14.154	-2959.0	-2973.8	2987.9
1220	-2958.3 2981.3	-1.3729	-2959.1	-217.99	.00000	.00000	14.612	-2959.1	-2974.3	2988.9
1221	-2958.3 2982.5	-1.0148	-2958.9	-222.02	.00000	.00000	15.561	-2958.9	-2974.9	2990.4
1222	-2958.4 2983.7	-.97552	-2958.9	-226.82	.00000	.00000	16.319	-2958.9	-2975.7	2992.0
1223	-2958.3 2985.9	.15085	-2958.6	-232.73	.00000	.00000	18.346	-2958.6	-2976.5	2994.9
1224	-2958.5 2987.3	-.29600	-2958.8	-239.52	.00000	.00000	18.972	-2958.8	-2977.8	2996.8
1225	-2958.3 2991.1	2.0629	-2958.1	-247.44	.00000	.00000	22.603	-2958.1	-2978.9	3001.5
1226	-2959.0 2989.5	-2.3853	-2959.6	-254.12	.00000	.00000	19.296	-2959.6	-2980.7	3000.0
1227	-2958.4 2992.9	.85035	-2958.5	-258.10	.00000	.00000	23.193	-2958.5	-2980.7	3003.9
1228	-2960.7 2973.7	-20.845	-2965.5	-249.05	.00000	.00000	.10338	-2965.5	-2981.7	2981.8
1229	-2957.4 2968.2	-17.196	-2963.4	-221.84	.00000	.00000	-.55290	-2963.4	-2974.0	2973.5
1230	-2967.0 2899.1	-89.283	-2986.9	-148.25	.00000	.00000	-81.666	-2974.6	-2986.9	2905.2
1231	-2938.9 2894.7	-60.441	-2969.7	-38.218	.00000	.00000	-59.933	-2939.4	-2969.7	2909.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
1232	-2996.6 2798.9	-224.81	-3032.2	130.15	.00000	.00000	-218.71	-3002.7	-3032.2	2813.
1233	-2850.5 3074.5	206.42	-2863.8	149.31	.00000	.00000	213.69	-2857.8	-2863.8	3077.
1234	-2449.0 2256.2	-487.82	-2936.3	130.73	.00000	.00000	-479.15	-2457.6	-2936.3	2457.

1235	-279.16 4233.2	2730.6	-1316.6	-1246.7	.00000	.00000	3179.9	-728.48	-1316.6	4496.5
1236	2485.3 7703.1	-5755.4	-2970.3	-1485.8	.00000	.00000	2745.0	-2970.3	-6015.1	8760.1
1237	1918.6 5060.8	-3607.8	-2400.5	308.08	.00000	.00000	1935.7	-2400.5	-3624.9	5560.6
1238	659.61 7994.5	8612.4	906.40	925.11	.00000	.00000	8718.6	906.40	553.42	8165.2
1239	-11769. 11732.	-36.988	-11769.	.00000	.00000	.00000	-36.988	-11769.	-11769.	11732.
1240	-11774. 11828.	62.839	-11757.	18.838	.00000	.00000	62.869	-11757.	-11774.	11837.
1241	-11818. 11615.	-216.48	-11786.	478.27	.00000	.00000	-196.80	-11786.	-11837.	11640.
1242	-11721. 11838.	67.754	-11674.	755.07	.00000	.00000	115.92	-11674.	-11770.	11886.
1243	-11541. 11620.	-12.910	-11652.	525.83	.00000	.00000	11.025	-11565.	-11652.	11663.
1244	-11318. 11449.	-3.5850	-11541.	402.50	.00000	.00000	10.715	-11333.	-11541.	11552.
1245	-11087. 11267.	1.6994	-11409.	317.00	.00000	.00000	10.754	-11096.	-11409.	11420.
1246	-10835. 11063.	-.53688	-11263.	250.26	.00000	.00000	5.2408	-10841.	-11263.	11268.
1247	-10547. 10837.	.51779	-11094.	198.01	.00000	.00000	4.2338	-10551.	-11094.	-11096.
1248	-10223. 10584.	.28701	-10905.	154.61	.00000	.00000	2.6245	-10225.	-10905.	10907
1249	-9862.0 10306.	.38955	-10694.	117.63	.00000	.00000	1.7923	-9863.4	-10694.	10696

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
1250	-9463.2 10002.	.36300	-10463.	85.312	.00000	.00000	1.1320	-9463.9	-10463.	10464.

1251	-9026.5 9673.1	.35780	-10209.	56.519	.00000	.00000	.71167	-9026.8	-10209.	10210.
1252	-8552.0 9320.9	.33742	-9934.4	30.452	.00000	.00000	.44586	-8552.1	-9934.4	9934.8
1253	-8039.8 8946.9	.31827	-9638.0	6.5415	.00000	.00000	.32359	-8039.8	-9638.0	9638.3
1254	-7490.0 8553.5	.29858	-9320.1	-15.638	.00000	.00000	.33123	-7490.0	-9320.1	9320.4
1255	-6902.8 8143.6	.28456	-8980.6	-36.411	.00000	.00000	.47660	-6903.0	-8980.6	8981.1
1256	-6278.2 7720.9	.29631	-8619.7	-56.055	.00000	.00000	.79675	-6278.7	-8619.7	8620.5
1257	-5615.9 7290.6	.34914	-8237.2	-74.833	.00000	.00000	1.3461	-5616.9	-8237.2	8238.6
1258	-4915.4 6859.0	.50044	-7832.9	-93.040	.00000	.00000	2.2607	-4917.1	-7832.9	7835.2
1259	-4174.9 6434.8	.74644	-7406.2	-111.00	.00000	.00000	3.6949	-4177.8	-7406.2	7409.9
1260	-3392.1 6030.0	1.1648	-6956.3	-129.07	.00000	.00000	6.0668	-3397.0	-6956.3	6962.3
1261	-2563.5 5661.2	1.5377	-6481.8	-147.43	.00000	.00000	9.9838	-2571.9	-6481.8	6491.8
1262	-1686.5 5351.2	1.8205	-5981.8	-165.96	.00000	.00000	17.980	-1702.6	-5981.8	5999.8
1263	-761.31 5128.7	.92590	-5456.3	-183.26	.00000	.00000	42.696	-803.08	-5456.3	5499.0
1264	198.70 5022.2	-1.7257	-4909.2	-196.28	.00000	.00000	318.87	-121.90	-4909.2	5228.1
1265	1159.9 5042.2	-9.0907	-4352.2	-197.60	.00000	.00000	1192.4	-41.589	-4352.2	5544.
1266	2037.4 5149.2	-24.143	-3813.5	-176.16	.00000	.00000	2052.4	-39.089	-3813.5	5865.
1267	2699.6 5239.2	-42.803	-3337.3	-114.72	.00000	.00000	2704.4	-47.594	-3337.3	6041.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

HABGE-01/99-0745, Revision 2

D 176

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1268	2895.7 5119.0	-90.129	-3015.2	3.5277	.00000	.00000	2895.7	-90.134	-3015.2	5910.8
1269	2548.9 4688.1	-54.046	-2856.2	138.12	.00000	.00000	2556.2	-61.354	-2856.2	5412.4
1270	1567.3 3967.6	-47.530	-2931.4	231.27	.00000	.00000	1599.8	-80.000	-2931.4	4531.1
1271	581.87 3396.6	96.661	-3022.9	137.21	.00000	.00000	617.98	60.549	-3022.9	3640.9
1272	-82.745 3420.7	718.55	-2970.3	-368.41	.00000	.00000	862.18	-226.38	-2970.3	3832.5
1273	-1275.6 3465.1	381.65	-3386.3	-660.16	.00000	.00000	612.47	-1506.4	-3386.3	3998.7
1274	-623.04 4096.1	-4708.9	-4673.0	276.24	.00000	.00000	-604.45	-4673.0	-4727.5	4123.1
1275	833.22 6774.1	6305.3	-866.16	1119.2	.00000	.00000	6525.3	613.16	-866.16	7391.5

MINIMUM VALUES

NODE	1201 414	1164	1241	1201	1	1	1164	1241	1164	414
VALUE	-14838. 68.218	-23663.	-11786.	-4552.2	.00000	.00000	-8813.9	-11786.	-24648.	75.802

MAXIMUM VALUES

NODE	900 1201	1166	757	1163	1	1	900	757	1162	1201
VALUE	18094. 19928.	9344.6	13456.	2778.7	.00000	.00000	18236.	13456.	4411.5	23005.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
------	------------	----	----	-----	-----	-----	----	----	----	------

***** ESTIMATED BOUNDS CONSIDERING THE EFFECT OF DISCRETIZATION ERROR *****

HABGE-01/99-0745, Revision 2

D171

MINIMUM VALUES

NODE	1164	1164	1164	1164	1164	1164	1164	1164	71
VALUE	-27823. .00000	-41687.	-29247.	-21849.	.00000	.00000	-26838.	-29247.	-42672. .00000

MAXIMUM VALUES

NODE	900	1162	1162	1164	1164	1164	900	1162	1162	1201
VALUE	27133. 32802.	21019.	16145.	14200.	.00000	.00000	27275.	20782.	16145.	35124.

HOPPER AND ASSOCIATES
ENGINEERS

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/14/99 PAGE: E1
SUBJECT: APPENDIX E BY: AJS CK: SR SHT: 1 OF 89

APPENDIX E

ANSYS HYDROSTATIC PRESSURE ANALYSIS

```
/filnam,hydro
/PREP7
/TITLE,DSC STRUCTURAL ANALYSIS MODEL
KAN,0
ET,1,42,,,1
C*** STAINLESS STEEL
EX,1,26.5E6
NUXY,1,0.3
DENS,1,0.283
ALPX,1,9.8E-6
C*** CHEMICAL LEAD
EX,2,3.0E6
NUXY,2,0.4
DENS,2,0.411
ALPX,2,16.4E-6
C*** KTEMP,-1 *****
C*** NODAL INPUT
C*** BOTTOM DETAIL
N,1,0.0,0.0
N,7,6.0,0.0
FILL
N,8,6.625,0.0
N,9,7.25,0.0
N,10,8.0,0.0
N,35,33.0,0.0
FILL
N,36,33.275,0.0
N,37,33.55,0.0
NGEN,3,37,1,37,1,0.0,0.5
NGEN,2,37,75,109,1,0.0,0.75
N,147,33.125,1.75
N,148,33.55,1.75
NGEN,2,37,112,145
N,183,33.125,1.75
NGEN,2,35,149,157,1,0.0,1.0
N,193,7.25,2.75
N,194,8.0,2.75
NGEN,2,37,158,183,1,0.0,1.0
N,221,33.125,2.75
N,222,33.55,2.75
NGEN,3,39,184,222,1,0.0,1.0
NGEN,2,39,262,270,1,0.0,1.0
N,310,8.0,6.0
N,335,33.125,6.0
FILL
NGEN,2,35,301,335,1,0.0,0.0
N,371,33.55,6.0
NGEN,2,36,336,344,1,0.0,0.75
NGEN,2,36,345,371,1,0.0,0.5
N,408,7.25,7.75
N,409,8.0,7.75
N,410,5.0,9.0
N,411,6.125,9.0
N,412,7.25,9.0
N,413,8.0,9.0
NGEN,2,4,410,413,1,0.0,1.0
```

ESP No.:	ES200100180	Supp No.	000	Rev. No.	0000	Page 1 of 1
----------	-------------	----------	-----	----------	------	-------------

FORM 19, CALCULATION COVER SHEET

INITIATION (Control Doc Type - DCALC)

Total Number of Pages (including attachments): 890

DCALC No.: CA04977

Revision No.: 0001

Vendor Calculation (Check one):

☒ Yes☐ No

Responsible Group: MEU

Responsible Engineer: B. H. Scott

CALCULATIONENGINEERING
DISCIPLINE:☐ Civil☐ Instr & Controls☐ Nuc Engrg☐ Electrical☒ Mechanical☐ Diesel Gen Project☐ Life Cycle Mngmt☐ Reliability Engrg☐ Nuc Fuel Mngmt☐ Other:

Title:

NUTECH HORIZONTAL MODULE SYSTEM (NUHOMS) 24P ISFSI DRY SHIELDED CANISTER
(DSC) STRUCTURAL ANALYSIS FOR DSC NUMBERS R025 AND BEYOND

Unit

☐ UNIT 1☐ UNIT 2☒ ISFSI

Proprietary or Safeguards Calculation

☐ YES☒ NO

Comments:

THIS IS AN OWNER ACCEPTANCE REVIEW OF AN ORIGINAL VENDOR CALCULATION

Vendor Calc No.:

HABGE-01/99-0745

REVISION NO.: 2

Vendor Name:

HOPPER AND ASSOCIATES ENGINEERS

Safety Class (Check one):

☒ SR☐ AQ☐ NSRThere are assumptions that require Verification during
walkdown:

AIT #: NONE

This calculation SUPERSEDES:

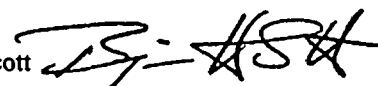
REVIEW AND APPROVAL:

Responsible Engineer: Hopper and Associates Engineers

Date: 01/19/2001

Owner Acceptance
Review:

B. H. Scott



Date: 02/27/2001

Approval:

NA

Date:

C*** DSC SHELL NODES

N,425,33.0,-0.75
N,426,33.275,-0.75
N,427,33.55,-0.75
NGEN,5,3,425,427,1,0.0,-1.0
N,440,33.0,-5.75
N,441,33.55,-5.75
NGEN,148,2,440,441,1,0.0,-1.0
N,736,33.0,-153.75
N,737,33.275,-153.75
N,738,33.55,-153.75
NGEN,6,3,736,738,1,0.0,-1.0

C*** DSC SHELL ELEMENTS

E,425,426,36,35
E,426,427,37,36
E,428,429,426,425
E,429,430,427,426
EGEN,4,3,291,292
E,440,438,437
E,440,441,438
E,441,439,438
E,442,443,441,440
EGEN,147,2,-1
E,736,737,734
E,737,735,734
E,736,738,735
E,739,740,737,736
E,740,741,738,737
EGEN,5,3,452,453,1

C*** BOTTOM DETAIL NODAL INPUT

LOCAL,11,0,0.0,-166,0.0
N,754,32.25,9.25
N,755,32.25,8.25
N,756,32.25,7.25
N,757,0.0,7.25
N,789,32.0,7.25
FILL
N,757,0.0,7.25
FILL,757,789
N,790,32.25,7.25
N,791,33.0,7.25
NGEN,2,35,757,789,1,0.0,-0.5
N,825,32.5,6.75
N,826,33.0,6.75
N,827,33.0,6.75
N,828,33.275,6.75
N,829,33.55,6.75
NGEN,3,38,792,829,1,0.0,-0.5
NGEN,3,38,868,901,1
NGEN,2,34,906,939,1,0.0,-1.0
N,974,32.5,4.75
N,975,33.0,4.75
N,976,33.0,4.75
N,977,33.275,4.75
N,978,33.55,4.75

NGEN,3,39,940,978,1,0.0,-1.0
NGEN,2,39,1018,1051,1,0.0,-1.5
NGEN,2,34,1057,1090,1
N,1125,33.0,1.25
N,1126,33.0,1.25
N,1127,33.275,1.25
N,1128,33.55,1.25
NGEN,2,38,1091,1128,1,0.0,-0.25
NGEN,2,38,1129,1163,1
N,1202,0.0,0.375
N,1234,32.0,0.375
FILL
N,1235,32.5,0.375
N,1236,33.0,0.375
N,1237,33.275,0.375
N,1238,33.55,0.375
NGEN,2,37,1202,1238,1,0.0,-0.625

C*** BOTTOM DETAIL ELEMENT GENERATION

E,755,748,745,754
E,756,751,748,755
E,792,793,758,757
EGEN,33,1,-1
E,825,826,791,790
E,827,828,752,751
E,828,829,753,752
E,830,831,793,792
EGEN,34,1,-1
E,865,866,828,827
E,866,867,829,828
E,868,869,831,830
EGEN,34,1,-1
E,903,904,866,865
E,904,905,867,866
MAT,2
E,940,941,907,906
EGEN,33,1,-1
MAT,1
E,974,975,902,901
E,976,977,904,903
E,977,978,905,904
MAT,2
E,979,980,941,940
EGEN,33,1,-1
MAT,1
E,1013,1014,975,974
E,1015,1016,977,976
E,1016,1017,978,977
MAT,2
E,1018,1019,980,979
EGEN,33,1,-1
MAT,1
E,1052,1053,1014,1013
E,1054,1055,1016,1015
E,1055,1056,1017,1016
MAT,2
E,1057,1058,1019,1018

```
EGEN,33,1,-1
MAT,1
E,1124,1125,1053,1052
E,1126,1127,1055,1054
E,1127,1128,1056,1055
E,1129,1130,1092,1091
EGEN,34,1,-1
E,1164,1165,1127,1126
E,1165,1166,1128,1127
E,1202,1203,1168,1167
EGEN,34,1,-1
E,1236,1237,1165,1164
E,1237,1238,1166,1165
E,1239,1240,1203,1202
EGEN,36,1,-1
WSORT,Y
C*** AXISYMETRIC BOUNDARY CONDITIONS
c*** SYMBC,,0.0 *****
csys,0
nsel,s,loc,x,0
dsym,symm,x,0
c*** SYMBC,11,,0.0 *****
c***csys,11
c***nsel,s,loc,y,0
c***dsym,symm,x,11
allsel
C*** CONSTANT COUPLED NODES
CP,1,UX,120,157
CP,2,UX,121,158
CP,3,UX,192,193
CP,4,UX,194,195
CP,5,UX,231,232
CP,6,UX,233,234
CP,7,UX,270,271
CP,8,UX,272,273
CP,9,UX,309,344
CP,10,UX,310,345
CP,12,UX,183,147
CP,13,UX,220,221
CP,14,UX,259,260
CP,15,UX,298,299
CP,16,UX,335,370
CP,17,UX,751,791
CP,18,UX,826,827
CP,19,UX,864,865
CP,20,UX,902,903
CP,21,UX,901,939
CP,22,UX,973,974
CP,23,UX,975,976
CP,24,UX,1012,1013
CP,25,UX,1014,1015
CP,26,UX,1051,1052
CP,27,UX,1053,1054
CP,28,UX,1090,1124
CP,29,UX,1125,1126
CP,30,UX,1164,1201
C*** LOADING CONDITIONS
```

CP, 31, UY, 112, 149
CPSGEN, 34, 1, -1
CP, 65, UY, 147, 183
CP, 66, UY, 868, 906
CPSGEN, 34, 1, -1
CP, 100, UY, 1057, 1091
CPSGEN, 34, 1, -1
CP, 134, UY, 1129, 1167
CPSGEN, 34, 1, -1
CP, 168, UY, 301, 336
CPSGEN, 35, 1, -1
C*** BOUNDARY CONDITIONS
D, 407, UY
C***
C***PRESSURE LOADING
SFE, 283, 2, PRES, , 20.94
SFE, 248, 2, PRES, , 20.9045
SFE, 213, 2, PRES, , 20.869
SFE, 178, 2, PRES, , 20.8335
SFE, 143, 2, PRES, , 20.798
SFE, 108, 2, PRES, , 20.7625
SFE, 72, 2, PRES, , 20.727
SFE, 36, 2, PRES, , 20.6915
SFE, 290, 2, PRES, , 20.656
SFE, 292, 2, PRES, , 20.6205
SFE, 294, 2, PRES, , 20.585
SFE, 296, 2, PRES, , 20.5495
SFE, 298, 2, PRES, , 20.514
SFE, 301, 1, PRES, , 20.4785
SFE, 302, 2, PRES, , 20.443
SFE, 303, 2, PRES, , 20.4075
SFE, 304, 2, PRES, , 20.372
SFE, 305, 2, PRES, , 20.3365
SFE, 306, 2, PRES, , 20.301
SFE, 307, 2, PRES, , 20.2655
SFE, 308, 2, PRES, , 20.23
SFE, 309, 2, PRES, , 20.1945
SFE, 310, 2, PRES, , 20.159
SFE, 311, 2, PRES, , 20.1235
SFE, 312, 2, PRES, , 20.088
SFE, 313, 2, PRES, , 20.0525
SFE, 314, 2, PRES, , 20.017
SFE, 315, 2, PRES, , 19.9815
SFE, 316, 2, PRES, , 19.946
SFE, 317, 2, PRES, , 19.9105
SFE, 318, 2, PRES, , 19.875
SFE, 319, 2, PRES, , 19.8395
SFE, 320, 2, PRES, , 19.804
SFE, 321, 2, PRES, , 19.7685
SFE, 322, 2, PRES, , 19.733
SFE, 323, 2, PRES, , 19.6975
SFE, 324, 2, PRES, , 19.662
SFE, 325, 2, PRES, , 19.6265
SFE, 326, 2, PRES, , 19.591
SFE, 327, 2, PRES, , 19.5555
SFE, 328, 2, PRES, , 19.52
SFE, 329, 2, PRES, , 19.4845

SFE,330,2,PRES,,19.449
SFE,331,2,PRES,,19.4135
SFE,332,2,PRES,,19.378
SFE,333,2,PRES,,19.3425
SFE,334,2,PRES,,19.307
SFE,335,2,PRES,,19.2715
SFE,336,2,PRES,,19.236
SFE,337,2,PRES,,19.2005
SFE,338,2,PRES,,19.165
SFE,339,2,PRES,,19.1295
SFE,340,2,PRES,,19.094
SFE,341,2,PRES,,19.0585
SFE,342,2,PRES,,19.023
SFE,343,2,PRES,,18.9875
SFE,344,2,PRES,,18.952
SFE,345,2,PRES,,18.9165
SFE,346,2,PRES,,18.881
SFE,347,2,PRES,,18.8455
SFE,348,2,PRES,,18.81
SFE,349,2,PRES,,18.7745
SFE,350,2,PRES,,18.739
SFE,351,2,PRES,,18.7035
SFE,352,2,PRES,,18.668
SFE,353,2,PRES,,18.6325
SFE,354,2,PRES,,18.597
SFE,355,2,PRES,,18.5615
SFE,356,2,PRES,,18.526
SFE,357,2,PRES,,18.4905
SFE,358,2,PRES,,18.455
SFE,359,2,PRES,,18.4195
SFE,360,2,PRES,,18.384
SFE,361,2,PRES,,18.3485
SFE,362,2,PRES,,18.313
SFE,363,2,PRES,,18.2775
SFE,364,2,PRES,,18.242
SFE,365,2,PRES,,18.2065
SFE,366,2,PRES,,18.171
SFE,367,2,PRES,,18.1355
SFE,368,2,PRES,,18.1
SFE,369,2,PRES,,18.0645
SFE,370,2,PRES,,18.029
SFE,371,2,PRES,,17.9935
SFE,372,2,PRES,,17.958
SFE,373,2,PRES,,17.9225
SFE,374,2,PRES,,17.887
SFE,375,2,PRES,,17.8515
SFE,376,2,PRES,,17.816
SFE,377,2,PRES,,17.7805
SFE,378,2,PRES,,17.745
SFE,379,2,PRES,,17.7095
SFE,380,2,PRES,,17.674
SFE,381,2,PRES,,17.6385
SFE,382,2,PRES,,17.603
SFE,383,2,PRES,,17.5675
SFE,384,2,PRES,,17.532
SFE,385,2,PRES,,17.4965
SFE,386,2,PRES,,17.461

SFE, 387, 2, PRES, , 17.4255
SFE, 388, 2, PRES, , 17.39
SFE, 389, 2, PRES, , 17.3545
SFE, 390, 2, PRES, , 17.319
SFE, 391, 2, PRES, , 17.2835
SFE, 392, 2, PRES, , 17.248
SFE, 393, 2, PRES, , 17.2125
SFE, 394, 2, PRES, , 17.177
SFE, 395, 2, PRES, , 17.1415
SFE, 396, 2, PRES, , 17.106
SFE, 397, 2, PRES, , 17.0705
SFE, 398, 2, PRES, , 17.035
SFE, 399, 2, PRES, , 16.9995
SFE, 400, 2, PRES, , 16.964
SFE, 401, 2, PRES, , 16.9285
SFE, 402, 2, PRES, , 16.893
SFE, 403, 2, PRES, , 16.8575
SFE, 404, 2, PRES, , 16.822
SFE, 405, 2, PRES, , 16.7865
SFE, 406, 2, PRES, , 16.751
SFE, 407, 2, PRES, , 16.7155
SFE, 408, 2, PRES, , 16.68
SFE, 409, 2, PRES, , 16.6445
SFE, 410, 2, PRES, , 16.609
SFE, 411, 2, PRES, , 16.5735
SFE, 412, 2, PRES, , 16.538
SFE, 413, 2, PRES, , 16.5025
SFE, 414, 2, PRES, , 16.467
SFE, 415, 2, PRES, , 16.4315
SFE, 416, 2, PRES, , 16.396
SFE, 417, 2, PRES, , 16.3605
SFE, 418, 2, PRES, , 16.325
SFE, 419, 2, PRES, , 16.2895
SFE, 420, 2, PRES, , 16.254
SFE, 421, 2, PRES, , 16.2185
SFE, 422, 2, PRES, , 16.183
SFE, 423, 2, PRES, , 16.1475
SFE, 424, 2, PRES, , 16.112
SFE, 425, 2, PRES, , 16.0765
SFE, 426, 2, PRES, , 16.041
SFE, 427, 2, PRES, , 16.0055
SFE, 428, 2, PRES, , 15.97
SFE, 429, 2, PRES, , 15.9345
SFE, 430, 2, PRES, , 15.899
SFE, 431, 2, PRES, , 15.8635
SFE, 432, 2, PRES, , 15.828
SFE, 433, 2, PRES, , 15.7925
SFE, 434, 2, PRES, , 15.757
SFE, 435, 2, PRES, , 15.7215
SFE, 436, 2, PRES, , 15.686
SFE, 437, 2, PRES, , 15.6505
SFE, 438, 2, PRES, , 15.615
SFE, 439, 2, PRES, , 15.5795
SFE, 440, 2, PRES, , 15.544
SFE, 441, 2, PRES, , 15.5085
SFE, 442, 2, PRES, , 15.473
SFE, 443, 2, PRES, , 15.4375

SFE,444,2,PRES,,15.402
SFE,445,2,PRES,,15.3665
SFE,446,2,PRES,,15.331
SFE,447,2,PRES,,15.2955
SFE,448,2,PRES,,15.26
SFE,451,2,PRES,,15.2245
SFE,453,2,PRES,,15.189
SFE,455,2,PRES,,15.1535
SFE,457,2,PRES,,15.118
SFE,459,2,PRES,,15.0825
SFE,461,2,PRES,,15.047
SFE,499,2,PRES,,15.0115
SFE,535,2,PRES,,14.976
SFE,571,2,PRES,,14.9405
SFE,607,2,PRES,,14.905
SFE,643,2,PRES,,14.8695
SFE,679,2,PRES,,14.834
SFE,715,2,PRES,,14.7985
SFE,751,2,PRES,,14.763
SFE,787,2,PRES,,14.7275
SFE,823,2,PRES,,14.7
NSEL,S,LOC,Y,-166.25
ESLN
SFE,ALL,1,PRES,,14.7
ALLSEL
NSEL,S,LOC,Y,6.5
ESLN
ESEL,U,ELEM,,284,285,1
SFE,ALL,3,PRES,,20.93
ALLSEL
esel,s,elem,,1,34,1
sfe,all,1,pres,,13.15
allsel
SAVE
/SOLU
ANTYPE,STATIC
SOLVE
SAVE
FINI
/POST1
ALLSEL
/OUT,HYDRO2,OUT
PRNSTR,ALL
/OUT
/title,DSC HYDROSTATIC PRESSURE ANALYSIS
PLNSOL,S,INT

PRINT S NODAL SOLUTION PER NODE

*** WARNING ***

CP= 71413.030 TIME= 12:21:28

The selected element set contains mixed materials.

This could invalidate error estimation.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1	221.87 241.90	-20.033	221.87	.00000	.00000	.00000	221.87	221.87	-20.033	241.90
2	220.93 228.92	-6.7813	220.40	-14.964	.00000	.00000	221.91	220.40	-7.7604	229.67
3	213.78 232.17	-14.270	214.96	-23.262	.00000	.00000	216.13	214.96	-16.618	232.75
4	209.53 225.83	-12.936	213.29	-14.806	.00000	.00000	213.29	210.51	-13.917	227.21
5	209.37 223.88	-12.169	212.15	-11.844	.00000	.00000	212.15	210.00	-12.800	224.95
6	212.83 226.40	-12.905	212.69	-10.564	.00000	.00000	213.32	212.69	-13.398	226.72
7	222.46 232.51	-12.191	216.16	-12.074	.00000	.00000	223.08	216.16	-12.810	235.8
8	259.93 250.36	.51163	232.48	-24.166	.00000	.00000	262.16	232.48	-1.7203	263.8
9	343.83 322.01	-3.0104	262.07	-41.109	.00000	.00000	348.63	262.07	-7.8163	356.4
10	471.39 439.01	-18.664	310.55	-42.932	.00000	.00000	475.12	310.55	-22.396	497.5
11	575.66 530.19	-24.545	370.43	-25.230	.00000	.00000	576.72	370.43	-25.604	602.3
12	603.23 550.00	-17.150	409.67	-8.9458	.00000	.00000	603.36	409.67	-17.279	620.6
13	582.88 535.00	-12.684	427.07	-3.9107	.00000	.00000	582.90	427.07	-12.710	595.6

HABGE-01/99-0745, Revision 2
E11

14	548.26 514.66	-14.786	431.36	-1.6310	.00000	.00000	548.27	431.36	-14.791	563.06
15	510.91 489.29	-13.461	430.88	.77269	.00000	.00000	510.91	430.88	-13.462	524.37
16	469.40 462.12	-13.557	424.40	2.1981	.00000	.00000	469.41	424.40	-13.567	482.97
17	426.93 434.22	-13.436	414.27	3.3370	.00000	.00000	426.96	414.27	-13.461	440.42
18	383.74 406.23	-13.457	401.10	4.3385	.00000	.00000	401.10	383.79	-13.504	414.61

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
19	339.78 378.25	-13.470	385.43	5.2905	.00000	.00000	385.43	339.85	-13.549	398.98
20	294.75 350.51	-13.493	367.52	6.2258	.00000	.00000	367.52	294.88	-13.619	381.14
21	248.38 323.35	-13.512	347.57	7.1555	.00000	.00000	347.57	248.58	-13.707	361.28
22	200.42 297.44	-13.527	325.71	8.0814	.00000	.00000	325.71	200.72	-13.832	339.54
23	150.66 273.80	-13.538	302.02	9.0011	.00000	.00000	302.02	151.16	-14.030	316.0
24	98.984 253.94	-13.541	276.59	9.9061	.00000	.00000	276.59	99.849	-14.406	290.9
25	45.346 239.81	-13.528	249.49	10.777	.00000	.00000	249.49	47.257	-15.439	264.9
26	-10.105 233.52	-13.485	220.84	11.568	.00000	.00000	220.84	-10.464	-23.485	244.3
27	-66.910 236.57	-13.385	190.87	12.200	.00000	.00000	190.87	-10.736	-69.560	260.4
28	-124.19 248.95	-13.244	159.91	12.565	.00000	.00000	159.91	-11.839	-125.59	285.5
29	-180.17 268.62	-12.949	128.64	12.467	.00000	.00000	128.64	-12.024	-181.10	309.7

HABCE-01/99-0745, Revision 2

30	-233.15 292.51	-12.603	97.706	11.879	.00000	.00000	97.706	-11.965	-233.79	331.50
31	-277.70 314.01	-13.272	68.596	10.443	.00000	.00000	68.596	-12.860	-278.11	346.71
32	-340.31 355.56	-11.062	34.929	15.918	.00000	.00000	34.929	-10.295	-341.07	376.00
33	-340.33 329.51	-37.345	10.433	-2.2521	.00000	.00000	10.433	-37.329	-340.35	350.78
34	-420.29 517.99	142.17	25.534	36.285	.00000	.00000	144.50	25.534	-422.62	567.12
35	-321.83 1059.0	-1423.8	-426.61	62.101	.00000	.00000	-318.34	-426.61	-1427.3	1109.0
36	-185.59 536.64	-712.78	-169.23	-19.645	.00000	.00000	-169.23	-184.86	-713.51	544.28

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
37	-159.65 554.79	457.06	187.26	-83.771	.00000	.00000	468.24	187.26	-170.83	-639.07
38	155.72 174.30	-18.578	155.72	.00000	.00000	.00000	155.72	155.72	-18.578	174.30
39	155.92 164.32	-8.8791	154.67	3.9795	.00000	.00000	156.01	154.67	-8.9752	164.9
40	152.58 166.99	-14.321	152.14	5.8568	.00000	.00000	152.78	152.14	-14.527	167.3
41	151.19 164.90	-12.959	152.41	3.8625	.00000	.00000	152.41	151.28	-13.050	165.4
42	150.82 163.37	-11.790	152.29	1.6058	.00000	.00000	152.29	150.83	-11.806	164.0
43	154.83 165.69	-11.618	153.27	-1.2841	.00000	.00000	154.84	153.27	-11.628	166.4
44	160.22 170.86	-12.684	155.66	-4.7312	.00000	.00000	160.35	155.66	-12.814	173.1
45	165.81 160.96	6.7781	163.50	-18.075	.00000	.00000	167.84	163.50	4.7496	163.0

46	194.17 184.67	18.593	175.84	-45.315	.00000	.00000	205.17	175.84	7.5871	197.58
47	231.59 249.98	-24.966	179.11	-49.600	.00000	.00000	240.85	179.11	-34.221	275.07
48	256.06 267.21	-35.102	192.20	-19.491	.00000	.00000	257.36	192.20	-36.401	293.76
49	264.21 255.12	-13.565	210.24	1.3668	.00000	.00000	264.22	210.24	-13.572	277.79
50	255.39 252.60	-15.590	212.66	6.5896	.00000	.00000	255.55	212.66	-15.750	271.30
51	246.08 247.80	-15.396	214.37	10.339	.00000	.00000	246.48	214.37	-15.805	262.29
52	230.63 237.42	-14.251	212.65	12.650	.00000	.00000	231.28	212.65	-14.902	246.18
53	214.45 227.14	-14.087	209.00	13.929	.00000	.00000	215.29	209.00	-14.933	230.23
54	197.21 216.04	-13.934	203.82	14.729	.00000	.00000	203.82	198.23	-14.957	218.78

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
55	179.49 204.74	-13.911	197.49	15.380	.00000	.00000	197.49	180.70	-15.126	212.61
56	161.26 193.28	-13.912	190.18	16.004	.00000	.00000	190.18	162.71	-15.362	205.5
57	142.48 181.77	-13.927	182.00	16.651	.00000	.00000	182.00	144.23	-15.680	197.6
58	123.04 170.33	-13.942	173.03	17.335	.00000	.00000	173.03	125.20	-16.102	189.1
59	102.84 159.17	-13.956	163.29	18.054	.00000	.00000	163.29	105.57	-16.683	179.9
60	81.837 148.59	-13.965	152.83	18.799	.00000	.00000	152.83	85.394	-17.522	170.3
61	59.968 139.02	-13.965	141.66	19.555	.00000	.00000	141.66	64.822	-18.818	160.4

HABCE-01/99-0745, Revision 2

62	37.242 131.01	-13.940	129.83	20.285	.00000	.00000	129.83	44.307	-21.005	150.83
63	13.736 125.21	-13.873	117.37	20.921	.00000	.00000	117.37	24.996	-25.133	142.51
64	-10.342 122.20	-13.708	104.41	21.342	.00000	.00000	104.41	9.3830	-33.433	137.84
65	-34.522 122.26	-13.488	91.093	21.364	.00000	.00000	91.093	-.19216	-47.817	138.91
66	-58.381 125.27	-12.959	77.673	20.799	.00000	.00000	77.673	-4.8740	-66.466	144.14
67	-79.942 129.62	-12.825	64.582	19.220	.00000	.00000	64.582	-7.7104	-85.057	149.64
68	-104.09 138.88	-11.118	51.083	18.190	.00000	.00000	51.083	-7.6857	-107.52	158.60
69	-110.30 135.04	-18.526	39.926	18.538	.00000	.00000	39.926	-14.923	-113.91	153.83
70	-171.43 174.74	-19.376	15.380	17.530	.00000	.00000	15.380	-17.381	-173.42	188.80
71	-172.21 243.87	86.370	36.134	32.010	.00000	.00000	90.273	36.134	-176.11	266.39
72	-50.464 510.94	-585.20	-131.00	-62.464	.00000	.00000	-43.264	-131.00	-592.40	549.13

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
73	18.943 649.16	-619.08	-118.11	-166.33	.00000	.00000	59.701	-118.11	-659.84	719.5
74	39.154 379.20	-232.42	5.4668	-161.30	.00000	.00000	114.21	5.4668	-307.48	421.6
75	91.727 107.63	-15.900	91.727	.00000	.00000	.00000	91.727	91.727	-15.900	107.6
76	91.952 106.08	-13.965	91.132	6.3517	.00000	.00000	92.331	91.132	-14.345	106.6
77	91.580 105.77	-13.574	90.944	8.0925	.00000	.00000	92.199	90.944	-14.193	106.3

78	91.906 105.14	-13.198	91.574	3.7188	.00000	.00000	92.038	91.574	-13.330	105.37
79	91.799 102.99	-10.884	92.344	1.4195	.00000	.00000	92.344	91.819	-10.903	103.25
80	91.596 101.99	-9.8676	92.464	-2.4413	.00000	.00000	92.464	91.655	-9.9263	102.39
81	93.760 102.19	-8.0024	93.479	-6.2391	.00000	.00000	94.141	93.479	-8.3835	102.52
82	70.951 83.158	-.23327	89.464	-7.9051	.00000	.00000	89.464	71.819	-1.1006	90.564
83	10.324 85.587	67.871	85.965	-29.692	.00000	.00000	85.965	80.444	-2.2490	88.214
84	-11.544 91.362	-55.081	32.270	-29.577	.00000	.00000	32.270	3.4113	-70.036	102.31
85	-38.244 63.334	-29.102	28.131	-6.5528	.00000	.00000	28.131	-25.683	-41.662	69.793
86	-77.065 74.638	-17.428	6.5848	1.3577	.00000	.00000	6.5848	-17.397	-77.096	83.681
87	-62.195 58.563	-18.242	2.0208	8.0953	.00000	.00000	2.0208	-16.798	-63.638	65.659
88	-55.190 52.340	-16.857	-2.1342	12.765	.00000	.00000	-2.1342	-12.995	-59.052	56.918
89	-47.117 46.505	-15.463	-4.2691	15.068	.00000	.00000	-4.2691	-9.4374	-53.143	48.874
90	-39.241 41.455	-14.954	-5.4503	16.407	.00000	.00000	-5.4503	-6.6852	-47.509	42.089

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
91	-31.410 37.404	-14.752	-5.7041	17.214	.00000	.00000	-3.9575	-5.7041	-42.204	38.24
92	-23.821 34.842	-14.695	-5.2659	17.849	.00000	.00000	-.83508	-5.2659	-37.681	36.84
93	-16.347 33.930	-14.704	-4.2353	18.455	.00000	.00000	2.9476	-4.2353	-33.999	36.94

HABCE-01/99-0745, Revision 2

94	-8.9145 34.668	-14.731	-2.6961	19.089	.00000	.00000	7.4869	-2.6961	-31.133	38.619
95	-1.4429 36.875	-14.760	-.71029	19.766	.00000	.00000	12.756	-.71029	-28.960	41.716
96	6.1332 40.287	-14.786	1.6757	20.484	.00000	.00000	18.674	1.6757	-27.327	46.001
97	13.865 44.644	-14.805	4.4267	21.234	.00000	.00000	25.150	4.4267	-26.090	51.240
98	21.788 49.721	-14.805	7.5168	21.998	.00000	.00000	32.104	7.5168	-25.120	57.224
99	29.918 55.310	-14.763	10.926	22.735	.00000	.00000	39.452	10.926	-24.297	63.749
100	38.240 61.184	-14.635	14.636	23.371	.00000	.00000	47.089	14.636	-23.484	70.573
101	46.692 67.061	-14.364	18.623	23.771	.00000	.00000	54.856	18.623	-22.527	77.383
102	55.097 72.523	-13.849	22.837	23.731	.00000	.00000	62.475	22.837	-21.228	83.703
103	63.511 77.509	-13.183	27.240	23.035	.00000	.00000	69.898	27.240	-19.570	89.467
104	69.982 80.171	-12.009	31.336	21.448	.00000	.00000	75.253	31.336	-17.281	92.534
105	79.706 86.027	-11.080	36.305	20.125	.00000	.00000	83.967	36.305	-15.341	99.308
106	83.316 95.065	-20.436	36.761	17.662	.00000	.00000	86.240	36.761	-23.360	109.60
107	93.101 103.51	-8.1350	45.108	31.736	.00000	.00000	102.23	45.108	-17.261	119.49
108	38.581 71.678	-3.2613	32.306	34.690	.00000	.00000	58.170	32.306	-22.851	81.02

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
109	-116.35 257.64	-323.38	-110.77	-86.275	.00000	.00000	-85.115	-110.77	-354.62	269.5

110	-100.77 467.61	-519.68	-165.39	-148.39	.00000	.00000	-53.528	-165.39	-566.92	513.39
111	-8.6374 899.72	-1002.2	-280.50	-78.519	.00000	.00000	-2.4706	-280.50	-1008.4	1005.9
112	-6.6601 8.0172	-14.677	-6.6601	.00000	.00000	.00000	-6.6601	-6.6601	-14.677	8.0172
113	-4.8925 11.891	-17.323	-6.3385	.95801	.00000	.00000	-4.8191	-6.3385	-17.396	12.577
114	-.56538 14.135	-12.769	-2.8509	4.9515	.00000	.00000	1.1909	-2.8509	-14.525	15.716
115	3.1391 19.386	-13.451	-.56899	7.0319	.00000	.00000	5.7186	-.56899	-16.031	21.749
116	4.3686 15.562	-10.159	2.2677	4.3678	.00000	.00000	5.5807	2.2677	-11.371	16.951
117	-2.5150 9.0666	-9.3891	.85624	.36928	.00000	.00000	.85624	-2.4952	-9.4089	10.265
118	-18.691 17.394	-2.3109	-3.8251	-4.3500	.00000	.00000	-1.2274	-3.8251	-19.775	18.547
119	-13.189 13.177	-14.640	-7.4660	6.5948	.00000	.00000	-7.2799	-7.4660	-20.549	13.269
120	-66.534 160.04	104.17	8.8016	34.916	.00000	.00000	111.03	8.8016	-73.400	184.43
121	-295.93 199.54	-87.713	-126.97	32.115	.00000	.00000	-82.872	-126.97	-300.77	217.90
122	-625.15 528.38	-18.372	-266.55	-.18640E-01	.00000	.00000	-18.372	-266.55	-625.15	-606.48
123	-566.33 469.31	-24.758	-291.84	-9.3728	.00000	.00000	-24.596	-291.84	-566.49	541.90
124	-546.77 458.16	-19.126	-316.01	-1.9894	.00000	.00000	-19.118	-316.01	-546.78	527.6
125	-509.08 429.81	-18.342	-327.82	1.9774	.00000	.00000	-18.334	-327.82	-509.08	490.7
126	-465.92 399.46	-16.488	-330.77	4.3190	.00000	.00000	-16.446	-330.77	-465.97	449.5

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

HABGE-01/99-0745, Revision 2

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
127	-420.91 367.75	-15.753	-328.00	5.9066	.00000	.00000	-15.667	-328.00	-420.99	405.33
128	-375.45 336.27	-15.453	-320.86	7.1491	.00000	.00000	-15.312	-320.86	-375.59	360.28
129	-329.75 305.44	-15.342	-310.20	8.2354	.00000	.00000	-15.126	-310.20	-329.96	314.84
130	-283.68 275.53	-15.324	-296.63	9.2882	.00000	.00000	-15.002	-284.00	-296.63	281.63
131	-236.88 246.91	-15.336	-280.49	10.344	.00000	.00000	-14.854	-237.36	-280.49	265.64
132	-189.01 220.37	-15.356	-262.05	11.414	.00000	.00000	-14.609	-189.75	-262.05	247.44
133	-139.76 197.32	-15.377	-241.46	12.495	.00000	.00000	-14.134	-141.01	-241.46	227.33
134	-88.909 180.02	-15.391	-218.88	13.582	.00000	.00000	-12.962	-91.338	-218.88	205.92
135	-36.288 171.42	-15.383	-194.40	14.662	.00000	.00000	-7.8294	-43.842	-194.40	186.57
136	18.153 174.13	-15.327	-168.11	15.705	.00000	.00000	24.367	-21.541	-168.11	192.48
137	74.286 188.77	-15.154	-140.15	16.652	.00000	.00000	77.286	-18.154	-140.15	217.44
138	131.67 213.57	-14.830	-110.72	17.399	.00000	.00000	133.71	-16.868	-110.72	244.43
139	189.42 245.29	-14.090	-80.123	17.791	.00000	.00000	190.96	-15.634	-80.123	271.09
140	245.71 280.43	-13.487	-49.183	17.576	.00000	.00000	246.90	-14.673	-49.183	296.0
141	300.18 316.00	-11.109	-17.646	17.099	.00000	.00000	301.11	-12.045	-17.646	318.7
142	346.77 349.49	-13.018	10.785	15.220	.00000	.00000	347.41	10.785	-13.661	361.0
143	392.00 384.23	-15.575	38.668	15.048	.00000	.00000	392.56	38.668	-16.130	408.6
144	459.07 437.59	-13.307	74.960	27.379	.00000	.00000	460.65	74.960	-14.888	475.5

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

HABCE-01/99-0745, Revision 2

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
145	601.63 582.28	-41.075	126.16	42.803	.00000	.00000	604.47	126.16	-43.913	648.38
146	782.18 788.49	-104.91	182.04	-48.313	.00000	.00000	784.80	182.04	-107.54	892.34
147	333.88 912.06	-715.69	-131.75	-26.763	.00000	.00000	334.56	-131.75	-716.37	1050.9
148	69.188 958.28	-1016.7	-295.72	27.598	.00000	.00000	69.889	-295.72	-1017.4	1087.3
149	5.4874 24.012	-18.525	5.4874	.00000	.00000	.00000	5.4874	5.4874	-18.525	24.012
150	4.9338 22.547	-17.357	5.4290	.24832	.00000	.00000	5.4290	4.9366	-17.360	22.789
151	3.3665 19.864	-15.654	4.7977	1.0826	.00000	.00000	4.7977	3.4279	-15.716	20.513
152	1.3105 16.740	-13.635	3.8378	2.0566	.00000	.00000	3.8378	1.5883	-13.913	17.751
153	-1.7288 12.315	-10.389	2.6208	2.5865	.00000	.00000	2.6208	-1.0151	-11.102	13.723
154	-6.2273 9.1694	-6.5542	.65296	3.3855	.00000	.00000	.65296	-3.0013	-9.7802	10.433
155	-14.852 14.154	-5.4002	-4.2895	5.7529	.00000	.00000	-2.6809	-4.2895	-17.571	14.890
156	-29.234 28.078	-4.7341	-11.934	10.209	.00000	.00000	-1.0377	-11.934	-32.930	31.89
157	-38.529 22.597	-32.984	-29.147	12.164	.00000	.00000	-23.281	-29.147	-48.232	24.95
158	227.73 197.85	2.5886	90.919	13.447	.00000	.00000	228.53	90.919	1.7882	226.7
159	203.01 199.38	-26.621	90.963	8.1135	.00000	.00000	203.30	90.963	-26.908	230.2
160	165.18 165.54	-24.515	90.087	2.8797	.00000	.00000	165.22	90.087	-24.559	189.7
161	145.56 148.54	-22.422	91.450	1.7886	.00000	.00000	145.57	91.450	-22.441	168.0
162	131.16 135.30	-19.196	92.587	2.0098	.00000	.00000	131.18	92.587	-19.223	150.4

HABGE-01/99-0745, Revision 2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
163	117.60 124.13	-17.456	91.445	2.2628	.00000	.00000	117.64	91.445	-17.494	135.13
164	104.71 114.29	-16.606	88.795	2.7045	.00000	.00000	104.77	88.795	-16.666	121.44
165	91.974 105.07	-16.289	84.930	3.2429	.00000	.00000	92.071	84.930	-16.386	108.46
166	79.092 96.032	-16.213	80.082	3.8149	.00000	.00000	80.082	79.244	-16.366	96.448
167	65.892 87.025	-16.235	74.396	4.3882	.00000	.00000	74.396	66.126	-16.469	90.865
168	52.283 78.084	-16.286	67.970	4.9538	.00000	.00000	67.970	52.639	-16.642	84.612
169	38.202 69.398	-16.339	60.872	5.5084	.00000	.00000	60.872	38.753	-16.890	77.762
170	23.606 61.346	-16.385	53.148	6.0521	.00000	.00000	53.148	24.502	-17.281	70.429
171	8.4619 54.562	-16.418	44.834	6.5864	.00000	.00000	44.834	10.098	-18.054	62.888
172	-7.2578 49.997	-16.421	35.961	7.1141	.00000	.00000	35.961	-3.3777	-20.301	56.261
173	-23.581 48.777	-16.354	26.561	7.6402	.00000	.00000	26.561	-11.516	-28.419	54.981
174	-40.539 51.701	-16.147	16.671	8.1730	.00000	.00000	16.671	-13.661	-43.025	59.69
175	-58.175 58.769	-15.690	6.3306	8.7262	.00000	.00000	6.3306	-13.968	-59.897	66.22
176	-76.547 69.400	-14.883	-4.4367	9.3194	.00000	.00000	-4.4367	-13.506	-77.925	73.48
177	-95.777 83.001	-13.612	-15.632	10.001	.00000	.00000	-12.412	-15.632	-96.977	84.56
178	-115.82 98.717	-12.153	-27.352	10.695	.00000	.00000	-11.061	-27.352	-116.91	105.81

HABGE-01/99-0745, Revision 2

179	-136.08 114.97	-11.226	-39.640	11.080	.00000	.00000	-10.250	-39.640	-137.06	126.81
180	-155.28 127.58	-14.083	-53.212	10.579	.00000	.00000	-13.295	-53.212	-156.06	142.77

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
181	-181.76 137.43	-29.296	-74.605	12.877	.00000	.00000	-28.216	-74.605	-182.84	154.62
182	-237.67 167.80	-53.105	-111.46	22.054	.00000	.00000	-50.506	-111.46	-240.27	189.76
183	-277.77 177.03	-85.105	-147.03	27.780	.00000	.00000	-81.179	-147.03	-281.69	200.52
184	-11.610 7.3478	-18.958	-11.610	.00000	.00000	.00000	-11.610	-11.610	-18.958	7.3478
185	-11.830 6.6809	-18.177	-11.581	.95028	.00000	.00000	-11.581	-11.691	-18.316	6.7351
186	-12.506 6.3449	-16.676	-11.397	2.3816	.00000	.00000	-11.397	-11.426	-17.756	6.3593
187	-13.617 7.0452	-14.625	-11.648	3.7753	.00000	.00000	-10.312	-11.648	-17.930	7.6176
188	-15.578 8.6352	-11.293	-12.177	4.4427	.00000	.00000	-8.5031	-12.177	-18.368	9.8641
189	-17.559 12.304	-7.4989	-12.790	5.0139	.00000	.00000	-5.4267	-12.790	-19.631	14.20
190	-16.854 14.020	-5.7678	-13.154	5.8022	.00000	.00000	-3.2864	-13.154	-19.335	16.04
191	-10.976 10.986	-9.5386	-12.640	6.1500	.00000	.00000	-4.0656	-12.640	-16.449	12.38
192	-5.8634 13.681	-16.930	-12.900	5.5696	.00000	.00000	-3.5456	-12.900	-19.247	15.70
193	89.104 126.41	-25.276	-12.546	37.372	.00000	.00000	100.23	-12.546	-36.404	136.6
194	87.963 95.219	15.566	10.796	33.947	.00000	.00000	101.39	10.796	2.1383	99.25

HABCE-01/99-0745, Revision 2

195	72.357 72.521	-6.8790	23.724	12.506	.00000	.00000	74.284	23.724	-8.8060	83.090
196	70.873 85.326	-24.924	23.518	11.511	.00000	.00000	72.237	23.518	-26.288	98.524
197	71.585 87.131	-26.464	30.210	10.375	.00000	.00000	72.671	30.210	-27.550	100.22
198	62.458 76.287	-22.315	32.999	9.3591	.00000	.00000	63.479	32.999	-23.336	86.815

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
199	53.462 67.091	-19.514	33.469	8.8521	.00000	.00000	54.520	33.469	-20.572	75.092
200	46.051 60.448	-17.931	32.962	8.6876	.00000	.00000	47.210	32.962	-19.089	66.299
201	39.273 55.238	-17.189	31.612	8.8914	.00000	.00000	40.640	31.612	-18.556	59.196
202	32.661 50.710	-16.889	29.602	9.2839	.00000	.00000	34.343	29.602	-18.571	52.914
203	25.957 46.496	-16.812	27.043	9.7478	.00000	.00000	28.074	27.043	-18.929	47.003
204	19.058 42.481	-16.825	24.025	10.233	.00000	.00000	24.025	21.771	-19.538	43.56
205	11.914 38.718	-16.866	20.609	10.723	.00000	.00000	20.609	15.470	-20.422	41.03
206	4.5015 35.381	-16.911	16.835	11.212	.00000	.00000	16.835	9.2980	-21.707	38.54
207	-3.1911 32.750	-16.950	12.733	11.699	.00000	.00000	12.733	3.5012	-23.642	36.37
208	-11.173 31.184	-16.978	8.3240	12.185	.00000	.00000	8.3240	-1.5495	-26.602	34.92
209	-19.455 31.047	-16.980	3.6286	12.676	.00000	.00000	3.6286	-5.4811	-30.954	34.58
210	-28.055 32.586	-16.920	-1.3319	13.182	.00000	.00000	-1.3319	-8.1777	-36.797	35.46

HABGE-01/99-0745, Revision 2

211	-37.008 35.870	-16.731	-6.5359	13.721	.00000	.00000	-6.5359	-9.8088	-43.931	37.395
212	-46.381 40.857	-16.316	-11.966	14.326	.00000	.00000	-10.583	-11.966	-52.114	41.531
213	-56.294 47.513	-15.572	-17.632	15.043	.00000	.00000	-10.618	-17.632	-61.248	50.630
214	-66.925 55.876	-14.429	-23.586	15.949	.00000	.00000	-9.9637	-23.586	-71.391	61.427
215	-78.583 65.822	-13.122	-30.055	17.021	.00000	.00000	-8.9611	-30.055	-82.744	73.783
216	-91.309 76.617	-12.040	-37.232	17.786	.00000	.00000	-8.2328	-37.232	-95.116	86.884

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
217	-103.73 84.275	-13.653	-45.543	16.779	.00000	.00000	-10.629	-45.543	-106.75	96.121
218	-107.96 77.424	-24.523	-54.313	14.505	.00000	.00000	-22.073	-54.313	-110.41	88.384
219	-87.012 34.383	-59.562	-61.900	12.746	.00000	.00000	-54.556	-61.900	-92.018	37.461
220	-65.798 22.777	-68.509	-57.509	11.836	.00000	.00000	-55.241	-57.509	-79.067	23.82
221	-88.307 874.80	-1069.4	-377.97	32.086	.00000	.00000	-87.258	-377.97	-1070.4	983.1
222	-92.337 508.49	-658.46	-252.19	31.684	.00000	.00000	-90.569	-252.19	-660.23	569.6
223	-28.337 8.4997	-19.838	-28.337	.00000	.00000	.00000	-19.838	-28.337	-28.337	8.499
224	-28.269 8.6077	-19.930	-28.308	1.1867	.00000	.00000	-19.764	-28.308	-28.434	8.670
225	-28.050 10.062	-18.950	-27.231	2.8984	.00000	.00000	-18.105	-27.231	-28.895	10.79
226	-27.542 13.081	-17.062	-26.466	4.8785	.00000	.00000	-15.142	-26.466	-29.461	14.319

HABCE-01/99-0745, Revision 2

227	-27.816 17.013	-13.946	-25.985	6.3009	.00000	.00000	-11.511	-25.985	-30.251	18.740
228	-28.239 21.404	-9.3656	-25.179	7.0783	.00000	.00000	-7.0060	-25.179	-30.598	23.592
229	-26.973 22.193	-5.6994	-24.156	5.5358	.00000	.00000	-4.3451	-24.156	-28.328	23.983
230	-24.481 17.364	-7.1733	-23.992	1.8397	.00000	.00000	-6.9799	-23.992	-24.675	17.695
231	-23.161 16.735	-6.4342	-23.163	-.28657	.00000	.00000	-6.4293	-23.163	-23.166	16.737
232	-30.748 107.63	-22.547	-115.74	-34.627	.00000	.00000	8.2208	-61.516	-115.74	123.96
233	-40.775 110.84	-12.925	-98.953	-31.048	.00000	.00000	27.123	-54.973	-98.953	126.08
234	-19.337 11.362	-26.973	-28.790	4.2275	.00000	.00000	-17.459	-28.790	-28.851	11.392

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
235	-20.349 17.998	-28.141	-28.227	9.3548	.00000	.00000	-14.111	-28.227	-34.379	20.267
236	-20.938 25.406	-26.439	-26.773	14.297	.00000	.00000	-9.1295	-26.773	-38.248	29.11
237	-22.119 23.473	-21.843	-24.804	13.453	.00000	.00000	-8.5272	-24.804	-35.435	26.90
238	-23.592 21.447	-19.848	-24.431	12.140	.00000	.00000	-9.4366	-24.431	-34.003	24.56
239	-24.215 21.208	-18.886	-24.263	11.848	.00000	.00000	-9.4070	-24.263	-33.695	24.28
240	-24.711 21.984	-18.397	-24.291	12.192	.00000	.00000	-8.9601	-24.291	-34.148	25.18
241	-25.263 23.187	-18.190	-24.489	12.812	.00000	.00000	-8.4354	-24.489	-35.018	26.58
242	-25.878 24.536	-18.139	-24.800	13.531	.00000	.00000	-7.9347	-24.800	-36.082	28.14

HABGE-01/99-0745, Revision 2

243	-26.553 25.932	-18.152	-25.180	14.278	.00000	.00000	-7.4699	-25.180	-37.235	29.765
244	-27.283 27.339	-18.184	-25.607	15.023	.00000	.00000	-7.0368	-25.607	-38.430	31.393
245	-28.061 28.746	-18.217	-26.070	15.759	.00000	.00000	-6.6292	-26.070	-39.649	33.020
246	-28.879 30.152	-18.246	-26.564	16.486	.00000	.00000	-6.2410	-26.564	-40.885	34.644
247	-29.730 31.563	-18.269	-27.083	17.207	.00000	.00000	-5.8634	-27.083	-42.135	36.271
248	-30.608 32.996	-18.273	-27.619	17.930	.00000	.00000	-5.4792	-27.619	-43.402	37.923
249	-31.516 34.489	-18.233	-28.164	18.676	.00000	.00000	-5.0531	-28.164	-44.696	39.643
250	-32.465 36.122	-18.101	-28.701	19.480	.00000	.00000	-4.5210	-28.701	-46.044	41.523
251	-33.490 38.031	-17.801	-29.220	20.404	.00000	.00000	-3.7859	-29.220	-47.506	43.720
252	-34.652 40.410	-17.251	-29.715	21.538	.00000	.00000	-2.7221	-29.715	-49.181	46.459

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
253	-36.036 43.481	-16.435	-30.224	22.997	.00000	.00000	-1.2377	-30.224	-51.233	49.99
254	-37.902 47.470	-15.517	-30.923	24.899	.00000	.00000	.58907	-30.923	-54.008	54.59
255	-41.201 52.252	-14.671	-32.279	26.979	.00000	.00000	2.1275	-32.279	-57.999	60.12
256	-46.684 54.877	-13.749	-34.597	26.949	.00000	.00000	1.3659	-34.597	-61.798	63.16
257	-46.017 40.620	-15.601	-35.746	17.623	.00000	.00000	-7.5307	-35.746	-54.087	46.55
258	-33.339 9.7072	-43.316	-41.873	-1.5280	.00000	.00000	-33.110	-41.873	-43.545	10.43

HABCE-01/99-0745, Revision 2

259	-24.945 50.525	-78.098	-51.512	-12.026	.00000	.00000	-22.351	-51.512	-80.693	58.342
260	-15.367 834.33	-966.20	-383.07	-46.304	.00000	.00000	-13.118	-383.07	-968.45	955.33
261	-19.594 651.20	-761.17	-317.31	-45.713	.00000	.00000	-16.787	-317.31	-763.97	747.19
262	-46.109 25.610	-20.498	-46.109	.00000	.00000	.00000	-20.498	-46.109	-46.109	25.610
263	-45.837 24.509	-21.524	-46.158	.75136	.00000	.00000	-21.501	-45.860	-46.158	24.657
264	-44.754 23.607	-21.216	-44.225	2.2652	.00000	.00000	-21.000	-44.225	-44.970	23.970
265	-42.306 23.755	-19.630	-42.349	4.0461	.00000	.00000	-18.929	-42.349	-43.007	24.077
266	-39.809 24.863	-17.058	-40.383	5.3908	.00000	.00000	-15.845	-40.383	-41.022	25.176
267	-38.308 28.602	-11.688	-37.646	6.4968	.00000	.00000	-10.187	-37.646	-39.809	29.622
268	-41.386 36.213	-4.5145	-36.524	5.9862	.00000	.00000	-3.5670	-36.524	-42.334	38.767
269	-50.025 47.012	1.0430	-38.973	3.8501	.00000	.00000	1.3316	-38.973	-50.314	51.645
270	-56.537 45.423	-7.1039	-46.475	2.2970	.00000	.00000	-6.9974	-46.475	-56.643	49.646

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
271	-64.644 247.13	107.36	-175.32	8.1665	.00000	.00000	107.75	-65.031	-175.32	283.0
272	-78.546 137.64	-103.05	-226.48	5.2673	.00000	.00000	-77.461	-104.13	-226.48	149.0
273	-107.22 59.042	-41.871	-78.568	9.4331	.00000	.00000	-40.536	-78.568	-108.55	68.01
274	-107.16 63.908	-38.140	-81.083	12.109	.00000	.00000	-36.077	-81.083	-109.23	73.14

275	-112.22 81.375	-23.825	-81.833	13.789	.00000	.00000	-21.724	-81.833	-114.33	92.602
276	-107.66 79.889	-20.993	-82.820	11.652	.00000	.00000	-19.454	-82.820	-109.19	89.741
277	-100.11 74.667	-20.273	-82.115	10.237	.00000	.00000	-18.981	-82.115	-101.40	82.417
278	-93.831 70.588	-19.951	-81.185	9.9784	.00000	.00000	-18.627	-81.185	-95.155	76.528
279	-88.248 67.163	-19.706	-79.944	10.216	.00000	.00000	-18.216	-79.944	-89.738	71.523
280	-82.878 63.865	-19.605	-78.382	10.640	.00000	.00000	-17.864	-78.382	-84.619	66.755
281	-77.492 60.562	-19.584	-76.477	11.137	.00000	.00000	-17.515	-76.477	-79.560	62.044
282	-72.001 57.240	-19.595	-74.243	11.655	.00000	.00000	-17.120	-74.243	-74.476	57.356
283	-66.353 53.919	-19.614	-71.698	12.170	.00000	.00000	-16.635	-69.332	-71.698	55.063
284	-60.519 50.642	-19.634	-68.864	12.678	.00000	.00000	-16.021	-64.132	-68.864	52.842
285	-54.480 47.478	-19.651	-65.760	13.178	.00000	.00000	-15.226	-58.905	-65.760	50.533
286	-48.221 44.524	-19.665	-62.401	13.674	.00000	.00000	-14.173	-53.712	-62.401	48.228
287	-41.726 41.915	-19.670	-58.797	14.172	.00000	.00000	-12.741	-48.656	-58.797	46.056
288	-34.976 39.836	-19.655	-54.947	14.689	.00000	.00000	-10.749	-43.882	-54.947	44.198

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
289	-27.942 38.520	-19.591	-50.839	15.260	.00000	.00000	-7.9459	-39.587	-50.839	42.89
290	-20.578 38.244	-19.437	-46.448	15.943	.00000	.00000	-4.0548	-35.961	-46.448	42.39

HABGE-01/99-0745, Revision 2

291	-12.828 39.268	-19.141	-41.735	16.823	.00000	.00000	1.1321	-33.101	-41.735	42.867
292	-4.5990 41.786	-18.693	-36.664	17.993	.00000	.00000	7.6777	-30.970	-36.664	44.342
293	4.3542 46.061	-18.245	-31.197	19.582	.00000	.00000	15.663	-29.554	-31.197	46.861
294	13.909 52.519	-18.233	-25.535	21.886	.00000	.00000	24.991	-25.535	-29.315	54.306
295	20.618 57.218	-16.582	-20.231	24.090	.00000	.00000	32.453	-20.231	-28.418	60.871
296	10.547 41.392	-7.1743	-18.694	18.818	.00000	.00000	22.487	-18.694	-19.114	41.600
297	-22.161 26.731	1.0658	-27.940	1.5773	.00000	.00000	1.1725	-22.267	-27.940	29.112
298	-45.668 78.614	-131.87	-89.808	-14.214	.00000	.00000	-43.385	-89.808	-134.15	90.767
299	31.498 380.19	-387.71	-275.20	-33.258	.00000	.00000	34.120	-275.20	-390.33	424.45
300	27.156 1187.3	-1337.2	-553.99	-32.821	.00000	.00000	27.945	-553.99	-1338.0	1365.9
301	-65.243 44.530	-20.712	-65.243	.00000	.00000	.00000	-20.712	-65.243	-65.243	44.530
302	-65.073 43.182	-22.055	-65.398	.11318	.00000	.00000	-22.055	-65.074	-65.398	43.344
303	-64.227 42.459	-22.201	-63.525	-4.6751	.00000	.00000	-21.687	-63.525	-64.741	43.054
304	-61.390 42.711	-20.763	-61.565	-7.4512	.00000	.00000	-19.440	-61.565	-62.714	43.274
305	-56.285 39.370	-18.567	-58.581	-3.4399	.00000	.00000	-18.256	-56.596	-58.581	40.32
306	-46.659 35.997	-13.532	-51.837	.98514E-01	.00000	.00000	-13.531	-46.660	-51.837	38.30

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
------	------------	----	----	-----	-----	-----	----	----	----	------

HABGE-01/99-0745, Revision 2

307	-31.835 33.536	-4.0078	-40.603	3.1332	.00000	.00000	-3.6594	-32.183	-40.603	36.944
308	-14.473 28.832	1.9662	-29.781	5.0016	.00000	.00000	3.3684	-15.875	-29.781	33.149
309	-4.2031 23.732	-.65654	-24.296	5.0201	.00000	.00000	2.8943	-7.7539	-24.296	27.191
310	-289.23 212.79	-43.909	-154.98	1.7206	.00000	.00000	-43.897	-154.98	-289.24	245.34
311	-270.20 196.86	-43.272	-167.41	2.4290	.00000	.00000	-43.246	-167.41	-270.22	226.98
312	-233.30 183.72	-23.893	-157.83	1.7447	.00000	.00000	-23.878	-157.83	-233.31	209.43
313	-209.30 168.39	-20.562	-155.41	-.55899	.00000	.00000	-20.560	-155.41	-209.30	188.74
314	-193.95 157.44	-20.678	-154.94	-.85507	.00000	.00000	-20.674	-154.94	-193.95	173.28
315	-180.78 148.44	-20.535	-153.33	-.29947	.00000	.00000	-20.535	-153.33	-180.78	160.25
316	-168.18 139.83	-20.381	-150.58	.50196	.00000	.00000	-20.380	-150.58	-168.18	147.80
317	-155.56 131.11	-20.301	-146.79	1.3534	.00000	.00000	-20.288	-146.79	-155.58	135.29
318	-142.70 122.17	-20.276	-142.07	2.2110	.00000	.00000	-20.236	-142.07	-142.74	122.50
319	-129.44 112.99	-20.272	-136.51	3.0454	.00000	.00000	-20.187	-129.52	-136.51	116.32
320	-115.71 103.64	-20.274	-130.17	3.8454	.00000	.00000	-20.119	-115.87	-130.17	110.05
321	-101.49 94.262	-20.277	-123.13	4.6103	.00000	.00000	-20.016	-101.75	-123.13	103.1
322	-86.761 85.058	-20.281	-115.44	5.3433	.00000	.00000	-19.854	-87.187	-115.44	95.59
323	-71.500 76.356	-20.284	-107.16	6.0490	.00000	.00000	-19.579	-72.205	-107.16	87.57
324	-55.700 68.656	-20.285	-98.299	6.7344	.00000	.00000	-19.048	-56.938	-98.299	79.25

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

HABGE-01/99-0745, Revision 2

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
325	-39.334 62.678	-20.276	-88.892	7.4131	.00000	.00000	-17.732	-41.878	-88.892	71.160
326	-22.338 59.355	-20.242	-78.929	8.1127	.00000	.00000	-13.110	-29.470	-78.929	65.819
327	-4.5703 59.620	-20.159	-68.361	8.8821	.00000	.00000	-.54746	-24.181	-68.361	67.814
328	14.230 64.057	-19.988	-57.079	9.7893	.00000	.00000	16.833	-22.591	-57.079	73.911
329	34.453 72.740	-19.716	-44.919	10.902	.00000	.00000	36.565	-21.827	-44.919	81.483
330	56.562 85.557	-19.508	-31.748	12.281	.00000	.00000	58.496	-21.442	-31.748	90.243
331	81.994 103.65	-19.951	-17.186	14.427	.00000	.00000	83.997	-17.186	-21.953	105.95
332	114.74 128.70	-19.018	1.2906	18.049	.00000	.00000	117.13	1.2906	-21.411	138.54
333	159.34 152.76	-3.5477	30.833	20.185	.00000	.00000	161.80	30.833	-6.0118	167.81
334	208.10 164.52	28.702	68.763	12.420	.00000	.00000	208.96	-68.763	27.847	181.11
335	230.78 347.23	-168.98	6.5134	-6.1552	.00000	.00000	230.87	6.5134	-169.08	399.95
336	-248.19 224.26	-23.922	-248.19	.00000	.00000	.00000	-23.922	-248.19	-248.19	224.26
337	-244.22 226.76	-18.345	-245.98	-.44805	.00000	.00000	-18.344	-244.22	-245.98	227.6
338	-239.10 211.98	-31.587	-240.76	22.561	.00000	.00000	-29.163	-240.76	-241.53	212.3
339	-234.70 224.61	-19.326	-233.84	37.637	.00000	.00000	-12.938	-233.84	-241.08	228.1
340	-235.36 220.32	-20.654	-235.16	28.785	.00000	.00000	-16.862	-235.16	-239.15	222.2
341	-259.06 239.04	-17.174	-242.21	28.424	.00000	.00000	-13.879	-242.21	-262.36	248.4
342	-326.02 296.60	-11.156	-267.96	35.313	.00000	.00000	-7.2437	-267.96	-329.93	322.1

***** POST1 NODAL STRESS LISTING *****

HABGE-01/99-0745, Revision 2

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
343	-439.92 385.44	-16.463	-314.38	47.089	.00000	.00000	-11.290	-314.38	-445.09	433.80
344	-296.77 349.97	65.409	-268.29	16.429	.00000	.00000	66.153	-268.29	-297.52	363.67
345	-31.427 180.92	-94.630	-231.75	20.578	.00000	.00000	-25.318	-100.74	-231.75	206.43
346	156.83 224.52	-14.546	-88.765	30.613	.00000	.00000	162.14	-19.850	-88.765	250.90
347	-13.706 108.38	-22.896	-125.92	5.7847	.00000	.00000	-10.913	-25.688	-125.92	115.01
348	-19.198 94.965	-19.622	-114.12	4.0187	.00000	.00000	-15.386	-23.434	-114.12	98.733
349	-23.396 83.818	-20.769	-105.45	4.8391	.00000	.00000	-17.068	-27.097	-105.45	88.381
350	-36.280 74.803	-20.702	-101.59	4.8146	.00000	.00000	-19.334	-37.648	-101.59	82.259
351	-50.322 70.080	-20.753	-100.29	4.5523	.00000	.00000	-20.068	-51.007	-100.29	80.226
352	-64.051 69.590	-20.768	-100.55	4.3583	.00000	.00000	-20.334	-64.485	-100.55	80.220
353	-77.842 72.707	-20.789	-102.15	4.2078	.00000	.00000	-20.481	-78.150	-102.15	81.67
354	-91.842 78.701	-20.805	-104.89	4.0808	.00000	.00000	-20.571	-92.076	-104.89	84.32
355	-106.09 86.825	-20.817	-108.60	3.9714	.00000	.00000	-20.633	-106.27	-108.60	87.96
356	-120.59 96.488	-20.827	-113.13	3.8782	.00000	.00000	-20.676	-113.13	-120.74	100.0
357	-135.39 107.28	-20.835	-118.40	3.7990	.00000	.00000	-20.709	-118.40	-135.52	114.8
358	-150.51 118.93	-20.841	-124.31	3.7309	.00000	.00000	-20.734	-124.31	-150.62	129.8
359	-165.94 131.26	-20.848	-130.80	3.6707	.00000	.00000	-20.755	-130.80	-166.03	145.20

HABCE-01/99-0745, Revision 2

360	-181.66	-20.853	-137.81	3.6157	.00000	.00000	-20.772	-137.81	-181.74	160.97
	144.12									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
361	-197.66 157.41	-20.860	-145.28	3.5663	.00000	.00000	-20.788	-145.28	-197.73	176.94
362	-213.98 171.14	-20.853	-153.18	3.5323	.00000	.00000	-20.789	-153.18	-214.05	193.26
363	-230.97 185.53	-20.861	-161.60	3.5517	.00000	.00000	-20.801	-161.60	-231.03	210.23
364	-249.49 201.40	-20.717	-170.73	3.6740	.00000	.00000	-20.658	-170.73	-249.54	228.89
365	-269.60 218.23	-21.074	-180.83	3.7164	.00000	.00000	-21.018	-180.83	-269.65	248.63
366	-284.06 231.48	-20.272	-189.23	2.6300	.00000	.00000	-20.245	-189.23	-284.08	263.84
367	-295.32 236.15	-26.222	-198.55	3.0733	.00000	.00000	-26.187	-198.55	-295.35	269.17
368	-448.72 395.91	4.8772	-239.74	26.551	.00000	.00000	6.4261	-239.74	-450.26	456.69
369	-988.33 830.36	-44.694	-428.80	68.233	.00000	.00000	-39.786	-428.80	-993.23	953.4
370	-583.16 578.36	72.170	-311.67	-55.532	.00000	.00000	76.842	-311.67	-587.84	664.6
371	-184.27 1545.7	-1924.6	-788.73	-125.03	.00000	.00000	-175.33	-788.73	-1933.6	1758.
372	-353.73 329.80	-23.922	-353.73	.00000	.00000	.00000	-23.922	-353.73	-353.73	329.8
373	-356.31 337.59	-17.430	-353.69	-1.6285	.00000	.00000	-17.423	-353.69	-356.32	338.9
374	-362.83 331.37	-31.796	-358.37	-23.634	.00000	.00000	-30.117	-358.37	-364.51	334.3
375	-363.13 346.66	-19.433	-356.11	-38.332	.00000	.00000	-15.210	-356.11	-367.35	352.1

HABGE-01/99-0745, Revision 2

376	-361.22 342.46	-21.018	-358.96	-27.714	.00000	.00000	-18.775	-358.96	-363.47	344.69
377	-337.07 326.68	-19.117	-351.54	-16.524	.00000	.00000	-18.260	-337.92	-351.54	333.28
378	-269.47 287.73	-12.379	-323.13	-2.5050	.00000	.00000	-12.355	-269.50	-323.13	310.77

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
379	-155.43 227.54	-19.133	-280.37	13.689	.00000	.00000	-17.772	-156.79	-280.37	262.59
380	-105.79 277.22	98.940	-214.87	15.318	.00000	.00000	100.08	-106.93	-214.87	314.95
381	-278.07 190.13	-113.05	-314.94	22.195	.00000	.00000	-110.12	-281.00	-314.94	204.82
382	-462.36 400.64	-25.242	-371.48	17.400	.00000	.00000	-24.550	-371.48	-463.05	438.50
383	-306.43 291.16	-23.444	-321.86	-5.4343	.00000	.00000	-23.340	-306.54	-321.86	298.52
384	-311.92 296.83	-19.708	-320.61	-5.9055	.00000	.00000	-19.589	-312.04	-320.61	301.02
385	-316.02 297.88	-21.139	-321.78	-4.0706	.00000	.00000	-21.083	-316.07	-321.78	300.7
386	-309.63 293.48	-21.057	-319.11	-3.2812	.00000	.00000	-21.020	-309.67	-319.11	298.0
387	-300.74 287.29	-21.036	-315.27	-2.8681	.00000	.00000	-21.007	-300.77	-315.27	294.1
388	-291.17 280.56	-21.004	-310.86	-2.4945	.00000	.00000	-20.981	-291.19	-310.86	289.1
389	-280.78 273.22	-20.992	-305.86	-2.1609	.00000	.00000	-20.974	-280.80	-305.86	284.1
390	-269.60 265.33	-20.981	-300.31	-1.8697	.00000	.00000	-20.967	-269.62	-300.31	279.1
391	-257.73 256.98	-20.973	-294.24	-1.6141	.00000	.00000	-20.962	-257.74	-294.24	273.1

HABCE-01/99-0745, Revision 2

392	-245.22 248.25	-20.966	-287.71	-1.3858	.00000	.00000	-20.957	-245.23	-287.71	266.75
393	-232.13 239.22	-20.960	-280.74	-1.1795	.00000	.00000	-20.954	-232.13	-280.74	259.79
394	-218.48 229.94	-20.956	-273.36	-.99214	.00000	.00000	-20.951	-218.49	-273.36	252.41
395	-204.33 220.50	-20.953	-265.60	-.82254	.00000	.00000	-20.950	-204.33	-265.60	244.65
396	-189.72 210.98	-20.951	-257.49	-.66955	.00000	.00000	-20.948	-189.72	-257.49	236.54

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
397	-174.70 201.49	-20.950	-249.04	-.52970	.00000	.00000	-20.948	-174.70	-249.04	228.10
398	-159.24 192.10	-20.939	-240.28	-.39082	.00000	.00000	-20.938	-159.24	-240.28	219.34
399	-143.01 182.79	-20.948	-231.10	-.21269	.00000	.00000	-20.948	-143.01	-231.10	210.15
400	-125.18 173.59	-20.816	-221.20	.55552E-01	.00000	.00000	-20.816	-125.18	-221.20	200.39
401	-105.68 164.46	-21.173	-210.71	.23328	.00000	.00000	-21.173	-105.68	-210.71	189.5
402	-91.755 157.91	-20.253	-201.26	-.73389	.00000	.00000	-20.246	-91.763	-201.26	181.0
403	-81.057 149.05	-26.259	-194.95	-.15108	.00000	.00000	-26.259	-81.057	-194.95	168.6
404	72.121 187.57	2.5367	-135.60	23.437	.00000	.00000	79.279	-4.6211	-135.60	214.8
405	611.18 638.33	-50.752	23.234	65.331	.00000	.00000	617.57	23.234	-57.139	674.7
406	696.43 545.69	184.78	150.24	-75.558	.00000	.00000	707.35	173.85	-150.24	557.1
407	370.46 2328.6	-2259.3	-671.98	-232.06	.00000	.00000	390.78	-671.98	-2279.6	2670.1

HABGE01/99-0745, Revision 2

408	38.304 187.73	91.793	-114.78	15.920	.00000	.00000	96.173	33.924	-114.78	210.95
409	29.551 160.19	-88.832	-150.31	14.029	.00000	.00000	31.191	-90.472	-150.31	181.50
410	-9.6875 61.201	-4.8372	-68.315	.38722	.00000	.00000	-4.8065	-9.7182	-68.315	63.509
411	-9.6601 49.923	2.2726	-52.532	.35760	.00000	.00000	2.2833	-9.6709	-52.532	54.815
412	-11.297 40.676	-1.2118	-45.972	-.49598	.00000	.00000	-1.1875	-11.321	-45.972	44.785
413	-16.843 39.095	2.3124	-42.610	-1.1466	.00000	.00000	2.3808	-16.911	-42.610	44.991
414	9.5702 52.287	2.7948	58.135	-.38722	.00000	.00000	58.135	9.5923	2.7727	55.362

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
415	8.0340 41.328	.88297	45.315	-.35760	.00000	.00000	45.315	8.0518	.86513	44.450
416	10.233 37.965	-5.4860	37.657	-1.9271	.00000	.00000	37.657	10.466	-5.7188	43.376
417	8.3377 30.102	7.7400	37.617	-3.2133	.00000	.00000	37.617	11.266	4.8117	32.80
425	79.833 2147.3	-2313.5	-591.41	113.55	.00000	.00000	85.207	-591.41	-2318.9	2404.
426	20.683 809.66	-850.33	-165.64	90.281	.00000	.00000	29.943	-165.64	-859.59	889.5
427	-36.316 381.50	382.80	186.47	67.387	.00000	.00000	393.37	186.47	-46.885	440.2
428	-25.022 1286.2	-1479.9	-513.99	57.136	.00000	.00000	-22.781	-513.99	-1482.2	1459.
429	-8.2594 809.95	-923.25	-337.35	62.246	.00000	.00000	-4.0443	-337.35	-927.47	923.1
430	10.533 290.30	-296.48	-140.74	67.260	.00000	.00000	24.622	-140.74	-310.57	335.1

HABGE-01/99-0745, Revision 2

431	-13.385 817.94	-950.73	-552.22	41.359	.00000	.00000	-11.564	-552.22	-952.56	940.99
432	-17.946 764.23	-892.90	-530.77	37.488	.00000	.00000	-16.343	-530.77	-894.51	878.16
433	-22.233 748.82	-880.28	-523.03	33.673	.00000	.00000	-20.913	-523.03	-881.60	860.69
434	-11.755 623.11	-614.29	-652.22	17.561	.00000	.00000	-11.243	-614.80	-652.22	640.98
435	-5.3070 831.28	-910.88	-731.80	18.852	.00000	.00000	-4.9147	-731.80	-911.27	906.36
436	.87624 1042.9	-1177.3	-801.50	20.118	.00000	.00000	1.2197	-801.50	-1177.6	1178.8
437	.64762 756.58	-651.02	-828.13	-17.841	.00000	.00000	1.1357	-651.51	-828.13	829.27
438	11.565 891.15	-876.16	-882.96	-2.1350	.00000	.00000	11.570	-876.16	-882.96	894.53
439	3.1165 1056.0	-1130.0	-952.06	-20.229	.00000	.00000	3.4775	-952.06	-1130.3	1133.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
440	-48.739 868.75	-755.96	-1018.3	-7.5383	.00000	.00000	-48.658	-756.04	-1018.3	969.6
441	-32.793 1068.6	-1105.9	-1096.8	-4.7235	.00000	.00000	-32.772	-1096.8	-1106.0	1073.
442	1.4782 906.15	-497.74	-1044.4	-6.9708	.00000	.00000	1.5755	-497.84	-1044.4	1046.
443	-17.149 1271.7	-1308.2	-1268.5	-6.8680	.00000	.00000	-17.113	-1268.5	-1308.3	1291.
444	-.59666 989.71	-577.20	-1143.3	-8.4334	.00000	.00000	-.47334	-577.32	-1143.3	1142.
445	-20.551 1255.9	-1229.2	-1318.6	-8.3023	.00000	.00000	-20.494	-1229.3	-1318.6	1298
446	.42554 1050.6	-664.52	-1210.7	-8.0982	.00000	.00000	.52416	-664.62	-1210.7	1211.

447	-20.258 1228.8	-1142.4	-1333.2	-7.9691	.00000	.00000	-20.202	-1142.4	-1333.2	1313.0
448	.35757 1091.4	-744.44	-1252.4	-6.8322	.00000	.00000	.42024	-744.50	-1252.4	1252.8
449	-20.677 1196.2	-1062.9	-1326.7	-6.7214	.00000	.00000	-20.634	-1062.9	-1326.7	1306.1
450	.41138 1117.0	-809.63	-1273.8	-5.2222	.00000	.00000	.44505	-809.66	-1273.8	1274.3
451	-20.701 1164.5	-998.07	-1309.1	-5.1363	.00000	.00000	-20.674	-998.10	-1309.1	1288.5
452	.33442 1130.9	-858.02	-1281.1	-3.6395	.00000	.00000	.34985	-858.03	-1281.1	1281.4
453	-20.694 1136.4	-949.95	-1287.6	-3.5787	.00000	.00000	-20.680	-949.97	-1287.6	1266.9
454	.24705 1136.2	-890.72	-1279.3	-2.2833	.00000	.00000	.25290	-890.73	-1279.3	1279.5
455	-20.615 1113.1	-917.43	-1266.4	-2.2444	.00000	.00000	-20.609	-917.43	-1266.4	1245.8
456	.15202 1135.7	-910.45	-1272.5	-1.2327	.00000	.00000	.15368	-910.45	-1272.5	1272.6
457	-20.515 1095.2	-897.81	-1248.0	-1.2110	.00000	.00000	-20.514	-897.81	-1248.0	1227.5

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
458	.69163E-01 1131.7	-920.42	-1263.5	-.49023	.00000	.00000	.69424E-01	-920.42	-1263.5	1263.
459	-20.410 1082.3	-887.89	-1233.3	-.48084	.00000	.00000	-20.409	-887.89	-1233.3	1212.
460	.31107E-02 1126.0	-923.71	-1254.3	-.15987E-01	.00000	.00000	.31110E-02	-923.71	-1254.3	1254.
461	-20.311 1073.7	-884.62	-1222.3	-.14603E-01	.00000	.00000	-20.311	-884.62	-1222.3	1202.
462	-.44612E-01 1119.8	-922.89	-1245.9	.24770	.00000	.00000	-.44546E-01	-922.89	-1245.9	1245.

HABGE-01/99-0745, Revision 2

463	-20.224 1068.4	-885.43	-1214.5	.24452	.00000	.00000	-20.224	-885.43	-1214.5	1194.3
464	-.75951E-01 1114.0	-919.93	-1238.7	.36065	.00000	.00000	-.75810E-01	-919.93	-1238.7	1238.7
465	-20.151 1065.5	-888.38	-1209.2	.35540	.00000	.00000	-20.151	-888.38	-1209.2	1189.1
466	-.94074E-01 1108.9	-916.19	-1232.9	.37581	.00000	.00000	-.93920E-01	-916.19	-1232.9	1232.8
467	-20.090 1064.1	-892.09	-1205.7	.37015	.00000	.00000	-20.090	-892.10	-1205.7	1185.6
468	-.10251 1104.8	-912.53	-1228.4	.33532	.00000	.00000	-.10239	-912.53	-1228.4	1228.3
469	-20.040 1063.5	-895.74	-1203.4	.33019	.00000	.00000	-20.039	-895.74	-1203.4	1183.4
470	-.10449 1101.4	-909.39	-1224.8	.26971	.00000	.00000	-.10441	-909.39	-1224.8	1224.7
471	-19.996 1063.2	-898.86	-1201.8	.26558	.00000	.00000	-19.996	-898.86	-1201.8	1181.8
472	-.10263 1098.8	-906.96	-1222.0	.19911	.00000	.00000	-.10259	-906.96	-1222.0	1221.9
473	-19.959 1062.9	-901.27	-1200.4	.19609	.00000	.00000	-19.959	-901.27	-1200.4	1180.5
474	-.98909E-01 1096.7	-905.25	-1219.6	.13521	.00000	.00000	-.98888E-01	-905.25	-1219.6	1219.5
475	-19.924 1062.5	-902.98	-1199.1	.13321	.00000	.00000	-19.924	-902.98	-1199.1	1179.2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
476	-.94636E-01 1094.9	-904.16	-1217.6	.83520E-01	.00000	.00000	-.94628E-01	-904.16	-1217.6	1217.
477	-19.891 1061.9	-904.06	-1197.7	.82363E-01	.00000	.00000	-19.891	-904.06	-1197.7	1177.
478	-.90614E-01 1093.4	-903.55	-1215.6	.45448E-01	.00000	.00000	-.90612E-01	-903.55	-1215.6	1215.5

479	-19.858 1061.1	-904.66	-1196.2	.44919E-01	.00000	.00000	-19.858	-904.66	-1196.2	1176.3
480	-.87248E-01 1092.1	-903.30	-1213.8	.19934E-01	.00000	.00000	-.87248E-01	-903.30	-1213.8	1213.7
481	-19.825 1060.0	-904.92	-1194.5	.19832E-01	.00000	.00000	-19.825	-904.92	-1194.5	1174.7
482	-.84672E-01 1090.7	-903.26	-1211.9	.47192E-02	.00000	.00000	-.84672E-01	-903.26	-1211.9	1211.8
483	-19.792 1058.8	-904.95	-1192.7	.48773E-02	.00000	.00000	-19.792	-904.95	-1192.7	1172.9
484	-.82854E-01 1089.4	-903.36	-1209.9	-.28123E-02	.00000	.00000	-.82854E-01	-903.36	-1209.9	1209.8
485	-19.758 1057.4	-904.86	-1190.7	-.25208E-02	.00000	.00000	-19.758	-904.86	-1190.7	1170.9
486	-.81675E-01 1088.1	-903.51	-1207.9	-.51226E-02	.00000	.00000	-.81675E-01	-903.51	-1207.9	1207.8
487	-19.724 1056.0	-904.71	-1188.6	-.47850E-02	.00000	.00000	-19.724	-904.71	-1188.6	1168.9
488	-.80984E-01 1086.7	-903.68	-1205.9	-.42603E-02	.00000	.00000	-.80984E-01	-903.68	-1205.9	1205.8
489	-19.689 1054.5	-904.54	-1186.5	-.39305E-02	.00000	.00000	-19.689	-904.54	-1186.5	1166.8
490	-.80634E-01 1085.3	-903.82	-1203.8	-.17733E-02	.00000	.00000	-.80634E-01	-903.82	-1203.8	1203.7
491	-19.654 1053.0	-904.40	-1184.4	-.14799E-02	.00000	.00000	-19.654	-904.40	-1184.4	1164.7
492	-.80498E-01 1083.8	-903.94	-1201.6	.12723E-02	.00000	.00000	-.80498E-01	-903.94	-1201.6	1201.5
493	-19.618 1051.5	-904.28	-1182.2	.15185E-02	.00000	.00000	-19.618	-904.28	-1182.2	1162.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
494	-.80477E-01 1082.3	-904.03	-1199.5	.42170E-02	.00000	.00000	-.80477E-01	-904.03	-1199.5	1199.

HABCE-01/99-0745, Revision 2

495	-19.583 1050.0	-904.19	-1180.0	.44163E-02	.00000	.00000	-19.583	-904.19	-1180.0	1160.4
496	-.80503E-01 1080.8	-904.09	-1197.3	.67126E-02	.00000	.00000	-.80503E-01	-904.09	-1197.3	1197.2
497	-19.547 1048.6	-904.13	-1177.8	.68715E-02	.00000	.00000	-19.547	-904.13	-1177.8	1158.3
498	-.80531E-01 1079.3	-904.13	-1195.1	.86281E-02	.00000	.00000	-.80531E-01	-904.13	-1195.1	1195.0
499	-19.511 1047.1	-904.10	-1175.6	.87557E-02	.00000	.00000	-19.511	-904.10	-1175.6	1156.1
500	-.80536E-01 1077.8	-904.14	-1192.9	.99693E-02	.00000	.00000	-.80536E-01	-904.14	-1192.9	1192.8
501	-19.476 1045.7	-904.08	-1173.5	.10075E-01	.00000	.00000	-19.476	-904.08	-1173.5	1154.0
502	-.80509E-01 1076.3	-904.15	-1190.7	.10816E-01	.00000	.00000	-.80509E-01	-904.15	-1190.7	1190.6
503	-19.440 1044.2	-904.07	-1171.3	.10907E-01	.00000	.00000	-19.440	-904.07	-1171.3	1151.9
504	-.80448E-01 1074.8	-904.15	-1188.5	.11279E-01	.00000	.00000	-.80448E-01	-904.15	-1188.5	1188.4
505	-19.404 1042.8	-904.08	-1169.1	.11362E-01	.00000	.00000	-19.404	-904.08	-1169.1	1149.7
506	-.80357E-01 1073.3	-904.14	-1186.3	.11469E-01	.00000	.00000	-.80357E-01	-904.14	-1186.3	1186.2
507	-19.368 1041.4	-904.08	-1167.0	.11548E-01	.00000	.00000	-19.368	-904.08	-1167.0	1147.6
508	-.80241E-01 1071.8	-904.13	-1184.1	.11484E-01	.00000	.00000	-.80241E-01	-904.13	-1184.1	1184.0
509	-19.333 1039.9	-904.09	-1164.8	.11562E-01	.00000	.00000	-19.333	-904.09	-1164.8	1145.
510	-.80108E-01 1070.3	-904.13	-1181.9	.11401E-01	.00000	.00000	-.80108E-01	-904.13	-1181.9	1181.
511	-19.297 1038.5	-904.10	-1162.7	.11481E-01	.00000	.00000	-19.297	-904.10	-1162.7	1143.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

HABCE-01/99-0745, Revision 2

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
512	-.79963E-01 1068.8	-904.12	-1179.7	.11275E-01	.00000	.00000	-.79963E-01	-904.12	-1179.7	1179.7
513	-19.261 1037.1	-904.10	-1160.5	.11357E-01	.00000	.00000	-19.261	-904.10	-1160.5	1141.3
514	-.79811E-01 1067.4	-904.12	-1177.6	.11143E-01	.00000	.00000	-.79811E-01	-904.12	-1177.6	1177.5
515	-19.226 1035.7	-904.11	-1158.4	.11227E-01	.00000	.00000	-19.226	-904.11	-1158.4	1139.2
516	-.79656E-01 1065.9	-904.11	-1175.4	.11025E-01	.00000	.00000	-.79656E-01	-904.11	-1175.4	1175.3
517	-19.190 1034.3	-904.11	-1156.3	.11110E-01	.00000	.00000	-19.190	-904.11	-1156.3	1137.1
518	-.79501E-01 1064.4	-904.11	-1173.2	.10930E-01	.00000	.00000	-.79501E-01	-904.11	-1173.2	1173.1
519	-19.154 1032.9	-904.11	-1154.1	.11017E-01	.00000	.00000	-19.154	-904.11	-1154.1	1135.0
520	-.79346E-01 1062.9	-904.11	-1171.0	.10861E-01	.00000	.00000	-.79346E-01	-904.11	-1171.0	1170.9
521	-19.119 1031.5	-904.11	-1152.0	.10949E-01	.00000	.00000	-19.119	-904.11	-1152.0	1132.8
522	-.79192E-01 1061.4	-904.11	-1168.8	.10815E-01	.00000	.00000	-.79192E-01	-904.11	-1168.8	1168.7
523	-19.083 1030.1	-904.11	-1149.8	.10904E-01	.00000	.00000	-19.083	-904.11	-1149.8	1130.7
524	-.79040E-01 1060.0	-904.11	-1166.6	.10788E-01	.00000	.00000	-.79039E-01	-904.11	-1166.6	1166.6
525	-19.047 1028.7	-904.11	-1147.7	.10878E-01	.00000	.00000	-19.047	-904.11	-1147.7	1128.
526	-.78889E-01 1058.5	-904.11	-1164.5	.10775E-01	.00000	.00000	-.78889E-01	-904.11	-1164.5	1164.
527	-19.012 1027.3	-904.11	-1145.5	.10865E-01	.00000	.00000	-19.012	-904.11	-1145.5	1126.
528	-.78739E-01 1057.0	-904.11	-1162.3	.10772E-01	.00000	.00000	-.78739E-01	-904.11	-1162.3	1162.
529	-18.976 1025.9	-904.11	-1143.4	.10862E-01	.00000	.00000	-18.976	-904.11	-1143.4	1124.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

HABCE-01/99-0745, Revision 2

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
530	-.78590E-01 1055.6	-904.11	-1160.1	.10774E-01	.00000	.00000	-.78590E-01	-904.11	-1160.1	1160.0
531	-18.941 1024.5	-904.11	-1141.2	.10864E-01	.00000	.00000	-18.941	-904.11	-1141.2	1122.3
532	-.78442E-01 1054.1	-904.11	-1157.9	.10778E-01	.00000	.00000	-.78442E-01	-904.11	-1157.9	1157.8
533	-18.905 1023.1	-904.11	-1139.1	.10868E-01	.00000	.00000	-18.905	-904.11	-1139.1	1120.2
534	-.78294E-01 1052.6	-904.11	-1155.7	.10784E-01	.00000	.00000	-.78294E-01	-904.11	-1155.7	1155.6
535	-18.869 1021.7	-904.11	-1136.9	.10874E-01	.00000	.00000	-18.869	-904.11	-1136.9	1118.1
536	-.78146E-01 1051.2	-904.11	-1153.5	.10790E-01	.00000	.00000	-.78146E-01	-904.11	-1153.5	1153.5
537	-18.834 1020.4	-904.11	-1134.8	.10880E-01	.00000	.00000	-18.834	-904.11	-1134.8	1116.0
538	-.77999E-01 1049.7	-904.11	-1151.4	.10794E-01	.00000	.00000	-.77999E-01	-904.11	-1151.4	1151.3
539	-18.798 1019.0	-904.11	-1132.6	.10884E-01	.00000	.00000	-18.798	-904.11	-1132.6	1112.8
540	-.77851E-01 1048.3	-904.11	-1149.2	.10798E-01	.00000	.00000	-.77851E-01	-904.11	-1149.2	1149.1
541	-18.762 1017.6	-904.11	-1130.5	.10887E-01	.00000	.00000	-18.762	-904.11	-1130.5	1111.
542	-.77704E-01 1046.8	-904.11	-1147.0	.10800E-01	.00000	.00000	-.77703E-01	-904.11	-1147.0	1146.
543	-18.727 1016.2	-904.11	-1128.3	.10890E-01	.00000	.00000	-18.727	-904.11	-1128.3	1109.
544	-.77556E-01 1045.4	-904.11	-1144.8	.10802E-01	.00000	.00000	-.77556E-01	-904.11	-1144.8	1144
545	-18.691 1014.9	-904.11	-1126.2	.10891E-01	.00000	.00000	-18.691	-904.11	-1126.2	1107
546	-.77408E-01 1043.9	-904.11	-1142.6	.10802E-01	.00000	.00000	-.77408E-01	-904.11	-1142.6	1142
547	-18.655 1013.5	-904.11	-1124.0	.10892E-01	.00000	.00000	-18.655	-904.11	-1124.0	1105.

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
548	SEQV - .77260E-01 1042.5	-904.11	-1140.4	.10803E-01	.00000	.00000	-.77260E-01	-904.11	-1140.4	1140.4
549	-18.620 1012.1	-904.11	-1121.9	.10892E-01	.00000	.00000	-18.620	-904.11	-1121.9	1103.3
550	-.77112E-01 1041.0	-904.11	-1138.3	.10803E-01	.00000	.00000	-.77112E-01	-904.11	-1138.3	1138.2
551	-18.584 1010.7	-904.11	-1119.7	.10892E-01	.00000	.00000	-18.584	-904.11	-1119.7	1101.2
552	-.76965E-01 1039.6	-904.11	-1136.1	.10803E-01	.00000	.00000	-.76964E-01	-904.11	-1136.1	1136.0
553	-18.548 1009.4	-904.11	-1117.6	.10892E-01	.00000	.00000	-18.548	-904.11	-1117.6	1099.1
554	-.76817E-01 1038.2	-904.11	-1133.9	.10802E-01	.00000	.00000	-.76817E-01	-904.11	-1133.9	1133.8
555	-18.513 1008.0	-904.11	-1115.5	.10892E-01	.00000	.00000	-18.513	-904.11	-1115.5	1099.9
556	-.76669E-01 1036.7	-904.11	-1131.7	.10802E-01	.00000	.00000	-.76669E-01	-904.11	-1131.7	1131.2
557	-18.477 1006.7	-904.11	-1113.3	.10892E-01	.00000	.00000	-18.477	-904.11	-1113.3	1094.2
558	-.76521E-01 1035.3	-904.11	-1129.5	.10802E-01	.00000	.00000	-.76521E-01	-904.11	-1129.5	1129.5
559	-18.442 1005.3	-904.11	-1111.2	.10892E-01	.00000	.00000	-18.442	-904.11	-1111.2	1092.2
560	-.76373E-01 1033.9	-904.11	-1127.3	.10802E-01	.00000	.00000	-.76373E-01	-904.11	-1127.3	1127.2
561	-18.406 1004.0	-904.11	-1109.0	.10891E-01	.00000	.00000	-18.406	-904.11	-1109.0	1090.2
562	-.76225E-01 1032.5	-904.11	-1125.2	.10802E-01	.00000	.00000	-.76225E-01	-904.11	-1125.2	1125.2
563	-18.370 1002.6	-904.11	-1106.9	.10891E-01	.00000	.00000	-18.370	-904.11	-1106.9	1088.2

HABCE-01/99-0745, Revision 2

564	-.76077E-01	-904.11	-1123.0	.10802E-01	.00000	.00000	-.76077E-01	-904.11	-1123.0	1122.9
	1031.0									
565	-18.335	-904.11	-1104.7	.10891E-01	.00000	.00000	-18.335	-904.11	-1104.7	1086.4
	1001.3									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
566	-.75929E-01	-904.11	-1120.8	.10802E-01	.00000	.00000	-.75929E-01	-904.11	-1120.8	1120.7
	1029.6									
567	-18.299	-904.11	-1102.6	.10891E-01	.00000	.00000	-18.299	-904.11	-1102.6	1084.3
	999.92									
568	-.75781E-01	-904.11	-1118.6	.10801E-01	.00000	.00000	-.75781E-01	-904.11	-1118.6	1118.5
	1028.2									
569	-18.263	-904.11	-1100.4	.10891E-01	.00000	.00000	-18.263	-904.11	-1100.4	1082.2
	998.58									
570	-.75633E-01	-904.11	-1116.4	.10801E-01	.00000	.00000	-.75633E-01	-904.11	-1116.4	1116.3
	1026.8									
571	-18.228	-904.11	-1098.3	.10891E-01	.00000	.00000	-18.228	-904.11	-1098.3	1080.6
	997.24									
572	-.75485E-01	-904.11	-1114.2	.10801E-01	.00000	.00000	-.75485E-01	-904.11	-1114.2	1114.2
	1025.4									
573	-18.192	-904.11	-1096.1	.10891E-01	.00000	.00000	-18.192	-904.11	-1096.1	1077.7
	995.91									
574	-.75338E-01	-904.11	-1112.1	.10801E-01	.00000	.00000	-.75338E-01	-904.11	-1112.1	1112.1
	1024.0									
575	-18.156	-904.11	-1094.0	.10891E-01	.00000	.00000	-18.156	-904.11	-1094.0	1075.5
	994.57									
576	-.75190E-01	-904.11	-1109.9	.10802E-01	.00000	.00000	-.75190E-01	-904.11	-1109.9	1109.9
	1022.6									
577	-18.121	-904.11	-1091.8	.10891E-01	.00000	.00000	-18.121	-904.11	-1091.8	1073.2
	993.24									
578	-.75042E-01	-904.11	-1107.7	.10802E-01	.00000	.00000	-.75042E-01	-904.11	-1107.7	1107.7
	1021.2									
579	-18.085	-904.11	-1089.7	.10891E-01	.00000	.00000	-18.085	-904.11	-1089.7	1071.9
	991.92									

HABCE-01/99-0745, Revision 2

580	-.74894E-01	-904.11	-1105.5	.10802E-01	.00000	.00000	-.74894E-01	-904.11	-1105.5	1105.4
	1019.8									
581	-18.049	-904.11	-1087.5	.10891E-01	.00000	.00000	-18.049	-904.11	-1087.5	1069.5
	990.59									
582	-.74746E-01	-904.11	-1103.3	.10802E-01	.00000	.00000	-.74746E-01	-904.11	-1103.3	1103.3
	1018.4									
583	-18.014	-904.11	-1085.4	.10891E-01	.00000	.00000	-18.014	-904.11	-1085.4	1067.4
	989.27									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
584	-.74598E-01	-904.11	-1101.1	.10802E-01	.00000	.00000	-.74598E-01	-904.11	-1101.1	1101.1
	1017.0									
585	-17.978	-904.11	-1083.2	.10891E-01	.00000	.00000	-17.978	-904.11	-1083.2	1065.3
	987.95									
586	-.74450E-01	-904.11	-1099.0	.10802E-01	.00000	.00000	-.74450E-01	-904.11	-1099.0	1098.9
	1015.6									
587	-17.942	-904.11	-1081.1	.10891E-01	.00000	.00000	-17.942	-904.11	-1081.1	1063.1
	986.64									
588	-.74302E-01	-904.11	-1096.8	.10802E-01	.00000	.00000	-.74302E-01	-904.11	-1096.8	1096.7
	1014.2									
589	-17.907	-904.11	-1078.9	.10891E-01	.00000	.00000	-17.907	-904.11	-1078.9	1061.1
	985.32									
590	-.74154E-01	-904.11	-1094.6	.10802E-01	.00000	.00000	-.74154E-01	-904.11	-1094.6	1094.1
	1012.8									
591	-17.871	-904.11	-1076.8	.10891E-01	.00000	.00000	-17.871	-904.11	-1076.8	1058.1
	984.01									
592	-.74006E-01	-904.11	-1092.4	.10802E-01	.00000	.00000	-.74006E-01	-904.11	-1092.4	1092.1
	1011.4									
593	-17.836	-904.11	-1074.6	.10891E-01	.00000	.00000	-17.836	-904.11	-1074.6	1056.1
	982.70									
594	-.73858E-01	-904.11	-1090.2	.10802E-01	.00000	.00000	-.73858E-01	-904.11	-1090.2	1090.1
	1010.0									
595	-17.800	-904.11	-1072.5	.10891E-01	.00000	.00000	-17.800	-904.11	-1072.5	1054.1
	981.40									

596	-.73711E-01	-904.11	-1088.0	.10802E-01	.00000	.00000	-.73710E-01	-904.11	-1088.0	1088.0
	1008.7									
597	-17.764	-904.11	-1070.4	.10891E-01	.00000	.00000	-17.764	-904.11	-1070.4	1052.6
	980.10									
598	-.73563E-01	-904.11	-1085.9	.10802E-01	.00000	.00000	-.73563E-01	-904.11	-1085.9	1085.8
	1007.3									
599	-17.729	-904.11	-1068.2	.10891E-01	.00000	.00000	-17.729	-904.11	-1068.2	1050.5
	978.80									
600	-.73415E-01	-904.11	-1083.7	.10802E-01	.00000	.00000	-.73415E-01	-904.11	-1083.7	1083.6
	1005.9									
601	-17.693	-904.11	-1066.1	.10891E-01	.00000	.00000	-17.693	-904.11	-1066.1	1048.4
	977.50									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SEQV	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
602	1004.5	-.73267E-01	-904.11	-1081.5	.10802E-01	.00000	.00000	-.73267E-01	-904.11	-1081.5	1081.4
603	976.21	-17.657	-904.11	-1063.9	.10891E-01	.00000	.00000	-17.657	-904.11	-1063.9	1046.3
604	1003.2	-.73119E-01	-904.11	-1079.3	.10802E-01	.00000	.00000	-.73119E-01	-904.11	-1079.3	1079.2
605	974.92	-17.622	-904.11	-1061.8	.10891E-01	.00000	.00000	-17.622	-904.11	-1061.8	1044.
606	1001.8	-.72971E-01	-904.11	-1077.1	.10802E-01	.00000	.00000	-.72971E-01	-904.11	-1077.1	1077.
607	973.63	-17.586	-904.11	-1059.6	.10891E-01	.00000	.00000	-17.586	-904.11	-1059.6	1042.
608	1000.5	-.72823E-01	-904.11	-1074.9	.10802E-01	.00000	.00000	-.72823E-01	-904.11	-1074.9	1074
609	972.35	-17.550	-904.11	-1057.5	.10891E-01	.00000	.00000	-17.550	-904.11	-1057.5	1039
610	999.10	-.72675E-01	-904.11	-1072.8	.10801E-01	.00000	.00000	-.72675E-01	-904.11	-1072.8	1072
611	971.07	-17.515	-904.11	-1055.3	.10891E-01	.00000	.00000	-17.515	-904.11	-1055.3	1037.

612	-.72527E-01	-904.11	-1070.6	.10801E-01	.00000	.00000	-.72527E-01	-904.11	-1070.6	1070.5
	997.74									
613	-17.479	-904.11	-1053.2	.10891E-01	.00000	.00000	-17.479	-904.11	-1053.2	1035.7
	969.79									
614	-.72379E-01	-904.11	-1068.4	.10801E-01	.00000	.00000	-.72379E-01	-904.11	-1068.4	1068.3
	996.39									
615	-17.443	-904.11	-1051.0	.10891E-01	.00000	.00000	-17.443	-904.11	-1051.0	1033.6
	968.52									
616	-.72232E-01	-904.11	-1066.2	.10801E-01	.00000	.00000	-.72231E-01	-904.11	-1066.2	1066.1
	995.04									
617	-17.408	-904.11	-1048.9	.10891E-01	.00000	.00000	-17.408	-904.11	-1048.9	1031.5
	967.24									
618	-.72084E-01	-904.11	-1064.0	.10801E-01	.00000	.00000	-.72084E-01	-904.11	-1064.0	1064.0
	993.69									
619	-17.372	-904.11	-1046.7	.10891E-01	.00000	.00000	-17.372	-904.11	-1046.7	1029.4
	965.97									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
620	-.71936E-01	-904.11	-1061.8	.10801E-01	.00000	.00000	-.71936E-01	-904.11	-1061.8	1061.8
	992.35									
621	-17.337	-904.11	-1044.6	.10890E-01	.00000	.00000	-17.337	-904.11	-1044.6	1027.
	964.71									
622	-.71788E-01	-904.11	-1059.7	.10801E-01	.00000	.00000	-.71788E-01	-904.11	-1059.7	1059.
	991.01									
623	-17.301	-904.11	-1042.4	.10890E-01	.00000	.00000	-17.301	-904.11	-1042.4	1025.
	963.45									
624	-.71640E-01	-904.11	-1057.5	.10801E-01	.00000	.00000	-.71640E-01	-904.11	-1057.5	1057
	989.67									
625	-17.265	-904.11	-1040.3	.10890E-01	.00000	.00000	-17.265	-904.11	-1040.3	1023
	962.19									
626	-.71492E-01	-904.11	-1055.3	.10801E-01	.00000	.00000	-.71492E-01	-904.11	-1055.3	1055
	988.34									
627	-17.230	-904.11	-1038.1	.10890E-01	.00000	.00000	-17.230	-904.11	-1038.1	1020.
	960.93									

628	-.71344E-01	-904.11	-1053.1	.10801E-01	.00000	.00000	-.71344E-01	-904.11	-1053.1	1053.0
	987.01									
629	-17.194	-904.11	-1036.0	.10891E-01	.00000	.00000	-17.194	-904.11	-1036.0	1018.8
	959.68									
630	-.71196E-01	-904.11	-1050.9	.10803E-01	.00000	.00000	-.71196E-01	-904.11	-1050.9	1050.9
	985.68									
631	-17.158	-904.11	-1033.8	.10892E-01	.00000	.00000	-17.158	-904.11	-1033.8	1016.7
	958.42									
632	-.71048E-01	-904.11	-1048.7	.10805E-01	.00000	.00000	-.71048E-01	-904.11	-1048.7	1048.7
	984.36									
633	-17.123	-904.11	-1031.7	.10894E-01	.00000	.00000	-17.123	-904.11	-1031.7	1014.6
	957.18									
634	-.70900E-01	-904.11	-1046.6	.10807E-01	.00000	.00000	-.70899E-01	-904.11	-1046.6	1046.5
	983.04									
635	-17.087	-904.11	-1029.5	.10897E-01	.00000	.00000	-17.087	-904.11	-1029.5	1012.5
	955.93									
636	-.70751E-01	-904.11	-1044.4	.10811E-01	.00000	.00000	-.70751E-01	-904.11	-1044.4	1044.3
	981.72									
637	-17.051	-904.11	-1027.4	.10900E-01	.00000	.00000	-17.051	-904.11	-1027.4	1010.3
	954.69									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
638	-.70603E-01	-904.11	-1042.2	.10815E-01	.00000	.00000	-.70603E-01	-904.11	-1042.2	1042
	980.40									
639	-17.016	-904.11	-1025.2	.10905E-01	.00000	.00000	-17.016	-904.11	-1025.2	1008
	953.45									
640	-.70455E-01	-904.11	-1040.0	.10820E-01	.00000	.00000	-.70455E-01	-904.11	-1040.0	1039
	979.09									
641	-16.980	-904.11	-1023.1	.10909E-01	.00000	.00000	-16.980	-904.11	-1023.1	1006
	952.22									
642	-.70308E-01	-904.11	-1037.8	.10823E-01	.00000	.00000	-.70308E-01	-904.11	-1037.8	1037
	977.78									
643	-16.944	-904.11	-1021.0	.10913E-01	.00000	.00000	-16.944	-904.11	-1021.0	1004
	950.99									

644	-.70161E-01	-904.11	-1035.6	.10825E-01	.00000	.00000	-.70160E-01	-904.11	-1035.6	1035.6
	976.47									
645	-16.909	-904.11	-1018.8	.10914E-01	.00000	.00000	-16.909	-904.11	-1018.8	1001.9
	949.76									
646	-.70014E-01	-904.11	-1033.5	.10822E-01	.00000	.00000	-.70014E-01	-904.11	-1033.5	1033.4
	975.17									
647	-16.873	-904.11	-1016.7	.10911E-01	.00000	.00000	-16.873	-904.11	-1016.7	999.78
	948.53									
648	-.69869E-01	-904.11	-1031.3	.10811E-01	.00000	.00000	-.69868E-01	-904.11	-1031.3	1031.2
	973.87									
649	-16.837	-904.11	-1014.5	.10901E-01	.00000	.00000	-16.837	-904.11	-1014.5	997.67
	947.31									
650	-.69724E-01	-904.11	-1029.1	.10790E-01	.00000	.00000	-.69724E-01	-904.11	-1029.1	1029.0
	972.57									
651	-16.802	-904.11	-1012.4	.10880E-01	.00000	.00000	-16.802	-904.11	-1012.4	995.56
	946.09									
652	-.69581E-01	-904.11	-1026.9	.10753E-01	.00000	.00000	-.69581E-01	-904.11	-1026.9	1026.8
	971.28									
653	-16.766	-904.11	-1010.2	.10844E-01	.00000	.00000	-16.766	-904.11	-1010.2	993.45
	944.87									
654	-.69439E-01	-904.11	-1024.7	.10699E-01	.00000	.00000	-.69438E-01	-904.11	-1024.7	1024.7
	969.99									
655	-16.731	-904.11	-1008.1	.10790E-01	.00000	.00000	-16.731	-904.11	-1008.1	991.33
	943.66									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
656	-.69297E-01	-904.11	-1022.5	.10625E-01	.00000	.00000	-.69297E-01	-904.11	-1022.5	1022
	968.70									
657	-16.695	-904.11	-1005.9	.10717E-01	.00000	.00000	-16.695	-904.11	-1005.9	989..
	942.45									
658	-.69154E-01	-904.11	-1020.4	.10532E-01	.00000	.00000	-.69154E-01	-904.11	-1020.4	1020
	967.42									
659	-16.659	-904.11	-1003.8	.10627E-01	.00000	.00000	-16.659	-904.11	-1003.8	987.11
	941.24									

660	-.69009E-01	-904.12	-1018.2	.10430E-01	.00000	.00000	-.69009E-01	-904.12	-1018.2	1018.1
	966.14									
661	-16.624	-904.10	-1001.6	.10526E-01	.00000	.00000	-16.624	-904.10	-1001.6	984.99
	940.04									
662	-.68858E-01	-904.12	-1016.0	.10333E-01	.00000	.00000	-.68858E-01	-904.12	-1016.0	1015.9
	964.87									
663	-16.588	-904.10	-999.47	.10431E-01	.00000	.00000	-16.588	-904.10	-999.47	982.88
	938.84									
664	-.68698E-01	-904.13	-1013.8	.10272E-01	.00000	.00000	-.68698E-01	-904.13	-1013.8	1013.7
	963.60									
665	-16.552	-904.09	-997.32	.10370E-01	.00000	.00000	-16.552	-904.09	-997.32	980.77
	937.64									
666	-.68525E-01	-904.13	-1011.6	.10289E-01	.00000	.00000	-.68525E-01	-904.13	-1011.6	1011.6
	962.33									
667	-16.517	-904.09	-995.18	.10386E-01	.00000	.00000	-16.517	-904.09	-995.18	978.66
	936.44									
668	-.68332E-01	-904.14	-1009.5	.10444E-01	.00000	.00000	-.68332E-01	-904.14	-1009.5	1009.4
	961.07									
669	-16.481	-904.08	-993.03	.10539E-01	.00000	.00000	-16.481	-904.08	-993.03	976.55
	935.25									
670	-.68116E-01	-904.14	-1007.3	.10815E-01	.00000	.00000	-.68116E-01	-904.14	-1007.3	1007.2
	959.81									
671	-16.446	-904.08	-990.89	.10903E-01	.00000	.00000	-16.446	-904.08	-990.89	974.45
	934.07									
672	-.67873E-01	-904.13	-1005.1	.11488E-01	.00000	.00000	-.67873E-01	-904.13	-1005.1	1005.0
	958.55									
673	-16.410	-904.09	-988.76	.11565E-01	.00000	.00000	-16.410	-904.09	-988.76	972.35
	932.90									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
674	-.67605E-01	-904.12	-1002.9	.12548E-01	.00000	.00000	-.67605E-01	-904.12	-1002.9	1002
	957.30									
675	-16.374	-904.10	-986.63	.12607E-01	.00000	.00000	-16.374	-904.10	-986.63	970
	931.73									

676	-.67320E-01	-904.09	-1000.8	.14054E-01	.00000	.00000	-.67320E-01	-904.09	-1000.8	1000.7
	956.03									
677	-16.339	-904.13	-984.50	.14088E-01	.00000	.00000	-16.339	-904.13	-984.50	968.16
	930.58									
678	-.67039E-01	-904.05	-998.58	.16007E-01	.00000	.00000	-.67039E-01	-904.05	-998.58	998.51
	954.76									
679	-16.303	-904.17	-982.38	.16010E-01	.00000	.00000	-16.303	-904.17	-982.38	966.08
	929.45									
680	-.66795E-01	-903.98	-996.39	.18299E-01	.00000	.00000	-.66795E-01	-903.98	-996.39	996.32
	953.48									
681	-16.268	-904.24	-980.26	.18265E-01	.00000	.00000	-16.268	-904.24	-980.26	964.00
	928.32									
682	-.66645E-01	-903.88	-994.17	.20650E-01	.00000	.00000	-.66645E-01	-903.88	-994.17	994.10
	952.18									
683	-16.232	-904.34	-978.14	.20580E-01	.00000	.00000	-16.232	-904.34	-978.14	961.91
	927.21									
684	-.66664E-01	-903.77	-991.92	.22535E-01	.00000	.00000	-.66664E-01	-903.77	-991.92	991.86
	950.85									
685	-16.196	-904.45	-976.00	.22437E-01	.00000	.00000	-16.196	-904.45	-976.00	959.80
	926.10									
686	-.66953E-01	-903.64	-989.64	.23111E-01	.00000	.00000	-.66952E-01	-903.64	-989.64	989.57
	949.50									
687	-16.160	-904.58	-973.83	.23009E-01	.00000	.00000	-16.160	-904.58	-973.83	957.67
	924.99									
688	-.67626E-01	-903.52	-987.31	.21160E-01	.00000	.00000	-.67625E-01	-903.52	-987.31	987.25
	948.13									
689	-16.123	-904.69	-971.61	.21097E-01	.00000	.00000	-16.123	-904.69	-971.61	955.49
	923.85									
690	-.68798E-01	-903.45	-984.94	.15078E-01	.00000	.00000	-.68798E-01	-903.45	-984.94	984.8
	946.76									
691	-16.086	-904.76	-969.32	.15122E-01	.00000	.00000	-16.086	-904.76	-969.32	953.2
	922.65									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
------	------------	----	----	-----	-----	-----	----	----	----	------

692	-.70561E-01	-903.49	-982.53	.29458E-02	.00000	.00000	-.70561E-01	-903.49	-982.53	982.46
	945.42									
693	-16.048	-904.73	-966.93	.31969E-02	.00000	.00000	-16.048	-904.73	-966.93	950.88
	921.36									
694	-.72934E-01	-903.70	-980.11	-.17259E-01	.00000	.00000	-.72934E-01	-903.70	-980.11	980.04
	944.15									
695	-16.010	-904.52	-964.42	-.16670E-01	.00000	.00000	-16.010	-904.52	-964.42	948.41
	919.93									
696	-.75805E-01	-904.18	-977.73	-.47256E-01	.00000	.00000	-.75802E-01	-904.18	-977.73	977.65
	943.03									
697	-15.972	-904.04	-961.79	-.46172E-01	.00000	.00000	-15.972	-904.04	-961.79	945.82
	918.30									
698	-.78847E-01	-905.05	-975.46	-.87793E-01	.00000	.00000	-.78838E-01	-905.05	-975.46	975.38
	942.15									
699	-15.935	-903.18	-959.04	-.86050E-01	.00000	.00000	-15.935	-903.18	-959.04	943.11
	916.45									
700	-.81423E-01	-906.40	-973.42	-.13766	.00000	.00000	-.81402E-01	-906.40	-973.42	973.34
	941.62									
701	-15.899	-901.83	-956.24	-.13512	.00000	.00000	-15.899	-901.83	-956.24	940.34
	914.35									
702	-.82487E-01	-908.31	-971.77	-.19240	.00000	.00000	-.82446E-01	-908.31	-971.77	971.69
	941.56									
703	-15.865	-899.94	-953.48	-.18900	.00000	.00000	-15.865	-899.94	-953.48	937.61
	912.02									
704	-.80497E-01	-910.76	-970.69	-.24264	.00000	.00000	-.80433E-01	-910.76	-970.69	970.61
	942.08									
705	-15.835	-897.50	-950.96	-.23849	.00000	.00000	-15.835	-897.50	-950.96	935.13
	909.57									
706	-.73390E-01	-913.61	-970.39	-.27247	.00000	.00000	-.73309E-01	-913.61	-970.39	970.3
	943.21									
707	-15.811	-894.66	-948.98	-.26792	.00000	.00000	-15.811	-894.66	-948.98	933.1
	907.23									
708	-.58645E-01	-916.50	-971.05	-.25778	.00000	.00000	-.58573E-01	-916.50	-971.05	970.9
	944.90									
709	-15.796	-891.79	-947.92	-.25360	.00000	.00000	-15.796	-891.79	-947.92	932.1
	905.36									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SKY	SYZ	SKZ	S1	S2	S3	SINT
710	-.33546E-01 946.87	-918.73	-972.77	-.16551	.00000	.00000	-.33516E-01	-918.73	-972.77	972.73
711	-15.790 904.56	-889.57	-948.28	-.16302	.00000	.00000	-15.790	-889.57	-948.28	932.49
712	.43888E-02 948.60	-919.25	-975.45	.45696E-01	.00000	.00000	.43911E-02	-919.25	-975.45	975.46
713	-15.794 905.61	-889.06	-950.61	.44543E-01	.00000	.00000	-15.794	-889.06	-950.61	934.82
714	.56369E-01 949.20	-916.49	-978.73	.42228	.00000	.00000	.56564E-01	-916.49	-978.73	978.78
715	-15.808 909.50	-891.80	-955.47	.41478	.00000	.00000	-15.808	-891.80	-955.47	939.66
716	.12185 947.35	-908.45	-981.74	1.0086	.00000	.00000	.12297	-908.45	-981.74	981.86
717	-15.826 917.32	-899.80	-963.20	.99134	.00000	.00000	-15.825	-899.80	-963.20	947.37
718	.19405 941.32	-892.73	-983.01	1.8343	.00000	.00000	.19781	-892.74	-983.01	983.21
719	-15.841 930.14	-915.43	-973.77	1.8035	.00000	.00000	-15.837	-915.43	-973.77	957.93
720	.26831 929.04	-866.85	-980.26	2.8951	.00000	.00000	.27797	-866.86	-980.26	980.53
721	-15.831 948.79	-941.17	-986.42	2.8473	.00000	.00000	-15.822	-941.18	-986.42	970.60
722	.30064 908.17	-828.74	-970.32	4.1262	.00000	.00000	.32118	-828.76	-970.32	970.61
723	-15.796 973.55	-979.07	-999.25	4.0589	.00000	.00000	-15.779	-979.09	-999.25	983.41
724	.35179 876.47	-777.63	-949.14	5.3671	.00000	.00000	.38881	-777.67	-949.14	949.5
725	-15.612 1003.9	-1029.9	-1008.7	5.2806	.00000	.00000	-15.584	-1008.7	-1029.9	1014.
726	.39996E-01 831.54	-715.28	-912.21	6.3249	.00000	.00000	.95916E-01	-715.34	-912.21	912.3
727	-15.583 1037.6	-1091.9	-1009.4	6.2246	.00000	.00000	-15.547	-1009.4	-1091.9	1076.

***** POST1 NODAL STRESS LISTING *****

HABCE-01/99-0745, Revision 2

E 54

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
728	.57874 772.88	-647.66	-854.62	6.5272	.00000	.00000	.64445	-647.72	-854.62	855.27
729	-14.372 1071.4	-1159.2	-992.86	6.4263	.00000	.00000	-14.336	-992.86	-1159.2	1144.9
730	-2.8234 697.06	-586.84	-774.42	5.3240	.00000	.00000	-2.7749	-586.89	-774.42	771.64
731	-16.756 1093.4	-1219.6	-950.12	5.2465	.00000	.00000	-16.733	-950.12	-1219.7	1202.9
732	7.4249 624.96	-553.48	-666.22	1.7726	.00000	.00000	7.4305	-553.48	-666.22	673.65
733	-4.7166 1106.0	-1252.8	-863.20	1.7568	.00000	.00000	-4.7142	-863.20	-1252.8	1248.1
734	-38.391 633.98	-725.80	-598.07	17.161	.00000	.00000	-37.963	-598.07	-726.23	688.27
735	-23.100 796.87	-922.61	-639.81	-9.6391	.00000	.00000	-22.996	-639.81	-922.72	899.72
736	7.4063 646.33	-733.80	-437.21	-8.7718	.00000	.00000	7.5101	-437.21	-733.90	741.41
737	-10.214 670.12	-781.20	-452.33	-3.4287	.00000	.00000	-10.199	-452.33	-781.21	771.01
738	-21.977 727.23	-856.83	-474.49	-40.414	.00000	.00000	-20.025	-474.49	-858.78	838.71
739	-36.159 799.77	-946.27	-361.83	-23.568	.00000	.00000	-35.549	-361.83	-946.88	911.3
740	-5.0278 787.94	-902.72	-336.06	-29.330	.00000	.00000	-4.0705	-336.06	-903.68	899.6
741	26.967 782.39	-865.13	-311.49	-34.992	.00000	.00000	28.337	-311.49	-866.50	894.8
742	101.35 1327.5	-1376.4	-298.72	-56.758	.00000	.00000	103.53	-298.72	-1378.6	1482.
743	37.733 859.44	-902.83	-172.25	-49.615	.00000	.00000	40.343	-172.25	-905.44	945.7
744	-25.746 408.38	-439.61	-51.376	-42.576	.00000	.00000	-21.412	-51.376	-443.94	422.5

HABCE-01/99-0745, Revision 2

745	-217.69	-896.30	-146.34	-62.465	.00000	.00000	-146.34	-211.99	-902.00	755.65
	725.06									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
746	-143.93 614.14	-717.74	-70.034	-4.1967	.00000	.00000	-70.034	-143.90	-717.77	647.74
747	-81.832 455.38	-473.20	20.735	34.341	.00000	.00000	20.735	-78.841	-476.19	496.93
748	279.49 935.79	-721.48	114.65	-62.165	.00000	.00000	283.34	114.65	-725.33	1008.7
749	251.53 809.36	-580.00	153.82	-108.51	.00000	.00000	265.46	153.82	-593.93	859.39
750	185.32 458.19	-210.36	245.81	-92.697	.00000	.00000	245.81	205.96	-231.00	476.81
751	-573.46 1336.0	-1790.1	-390.71	127.85	.00000	.00000	-390.71	-560.17	-1803.4	1412.7
752	-517.78 560.31	-606.00	-19.761	68.826	.00000	.00000	-19.761	-480.14	-643.64	623.87
753	-282.48 881.41	700.53	437.34	-2.8489	.00000	.00000	700.54	437.34	-282.49	983.03
754	-244.64 391.58	57.563	136.73	-102.99	.00000	.00000	136.73	89.322	-276.40	413.1
755	233.99 179.14	157.42	362.12	.22915	.00000	.00000	362.12	233.99	157.42	204.7
756	-221.20 553.62	263.12	335.67	102.53	.00000	.00000	335.67	283.93	-242.01	577.6
757	1891.5 1939.5	-47.982	1891.5	.00000	.00000	.00000	1891.5	1891.5	-47.982	1939.
758	1899.8 1852.8	51.458	1887.0	115.62	.00000	.00000	1907.0	1887.0	44.254	1862.
759	1870.6 1902.3	-10.221	1864.0	176.70	.00000	.00000	1887.0	1864.0	-26.678	1913.
760	1848.4 1865.5	.21207	1863.3	110.63	.00000	.00000	1863.3	1855.0	-6.3863	1869.

761	1822.4 1842.2	-1.0744	1849.3	78.861	.00000	.00000	1849.3	1825.8	-4.4785	1853.8
762	1791.6 1815.9	-1.1067	1831.4	59.605	.00000	.00000	1831.4	1793.6	-3.0863	1834.5
763	1755.1 1786.1	-1.1860	1810.0	45.989	.00000	.00000	1810.0	1756.3	-2.3894	1812.4

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
764	1711.6 1751.5	-1.1281	1784.6	35.756	.00000	.00000	1784.6	1712.4	-1.8742	1786.5
765	1661.3 1712.1	-1.1096	1755.4	27.668	.00000	.00000	1755.4	1661.8	-1.5700	1757.0
766	1604.4 1668.0	-1.0874	1722.4	21.007	.00000	.00000	1722.4	1604.7	-1.3622	1723.8
767	1541.0 1619.5	-1.0845	1685.6	15.334	.00000	.00000	1685.6	1541.1	-1.2370	1686.9
768	1471.1 1566.6	-1.0854	1645.1	10.362	.00000	.00000	1645.1	1471.2	-1.1583	1646.3
769	1394.8 1509.6	-1.0891	1600.9	5.9094	.00000	.00000	1600.9	1394.8	-1.1141	1602.0
770	1312.0 1448.7	-1.0932	1552.9	1.8500	.00000	.00000	1552.9	1312.0	-1.0958	1554.1
771	1222.6 1384.2	-1.0973	1501.2	-1.9028	.00000	.00000	1501.2	1222.6	-1.1002	1502.1
772	1126.6 1316.6	-1.1006	1445.7	-5.4113	.00000	.00000	1445.7	1126.6	-1.1265	1446.1
773	1023.9 1246.6	-1.1018	1386.4	-8.7201	.00000	.00000	1386.4	1024.0	-1.1760	1387.1
774	914.66 1174.9	-1.0987	1323.4	-11.859	.00000	.00000	1323.4	914.81	-1.2523	1324.1
775	798.78 1102.8	-1.0877	1256.5	-14.843	.00000	.00000	1256.5	799.05	-1.3631	1257.1
776	676.42 1031.8	-1.0651	1185.9	-17.674	.00000	.00000	1185.9	676.88	-1.5258	1187.1

777	547.81 964.26	-1.0289	1111.6	-20.345	.00000	.00000	1111.6	548.57	-1.7820	1113.4
778	413.31 902.92	-.98357	1033.8	-22.848	.00000	.00000	1033.8	414.57	-2.2398	1036.0
779	273.29 851.35	-.94807	952.56	-25.196	.00000	.00000	952.56	275.59	-3.2437	955.80
780	128.00 813.60	-.95121	868.02	-27.452	.00000	.00000	868.02	133.60	-6.5523	874.57
781	-22.862 793.96	-1.0666	780.10	-29.774	.00000	.00000	780.10	19.741	-43.670	823.77

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
782	-180.49 796.62	-1.2805	688.45	-32.399	.00000	.00000	688.45	4.3967	-186.17	874.62
783	-347.41 825.47	-1.7277	592.23	-35.606	.00000	.00000	592.23	1.9018	-351.04	943.27
784	-526.93 883.87	-1.8965	490.43	-39.535	.00000	.00000	490.43	1.0639	-529.89	1020.3
785	-722.06 973.41	-2.5702	381.69	-43.754	.00000	.00000	381.69	.80894E-01	-724.71	1106.4
786	-926.30 1089.2	.73987	268.97	-46.267	.00000	.00000	268.97	3.0433	-928.61	1197.
787	-1162.8 1239.9	-7.5528	140.94	-54.956	.00000	.00000	140.94	-4.9443	-1165.4	1306.
788	-1366.4 1381.8	1.8116	24.316	-44.395	.00000	.00000	24.316	3.2505	-1367.9	1392.
789	-1465.4 1471.9	55.670	-48.161	-7.8927	.00000	.00000	55.711	-48.161	-1465.4	1521.
790	-1588.6 1434.4	-146.72	-161.86	1.9551	.00000	.00000	-146.71	-161.86	-1588.6	1441.
791	-1656.4 1668.1	114.44	-146.84	-116.75	.00000	.00000	122.11	-146.84	-1664.1	1786.
792	861.36 887.58	-26.219	861.36	.00000	.00000	.00000	861.36	861.36	-26.219	887.58

HABGE-01/99-0745, Revision 2

793	867.19 834.03	32.175	858.17	-44.005	.00000	.00000	869.50	858.17	29.863	839.64
794	852.97 868.33	-10.300	845.19	-71.708	.00000	.00000	858.88	845.19	-16.216	875.10
795	845.83 853.40	-.75427	850.20	-51.204	.00000	.00000	850.20	848.92	-3.8399	854.04
796	837.00 846.23	-1.7977	845.77	-41.185	.00000	.00000	845.77	839.02	-3.8150	849.59
797	827.10 838.26	-2.1946	840.17	-36.256	.00000	.00000	840.17	828.68	-3.7766	843.94
798	814.90 828.47	-2.1783	833.18	-34.011	.00000	.00000	833.18	816.31	-3.5916	836.77
799	800.44 817.08	-2.1680	824.82	-33.061	.00000	.00000	824.82	801.80	-3.5276	828.35

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
800	783.72 804.03	-2.1203	815.15	-32.840	.00000	.00000	815.15	785.09	-3.4902	818.64
801	764.78 789.40	-2.0952	804.19	-33.081	.00000	.00000	804.19	766.20	-3.5195	807.71
802	743.67 773.24	-2.0892	791.96	-33.661	.00000	.00000	791.96	745.18	-3.6055	795.50
803	720.40 755.58	-2.0904	778.47	-34.506	.00000	.00000	778.47	722.05	-3.7347	782.20
804	694.97 736.45	-2.0957	763.74	-35.558	.00000	.00000	763.74	696.78	-3.9049	767.60
805	667.37 715.92	-2.1021	747.76	-36.775	.00000	.00000	747.76	669.39	-4.1162	751.80
806	637.58 694.02	-2.1085	730.53	-38.125	.00000	.00000	730.53	639.84	-4.3727	734.90
807	605.59 670.83	-2.1140	712.03	-39.582	.00000	.00000	712.03	608.15	-4.6813	716.70
808	571.38 646.47	-2.1167	692.28	-41.122	.00000	.00000	692.28	574.31	-5.0503	697.30

809	534.96 621.05	-2.1131	671.26	-42.723	.00000	.00000	671.26	538.34	-5.4903	676.75
810	496.34 594.75	-2.0974	648.98	-44.355	.00000	.00000	648.98	500.26	-6.0137	654.99
811	455.58 567.79	-2.0634	625.46	-45.984	.00000	.00000	625.46	460.15	-6.6382	632.10
812	412.73 540.47	-2.0074	600.72	-47.567	.00000	.00000	600.72	418.12	-7.3929	608.11
813	367.93 513.16	-1.9350	574.80	-49.068	.00000	.00000	574.80	374.33	-8.3340	583.14
814	321.27 486.36	-1.8718	547.75	-50.489	.00000	.00000	547.75	328.98	-9.5766	557.32
815	272.83 460.65	-1.8681	519.56	-51.905	.00000	.00000	519.56	282.31	-11.349	530.91
816	222.48 436.77	-2.0145	490.21	-53.517	.00000	.00000	490.21	234.58	-14.120	504.33
817	169.77 415.65	-2.3752	459.52	-55.662	.00000	.00000	459.52	186.20	-18.805	478.33

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
818	113.98 398.48	-2.9586	427.27	-58.686	.00000	.00000	427.27	138.35	-27.331	454.61
819	53.891 386.87	-3.5133	393.11	-62.797	.00000	.00000	393.11	94.234	-43.857	436.9
820	-10.266 382.36	-4.1298	357.00	-67.153	.00000	.00000	357.00	60.025	-74.421	431.4
821	-83.016 387.52	-.47064	318.84	-70.805	.00000	.00000	318.84	40.212	-123.70	442.5
822	-145.34 397.52	-7.0315	279.68	-75.346	.00000	.00000	279.68	26.085	-178.46	458.1
823	-243.61 430.41	-13.239	230.08	-75.098	.00000	.00000	230.08	9.0797	-265.93	496.0
824	-284.64 449.97	70.562	220.53	-13.508	.00000	.00000	220.53	71.075	-285.16	505.6

HABGE-01/99-0745, Revision 2

825	-100.21 338.34	-54.598	228.21	80.663	.00000	.00000	228.21	6.4209	-161.23	389.43
826	82.301 288.85	4.5063	297.32	69.329	.00000	.00000	297.32	122.90	-36.092	333.41
827	245.09 2406.4	-2286.8	-337.28	414.67	.00000	.00000	311.27	-337.28	-2353.0	2664.2
828	77.133 1110.8	-834.49	51.618	376.60	.00000	.00000	212.58	51.618	-969.94	1182.5
829	-90.190 725.57	324.79	345.98	339.12	.00000	.00000	514.86	345.98	-280.26	795.12
830	-166.34 172.34	5.9948	-166.34	.00000	.00000	.00000	5.9948	-166.34	-166.34	172.34
831	-164.75 177.89	-1.8759	-164.49	-41.459	.00000	.00000	8.0698	-164.49	-174.70	182.77
832	-159.17 194.22	-11.757	-162.82	-71.739	.00000	.00000	17.391	-162.82	-188.32	205.71
833	-154.64 178.70	-1.3269	-157.61	-51.521	.00000	.00000	14.378	-157.61	-170.35	184.73
834	-145.96 162.83	-3.6760	-154.12	-40.995	.00000	.00000	7.2902	-154.12	-156.93	164.22
835	-135.39 151.88	-3.9381	-148.12	-36.300	.00000	.00000	5.4196	-144.75	-148.12	153.53

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
836	-123.25 141.84	-4.0372	-141.04	-34.009	.00000	.00000	4.9824	-132.27	-141.04	146.0
837	-108.72 131.59	-4.0035	-132.61	-33.062	.00000	.00000	5.5614	-118.28	-132.61	138.1
838	-91.939 121.09	-3.9171	-122.88	-32.841	.00000	.00000	6.9855	-102.84	-122.88	129.8
839	-72.942 110.72	-3.8818	-111.89	-33.080	.00000	.00000	9.4067	-86.230	-111.89	121.3
840	-51.783 101.39	-3.8693	-99.653	-33.661	.00000	.00000	13.490	-69.142	-99.653	113.1

841	-28.478 94.478	-3.8716	-86.175	-34.506	.00000	.00000	20.459	-52.809	-86.175	106.63
842	-3.0197 91.751	-3.8797	-71.454	-35.558	.00000	.00000	32.111	-39.010	-71.454	103.57
843	24.608 94.878	-3.8899	-55.485	-36.775	.00000	.00000	49.798	-29.080	-55.485	105.28
844	54.421 104.63	-3.9003	-38.261	-38.125	.00000	.00000	73.259	-22.738	-38.261	111.52
845	86.434 120.61	-3.9096	-19.777	-39.582	.00000	.00000	101.32	-18.798	-19.777	121.10
846	120.66 141.85	-3.9145	-.27722E-01	-41.122	.00000	.00000	133.01	-.27722E-01	-16.265	149.27
847	157.09 167.35	-3.9092	20.991	-42.722	.00000	.00000	167.72	20.991	-14.543	182.27
848	195.72 196.35	-3.8839	43.278	-44.355	.00000	.00000	205.13	43.278	-13.297	218.43
849	236.50 228.28	-3.8279	66.822	-45.984	.00000	.00000	245.00	66.822	-12.326	257.32
850	279.35 262.73	-3.7337	91.599	-47.567	.00000	.00000	287.13	91.599	-11.513	298.64
851	324.16 299.37	-3.6104	117.56	-49.070	.00000	.00000	331.35	117.56	-10.799	342.15
852	370.82 338.01	-3.4960	144.66	-50.491	.00000	.00000	377.51	144.66	-10.187	387.70
853	419.26 378.61	-3.4830	172.83	-51.908	.00000	.00000	425.54	172.83	-9.7635	435.30

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
854	469.60 421.38	-3.6997	202.07	-53.518	.00000	.00000	475.58	202.07	-9.6758	485.2
855	522.32 466.92	-4.3247	232.46	-55.658	.00000	.00000	528.13	232.46	-10.143	538.2
856	578.09 515.78	-5.2411	264.27	-58.693	.00000	.00000	583.93	264.27	-11.088	595.02

857	638.44 569.22	-6.4265	298.03	-62.715	.00000	.00000	644.49	298.03	-12.469	656.95
858	702.68 625.52	-6.8120	333.94	-67.196	.00000	.00000	708.98	333.94	-13.120	722.10
859	772.21 682.63	-2.8069	373.43	-71.567	.00000	.00000	778.77	373.43	-9.3601	788.13
860	847.13 753.24	-10.729	411.90	-71.624	.00000	.00000	853.07	411.90	-16.668	869.74
861	924.67 815.96	-2.8680	456.78	-82.729	.00000	.00000	931.99	456.78	-10.189	942.18
862	719.24 640.32	22.485	422.81	-120.01	.00000	.00000	739.33	422.81	2.3955	736.94
863	505.91 201.75	280.71	437.17	-15.697	.00000	.00000	507.00	437.17	279.62	227.38
864	540.12 818.72	-358.20	259.09	110.74	.00000	.00000	553.58	259.09	-371.65	925.23
865	146.92 778.61	-579.57	74.797	204.65	.00000	.00000	200.61	74.797	-633.25	833.86
866	169.25 1108.2	-961.22	-31.431	213.42	.00000	.00000	208.20	-31.431	-1000.2	1208.4
867	193.47 1256.5	-1111.2	-66.249	222.04	.00000	.00000	230.23	-66.249	-1148.0	1378.2
868	-1187.2 1203.6	16.447	-1187.2	.00000	.00000	.00000	16.447	-1187.2	-1187.2	1203.6
869	-1194.3 1177.9	-15.681	-1183.8	59.245	.00000	.00000	-12.711	-1183.8	-1197.2	1184.5
870	-1181.9 1177.5	-14.682	-1183.8	85.472	.00000	.00000	-8.4568	-1183.8	-1188.2	1179.7
871	-1157.6 1166.5	-1.2323	-1171.2	50.891	.00000	.00000	1.0032	-1159.8	-1171.2	1172.1

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
872	-1130.2 1140.7	-4.9208	-1157.2	35.269	.00000	.00000	-3.8165	-1131.3	-1157.2	1153.1

873	-1100.4 1116.4	-4.7943	-1139.4	24.574	.00000	.00000	-4.2434	-1100.9	-1139.4	1135.2
874	-1063.5 1087.0	-5.1070	-1117.9	16.950	.00000	.00000	-4.8357	-1063.8	-1117.9	1113.0
875	-1019.9 1053.2	-5.0255	-1092.4	10.906	.00000	.00000	-4.9083	-1020.1	-1092.4	1087.5
876	-969.53 1014.7	-4.9313	-1063.1	5.9471	.00000	.00000	-4.8946	-969.57	-1063.1	1058.2
877	-912.54 971.78	-4.8895	-1030.1	1.7184	.00000	.00000	-4.8862	-912.54	-1030.1	1025.2
878	-849.09 924.81	-4.8737	-993.31	-2.0170	.00000	.00000	-4.8689	-849.10	-993.31	988.44
879	-779.21 874.21	-4.8767	-952.82	-5.4040	.00000	.00000	-4.8390	-779.24	-952.82	947.98
880	-702.86 820.56	-4.8863	-908.60	-8.5383	.00000	.00000	-4.7819	-702.96	-908.60	903.82
881	-620.00 764.65	-4.8987	-860.65	-11.483	.00000	.00000	-4.6844	-620.21	-860.65	855.97
882	-530.58 707.64	-4.9116	-808.95	-14.280	.00000	.00000	-4.5239	-530.97	-808.95	804.42
883	-434.56 651.28	-4.9231	-753.47	-16.962	.00000	.00000	-4.2545	-435.23	-753.47	749.21
884	-331.91 598.14	-4.9295	-694.20	-19.547	.00000	.00000	-3.7651	-333.08	-694.20	690.43
885	-222.62 551.96	-4.9235	-631.13	-22.047	.00000	.00000	-2.7131	-224.83	-631.13	628.41
886	-106.73 517.78	-4.8935	-564.26	-24.464	.00000	.00000	.67884	-112.30	-564.26	564.94
887	15.641 501.50	-4.8263	-493.63	-26.789	.00000	.00000	34.084	-23.270	-493.63	527.7
888	144.26 508.30	-4.7121	-419.31	-29.005	.00000	.00000	149.71	-10.160	-419.31	569.0
889	278.78 540.48	-4.5618	-341.43	-31.097	.00000	.00000	282.16	-7.9346	-341.43	623.5

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

HABCE-01/99-0745, Revision 2

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
890	418.84 596.71	-4.4197	-260.14	-33.072	.00000	.00000	421.41	-6.9883	-260.14	681.55
891	564.19 673.50	-4.3995	-175.59	-34.988	.00000	.00000	566.33	-6.5444	-175.59	741.92
892	715.09 767.38	-4.6536	-87.778	-36.990	.00000	.00000	716.98	-6.5497	-87.778	804.76
893	872.70 876.30	-5.3979	3.5799	-39.314	.00000	.00000	874.46	3.5799	-7.1546	881.61
894	1039.6 1000.1	-6.5315	99.350	-42.274	.00000	.00000	1041.3	99.350	-8.2370	1049.6
895	1218.5 1139.4	-7.9656	200.53	-45.772	.00000	.00000	1220.2	200.53	-9.6714	1229.9
896	1413.4 1295.5	-8.2746	308.91	-50.012	.00000	.00000	1415.1	308.91	-10.032	1425.2
897	1624.0 1464.4	-4.1014	425.80	-53.765	.00000	.00000	1625.8	425.80	-5.8749	1631.7
898	1835.2 1647.4	-15.610	540.73	-53.278	.00000	.00000	1836.7	540.73	-17.142	1853.9
899	2080.1 1822.7	23.078	682.53	-65.074	.00000	.00000	2082.1	682.53	21.021	2061.1
900	2666.1 2437.9	-74.964	890.78	-219.35	.00000	.00000	2683.6	890.78	-92.405	2776.0
901	1321.4 760.12	629.78	735.61	-231.99	.00000	.00000	1392.0	735.61	559.17	832.82
902	426.72 648.17	-230.21	209.94	-167.31	.00000	.00000	466.88	209.94	-270.36	737.25
903	180.11 572.43	-431.26	76.934	-45.940	.00000	.00000	183.55	76.934	-434.70	618.2
904	125.36 938.54	-893.76	-76.595	-49.253	.00000	.00000	127.74	-76.595	-896.13	1023.
905	70.396 1337.8	-1392.2	-240.17	-52.505	.00000	.00000	72.278	-240.17	-1394.1	1466.
906	587.24 595.84	-8.6014	587.24	.00000	.00000	.00000	587.24	587.24	-8.6014	595.8
907	585.02 588.61	-2.4775	587.25	-.65576	.00000	.00000	587.25	585.02	-2.4783	589.7

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1

HABGE-01/99-0745, Revision 2

ECS

TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SKZ	S1	S2	S3	SINT
908	580.60 575.46	7.0585	575.43	41.375	.00000	.00000	583.57	575.43	4.0891	579.48
909	568.26 585.34	-6.4739	563.80	70.343	.00000	.00000	576.75	563.80	-14.958	591.71
910	558.03 573.48	-6.8240	562.08	50.015	.00000	.00000	562.43	562.08	-11.218	573.65
911	546.29 562.70	-7.7547	556.08	37.161	.00000	.00000	556.08	548.77	-10.236	566.31
912	532.46 550.43	-7.9161	547.98	27.932	.00000	.00000	547.98	533.90	-9.3561	557.34
913	516.14 536.33	-7.7089	537.99	20.950	.00000	.00000	537.99	516.97	-8.5454	546.53
914	497.23 520.52	-7.5966	526.06	15.371	.00000	.00000	526.06	497.70	-8.0642	534.12
915	475.87 503.00	-7.5305	512.39	10.684	.00000	.00000	512.39	476.10	-7.7665	520.16
916	452.02 483.75	-7.5114	497.03	6.6240	.00000	.00000	497.03	452.12	-7.6069	504.64
917	425.69 462.79	-7.5144	480.02	3.0171	.00000	.00000	480.02	425.71	-7.5354	487.55
918	396.86 440.20	-7.5274	461.36	-.24950	.00000	.00000	461.36	396.86	-7.5275	468.89
919	365.53 416.06	-7.5437	441.08	-3.2549	.00000	.00000	441.08	365.56	-7.5721	448.6
920	331.70 390.55	-7.5606	419.17	-6.0553	.00000	.00000	419.17	331.80	-7.6686	426.8
921	295.35 363.91	-7.5755	395.64	-8.6921	.00000	.00000	395.64	295.60	-7.8247	403.4
922	256.50 336.46	-7.5831	370.48	-11.196	.00000	.00000	370.48	256.98	-8.0569	378.5
923	215.14 308.74	-7.5734	343.71	-13.589	.00000	.00000	343.71	215.97	-8.3995	352.1
924	171.28 281.49	-7.5306	315.33	-15.889	.00000	.00000	315.33	172.68	-8.9315	324.2
925	124.93 255.88	-7.4361	285.35	-18.105	.00000	.00000	285.35	127.36	-9.8680	295.2

HABCE-01/99-0745, Revision 2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
926	76.108 233.60	-7.2785	253.79	-20.247	.00000	.00000	253.79	80.764	-11.935	265.72
927	24.862 217.03	-7.0707	220.66	-22.317	.00000	.00000	220.66	36.336	-18.545	239.20
928	-28.770 208.95	-6.8821	185.95	-24.323	.00000	.00000	185.95	8.8454	-44.498	230.45
929	-84.762 211.70	-6.8620	149.62	-26.281	.00000	.00000	149.62	1.1751	-92.799	242.42
930	-143.18 226.12	-7.2615	111.55	-28.238	.00000	.00000	111.55	-1.6284	-148.81	260.36
931	-204.26 251.35	-8.3404	71.561	-30.294	.00000	.00000	71.561	-3.7632	-208.84	280.40
932	-268.65 285.95	-10.228	29.335	-32.648	.00000	.00000	29.335	-6.1672	-272.71	302.04
933	-337.49 329.41	-12.409	-15.403	-35.605	.00000	.00000	-8.5550	-15.403	-341.34	332.79
934	-412.54 382.90	-13.553	-62.915	-39.486	.00000	.00000	-9.6825	-62.915	-416.41	406.73
935	-494.81 447.63	-11.890	-113.06	-43.890	.00000	.00000	-7.9337	-113.06	-498.77	490.8
936	-583.71 522.56	-6.9527	-165.60	-47.419	.00000	.00000	-3.0801	-165.60	-587.59	584.5
937	-707.69 619.86	-16.193	-238.87	-59.043	.00000	.00000	-11.188	-238.87	-712.70	701.5
938	-862.28 723.10	-54.476	-338.50	-79.787	.00000	.00000	-46.671	-338.50	-870.08	823.4
939	-939.20 653.58	-222.60	-448.25	-90.238	.00000	.00000	-211.41	-448.25	-950.39	738.9
940	318.60 328.00	-9.4006	318.60	.00000	.00000	.00000	318.60	318.60	-9.4006	328.0
941	316.41 323.36	-5.8775	318.27	-5.4030	.00000	.00000	318.27	316.50	-5.9681	324.1

HABGE-01/99-0745, Revision 2

E67

942	312.38 313.39	-1.3709	308.32	-18.524	.00000	.00000	313.47	308.32	-2.4608	315.93
943	306.08 315.27	-7.1238	302.86	-27.689	.00000	.00000	308.51	302.86	-9.5529	318.06

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
944	300.33 312.84	-9.0157	301.78	-23.961	.00000	.00000	302.18	301.78	-10.861	313.04
945	293.95 308.98	-10.075	298.70	-22.878	.00000	.00000	298.70	295.66	-11.787	310.49
946	286.32 303.04	-9.8867	294.60	-22.899	.00000	.00000	294.60	288.08	-11.647	306.25
947	277.16 295.85	-9.7547	289.12	-23.345	.00000	.00000	289.12	279.05	-11.642	300.76
948	266.74 287.69	-9.6271	282.62	-24.147	.00000	.00000	282.62	268.83	-11.721	294.34
949	254.94 278.59	-9.5683	275.11	-25.211	.00000	.00000	275.11	257.32	-11.950	287.06
950	241.75 268.56	-9.5488	266.64	-26.460	.00000	.00000	266.64	244.51	-12.305	278.95
951	227.17 257.65	-9.5517	257.24	-27.844	.00000	.00000	257.24	230.40	-12.783	270.0
952	211.18 245.91	-9.5644	246.91	-29.328	.00000	.00000	246.91	215.01	-13.394	260.3
953	193.80 233.44	-9.5805	235.67	-30.888	.00000	.00000	235.67	198.39	-14.168	249.8
954	175.02 220.37	-9.5974	223.52	-32.509	.00000	.00000	223.52	180.58	-15.155	238.6
955	154.85 206.87	-9.6125	210.47	-34.179	.00000	.00000	210.47	161.67	-16.433	226.9
956	133.29 193.18	-9.6205	196.52	-35.889	.00000	.00000	196.52	141.79	-18.127	214.6
957	110.33 179.66	-9.6112	181.66	-37.631	.00000	.00000	181.66	121.16	-20.440	202.1

HABGE-01/99-0745, Revision 2

EL8

958	85.976 166.78	-9.5680	165.92	-39.399	.00000	.00000	165.92	100.13	-23.719	189.64
959	60.227 155.20	-9.4721	149.30	-41.186	.00000	.00000	149.30	79.329	-28.574	177.87
960	33.078 145.83	-9.3097	131.79	-42.984	.00000	.00000	131.79	59.809	-36.041	167.83
961	4.5243 139.77	-9.0942	113.39	-44.784	.00000	.00000	113.39	43.014	-47.584	160.97

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
962	-25.433 138.16	-8.8919	94.076	-46.580	.00000	.00000	94.076	30.146	-64.471	158.55
963	-56.792 141.81	-8.8637	73.783	-48.375	.00000	.00000	73.783	21.158	-86.813	160.60
964	-89.545 150.88	-9.2694	52.418	-50.211	.00000	.00000	52.418	14.875	-113.69	166.11
965	-123.74 164.93	-10.442	29.843	-52.212	.00000	.00000	29.843	9.9487	-144.13	173.97
966	-159.53 183.37	-12.571	5.9322	-54.659	.00000	.00000	5.9322	5.5286	-177.63	183.57
967	-197.48 206.30	-15.380	-19.419	-58.075	.00000	.00000	1.5638	-19.419	-214.43	215.9
968	-238.53 235.10	-17.535	-46.092	-63.059	.00000	.00000	-.80781	-46.092	-255.26	254.4
969	-284.24 271.90	-16.918	-73.959	-69.438	.00000	.00000	.42762E-01	-73.959	-301.20	301.2
970	-332.54 314.43	-11.015	-101.40	-73.896	.00000	.00000	5.1556	-101.40	-348.71	353.8
971	-350.38 326.55	-8.2935	-118.58	-71.127	.00000	.00000	5.9062	-118.58	-364.58	370.4
972	-312.02 250.32	-52.272	-130.35	-55.899	.00000	.00000	-40.753	-130.35	-323.54	282.7
973	-280.02 185.50	-93.935	-137.58	-44.713	.00000	.00000	-83.749	-137.58	-290.21	206.46

HABGE-01/99-0745, Revision 2

974	-473.80 665.17	248.14	42.082	-95.847	.00000	.00000	260.64	42.082	-486.30	746.95
975	-472.23 997.06	661.33	155.16	-94.413	.00000	.00000	669.14	155.16	-480.04	1149.2
976	-118.86 1000.2	-1185.9	-292.77	-75.545	.00000	.00000	-113.54	-292.77	-1191.3	1077.7
977	-115.90 764.20	-910.21	-207.64	-76.430	.00000	.00000	-108.62	-207.64	-917.50	808.88
978	-112.94 515.99	-613.33	-117.10	-77.280	.00000	.00000	-101.27	-117.10	-624.99	523.72
979	49.462 63.293	-13.831	49.462	.00000	.00000	.00000	49.462	49.462	-13.831	63.293

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
980	50.998 65.207	-13.662	50.082	-6.5692	.00000	.00000	51.658	50.082	-14.323	65.981
981	50.820 78.883	-19.447	49.024	-21.665	.00000	.00000	56.963	49.024	-25.590	82.553
982	46.961 76.853	-7.4137	50.420	-30.275	.00000	.00000	60.464	50.420	-20.917	81.381
983	47.607 78.663	-15.526	47.099	-27.288	.00000	.00000	57.766	47.099	-25.686	83.45
984	46.355 78.197	-15.002	47.097	-27.713	.00000	.00000	57.019	47.097	-25.665	82.68
985	44.374 77.926	-14.846	46.096	-28.638	.00000	.00000	55.958	46.096	-26.430	82.38
986	42.612 78.342	-14.671	45.060	-30.055	.00000	.00000	55.487	45.060	-27.546	83.03
987	40.619 79.218	-14.555	43.817	-31.857	.00000	.00000	55.174	43.817	-29.110	84.28
988	38.345 80.461	-14.503	42.361	-33.925	.00000	.00000	54.922	42.361	-31.080	86.00
989	35.773 82.002	-14.483	40.702	-36.179	.00000	.00000	54.694	40.702	-33.404	88.03

HABCE-01/99-0745, Revision 2

990	32.902 83.808	-14.485	38.845	-38.563	.00000	.00000	54.469	38.845	-36.052	90.521
991	29.737 85.862	-14.495	36.797	-41.044	.00000	.00000	54.244	36.797	-39.002	93.246
992	26.283 88.161	-14.510	34.562	-43.597	.00000	.00000	54.019	34.562	-42.246	96.264
993	22.544 90.706	-14.525	32.143	-46.208	.00000	.00000	53.796	32.143	-45.777	99.573
994	18.524 93.499	-14.539	29.543	-48.864	.00000	.00000	53.577	29.543	-49.593	103.17
995	14.225 96.545	-14.548	26.763	-51.560	.00000	.00000	53.368	26.763	-53.690	107.06
996	9.6474 99.848	-14.539	23.810	-54.288	.00000	.00000	53.173	23.810	-58.064	111.24
997	4.7861 103.41	-14.498	20.686	-57.046	.00000	.00000	52.999	20.686	-62.711	115.71

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
998	-.36843 107.24	-14.402	17.395	-59.829	.00000	.00000	52.854	17.395	-67.624	120.48
999	-5.8340 111.34	-14.239	13.932	-62.634	.00000	.00000	52.738	13.932	-72.811	125.5
1000	-11.631 115.71	-14.011	10.287	-65.452	.00000	.00000	52.641	10.287	-78.283	130.9
1001	-17.780 120.36	-13.792	6.4177	-68.269	.00000	.00000	52.512	6.4177	-84.084	136.6
1002	-24.272 125.26	-13.727	2.2711	-71.071	.00000	.00000	52.267	2.2711	-90.266	142.5
1003	-31.053 130.38	-14.147	-2.2572	-73.872	.00000	.00000	51.755	-2.2572	-96.954	148.1
1004	-37.950 135.79	-15.424	-7.2313	-76.770	.00000	.00000	50.905	-7.2313	-104.28	155.1
1005	-44.721 141.87	-18.110	-12.742	-80.096	.00000	.00000	49.778	-12.742	-112.61	162.3

HABGE-01/99-0745, Revision 2

1006	-51.000 149.67	-22.126	-18.570	-84.559	.00000	.00000	49.219	-18.570	-122.35	171.57
1007	-56.969 161.25	-27.016	-24.555	-91.334	.00000	.00000	50.562	-24.555	-134.55	185.11
1008	-63.656 178.41	-29.039	-29.639	-101.08	.00000	.00000	56.203	-29.639	-148.90	205.10
1009	-75.175 196.69	-23.720	-33.796	-110.23	.00000	.00000	63.749	-33.796	-162.64	226.39
1010	-85.644 181.06	2.1170	-29.948	-94.637	.00000	.00000	62.552	-29.948	-146.08	208.63
1011	-78.997 106.57	18.303	-23.481	-37.461	.00000	.00000	31.055	-23.481	-91.748	122.80
1012	-69.628 69.821	10.734	-23.843	-.17342E-01	.00000	.00000	10.734	-23.843	-69.628	80.362
1013	-55.009 323.91	260.83	61.336	97.259	.00000	.00000	288.37	61.336	-82.557	370.93
1014	-51.304 640.49	648.71	175.41	95.781	.00000	.00000	661.57	175.41	-64.173	725.75
1015	-52.912 886.22	-1023.7	-327.62	106.83	.00000	.00000	-41.294	-327.62	-1035.3	993.99

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1016	-62.354 762.82	-887.63	-287.19	109.26	.00000	.00000	-48.133	-287.19	-901.85	853.7
1017	-72.293 697.80	-818.74	-267.60	111.62	.00000	.00000	-55.959	-267.60	-835.08	779.1
1018	-216.15 196.27	-19.889	-216.15	.00000	.00000	.00000	-19.889	-216.15	-216.15	196.2
1019	-214.92 193.68	-21.834	-215.96	-3.0549	.00000	.00000	-21.786	-214.97	-215.96	194.1
1020	-212.41 184.15	-29.496	-214.61	-3.9564	.00000	.00000	-29.410	-212.49	-214.61	185.1
1021	-210.15 188.23	-23.938	-205.45	-23.172	.00000	.00000	-21.097	-205.45	-212.99	191.1

1022	-205.22 195.60	-21.577	-201.83	-41.410	.00000	.00000	-12.671	-201.83	-214.13	201.46
1023	-200.97 192.15	-20.668	-201.52	-37.918	.00000	.00000	-13.019	-201.52	-208.62	195.61
1024	-196.14 188.00	-20.510	-199.75	-35.823	.00000	.00000	-13.485	-199.75	-203.17	189.69
1025	-190.57 183.77	-20.290	-196.84	-34.963	.00000	.00000	-13.391	-196.84	-197.47	184.08
1026	-184.25 179.18	-20.220	-193.19	-34.896	.00000	.00000	-13.105	-191.36	-193.19	180.08
1027	-177.11 174.25	-20.164	-188.84	-35.363	.00000	.00000	-12.565	-184.71	-188.84	176.27
1028	-169.17 168.96	-20.152	-183.88	-36.197	.00000	.00000	-11.824	-177.50	-183.88	172.06
1029	-160.40 163.34	-20.149	-178.33	-37.296	.00000	.00000	-10.848	-169.70	-178.33	167.48
1030	-150.81 157.45	-20.157	-172.21	-38.590	.00000	.00000	-9.6097	-161.35	-172.21	162.60
1031	-140.38 151.37	-20.167	-165.52	-40.034	.00000	.00000	-8.0548	-152.49	-165.52	157.47
1032	-129.11 145.21	-20.180	-158.28	-41.595	.00000	.00000	-6.1134	-143.18	-158.28	152.17
1033	-117.01 139.09	-20.192	-150.48	-43.251	.00000	.00000	-3.6857	-133.52	-150.48	146.80

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 10

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1034	-104.07 133.22	-20.200	-142.14	-44.985	.00000	.00000	-.63640	-123.64	-142.14	141.5
1035	-90.296 127.81	-20.195	-133.23	-46.785	.00000	.00000	3.2134	-113.70	-133.23	136.4
1036	-75.681 123.15	-20.159	-123.77	-48.646	.00000	.00000	8.0903	-103.93	-123.77	131.8
1037	-60.234 119.57	-20.075	-113.75	-50.564	.00000	.00000	14.250	-94.560	-113.75	128.0

1038	-43.967 117.42	-19.919	-103.17	-52.534	.00000	.00000	21.949	-85.836	-103.17	125.12
1039	-26.899 117.01	-19.704	-92.042	-54.552	.00000	.00000	31.368	-77.972	-92.042	123.41
1040	-9.0545 118.59	-19.461	-80.392	-56.597	.00000	.00000	42.578	-71.094	-80.392	122.97
1041	9.5424 122.32	-19.379	-68.306	-58.644	.00000	.00000	55.482	-65.319	-68.306	123.79
1042	28.921 128.31	-19.696	-55.865	-60.646	.00000	.00000	69.949	-55.865	-60.723	130.67
1043	49.204 136.93	-21.058	-43.264	-62.610	.00000	.00000	85.866	-43.264	-57.720	143.59
1044	70.821 148.93	-23.908	-30.479	-64.652	.00000	.00000	103.60	-30.479	-56.689	160.29
1045	94.547 166.17	-29.351	-17.573	-67.290	.00000	.00000	124.06	-17.573	-58.865	182.93
1046	121.79 190.41	-36.414	-3.5106	-71.533	.00000	.00000	149.34	-3.5106	-63.961	213.30
1047	152.96 222.84	-44.017	12.440	-79.146	.00000	.00000	180.82	12.440	-71.878	252.70
1048	182.93 251.72	-40.138	33.004	-90.500	.00000	.00000	215.02	33.004	-72.236	287.26
1049	166.70 228.06	-8.8092	46.198	-96.330	.00000	.00000	209.25	46.198	-51.364	260.62
1050	77.556 128.27	123.34	66.813	-67.697	.00000	.00000	171.91	66.813	28.986	142.93
1051	18.160 141.67	155.67	55.306	-40.373	.00000	.00000	166.65	55.306	7.1826	159.47

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN1
1052	105.08 782.78	916.70	168.49	22.079	.00000	.00000	917.30	168.49	104.48	812.8
1053	103.27 185.76	-3.8367	-106.76	21.744	.00000	.00000	107.51	-8.0827	-106.76	214.21

1054	-86.029 306.83	-432.94	-290.96	31.056	.00000	.00000	-83.270	-290.96	-435.70	352.43
1055	-20.127 768.19	-902.86	-408.60	31.093	.00000	.00000	-19.033	-408.60	-903.95	884.92
1056	46.842 1238.2	-1372.4	-523.27	31.119	.00000	.00000	47.524	-523.27	-1373.1	1420.6
1057	-614.60 592.28	-22.315	-614.60	.00000	.00000	.00000	-22.315	-614.60	-614.60	592.28
1058	-614.45 588.10	-26.706	-615.16	-.50836	.00000	.00000	-26.705	-614.45	-615.16	588.45
1059	-610.27 583.43	-28.564	-613.68	-1.8535	.00000	.00000	-28.558	-610.27	-613.68	585.13
1060	-602.25 564.47	-41.292	-601.11	39.139	.00000	.00000	-38.574	-601.11	-604.96	566.39
1061	-590.94 577.05	-23.516	-585.74	68.161	.00000	.00000	-15.443	-585.74	-599.01	583.57
1062	-577.69 563.52	-23.758	-583.15	50.532	.00000	.00000	-19.186	-582.26	-583.15	563.96
1063	-562.31 549.91	-23.289	-575.74	38.466	.00000	.00000	-20.557	-565.04	-575.74	555.18
1064	-545.46 535.37	-23.102	-566.13	29.121	.00000	.00000	-21.484	-547.07	-566.13	544.65
1065	-526.44 519.36	-23.048	-554.55	21.547	.00000	.00000	-22.128	-527.36	-554.55	532.43
1066	-505.08 501.78	-22.990	-541.15	15.150	.00000	.00000	-22.515	-505.56	-541.15	518.63
1067	-481.28 482.50	-22.986	-526.00	9.5993	.00000	.00000	-22.785	-481.48	-526.00	503.22
1068	-454.99 461.55	-22.980	-509.15	4.6653	.00000	.00000	-22.929	-455.04	-509.15	486.2
1069	-426.20 438.99	-22.988	-490.63	.19961	.00000	.00000	-22.988	-426.20	-490.63	467.6

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
------	------------	----	----	-----	-----	-----	----	----	----	-----

1070	-394.90 414.93	-22.997	-470.45	-3.9050	.00000	.00000	-22.956	-394.94	-470.45	447.50
1071	-361.10 389.54	-23.008	-448.63	-7.7245	.00000	.00000	-22.832	-361.27	-448.63	425.80
1072	-324.80 363.07	-23.020	-425.17	-11.316	.00000	.00000	-22.596	-325.22	-425.17	402.57
1073	-286.00 335.88	-23.027	-400.07	-14.723	.00000	.00000	-22.206	-286.82	-400.07	377.87
1074	-244.69 308.51	-23.025	-373.35	-17.982	.00000	.00000	-21.575	-246.14	-373.35	351.77
1075	-200.88 281.75	-22.992	-344.98	-21.121	.00000	.00000	-20.518	-203.35	-344.98	324.47
1076	-154.52 256.77	-22.919	-314.97	-24.168	.00000	.00000	-18.622	-158.82	-314.97	296.35
1077	-105.60 235.28	-22.769	-283.27	-27.142	.00000	.00000	-14.668	-113.70	-283.27	268.60
1078	-54.062 219.58	-22.575	-249.89	-30.062	.00000	.00000	-4.3838	-72.253	-249.89	245.51
1079	.13046 212.43	-22.313	-214.80	-32.921	.00000	.00000	23.690	-45.872	-214.80	238.49
1080	56.970 216.18	-22.247	-178.09	-35.708	.00000	.00000	70.690	-35.967	-178.09	248.78
1081	116.34 231.85	-22.451	-139.85	-38.353	.00000	.00000	126.24	-32.344	-139.85	266.08
1082	177.98 259.04	-23.885	-100.54	-40.833	.00000	.00000	185.93	-31.832	-100.54	286.47
1083	241.45 295.96	-26.555	-60.348	-43.078	.00000	.00000	248.20	-33.309	-60.348	308.55
1084	306.37 342.30	-32.821	-20.333	-45.454	.00000	.00000	312.36	-20.333	-38.806	351.1
1085	373.19 395.64	-40.258	20.650	-48.518	.00000	.00000	378.81	20.650	-45.876	424.6
1086	445.33 460.77	-51.890	62.861	-54.662	.00000	.00000	451.27	62.861	-57.828	509.1
1087	534.15 531.97	-48.024	118.79	-66.718	.00000	.00000	541.70	118.79	-55.572	597.2

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

HABGE-01/99-0745, Revision 2

576

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1088	679.72 642.46	-23.280	207.26	-95.698	.00000	.00000	692.51	207.26	-36.074	728.58
1089	860.46 649.12	160.50	375.23	-108.92	.00000	.00000	877.02	375.23	143.94	733.08
1090	946.76 583.32	328.28	487.81	-101.60	.00000	.00000	963.02	487.81	312.01	651.00
1091	-49.575 24.131	-25.444	-49.575	.00000	.00000	.00000	-25.444	-49.575	-49.575	24.131
1092	-60.245 41.691	-24.773	-52.088	-15.305	.00000	.00000	-19.082	-52.088	-65.936	46.853
1093	-63.747 38.509	-48.607	-67.991	-19.761	.00000	.00000	-35.016	-67.991	-77.338	42.322
1094	-52.678 56.250	.83078	-47.180	-13.722	.00000	.00000	4.1443	-47.180	-55.991	60.136
1095	-64.281 33.455	-35.588	-63.029	-10.493	.00000	.00000	-32.161	-63.029	-67.709	35.548
1096	-71.456 45.547	-24.739	-63.849	-7.9495	.00000	.00000	-23.424	-63.849	-72.771	49.348
1097	-76.407 47.944	-26.189	-67.322	-7.0843	.00000	.00000	-25.209	-67.322	-77.387	52.178
1098	-84.949 54.648	-26.060	-72.246	-5.9209	.00000	.00000	-25.471	-72.246	-85.539	60.068
1099	-92.702 61.259	-25.815	-76.855	-5.4035	.00000	.00000	-25.381	-76.855	-93.136	67.755
1100	-102.44 69.271	-25.928	-82.573	-4.8374	.00000	.00000	-25.623	-82.573	-102.74	77.11
1101	-112.78 78.132	-25.827	-88.624	-4.4901	.00000	.00000	-25.596	-88.624	-113.01	87.41
1102	-124.46 88.049	-25.870	-95.428	-4.1691	.00000	.00000	-25.694	-95.428	-124.63	98.94
1103	-137.12 98.925	-25.848	-102.78	-3.9360	.00000	.00000	-25.709	-102.78	-137.26	111.5
1104	-150.93 110.79	-25.865	-110.80	-3.7343	.00000	.00000	-25.753	-110.80	-151.04	125.2
1105	-165.82 123.62	-25.868	-119.42	-3.5769	.00000	.00000	-25.776	-119.42	-165.91	140.1

***** POST1 NODAL STRESS LISTING *****

HABCE-01/99-0745, Revision 2

E 44

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1106	-181.80 137.42	-25.877	-128.66	-3.4422	.00000	.00000	-25.801	-128.66	-181.87	156.07
1107	-198.86 152.18	-25.889	-138.54	-3.3368	.00000	.00000	-25.824	-138.54	-198.93	173.10
1108	-216.99 167.89	-25.878	-149.02	-3.2420	.00000	.00000	-25.823	-149.02	-217.05	191.23
1109	-236.25 184.58	-25.873	-160.13	-3.1781	.00000	.00000	-25.825	-160.13	-236.30	210.47
1110	-256.53 202.25	-25.775	-171.83	-3.1031	.00000	.00000	-25.733	-171.83	-256.57	230.84
1111	-278.11 221.02	-25.716	-184.23	-3.0894	.00000	.00000	-25.678	-184.23	-278.15	252.47
1112	-300.64 240.85	-25.405	-197.15	-3.0035	.00000	.00000	-25.372	-197.15	-300.67	275.30
1113	-325.07 262.04	-25.396	-211.02	-3.0915	.00000	.00000	-25.364	-211.02	-325.10	299.74
1114	-349.98 284.16	-24.838	-225.26	-2.8990	.00000	.00000	-24.812	-225.26	-350.01	325.20
1115	-378.29 307.81	-25.808	-241.19	-3.2547	.00000	.00000	-25.778	-241.19	-378.32	352.55
1116	-404.45 330.85	-25.495	-256.65	-2.5960	.00000	.00000	-25.477	-256.65	-404.47	378.9
1117	-437.38 354.39	-31.061	-275.83	-3.7386	.00000	.00000	-31.027	-275.83	-437.41	406.3
1118	-456.66 370.83	-31.796	-290.37	-1.3315	.00000	.00000	-31.792	-290.37	-456.66	424.8
1119	-492.11 384.00	-51.546	-314.31	-5.0599	.00000	.00000	-51.488	-314.31	-492.16	440.0
1120	-473.80 376.77	-43.791	-315.76	3.3599	.00000	.00000	-43.764	-315.76	-473.82	430.0
1121	-516.89 367.91	-95.419	-348.77	-10.245	.00000	.00000	-95.170	-348.77	-517.14	421.1
1122	-373.34 370.80	34.327	-277.73	19.482	.00000	.00000	35.256	-277.73	-374.27	409.5

HABGE-01/99-0745, Revision 2

1123	-1380.8	-128.51	-624.14	-250.71	.00000	.00000	-80.180	-624.14	-1429.2	1349.0
	1175.5									

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1124	-549.72 1569.1	1212.4	-13.547	-69.031	.00000	.00000	1215.1	-13.547	-552.42	1767.5
1125	498.85 779.92	-276.49	-139.95	177.35	.00000	.00000	537.49	-139.95	-315.13	852.61
1126	495.73 1962.3	-1449.1	-490.58	-581.27	.00000	.00000	656.22	-490.58	-1609.6	2265.8
1127	432.93 1580.6	-1034.3	-373.70	-541.05	.00000	.00000	610.86	-373.70	-1212.3	1823.1
1128	370.49 990.72	-106.18	-106.04	-501.46	.00000	.00000	687.37	-106.04	-423.06	1110.4
1129	-577.44 551.99	-25.444	-577.44	.00000	.00000	.00000	-25.444	-577.44	-577.44	551.99
1130	-566.61 542.31	-27.771	-572.84	10.925	.00000	.00000	-27.549	-566.83	-572.84	545.29
1131	-564.19 521.49	-44.902	-565.82	21.933	.00000	.00000	-43.977	-565.11	-565.82	521.85
1132	-572.68 567.31	-.42018	-561.74	12.890	.00000	.00000	-.12996	-561.74	-572.97	572.8
1133	-559.90 528.54	-36.235	-569.04	9.3209	.00000	.00000	-36.069	-560.07	-569.04	532.5
1134	-553.68 532.83	-24.486	-560.54	7.8754	.00000	.00000	-24.369	-553.80	-560.54	536.1
1135	-548.66 527.13	-26.491	-558.24	6.0325	.00000	.00000	-26.421	-548.73	-558.24	531.1
1136	-540.18 520.78	-26.076	-553.12	5.3041	.00000	.00000	-26.022	-540.23	-553.12	527.1
1137	-532.45 514.71	-25.962	-548.40	4.4051	.00000	.00000	-25.924	-532.49	-548.40	522.1
1138	-522.73 507.05	-26.020	-542.74	3.8740	.00000	.00000	-25.990	-522.76	-542.74	516.1

HABGE-01/99-0745, Revision 2

1139	-512.39 499.04	-25.947	-536.63	3.3454	.00000	.00000	-25.924	-512.42	-536.63	510.71
1140	-500.73 489.98	-25.979	-529.85	2.9510	.00000	.00000	-25.961	-500.74	-529.85	503.89
1141	-488.07 480.26	-25.964	-522.48	2.5886	.00000	.00000	-25.949	-488.09	-522.48	496.53

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1142	-474.26 469.70	-25.979	-514.48	2.2869	.00000	.00000	-25.967	-474.28	-514.48	488.51
1143	-459.39 458.42	-25.983	-505.86	2.0130	.00000	.00000	-25.974	-459.40	-505.86	479.88
1144	-443.41 446.42	-25.992	-496.61	1.7742	.00000	.00000	-25.984	-443.42	-496.61	470.63
1145	-426.35 433.72	-26.005	-486.75	1.5529	.00000	.00000	-25.999	-426.35	-486.75	460.75
1146	-408.22 420.40	-25.992	-476.26	1.3595	.00000	.00000	-25.987	-408.23	-476.26	450.27
1147	-388.97 406.46	-25.990	-465.14	1.1673	.00000	.00000	-25.986	-388.97	-465.14	439.15
1148	-368.69 392.07	-25.887	-453.38	1.0130	.00000	.00000	-25.884	-368.70	-453.38	427.4
1149	-347.11 377.06	-25.839	-440.95	.82022	.00000	.00000	-25.837	-347.11	-440.95	415.1
1150	-324.57 361.92	-25.514	-427.84	.71916	.00000	.00000	-25.512	-324.57	-427.84	402.3
1151	-300.13 345.88	-25.538	-413.99	.46101	.00000	.00000	-25.537	-300.13	-413.99	388.1
1152	-275.20 330.39	-24.932	-399.42	.49887	.00000	.00000	-24.931	-275.20	-399.42	374.1
1153	-246.88 312.94	-25.997	-384.11	.23733E-02	.00000	.00000	-25.997	-246.88	-384.11	358.1
1154	-220.72 297.91	-25.518	-368.42	.53499	.00000	.00000	-25.517	-220.72	-368.42	342.1

HABGE-01/99-0745, Revision 2

1155	-187.85 278.23	-31.360	-352.60	-.72009	.00000	.00000	-31.357	-187.86	-352.60	321.24
1156	-168.69 266.11	-31.535	-338.23	1.5929	.00000	.00000	-31.516	-168.71	-338.23	306.71
1157	-133.57 243.66	-52.129	-326.05	-2.2198	.00000	.00000	-52.069	-133.63	-326.05	273.98
1158	-152.27 241.35	-42.565	-319.03	6.1359	.00000	.00000	-42.223	-152.61	-319.03	276.80
1159	-110.08 214.05	-97.084	-316.93	-7.5846	.00000	.00000	-93.595	-113.57	-316.93	223.34

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1160	-253.50 325.40	38.627	-308.49	22.029	.00000	.00000	40.279	-255.15	-308.49	348.77
1161	753.30 959.40	-139.34	-63.277	-248.83	.00000	.00000	817.97	-63.277	-204.02	1022.0
1162	1484.1 805.18	1332.7	627.22	-83.348	.00000	.00000	1521.0	1295.8	627.22	893.80
1163	925.99 1422.7	-475.30	-70.009	393.27	.00000	.00000	1028.8	-70.009	-578.13	1606.9
1164	-1398.6 2155.5	-3440.1	-1625.3	-544.54	.00000	.00000	-1262.4	-1625.3	-3576.3	2313.
1165	-1050.4 857.11	-753.04	-718.11	-459.92	.00000	.00000	-418.38	-718.11	-1385.1	966.7
1166	-698.13 1876.6	1303.0	-1.5976	-376.67	.00000	.00000	1371.6	-1.5976	-766.68	2138.
1167	836.46 854.76	-18.304	836.46	.00000	.00000	.00000	836.46	836.46	-18.304	854.
1168	830.62 862.90	-31.423	832.31	-1.9318	.00000	.00000	832.31	830.62	-31.428	863.
1169	830.39 862.41	-33.269	827.15	14.469	.00000	.00000	830.63	827.15	-33.512	864.
1170	828.74 845.07	-13.251	833.84	17.123	.00000	.00000	833.84	829.09	-13.599	847.

1171	801.50 840.87	-31.076	817.68	6.8280	.00000	.00000	817.68	801.56	-31.132	848.81
1172	767.82 812.44	-27.281	801.40	3.7823	.00000	.00000	801.40	767.84	-27.299	828.70
1173	735.55 786.75	-26.602	782.64	.22272	.00000	.00000	782.64	735.55	-26.602	809.24
1174	698.44 758.73	-27.303	760.56	-2.7469	.00000	.00000	760.56	698.45	-27.313	787.87
1175	656.68 726.53	-26.825	736.08	-5.4215	.00000	.00000	736.08	656.73	-26.868	762.95
1176	609.63 691.51	-27.031	708.43	-7.9176	.00000	.00000	708.43	609.73	-27.129	735.56
1177	557.14 653.05	-26.907	677.83	-10.229	.00000	.00000	677.83	557.32	-27.086	704.91

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1178	499.18 611.99	-26.960	644.10	-12.437	.00000	.00000	644.10	499.48	-27.254	671.35
1179	435.72 568.76	-26.932	607.28	-14.541	.00000	.00000	607.28	436.18	-27.389	634.67
1180	366.77 524.43	-26.949	567.33	-16.574	.00000	.00000	567.33	367.46	-27.645	594.9
1181	292.34 480.43	-26.948	524.26	-18.542	.00000	.00000	524.26	293.41	-28.021	552.2
1182	212.47 438.99	-26.953	478.07	-20.460	.00000	.00000	478.07	214.20	-28.689	506.7
1183	127.17 403.36	-26.964	428.76	-22.334	.00000	.00000	428.76	130.34	-30.135	458.9
1184	36.458 377.96	-26.950	376.35	-24.180	.00000	.00000	376.35	44.626	-35.119	411.4
1185	-59.698 368.00	-26.962	320.80	-26.008	.00000	.00000	320.80	-12.600	-74.060	394.8
1186	-161.43 377.94	-26.876	262.12	-27.860	.00000	.00000	262.12	-21.335	-166.97	429.0

1187	-268.97 409.60	-26.887	200.16	-29.753	.00000	.00000	200.16	-23.284	-272.57	472.73
1188	-382.79 462.05	-26.602	134.87	-31.776	.00000	.00000	134.87	-23.789	-385.60	520.47
1189	-503.41 532.31	-26.754	65.844	-33.880	.00000	.00000	65.844	-24.358	-505.81	571.65
1190	-631.51 618.47	-26.091	-6.8078	-36.177	.00000	.00000	-6.8078	-23.936	-633.66	626.85
1191	-766.77 715.98	-27.228	-83.844	-38.189	.00000	.00000	-25.261	-83.844	-768.74	743.48
1192	-907.83 824.63	-25.972	-163.62	-39.890	.00000	.00000	-24.172	-163.62	-909.63	885.46
1193	-1048.3 930.73	-31.265	-246.81	-39.270	.00000	.00000	-29.751	-246.81	-1049.8	1020.1
1194	-1177.6 1035.2	-28.333	-325.42	-36.262	.00000	.00000	-27.190	-325.42	-1178.7	1151.5
1195	-1270.4 1091.8	-46.613	-399.90	-25.035	.00000	.00000	-46.101	-399.90	-1270.9	1224.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1196	-1303.7 1123.9	-31.779	-445.37	-10.694	.00000	.00000	-31.689	-445.37	-1303.8	1272.
1197	-1230.3 1009.5	-84.285	-475.62	19.091	.00000	.00000	-83.967	-475.62	-1230.6	1146.
1198	-1118.6 1008.0	38.771	-435.43	12.448	.00000	.00000	38.905	-435.43	-1118.8	1157.
1199	-1078.5 785.78	-182.41	-514.03	23.109	.00000	.00000	-181.81	-514.03	-1079.1	897.3
1200	-1592.1 2027.6	670.17	-425.66	-300.83	.00000	.00000	709.49	-425.66	-1631.4	2340.
1201	-2112.3 2852.5	909.76	-541.21	-654.05	.00000	.00000	1045.2	-541.21	-2247.8	3293.
1202	-441.50 422.83	-18.669	-441.50	.00000	.00000	.00000	-18.669	-441.50	-441.50	422.8

HABCE-01/99-0745, Revision 2

1203	-437.89 420.12	-19.039	-440.41	-.27751	.00000	.00000	-19.039	-437.89	-440.41	421.37
1204	-437.16 404.45	-38.266	-437.11	-38.662	.00000	.00000	-34.554	-437.11	-440.87	406.32
1205	-437.89 442.72	-8.5760	-429.76	-70.980	.00000	.00000	2.8551	-429.76	-449.32	452.17
1206	-435.79 424.25	-23.530	-436.15	-57.396	.00000	.00000	-15.688	-436.15	-443.64	427.95
1207	-435.32 422.38	-20.684	-435.19	-46.672	.00000	.00000	-15.495	-435.19	-440.50	425.01
1208	-435.93 421.58	-20.071	-435.59	-40.557	.00000	.00000	-16.153	-435.59	-439.85	423.70
1209	-435.66 420.01	-20.558	-435.79	-36.737	.00000	.00000	-17.332	-435.79	-438.88	421.55
1210	-435.72 419.71	-20.241	-435.78	-34.168	.00000	.00000	-17.450	-435.78	-438.51	421.06
1211	-435.73 419.23	-20.364	-435.87	-32.490	.00000	.00000	-17.838	-435.87	-438.26	420.42
1212	-435.74 419.06	-20.292	-435.88	-31.380	.00000	.00000	-17.936	-435.88	-438.10	420.16
1213	-435.76 418.90	-20.322	-435.91	-30.697	.00000	.00000	-18.066	-435.91	-438.02	419.95

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1214	-435.77 418.84	-20.308	-435.91	-30.317	.00000	.00000	-18.108	-435.91	-437.97	419.8
1215	-435.78 418.81	-20.318	-435.92	-30.171	.00000	.00000	-18.139	-435.92	-437.96	419.8
1216	-435.79 418.82	-20.319	-435.93	-30.204	.00000	.00000	-18.135	-435.93	-437.98	419.8
1217	-435.80 418.86	-20.324	-435.93	-30.380	.00000	.00000	-18.114	-435.93	-438.01	419.9
1218	-435.81 418.92	-20.331	-435.94	-30.670	.00000	.00000	-18.079	-435.94	-438.06	419.9

HABCE-01/99-0745, Revision 2

1219	-435.82 419.02	-20.323	-435.94	-31.060	.00000	.00000	-18.014	-435.94	-438.12	420.11
1220	-435.82 419.13	-20.325	-435.94	-31.542	.00000	.00000	-17.944	-435.94	-438.20	420.26
1221	-435.82 419.31	-20.269	-435.92	-32.135	.00000	.00000	-17.799	-435.92	-438.29	420.50
1222	-435.83 419.50	-20.252	-435.91	-32.850	.00000	.00000	-17.672	-435.91	-438.42	420.74
1223	-435.83 419.86	-20.075	-435.86	-33.746	.00000	.00000	-17.354	-435.86	-438.55	421.20
1224	-435.86 420.10	-20.114	-435.88	-34.797	.00000	.00000	-17.222	-435.88	-438.75	421.53
1225	-435.83 420.70	-19.758	-435.77	-36.037	.00000	.00000	-16.660	-435.77	-438.93	422.27
1226	-435.93 420.52	-20.385	-435.99	-37.108	.00000	.00000	-17.098	-435.99	-439.22	422.12
1227	-435.84 420.98	-19.975	-435.85	-37.750	.00000	.00000	-16.576	-435.85	-439.24	422.67
1228	-436.17 418.13	-23.174	-436.88	-36.398	.00000	.00000	-19.991	-436.88	-439.36	419.36
1229	-435.70 417.03	-22.896	-436.65	-32.196	.00000	.00000	-20.401	-436.65	-438.19	417.79
1230	-437.07 406.83	-33.384	-440.06	-21.045	.00000	.00000	-32.290	-438.17	-440.06	407.77
1231	-433.02 405.83	-29.615	-437.70	-4.3657	.00000	.00000	-29.568	-433.07	-437.70	408.13

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X, Y, Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN
1232	-441.49 392.89	-52.834	-446.59	20.813	.00000	.00000	-51.723	-442.60	-446.59	394.1
1233	-419.89 431.41	8.0333	-422.54	24.873	.00000	.00000	9.4742	-421.33	-422.54	432.1
1234	-361.52 314.39	-91.411	-432.60	23.304	.00000	.00000	-89.415	-363.52	-432.60	343.1

1235	-52.782 605.49	380.92	-197.82	-177.56	.00000	.00000	444.34	-116.20	-197.82	642.15
1236	340.98 1106.7	-840.86	-437.36	-217.66	.00000	.00000	379.80	-437.36	-879.68	1259.5
1237	260.04 735.51	-547.83	-360.05	39.832	.00000	.00000	262.00	-360.05	-549.79	811.79
1238	80.176 1130.0	1203.9	114.17	130.73	.00000	.00000	1218.9	114.17	65.167	1153.7
1239	-1705.2 1686.2	-19.034	-1705.2	.00000	.00000	.00000	-19.034	-1705.2	-1705.2	1686.2
1240	-1706.2 1700.2	-4.6954	-1703.5	2.8351	.00000	.00000	-4.6907	-1703.5	-1706.2	1701.5
1241	-1713.0 1669.7	-45.247	-1708.1	69.599	.00000	.00000	-42.348	-1708.1	-1715.9	1673.6
1242	-1699.2 1702.6	-3.7261	-1692.1	109.67	.00000	.00000	3.3381	-1692.1	-1706.3	1709.6
1243	-1672.8 1670.5	-15.648	-1689.0	76.286	.00000	.00000	-12.144	-1676.3	-1689.0	1676.8
1244	-1640.2 1645.5	-14.293	-1672.7	58.420	.00000	.00000	-12.197	-1642.3	-1672.7	1660.5
1245	-1606.5 1619.0	-13.482	-1653.5	46.031	.00000	.00000	-12.153	-1607.8	-1653.5	1641.3
1246	-1569.9 1589.4	-13.820	-1632.2	36.341	.00000	.00000	-12.972	-1570.8	-1632.2	1619.2
1247	-1528.1 1556.5	-13.660	-1607.6	28.755	.00000	.00000	-13.114	-1528.6	-1607.6	1594.5
1248	-1481.1 1519.8	-13.694	-1580.2	22.450	.00000	.00000	-13.351	-1481.4	-1580.2	1566.8
1249	-1428.6 1479.4	-13.679	-1549.6	17.079	.00000	.00000	-13.473	-1428.8	-1549.6	1536.8

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SKY	SYZ	SKZ	S1	S2	S3	SIN
1250	-1370.7 1435.3	-13.683	-1515.9	12.384	.00000	.00000	-13.570	-1370.8	-1515.9	1502.9

HABGE01/99-0745, Revision 2

1251	-1307.3 1387.6	-13.684	-1479.1	8.2014	.00000	.00000	-13.632	-1307.3	-1479.1	1465.5
1252	-1238.3 1336.5	-13.688	-1439.2	4.4155	.00000	.00000	-13.672	-1238.3	-1439.2	1425.5
1253	-1163.9 1282.2	-13.691	-1396.1	.94377	.00000	.00000	-13.690	-1163.9	-1396.1	1382.4
1254	-1084.1 1225.1	-13.695	-1349.9	-2.2753	.00000	.00000	-13.690	-1084.1	-1349.9	1336.2
1255	-998.79 1165.7	-13.697	-1300.6	-5.2887	.00000	.00000	-13.669	-998.82	-1300.6	1287.0
1256	-908.10 1104.6	-13.696	-1248.2	-8.1375	.00000	.00000	-13.622	-908.17	-1248.2	1234.6
1257	-811.95 1042.3	-13.687	-1192.7	-10.861	.00000	.00000	-13.539	-812.10	-1192.7	1179.1
1258	-710.24 980.03	-13.662	-1134.0	-13.507	.00000	.00000	-13.400	-710.50	-1134.0	1120.6
1259	-602.70 918.96	-13.619	-1072.0	-16.129	.00000	.00000	-13.177	-603.14	-1072.0	1058.8
1260	-488.90 860.89	-13.546	-1006.6	-18.786	.00000	.00000	-12.805	-489.64	-1006.6	993.80
1261	-368.23 808.33	-13.477	-937.59	-21.514	.00000	.00000	-12.177	-369.53	-937.59	925.42
1262	-240.18 764.78	-13.422	-864.74	-24.295	.00000	.00000	-10.849	-242.76	-864.74	853.89
1263	-104.72 734.64	-13.551	-788.04	-26.909	.00000	.00000	-6.2014	-112.07	-788.04	781.83
1264	36.159 722.19	-13.965	-708.05	-28.869	.00000	.00000	49.327	-27.133	-708.05	757.30
1265	177.23 728.72	-15.106	-626.59	-29.022	.00000	.00000	181.51	-19.390	-626.59	808.1
1266	305.44 747.66	-17.417	-547.98	-25.668	.00000	.00000	307.46	-19.445	-547.98	855.1
1267	400.62 762.52	-20.244	-478.98	-16.260	.00000	.00000	401.25	-20.871	-478.98	880.1

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SINT
1268	425.43 743.99	-27.213	-433.23	1.5970	.00000	.00000	425.44	-27.218	-433.23	858.67
1269	368.08 676.89	-21.907	-412.29	21.916	.00000	.00000	369.31	-23.134	-412.29	781.60
1270	213.39 565.04	-21.464	-427.32	36.844	.00000	.00000	219.04	-27.109	-427.32	646.36
1271	55.582 477.58	-.53437	-445.74	24.094	.00000	.00000	64.507	-9.4595	-445.74	510.25
1272	-45.337 487.97	96.222	-438.05	-52.476	.00000	.00000	113.55	-62.668	-438.05	551.61
1273	-211.66 501.01	45.148	-497.53	-99.883	.00000	.00000	79.422	-245.94	-497.53	576.95
1274	-111.86 581.17	-695.97	-683.66	34.721	.00000	.00000	-109.81	-683.66	-698.03	588.22
1275	100.41 964.59	883.91	-136.64	157.75	.00000	.00000	914.47	69.839	-136.64	1051.1

MINIMUM VALUES

NODE	1201 186	1164	1241	1201	1	1	1164	1241	1164	186
VALUE	-2112.3 6.3449	-3440.1	-1708.1	-654.05	.00000	.00000	-1262.4	-1708.1	-3576.3	6.3593

MAXIMUM VALUES

NODE	900 1201	1162	757	827	1	1	900	757	1162	1201
VALUE	2666.1 2852.5	1332.7	1891.5	414.67	.00000	.00000	2683.6	1891.5	627.22	3293.0

***** POST1 NODAL STRESS LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z VALUES ARE IN GLOBAL COORDINATES

NODE	SX SEQV	SY	SZ	SXY	SYZ	SXZ	S1	S2	S3	SIN'
------	------------	----	----	-----	-----	-----	----	----	----	------

***** ESTIMATED BOUNDS CONSIDERING THE EFFECT OF DISCRETIZATION ERROR *****

HABGE-01/99-0745, Revision 2

E 38

MINIMUM VALUES

NODE	1164	1164	1164	1164	1164	1164	1164	1164	36
VALUE	-4006.8	-6048.3	-4233.4	-3152.7	.00000	.00000	-3870.6	-4233.4	.00000
	.00000								

MAXIMUM VALUES

NODE	900	1162	1162	1164	1164	1164	900	1162	1162	1201
VALUE	3974.4	3006.8	2301.3	2063.6	.00000	.00000	3991.9	2969.9	2301.3	5054.4
	4763.6									

HOPPER AND ASSOCIATES
ENGINEERS

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/14/99 PAGE: F1
SUBJECT: APPENDIX F BY: AJS CK: SR SHT: 1 OF 55

APPENDIX F

SPACER PLATE ANSYS INPUT FILES
AND MOMENT REACTION OUTPUT

```
/PREP7
/TITLE, SPACER DISC ELASTIC THERMAL ANALYSIS
C***KAN,0
ET,1,63
C*** SA-240, TYPE 304 STAINLESS STEEL MATERIAL PROPERTIES
EX,1,26.15E6
NUXY,1,0.29
DENS,1,0.286
MPTEMP,,70,100,200,400,500
MPDATA,ALPX,,8.46E-6,8.63E-6,9.08E-6,9.80E-6,10.10E-6
C*** GEOMETRY
C*** REAL CONSTANTS
C*** SPACER DISC THICKNESS
R,1,1.5
C*** NODAL INPUT
CSYS,1
C*** SPACER DISK NODES
N,1,32.75,-90.0
N,2,32.75,-88.65
N,3,32.75,-83.18
N,4,32.75,-77.65
N,5,32.75,-71.99
N,6,32.75,-69.61
N,7,32.75,-63.67
N,8,32.75,-57.4
N,9,32.75,-50.65
N,10,32.75,-48.65
N,11,32.75,-41.71
N,12,32.75,-39.35
N,13,32.75,-32.60
N,14,32.75,-26.33
N,15,32.75,-20.39
N,16,32.75,-18.01
N,17,32.75,-12.35
N,18,32.75,-6.82
N,19,32.75,-1.35
C*** INNER SPACER DISK NODES
N,20,31.86,-90.0
N,21,31.86,-88.65
N,22,31.86,-83.18
N,23,31.86,-77.65
N,24,31.86,-71.99
N,25,31.86,-69.61
N,26,31.86,-63.67
N,27,31.86,-57.40
N,28,31.86,-50.65
N,29,31.86,-48.65
N,30,31.86,-41.71
N,31,31.86,-39.35
N,32,31.86,-32.60
N,33,31.86,-26.33
N,34,31.86,-20.39
N,35,31.86,-18.01
N,36,31.86,-12.35
N,37,31.86,-6.82
N,38,31.86,-1.35
CSYS,0
```


N,39,20.201,-23.917
N,40,23.784,-20.2
N,41,0.0,-30.3
N,42,0.75,-30.3
N,43,3.783,-30.3
N,44,6.817,-30.3
N,45,0.0,-27.267
N,46,0.75,-27.267
N,47,9.85,-27.267
N,48,11.1,-27.267
N,49,14.133,-27.267
N,50,0.0,-24.233
N,51,0.75,-24.233
N,52,9.85,-24.233
N,53,11.1,-24.233
N,54,14.167,-24.233
N,55,17.167,-24.233
N,56,0.0,-21.2
N,57,0.75,-21.2
N,58,3.783,-21.2
N,59,6.817,-21.2
N,60,9.85,-21.2
N,61,11.1,-21.2
N,62,14.133,-21.2
N,63,17.162,-21.2
N,64,20.2,-21.2
N,65,21.2,-21.2
N,66,0.0,-20.2
N,67,0.75,-20.2
N,68,3.783,-20.2
N,69,6.817,-20.2
N,70,9.85,-20.2
N,71,11.1,-20.2
N,72,14.133,-20.2
N,73,17.162,-20.2
N,74,20.2,-20.2
N,75,21.2,-20.2
N,76,0.0,-17.167
N,77,0.75,-17.167
N,78,9.85,-17.167
N,79,11.1,-17.167
N,80,20.2,-17.167
N,81,21.2,-17.167
N,82,24.233,-17.167
N,83,0.0,-14.133
N,84,0.75,-14.133
N,85,9.85,-14.133
N,86,11.1,-14.133
N,87,20.2,-14.133
N,88,21.2,-14.133
N,89,24.233,-14.133
N,90,27.267,-14.133
N,91,0.0,-11.1
N,92,0.75,-11.1
N,93,3.783,-11.1
N,94,6.817,-11.1
N,95,9.85,-11.1

N,96,11.1,-11.1
N,97,14.133,-11.1
N,98,17.162,-11.1
N,99,20.2,-11.1
N,100,21.2,-11.1
N,101,24.233,-11.1
N,102,27.267,-11.1
N,103,0.0,-9.85
N,104,0.75,-9.85
N,105,3.783,-9.85
N,106,6.817,-9.85
N,107,9.85,-9.85
N,108,11.1,-9.85
N,109,14.133,-9.85
N,110,17.162,-9.85
N,111,20.2,-9.85
N,112,21.2,-9.85
N,113,24.233,-9.85
N,114,27.267,-9.85
N,115,0.0,-6.817
N,116,0.75,-6.817
N,117,9.85,-6.817
N,118,11.1,-6.817
N,119,20.2,-6.817
N,120,21.2,-6.817
N,121,30.3,-6.817
N,122,0.0,-3.783
N,123,0.75,-3.783
N,124,9.85,-3.783
N,125,11.1,-3.783
N,126,20.2,-3.783
N,127,21.2,-3.783
N,128,30.3,-3.783
N,129,0.0,-0.75
N,130,0.75,-0.75
N,131,3.783,-0.75
N,132,6.817,-0.75
N,133,9.85,-0.75
N,134,11.1,-0.75
N,135,14.133,-0.75
N,136,17.162,-0.75
N,137,20.2,-0.75
N,138,21.2,-0.75
N,139,24.233,-0.75
N,140,27.267,-0.75
N,141,30.3,-0.75
SYMM,2,141,ALL
SYMM,1,1000,ALL
C*** ELEMENT GENERATION
TYPE,1
REAL,1
E,1,2,21,20
EGEN,18,1,-1
E,20,21,42,41
E,21,22,43,42
E,22,23,44,43
E,23,24,44

E, 41, 42, 46, 45
E, 24, 25, 48, 47
E, 25, 26, 49, 48
E, 26, 27, 49
E, 45, 46, 51, 50
E, 47, 48, 53, 52
E, 48, 49, 54, 53
E, 49, 27, 55, 54
E, 27, 28, 55
E, 55, 28, 39
E, 28, 29, 39
E, 50, 51, 57, 56
E, 52, 53, 61, 60
E, 53, 54, 62, 61
E, 54, 55, 63, 62
E, 55, 39, 64, 63
E, 39, 29, 65, 64
E, 29, 30, 65
E, 56, 57, 67, 66
EGEN, 9, 1, -1
E, 65, 30, 40, 75
E, 30, 31, 40
E, 66, 67, 77, 76
E, 70, 71, 79, 78
E, 74, 75, 81, 80
E, 75, 40, 82, 81
E, 40, 31, 82
E, 31, 32, 82
E, 76, 77, 84, 83
E, 78, 79, 86, 85
E, 80, 81, 88, 87
E, 81, 82, 89, 88
E, 82, 32, 90, 89
E, 32, 33, 90
E, 83, 84, 92, 91
E, 85, 86, 96, 95
E, 87, 88, 100, 99
E, 88, 89, 101, 100
E, 89, 90, 102, 101
E, 90, 33, 34, 102
E, 91, 92, 104, 103
EGEN, 11, 1, -1
E, 102, 34, 35, 114
E, 103, 104, 116, 115
E, 107, 108, 118, 117
E, 111, 112, 120, 119
E, 35, 36, 121
E, 115, 116, 123, 122
E, 117, 118, 125, 124
E, 119, 120, 127, 126
E, 121, 36, 37, 128
E, 122, 123, 130, 129
E, 124, 125, 134, 133
E, 126, 127, 138, 137
E, 128, 37, 38, 141
ESYM, 2, 141, ALL
E, 129, 130, 271, 270

EGEN,12,1,-1
E,141,38,179,282
E,38,19,160,179
ESYM,2,1000,ALL
NUMMRG,NODE
WSORT,ALL
C*** BOUNDARY CONDITIONS
D,129,UX,0.0,,,UY,UZ
D,89,UZ
D,230,UZ,0.0
D,1089,UZ
D,1230,UZ
C*** LOADING CONDITIONS
C*** THERMAL LOADING
TREF=180
C***KTEMP,-1
BF,1,TEMP,212
BF,2,TEMP,212
BF,3,TEMP,207
BF,4,TEMP,196
BF,5,TEMP,215
BF,6,TEMP,212
BF,7,TEMP,215
BF,8,TEMP,220
BF,9,TEMP,220
BF,10,TEMP,213
BF,11,TEMP,210
BF,12,TEMP,206
BF,13,TEMP,200
BF,14,TEMP,196
BF,15,TEMP,192
BF,16,TEMP,197
BF,17,TEMP,192
BF,18,TEMP,200
BF,19,TEMP,200
BF,20,TEMP,220
BF,21,TEMP,220
BF,22,TEMP,220
BF,23,TEMP,214
BF,24,TEMP,218
BF,25,TEMP,216
BF,26,TEMP,215
BF,27,TEMP,220
BF,28,TEMP,224
BF,29,TEMP,213
BF,30,TEMP,210
BF,31,TEMP,210
BF,32,TEMP,200
BF,33,TEMP,197
BF,34,TEMP,197
BF,35,TEMP,195
BF,36,TEMP,195
BF,37,TEMP,208
BF,38,TEMP,208
BF,39,TEMP,205
BF,40,TEMP,215
BF,41,TEMP,266

ESP No.:	ES200100180	Supp No.	000	Rev. No.	0000	Page 1 of 1
----------	-------------	----------	-----	----------	------	-------------

FORM 19, CALCULATION COVER SHEET

INITIATION (Control Doc Type - DCALC)

Total Number of Pages (including attachments): 890

DCALC No.: CA04977

Revision No.: 0001

Vendor Calculation (Check one):

☒ Yes☐ No

Responsible Group: MEU

Responsible Engineer: B. H. Scott

CALCULATIONENGINEERING
DISCIPLINE:☐ Civil☐ Instr & Controls☐ Nuc Engrg☐ Electrical☒ Mechanical☐ Diesel Gen Project☐ Life Cycle Mngmt☐ Reliability Engrg☐ Nuc Fuel Mngmt☐ Other:

Title:

NUTECH HORIZONTAL MODULE SYSTEM (NUHOMS) 24P ISFSI DRY SHIELDED CANISTER
(DSC) STRUCTURAL ANALYSIS FOR DSC NUMBERS R025 AND BEYOND

Unit

☐ UNIT 1☐ UNIT 2☒ ISFSI

Proprietary or Safeguards Calculation

☐ YES☒ NO

Comments:

THIS IS AN OWNER ACCEPTANCE REVIEW OF AN ORIGINAL VENDOR CALCULATION

Vendor Calc No.:

HABGE-01/99-0745

REVISION NO.: 2

Vendor Name:

HOPPER AND ASSOCIATES ENGINEERS

Safety Class (Check one):

☒ SR☐ AQ☐ NSRThere are assumptions that require Verification during
walkdown:

AIT #: NONE

This calculation SUPERSEDES:

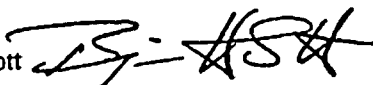
REVIEW AND APPROVAL:

Responsible Engineer: Hopper and Associates Engineers

Date: 01/19/2001

Owner Acceptance
Review:

B. H. Scott



Date: 02/27/2001

Approval:

NA

Date:

BF, 99, TEMP, 296
BF, 100, TEMP, 283
BF, 101, TEMP, 230
BF, 102, TEMP, 220
BF, 103, TEMP, 432
BF, 104, TEMP, 435
BF, 105, TEMP, 435
BF, 106, TEMP, 430
BF, 107, TEMP, 415
BF, 108, TEMP, 400
BF, 109, TEMP, 380
BF, 110, TEMP, 350
BF, 111, TEMP, 320
BF, 112, TEMP, 295
BF, 113, TEMP, 250
BF, 114, TEMP, 238
BF, 115, TEMP, 438
BF, 116, TEMP, 440
BF, 117, TEMP, 425
BF, 118, TEMP, 415
BF, 119, TEMP, 345
BF, 120, TEMP, 320
BF, 121, TEMP, 210
BF, 122, TEMP, 444
BF, 123, TEMP, 445
BF, 124, TEMP, 430
BF, 125, TEMP, 420
BF, 126, TEMP, 365
BF, 127, TEMP, 348
BF, 128, TEMP, 230
BF, 129, TEMP, 441
BF, 130, TEMP, 444
BF, 131, TEMP, 445
BF, 132, TEMP, 435
BF, 133, TEMP, 425
BF, 134, TEMP, 420
BF, 135, TEMP, 410
BF, 136, TEMP, 385
BF, 137, TEMP, 367
BF, 138, TEMP, 345
BF, 139, TEMP, 325
BF, 140, TEMP, 260
BF, 141, TEMP, 244
BF, 142, TEMP, 184
BF, 143, TEMP, 184
BF, 144, TEMP, 175
BF, 145, TEMP, 175
BF, 146, TEMP, 186
BF, 147, TEMP, 180
BF, 148, TEMP, 185
BF, 149, TEMP, 190
BF, 150, TEMP, 196
BF, 151, TEMP, 192
BF, 152, TEMP, 192
BF, 153, TEMP, 196
BF, 154, TEMP, 187
BF, 155, TEMP, 187

BF, 156, TEMP, 183
BF, 157, TEMP, 190
BF, 158, TEMP, 188
BF, 159, TEMP, 190
BF, 160, TEMP, 198
BF, 161, TEMP, 190
BF, 162, TEMP, 190
BF, 163, TEMP, 190
BF, 164, TEMP, 210
BF, 165, TEMP, 186
BF, 166, TEMP, 183
BF, 167, TEMP, 240
BF, 168, TEMP, 194
BF, 169, TEMP, 194
BF, 170, TEMP, 192
BF, 171, TEMP, 192
BF, 172, TEMP, 192
BF, 173, TEMP, 188
BF, 174, TEMP, 186
BF, 175, TEMP, 186
BF, 176, TEMP, 190
BF, 177, TEMP, 199
BF, 178, TEMP, 199
BF, 179, TEMP, 200
BF, 180, TEMP, 201
BF, 181, TEMP, 192
BF, 182, TEMP, 253
BF, 183, TEMP, 242
BF, 184, TEMP, 222
BF, 185, TEMP, 195
BF, 186, TEMP, 300
BF, 187, TEMP, 300
BF, 188, TEMP, 220
BF, 189, TEMP, 210
BF, 190, TEMP, 180
BF, 191, TEMP, 310
BF, 192, TEMP, 310
BF, 193, TEMP, 235
BF, 194, TEMP, 230
BF, 195, TEMP, 200
BF, 196, TEMP, 180
BF, 197, TEMP, 346
BF, 198, TEMP, 346
BF, 199, TEMP, 353
BF, 200, TEMP, 300
BF, 201, TEMP, 280
BF, 202, TEMP, 274
BF, 203, TEMP, 230
BF, 204, TEMP, 215
BF, 205, TEMP, 201
BF, 206, TEMP, 193
BF, 207, TEMP, 353
BF, 208, TEMP, 361
BF, 209, TEMP, 360
BF, 210, TEMP, 340
BF, 211, TEMP, 316
BF, 212, TEMP, 287

BF, 213, TEMP, 245
BF, 214, TEMP, 220
BF, 215, TEMP, 205
BF, 216, TEMP, 202
BF, 217, TEMP, 380
BF, 218, TEMP, 380
BF, 219, TEMP, 345
BF, 220, TEMP, 325
BF, 221, TEMP, 220
BF, 222, TEMP, 210
BF, 223, TEMP, 190
BF, 224, TEMP, 405
BF, 225, TEMP, 405
BF, 226, TEMP, 375
BF, 227, TEMP, 365
BF, 228, TEMP, 240
BF, 229, TEMP, 235
BF, 230, TEMP, 200
BF, 231, TEMP, 180
BF, 232, TEMP, 418
BF, 233, TEMP, 419
BF, 234, TEMP, 424
BF, 235, TEMP, 410
BF, 236, TEMP, 400
BF, 237, TEMP, 381
BF, 238, TEMP, 370
BF, 239, TEMP, 330
BF, 240, TEMP, 285
BF, 241, TEMP, 272
BF, 242, TEMP, 230
BF, 243, TEMP, 205
BF, 244, TEMP, 403
BF, 245, TEMP, 424
BF, 246, TEMP, 428
BF, 247, TEMP, 415
BF, 248, TEMP, 406
BF, 249, TEMP, 387
BF, 250, TEMP, 370
BF, 251, TEMP, 345
BF, 252, TEMP, 310
BF, 253, TEMP, 285
BF, 254, TEMP, 240
BF, 255, TEMP, 210
BF, 256, TEMP, 430
BF, 257, TEMP, 430
BF, 258, TEMP, 430
BF, 259, TEMP, 410
BF, 260, TEMP, 340
BF, 261, TEMP, 310
BF, 262, TEMP, 205
BF, 263, TEMP, 442
BF, 264, TEMP, 443
BF, 265, TEMP, 445
BF, 266, TEMP, 421
BF, 267, TEMP, 365
BF, 268, TEMP, 350
BF, 269, TEMP, 230

BF, 270, TEMP, 440
BF, 271, TEMP, 444
BF, 272, TEMP, 445
BF, 273, TEMP, 445
BF, 274, TEMP, 432
BF, 275, TEMP, 421
BF, 276, TEMP, 415
BF, 277, TEMP, 400
BF, 278, TEMP, 370
BF, 279, TEMP, 350
BF, 280, TEMP, 320
BF, 281, TEMP, 300
BF, 282, TEMP, 245
BF, 1001, TEMP, 212
BF, 1002, TEMP, 212
BF, 1003, TEMP, 207
BF, 1004, TEMP, 196
BF, 1005, TEMP, 215
BF, 1006, TEMP, 212
BF, 1007, TEMP, 215
BF, 1008, TEMP, 220
BF, 1009, TEMP, 220
BF, 1010, TEMP, 213
BF, 1011, TEMP, 210
BF, 1012, TEMP, 206
BF, 1013, TEMP, 200
BF, 1014, TEMP, 196
BF, 1015, TEMP, 192
BF, 1016, TEMP, 197
BF, 1017, TEMP, 192
BF, 1018, TEMP, 200
BF, 1019, TEMP, 200
BF, 1020, TEMP, 220
BF, 1021, TEMP, 220
BF, 1022, TEMP, 220
BF, 1023, TEMP, 214
BF, 1024, TEMP, 218
BF, 1025, TEMP, 216
BF, 1026, TEMP, 215
BF, 1027, TEMP, 220
BF, 1028, TEMP, 224
BF, 1029, TEMP, 213
BF, 1030, TEMP, 210
BF, 1031, TEMP, 210
BF, 1032, TEMP, 200
BF, 1033, TEMP, 197
BF, 1034, TEMP, 197
BF, 1035, TEMP, 195
BF, 1036, TEMP, 195
BF, 1037, TEMP, 208
BF, 1038, TEMP, 208
BF, 1039, TEMP, 205
BF, 1040, TEMP, 215
BF, 1041, TEMP, 266
BF, 1042, TEMP, 259
BF, 1043, TEMP, 252
BF, 1044, TEMP, 230

BF,1045,TEMP,305
BF,1046,TEMP,300
BF,1047,TEMP,240
BF,1048,TEMP,230
BF,1049,TEMP,217
BF,1050,TEMP,330
BF,1051,TEMP,330
BF,1052,TEMP,270
BF,1053,TEMP,260
BF,1054,TEMP,245
BF,1055,TEMP,220
BF,1056,TEMP,354
BF,1057,TEMP,357
BF,1058,TEMP,360
BF,1059,TEMP,340
BF,1060,TEMP,305
BF,1061,TEMP,294
BF,1062,TEMP,260
BF,1063,TEMP,237
BF,1064,TEMP,224
BF,1065,TEMP,215
BF,1066,TEMP,373
BF,1067,TEMP,376
BF,1068,TEMP,374
BF,1069,TEMP,360
BF,1070,TEMP,332
BF,1071,TEMP,306
BF,1072,TEMP,270
BF,1073,TEMP,246
BF,1074,TEMP,228
BF,1075,TEMP,224
BF,1076,TEMP,390
BF,1077,TEMP,390
BF,1078,TEMP,360
BF,1079,TEMP,340
BF,1080,TEMP,235
BF,1081,TEMP,235
BF,1082,TEMP,220
BF,1083,TEMP,410
BF,1084,TEMP,415
BF,1085,TEMP,385
BF,1086,TEMP,375
BF,1087,TEMP,260
BF,1088,TEMP,250
BF,1089,TEMP,220
BF,1090,TEMP,190
BF,1091,TEMP,406
BF,1092,TEMP,420
BF,1093,TEMP,428
BF,1094,TEMP,420
BF,1095,TEMP,400
BF,1096,TEMP,385
BF,1097,TEMP,370
BF,1098,TEMP,320
BF,1099,TEMP,296
BF,1100,TEMP,283
BF,1101,TEMP,230

BF, 1102, TEMP, 220
BF, 1103, TEMP, 432
BF, 1104, TEMP, 435
BF, 1105, TEMP, 435
BF, 1106, TEMP, 430
BF, 1107, TEMP, 415
BF, 1108, TEMP, 400
BF, 1109, TEMP, 380
BF, 1110, TEMP, 350
BF, 1111, TEMP, 320
BF, 1112, TEMP, 295
BF, 1113, TEMP, 250
BF, 1114, TEMP, 238
BF, 1115, TEMP, 438
BF, 1116, TEMP, 440
BF, 1117, TEMP, 425
BF, 1118, TEMP, 415
BF, 1119, TEMP, 345
BF, 1120, TEMP, 320
BF, 1121, TEMP, 210
BF, 1122, TEMP, 444
BF, 1123, TEMP, 445
BF, 1124, TEMP, 430
BF, 1125, TEMP, 420
BF, 1126, TEMP, 365
BF, 1127, TEMP, 348
BF, 1128, TEMP, 230
BF, 1129, TEMP, 441
BF, 1130, TEMP, 444
BF, 1131, TEMP, 445
BF, 1132, TEMP, 435
BF, 1133, TEMP, 425
BF, 1134, TEMP, 420
BF, 1135, TEMP, 410
BF, 1136, TEMP, 385
BF, 1137, TEMP, 367
BF, 1138, TEMP, 345
BF, 1139, TEMP, 325
BF, 1140, TEMP, 260
BF, 1141, TEMP, 244
BF, 1142, TEMP, 184
BF, 1143, TEMP, 184
BF, 1144, TEMP, 175
BF, 1145, TEMP, 175
BF, 1146, TEMP, 186
BF, 1147, TEMP, 180
BF, 1148, TEMP, 185
BF, 1149, TEMP, 190
BF, 1150, TEMP, 196
BF, 1151, TEMP, 192
BF, 1152, TEMP, 192
BF, 1153, TEMP, 196
BF, 1154, TEMP, 187
BF, 1155, TEMP, 187
BF, 1156, TEMP, 183
BF, 1157, TEMP, 190
BF, 1158, TEMP, 188

BF, 1159, TEMP, 190
BF, 1160, TEMP, 198
BF, 1161, TEMP, 190
BF, 1162, TEMP, 190
BF, 1163, TEMP, 190
BF, 1164, TEMP, 210
BF, 1165, TEMP, 186
BF, 1166, TEMP, 183
BF, 1167, TEMP, 240
BF, 1168, TEMP, 194
BF, 1169, TEMP, 194
BF, 1170, TEMP, 192
BF, 1171, TEMP, 192
BF, 1172, TEMP, 192
BF, 1173, TEMP, 188
BF, 1174, TEMP, 186
BF, 1175, TEMP, 186
BF, 1176, TEMP, 190
BF, 1177, TEMP, 199
BF, 1178, TEMP, 199
BF, 1179, TEMP, 200
BF, 1180, TEMP, 201
BF, 1181, TEMP, 192
BF, 1182, TEMP, 253
BF, 1183, TEMP, 242
BF, 1184, TEMP, 222
BF, 1185, TEMP, 195
BF, 1186, TEMP, 300
BF, 1187, TEMP, 300
BF, 1188, TEMP, 220
BF, 1189, TEMP, 210
BF, 1190, TEMP, 180
BF, 1191, TEMP, 310
BF, 1192, TEMP, 310
BF, 1193, TEMP, 235
BF, 1194, TEMP, 230
BF, 1195, TEMP, 200
BF, 1196, TEMP, 180
BF, 1197, TEMP, 346
BF, 1198, TEMP, 346
BF, 1199, TEMP, 353
BF, 1200, TEMP, 300
BF, 1201, TEMP, 280
BF, 1202, TEMP, 274
BF, 1203, TEMP, 230
BF, 1204, TEMP, 215
BF, 1205, TEMP, 201
BF, 1206, TEMP, 193
BF, 1207, TEMP, 353
BF, 1208, TEMP, 361
BF, 1209, TEMP, 360
BF, 1210, TEMP, 340
BF, 1211, TEMP, 316
BF, 1212, TEMP, 287
BF, 1213, TEMP, 245
BF, 1214, TEMP, 220
BF, 1215, TEMP, 205

BF, 1216, TEMP, 202
BF, 1217, TEMP, 380
BF, 1218, TEMP, 380
BF, 1219, TEMP, 345
BF, 1220, TEMP, 325
BF, 1221, TEMP, 220
BF, 1222, TEMP, 210
BF, 1223, TEMP, 190
BF, 1224, TEMP, 405
BF, 1225, TEMP, 405
BF, 1226, TEMP, 375
BF, 1227, TEMP, 365
BF, 1228, TEMP, 240
BF, 1229, TEMP, 235
BF, 1230, TEMP, 200
BF, 1231, TEMP, 180
BF, 1232, TEMP, 418
BF, 1233, TEMP, 419
BF, 1234, TEMP, 424
BF, 1235, TEMP, 410
BF, 1236, TEMP, 400
BF, 1237, TEMP, 381
BF, 1238, TEMP, 370
BF, 1239, TEMP, 330
BF, 1240, TEMP, 285
BF, 1241, TEMP, 272
BF, 1242, TEMP, 230
BF, 1243, TEMP, 205
BF, 1244, TEMP, 403
BF, 1245, TEMP, 424
BF, 1246, TEMP, 428
BF, 1247, TEMP, 415
BF, 1248, TEMP, 406
BF, 1249, TEMP, 387
BF, 1250, TEMP, 370
BF, 1251, TEMP, 345
BF, 1252, TEMP, 310
BF, 1253, TEMP, 285
BF, 1254, TEMP, 240
BF, 1255, TEMP, 210
BF, 1256, TEMP, 430
BF, 1257, TEMP, 430
BF, 1258, TEMP, 430
BF, 1259, TEMP, 410
BF, 1260, TEMP, 340
BF, 1261, TEMP, 310
BF, 1262, TEMP, 205
BF, 1263, TEMP, 442
BF, 1264, TEMP, 443
BF, 1265, TEMP, 445
BF, 1266, TEMP, 421
BF, 1267, TEMP, 365
BF, 1268, TEMP, 350
BF, 1269, TEMP, 230
BF, 1270, TEMP, 440
BF, 1271, TEMP, 444
BF, 1272, TEMP, 445

BF,1273,TEMP,445
BF,1274,TEMP,432
BF,1275,TEMP,421
BF,1276,TEMP,415
BF,1277,TEMP,400
BF,1278,TEMP,370
BF,1279,TEMP,350
BF,1280,TEMP,320
BF,1281,TEMP,300
BF,1282,TEMP,245
TLIST,ALL
NLIST,ALL
ELIST,ALL
CPLIST,ALL
C*** SOLUTION
C***ITER,1,1,1
C***AFWRITE
FINISH
C***/INPUT,27
/SOLU
ALLSEL
ANTYPE,STATIC
SOLVE
/POST1
SET,1,1
NSORT,SI
PRNSTR,ALL
FINISH
/POST1
PLNSOL,S,INT

```
/PREP7
/TITLE, SPACER DISC PLASTIC THERMAL ANALYSIS
C***KAN, 0
ET, 1, 43
C*** SA-240, TYPE 304 STAINLESS STEEL MATERIAL PROPERTIES
TREF, 450
EX, 1, 26.15E6
TB, BKIN, 1, 2
TBTEMP, 400
TBDATA, 1, 20050, 1.31E6
TBTEMP, 500
TBDATA, 1, 20050, 1.31E6
NUXY, 1, 0.29
DENS, 1, 0.286
MPTEMP, , 70, 100, 200, 400, 500
MPDATA, ALPX, , 8.46E-6, 8.63E-6, 9.08E-6, 9.80E-6, 10.10E-6
C*** GEOMETRY
C*** REAL CONSTANTS
C*** SPACER DISC THICKNESS
R, 1, 1.5
C*** NODAL INPUT
CSYS, 1
C*** SPACER DISK NODES
N, 1, 32.75, -90.0
N, 2, 32.75, -88.65
N, 3, 32.75, -83.18
N, 4, 32.75, -77.65
N, 5, 32.75, -71.99
N, 6, 32.75, -69.61
N, 7, 32.75, -63.67
N, 8, 32.75, -57.4
N, 9, 32.75, -50.65
N, 10, 32.75, -48.65
N, 11, 32.75, -41.71
N, 12, 32.75, -39.35
N, 13, 32.75, -32.60
N, 14, 32.75, -26.33
N, 15, 32.75, -20.39
N, 16, 32.75, -18.01
N, 17, 32.75, -12.35
N, 18, 32.75, -6.82
N, 19, 32.75, -1.35
C*** INNER SPACER DISK NODES
N, 20, 31.86, -90.0
N, 21, 31.86, -88.65
N, 22, 31.86, -83.18
N, 23, 31.86, -77.65
N, 24, 31.86, -71.99
N, 25, 31.86, -69.61
N, 26, 31.86, -63.67
N, 27, 31.86, -57.40
N, 28, 31.86, -50.65
N, 29, 31.86, -48.65
N, 30, 31.86, -41.71
N, 31, 31.86, -39.35
N, 32, 31.86, -32.60
N, 33, 31.86, -26.33
```

N,34,31.86,-20.39
N,35,31.86,-18.01
N,36,31.86,-12.35
N,37,31.86,-6.82
N,38,31.86,-1.35
CSYS,0
N,39,20.201,-23.917
N,40,23.784,-20.2
N,41,0.0,-30.3
N,42,0.75,-30.3
N,43,3.783,-30.3
N,44,6.817,-30.3
N,45,0.0,-27.267
N,46,0.75,-27.267
N,47,9.85,-27.267
N,48,11.1,-27.267
N,49,14.133,-27.267
N,50,0.0,-24.233
N,51,0.75,-24.233
N,52,9.85,-24.233
N,53,11.1,-24.233
N,54,14.167,-24.233
N,55,17.167,-24.233
N,56,0.0,-21.2
N,57,0.75,-21.2
N,58,3.783,-21.2
N,59,6.817,-21.2
N,60,9.85,-21.2
N,61,11.1,-21.2
N,62,14.133,-21.2
N,63,17.162,-21.2
N,64,20.2,-21.2
N,65,21.2,-21.2
N,66,0.0,-20.2
N,67,0.75,-20.2
N,68,3.783,-20.2
N,69,6.817,-20.2
N,70,9.85,-20.2
N,71,11.1,-20.2
N,72,14.133,-20.2
N,73,17.162,-20.2
N,74,20.2,-20.2
N,75,21.2,-20.2
N,76,0.0,-17.167
N,77,0.75,-17.167
N,78,9.85,-17.167
N,79,11.1,-17.167
N,80,20.2,-17.167
N,81,21.2,-17.167
N,82,24.233,-17.167
N,83,0.0,-14.133
N,84,0.75,-14.133
N,85,9.85,-14.133
N,86,11.1,-14.133
N,87,20.2,-14.133
N,88,21.2,-14.133
N,89,24.233,-14.133

N,90,27.267,-14.133
N,91,0.0,-11.1
N,92,0.75,-11.1
N,93,3.783,-11.1
N,94,6.817,-11.1
N,95,9.85,-11.1
N,96,11.1,-11.1
N,97,14.133,-11.1
N,98,17.162,-11.1
N,99,20.2,-11.1
N,100,21.2,-11.1
N,101,24.233,-11.1
N,102,27.267,-11.1
N,103,0.0,-9.85
N,104,0.75,-9.85
N,105,3.783,-9.85
N,106,6.817,-9.85
N,107,9.85,-9.85
N,108,11.1,-9.85
N,109,14.133,-9.85
N,110,17.162,-9.85
N,111,20.2,-9.85
N,112,21.2,-9.85
N,113,24.233,-9.85
N,114,27.267,-9.85
N,115,0.0,-6.817
N,116,0.75,-6.817
N,117,9.85,-6.817
N,118,11.1,-6.817
N,119,20.2,-6.817
N,120,21.2,-6.817
N,121,30.3,-6.817
N,122,0.0,-3.783
N,123,0.75,-3.783
N,124,9.85,-3.783
N,125,11.1,-3.783
N,126,20.2,-3.783
N,127,21.2,-3.783
N,128,30.3,-3.783
N,129,0.0,-0.75
N,130,0.75,-0.75
N,131,3.783,-0.75
N,132,6.817,-0.75
N,133,9.85,-0.75
N,134,11.1,-0.75
N,135,14.133,-0.75
N,136,17.162,-0.75
N,137,20.2,-0.75
N,138,21.2,-0.75
N,139,24.233,-0.75
N,140,27.267,-0.75
N,141,30.3,-0.75
SYMM,2,141,ALL
SYMM,1,1000,ALL
C*** ELEMENT GENERATION
TYPE,1
REAL,1

E, 1, 2, 21, 20
EGEN, 18, 1, -1
E, 20, 21, 42, 41
E, 21, 22, 43, 42
E, 22, 23, 44, 43
E, 23, 24, 44
E, 41, 42, 46, 45
E, 24, 25, 48, 47
E, 25, 26, 49, 48
E, 26, 27, 49
E, 45, 46, 51, 50
E, 47, 48, 53, 52
E, 48, 49, 54, 53
E, 49, 27, 55, 54
E, 27, 28, 55
E, 55, 28, 39
E, 28, 29, 39
E, 50, 51, 57, 56
E, 52, 53, 61, 60
E, 53, 54, 62, 61
E, 54, 55, 63, 62
E, 55, 39, 64, 63
E, 39, 29, 65, 64
E, 29, 30, 65
E, 56, 57, 67, 66
EGEN, 9, 1, -1
E, 65, 30, 40, 75
E, 30, 31, 40
E, 66, 67, 77, 76
E, 70, 71, 79, 78
E, 74, 75, 81, 80
E, 75, 40, 82, 81
E, 40, 31, 82
E, 31, 32, 82
E, 76, 77, 84, 83
E, 78, 79, 86, 85
E, 80, 81, 88, 87
E, 81, 82, 89, 88
E, 82, 32, 90, 89
E, 32, 33, 90
E, 83, 84, 92, 91
E, 85, 86, 96, 95
E, 87, 88, 100, 99
E, 88, 89, 101, 100
E, 89, 90, 102, 101
E, 90, 33, 34, 102
E, 91, 92, 104, 103
EGEN, 11, 1, -1
E, 102, 34, 35, 114
E, 103, 104, 116, 115
E, 107, 108, 118, 117
E, 111, 112, 120, 119
E, 35, 36, 121
E, 115, 116, 123, 122
E, 117, 118, 125, 124
E, 119, 120, 127, 126
E, 121, 36, 37, 128

E,122,123,130,129
E,124,125,134,133
E,126,127,138,137
E,128,37,38,141
ESYM,2,141,ALL
E,129,130,271,270
EGEN,12,1,-1
E,141,38,179,282
E,38,19,160,179
ESYM,2,1000,ALL
NUMMRG,NODE
WSORT,ALL
C*** BOUNDARY CONDITIONS
D,129,UX,0.0,,,,UY,UZ
D,89,UZ
D,230,UZ,0.0
D,1089,UZ
D,1230,UZ
C*** LOADING CONDITIONS
C*** THERMAL LOADING
TREF=180
C***KTEMP,-1
BF,1,TEMP,212
BF,2,TEMP,212
BF,3,TEMP,207
BF,4,TEMP,196
BF,5,TEMP,215
BF,6,TEMP,212
BF,7,TEMP,215
BF,8,TEMP,220
BF,9,TEMP,220
BF,10,TEMP,213
BF,11,TEMP,210
BF,12,TEMP,206
BF,13,TEMP,200
BF,14,TEMP,196
BF,15,TEMP,192
BF,16,TEMP,197
BF,17,TEMP,192
BF,18,TEMP,200
BF,19,TEMP,200
BF,20,TEMP,220
BF,21,TEMP,220
BF,22,TEMP,220
BF,23,TEMP,214
BF,24,TEMP,218
BF,25,TEMP,216
BF,26,TEMP,215
BF,27,TEMP,220
BF,28,TEMP,224
BF,29,TEMP,213
BF,30,TEMP,210
BF,31,TEMP,210
BF,32,TEMP,200
BF,33,TEMP,197
BF,34,TEMP,197
BF,35,TEMP,195

BF, 36, TEMP, 195
BF, 37, TEMP, 208
BF, 38, TEMP, 208
BF, 39, TEMP, 205
BF, 40, TEMP, 215
BF, 41, TEMP, 266
BF, 42, TEMP, 259
BF, 43, TEMP, 252
BF, 44, TEMP, 230
BF, 45, TEMP, 305
BF, 46, TEMP, 300
BF, 47, TEMP, 240
BF, 48, TEMP, 230
BF, 49, TEMP, 217
BF, 50, TEMP, 330
BF, 51, TEMP, 330
BF, 52, TEMP, 270
BF, 53, TEMP, 260
BF, 54, TEMP, 245
BF, 55, TEMP, 220
BF, 56, TEMP, 354
BF, 57, TEMP, 357
BF, 58, TEMP, 360
BF, 59, TEMP, 340
BF, 60, TEMP, 305
BF, 61, TEMP, 294
BF, 62, TEMP, 260
BF, 63, TEMP, 237
BF, 64, TEMP, 224
BF, 65, TEMP, 215
BF, 66, TEMP, 373
BF, 67, TEMP, 376
BF, 68, TEMP, 374
BF, 69, TEMP, 360
BF, 70, TEMP, 332
BF, 71, TEMP, 306
BF, 72, TEMP, 270
BF, 73, TEMP, 246
BF, 74, TEMP, 228
BF, 75, TEMP, 224
BF, 76, TEMP, 390
BF, 77, TEMP, 390
BF, 78, TEMP, 360
BF, 79, TEMP, 340
BF, 80, TEMP, 235
BF, 81, TEMP, 235
BF, 82, TEMP, 220
BF, 83, TEMP, 410
BF, 84, TEMP, 415
BF, 85, TEMP, 385
BF, 86, TEMP, 375
BF, 87, TEMP, 260
BF, 88, TEMP, 250
BF, 89, TEMP, 220
BF, 90, TEMP, 190
BF, 91, TEMP, 406
BF, 92, TEMP, 420

BF, 93, TEMP, 428
BF, 94, TEMP, 420
BF, 95, TEMP, 400
BF, 96, TEMP, 385
BF, 97, TEMP, 370
BF, 98, TEMP, 320
BF, 99, TEMP, 296
BF, 100, TEMP, 283
BF, 101, TEMP, 230
BF, 102, TEMP, 220
BF, 103, TEMP, 432
BF, 104, TEMP, 435
BF, 105, TEMP, 435
BF, 106, TEMP, 430
BF, 107, TEMP, 415
BF, 108, TEMP, 400
BF, 109, TEMP, 380
BF, 110, TEMP, 350
BF, 111, TEMP, 320
BF, 112, TEMP, 295
BF, 113, TEMP, 250
BF, 114, TEMP, 238
BF, 115, TEMP, 438
BF, 116, TEMP, 440
BF, 117, TEMP, 425
BF, 118, TEMP, 415
BF, 119, TEMP, 345
BF, 120, TEMP, 320
BF, 121, TEMP, 210
BF, 122, TEMP, 444
BF, 123, TEMP, 445
BF, 124, TEMP, 430
BF, 125, TEMP, 420
BF, 126, TEMP, 365
BF, 127, TEMP, 348
BF, 128, TEMP, 230
BF, 129, TEMP, 441
BF, 130, TEMP, 444
BF, 131, TEMP, 445
BF, 132, TEMP, 435
BF, 133, TEMP, 425
BF, 134, TEMP, 420
BF, 135, TEMP, 410
BF, 136, TEMP, 385
BF, 137, TEMP, 367
BF, 138, TEMP, 345
BF, 139, TEMP, 325
BF, 140, TEMP, 260
BF, 141, TEMP, 244
BF, 142, TEMP, 184
BF, 143, TEMP, 184
BF, 144, TEMP, 175
BF, 145, TEMP, 175
BF, 146, TEMP, 186
BF, 147, TEMP, 180
BF, 148, TEMP, 185
BF, 149, TEMP, 190

BF,150,TEMP,196
BF,151,TEMP,192
BF,152,TEMP,192
BF,153,TEMP,196
BF,154,TEMP,187
BF,155,TEMP,187
BF,156,TEMP,183
BF,157,TEMP,190
BF,158,TEMP,188
BF,159,TEMP,190
BF,160,TEMP,198
BF,161,TEMP,190
BF,162,TEMP,190
BF,163,TEMP,190
BF,164,TEMP,210
BF,165,TEMP,186
BF,166,TEMP,183
BF,167,TEMP,240
BF,168,TEMP,194
BF,169,TEMP,194
BF,170,TEMP,192
BF,171,TEMP,192
BF,172,TEMP,192
BF,173,TEMP,188
BF,174,TEMP,186
BF,175,TEMP,186
BF,176,TEMP,190
BF,177,TEMP,199
BF,178,TEMP,199
BF,179,TEMP,200
BF,180,TEMP,201
BF,181,TEMP,192
BF,182,TEMP,253
BF,183,TEMP,242
BF,184,TEMP,222
BF,185,TEMP,195
BF,186,TEMP,300
BF,187,TEMP,300
BF,188,TEMP,220
BF,189,TEMP,210
BF,190,TEMP,180
BF,191,TEMP,310
BF,192,TEMP,310
BF,193,TEMP,235
BF,194,TEMP,230
BF,195,TEMP,200
BF,196,TEMP,180
BF,197,TEMP,346
BF,198,TEMP,346
BF,199,TEMP,353
BF,200,TEMP,300
BF,201,TEMP,280
BF,202,TEMP,274
BF,203,TEMP,230
BF,204,TEMP,215
BF,205,TEMP,201
BF,206,TEMP,193

BF, 207, TEMP, 353
BF, 208, TEMP, 361
BF, 209, TEMP, 360
BF, 210, TEMP, 340
BF, 211, TEMP, 316
BF, 212, TEMP, 287
BF, 213, TEMP, 245
BF, 214, TEMP, 220
BF, 215, TEMP, 205
BF, 216, TEMP, 202
BF, 217, TEMP, 380
BF, 218, TEMP, 380
BF, 219, TEMP, 345
BF, 220, TEMP, 325
BF, 221, TEMP, 220
BF, 222, TEMP, 210
BF, 223, TEMP, 190
BF, 224, TEMP, 405
BF, 225, TEMP, 405
BF, 226, TEMP, 375
BF, 227, TEMP, 365
BF, 228, TEMP, 240
BF, 229, TEMP, 235
BF, 230, TEMP, 200
BF, 231, TEMP, 180
BF, 232, TEMP, 418
BF, 233, TEMP, 419
BF, 234, TEMP, 424
BF, 235, TEMP, 410
BF, 236, TEMP, 400
BF, 237, TEMP, 381
BF, 238, TEMP, 370
BF, 239, TEMP, 330
BF, 240, TEMP, 285
BF, 241, TEMP, 272
BF, 242, TEMP, 230
BF, 243, TEMP, 205
BF, 244, TEMP, 403
BF, 245, TEMP, 424
BF, 246, TEMP, 428
BF, 247, TEMP, 415
BF, 248, TEMP, 406
BF, 249, TEMP, 387
BF, 250, TEMP, 370
BF, 251, TEMP, 345
BF, 252, TEMP, 310
BF, 253, TEMP, 285
BF, 254, TEMP, 240
BF, 255, TEMP, 210
BF, 256, TEMP, 430
BF, 257, TEMP, 430
BF, 258, TEMP, 430
BF, 259, TEMP, 410
BF, 260, TEMP, 340
BF, 261, TEMP, 310
BF, 262, TEMP, 205
BF, 263, TEMP, 442

BF, 264, TEMP, 443
BF, 265, TEMP, 445
BF, 266, TEMP, 421
BF, 267, TEMP, 365
BF, 268, TEMP, 350
BF, 269, TEMP, 230
BF, 270, TEMP, 440
BF, 271, TEMP, 444
BF, 272, TEMP, 445
BF, 273, TEMP, 445
BF, 274, TEMP, 432
BF, 275, TEMP, 421
BF, 276, TEMP, 415
BF, 277, TEMP, 400
BF, 278, TEMP, 370
BF, 279, TEMP, 350
BF, 280, TEMP, 320
BF, 281, TEMP, 300
BF, 282, TEMP, 245
BF, 1001, TEMP, 212
BF, 1002, TEMP, 212
BF, 1003, TEMP, 207
BF, 1004, TEMP, 196
BF, 1005, TEMP, 215
BF, 1006, TEMP, 212
BF, 1007, TEMP, 215
BF, 1008, TEMP, 220
BF, 1009, TEMP, 220
BF, 1010, TEMP, 213
BF, 1011, TEMP, 210
BF, 1012, TEMP, 206
BF, 1013, TEMP, 200
BF, 1014, TEMP, 196
BF, 1015, TEMP, 192
BF, 1016, TEMP, 197
BF, 1017, TEMP, 192
BF, 1018, TEMP, 200
BF, 1019, TEMP, 200
BF, 1020, TEMP, 220
BF, 1021, TEMP, 220
BF, 1022, TEMP, 220
BF, 1023, TEMP, 214
BF, 1024, TEMP, 218
BF, 1025, TEMP, 216
BF, 1026, TEMP, 215
BF, 1027, TEMP, 220
BF, 1028, TEMP, 224
BF, 1029, TEMP, 213
BF, 1030, TEMP, 210
BF, 1031, TEMP, 210
BF, 1032, TEMP, 200
BF, 1033, TEMP, 197
BF, 1034, TEMP, 197
BF, 1035, TEMP, 195
BF, 1036, TEMP, 195
BF, 1037, TEMP, 208
BF, 1038, TEMP, 208

BF,1039,TEMP,205
BF,1040,TEMP,215
BF,1041,TEMP,266
BF,1042,TEMP,259
BF,1043,TEMP,252
BF,1044,TEMP,230
BF,1045,TEMP,305
BF,1046,TEMP,300
BF,1047,TEMP,240
BF,1048,TEMP,230
BF,1049,TEMP,217
BF,1050,TEMP,330
BF,1051,TEMP,330
BF,1052,TEMP,270
BF,1053,TEMP,260
BF,1054,TEMP,245
BF,1055,TEMP,220
BF,1056,TEMP,354
BF,1057,TEMP,357
BF,1058,TEMP,360
BF,1059,TEMP,340
BF,1060,TEMP,305
BF,1061,TEMP,294
BF,1062,TEMP,260
BF,1063,TEMP,237
BF,1064,TEMP,224
BF,1065,TEMP,215
BF,1066,TEMP,373
BF,1067,TEMP,376
BF,1068,TEMP,374
BF,1069,TEMP,360
BF,1070,TEMP,332
BF,1071,TEMP,306
BF,1072,TEMP,270
BF,1073,TEMP,246
BF,1074,TEMP,228
BF,1075,TEMP,224
BF,1076,TEMP,390
BF,1077,TEMP,390
BF,1078,TEMP,360
BF,1079,TEMP,340
BF,1080,TEMP,235
BF,1081,TEMP,235
BF,1082,TEMP,220
BF,1083,TEMP,410
BF,1084,TEMP,415
BF,1085,TEMP,385
BF,1086,TEMP,375
BF,1087,TEMP,260
BF,1088,TEMP,250
BF,1089,TEMP,220
BF,1090,TEMP,190
BF,1091,TEMP,406
BF,1092,TEMP,420
BF,1093,TEMP,428
BF,1094,TEMP,420
BF,1095,TEMP,400

BF,1096,TEMP,385
BF,1097,TEMP,370
BF,1098,TEMP,320
BF,1099,TEMP,296
BF,1100,TEMP,283
BF,1101,TEMP,230
BF,1102,TEMP,220
BF,1103,TEMP,432
BF,1104,TEMP,435
BF,1105,TEMP,435
BF,1106,TEMP,430
BF,1107,TEMP,415
BF,1108,TEMP,400
BF,1109,TEMP,380
BF,1110,TEMP,350
BF,1111,TEMP,320
BF,1112,TEMP,295
BF,1113,TEMP,250
BF,1114,TEMP,238
BF,1115,TEMP,438
BF,1116,TEMP,440
BF,1117,TEMP,425
BF,1118,TEMP,415
BF,1119,TEMP,345
BF,1120,TEMP,320
BF,1121,TEMP,210
BF,1122,TEMP,444
BF,1123,TEMP,445
BF,1124,TEMP,430
BF,1125,TEMP,420
BF,1126,TEMP,365
BF,1127,TEMP,348
BF,1128,TEMP,230
BF,1129,TEMP,441
BF,1130,TEMP,444
BF,1131,TEMP,445
BF,1132,TEMP,435
BF,1133,TEMP,425
BF,1134,TEMP,420
BF,1135,TEMP,410
BF,1136,TEMP,385
BF,1137,TEMP,367
BF,1138,TEMP,345
BF,1139,TEMP,325
BF,1140,TEMP,260
BF,1141,TEMP,244
BF,1142,TEMP,184
BF,1143,TEMP,184
BF,1144,TEMP,175
BF,1145,TEMP,175
BF,1146,TEMP,186
BF,1147,TEMP,180
BF,1148,TEMP,185
BF,1149,TEMP,190
BF,1150,TEMP,196
BF,1151,TEMP,192
BF,1152,TEMP,192

BF, 1153, TEMP, 196
BF, 1154, TEMP, 187
BF, 1155, TEMP, 187
BF, 1156, TEMP, 183
BF, 1157, TEMP, 190
BF, 1158, TEMP, 188
BF, 1159, TEMP, 190
BF, 1160, TEMP, 198
BF, 1161, TEMP, 190
BF, 1162, TEMP, 190
BF, 1163, TEMP, 190
BF, 1164, TEMP, 210
BF, 1165, TEMP, 186
BF, 1166, TEMP, 183
BF, 1167, TEMP, 240
BF, 1168, TEMP, 194
BF, 1169, TEMP, 194
BF, 1170, TEMP, 192
BF, 1171, TEMP, 192
BF, 1172, TEMP, 192
BF, 1173, TEMP, 188
BF, 1174, TEMP, 186
BF, 1175, TEMP, 186
BF, 1176, TEMP, 190
BF, 1177, TEMP, 199
BF, 1178, TEMP, 199
BF, 1179, TEMP, 200
BF, 1180, TEMP, 201
BF, 1181, TEMP, 192
BF, 1182, TEMP, 253
BF, 1183, TEMP, 242
BF, 1184, TEMP, 222
BF, 1185, TEMP, 195
BF, 1186, TEMP, 300
BF, 1187, TEMP, 300
BF, 1188, TEMP, 220
BF, 1189, TEMP, 210
BF, 1190, TEMP, 180
BF, 1191, TEMP, 310
BF, 1192, TEMP, 310
BF, 1193, TEMP, 235
BF, 1194, TEMP, 230
BF, 1195, TEMP, 200
BF, 1196, TEMP, 180
BF, 1197, TEMP, 346
BF, 1198, TEMP, 346
BF, 1199, TEMP, 353
BF, 1200, TEMP, 300
BF, 1201, TEMP, 280
BF, 1202, TEMP, 274
BF, 1203, TEMP, 230
BF, 1204, TEMP, 215
BF, 1205, TEMP, 201
BF, 1206, TEMP, 193
BF, 1207, TEMP, 353
BF, 1208, TEMP, 361
BF, 1209, TEMP, 360

BF,1210,TEMP,340
BF,1211,TEMP,316
BF,1212,TEMP,287
BF,1213,TEMP,245
BF,1214,TEMP,220
BF,1215,TEMP,205
BF,1216,TEMP,202
BF,1217,TEMP,380
BF,1218,TEMP,380
BF,1219,TEMP,345
BF,1220,TEMP,325
BF,1221,TEMP,220
BF,1222,TEMP,210
BF,1223,TEMP,190
BF,1224,TEMP,405
BF,1225,TEMP,405
BF,1226,TEMP,375
BF,1227,TEMP,365
BF,1228,TEMP,240
BF,1229,TEMP,235
BF,1230,TEMP,200
BF,1231,TEMP,180
BF,1232,TEMP,418
BF,1233,TEMP,419
BF,1234,TEMP,424
BF,1235,TEMP,410
BF,1236,TEMP,400
BF,1237,TEMP,381
BF,1238,TEMP,370
BF,1239,TEMP,330
BF,1240,TEMP,285
BF,1241,TEMP,272
BF,1242,TEMP,230
BF,1243,TEMP,205
BF,1244,TEMP,403
BF,1245,TEMP,424
BF,1246,TEMP,428
BF,1247,TEMP,415
BF,1248,TEMP,406
BF,1249,TEMP,387
BF,1250,TEMP,370
BF,1251,TEMP,345
BF,1252,TEMP,310
BF,1253,TEMP,285
BF,1254,TEMP,240
BF,1255,TEMP,210
BF,1256,TEMP,430
BF,1257,TEMP,430
BF,1258,TEMP,430
BF,1259,TEMP,410
BF,1260,TEMP,340
BF,1261,TEMP,310
BF,1262,TEMP,205
BF,1263,TEMP,442
BF,1264,TEMP,443
BF,1265,TEMP,445
BF,1266,TEMP,421

BF,1267,TEMP,365
BF,1268,TEMP,350
BF,1269,TEMP,230
BF,1270,TEMP,440
BF,1271,TEMP,444
BF,1272,TEMP,445
BF,1273,TEMP,445
BF,1274,TEMP,432
BF,1275,TEMP,421
BF,1276,TEMP,415
BF,1277,TEMP,400
BF,1278,TEMP,370
BF,1279,TEMP,350
BF,1280,TEMP,320
BF,1281,TEMP,300
BF,1282,TEMP,245
TLIST,ALL
NLIST,ALL
ELIST,ALL
CPLIST,ALL
C*** SOLUTION
C***ITER,1,1,1
C***AFWRITE
FINISH
C***/INPUT,27
/SOLU
ALLSEL
ANTYPE,STATIC
SOLVE
/POST1
SET,1,1
/OUT,THERSTR,OUT
NSORT,SI
PRNSTR,ALL
/OUT
FINISH
/POST1
PLNSOL,S,INT

```

/COM,ANSYS REVISION 5.2   UP020996   16:41:01   01/14/1999
/PREP7
/NOPR
/TITLE,DISC MODEL USED TO CALCULATE MOMENT APPLIED TO ROD
ANTYPE, 0
*IF, _CDRDOFF,EQ,1,THEN      !if solid model was read in
  _CDRDOFF=                  !reset flag, numoffs already performed
*ELSE                        !offset database for the following FE model
NUMOFF,NODE, 490
NUMOFF,ELEM, 3313
NUMOFF,MAT, 3
NUMOFF,REAL, 3
NUMOFF,TYPE, 4
*ENDIF
ET, 1, 63
ET, 3, 4
ET, 4, 45
KEYOP, 4, 1, 1
KEYOP, 4, 6, 3
DOF,UX,UY,UZ,ROTX,ROTY,ROTZ,
R,R5.0,1,LOC,1,1.50000000,100.000000,100.000000
R,R5.0,3,LOC,1,10.00000000,2.00000000
R,R5.0,3,LOC,4,2.00000000
MAT, 3
TYPE, 3
REAL, 3
N,R5.1,LOC,5,0,23.9500000,13.6700000,4.38000000
N,R5.1,LOC,15,0,0.00000000,.750000000,4.38000000
N,R5.1,LOC,16,0,.750000000,.750000000,4.38000000
N,R5.1,LOC,17,0,.750000000,.000000000,4.38000000
N,R5.1,LOC,18,0,.000000000,.000000000,4.38000000
N,R5.1,LOC,19,0,.9.85000000,.750000000,4.38000000
N,R5.1,LOC,20,0,1.66000000,.750000000,4.38000000
N,R5.1,LOC,21,0,2.57000000,.750000000,4.38000000
N,R5.1,LOC,22,0,3.48000000,.750000000,4.38000000
N,R5.1,LOC,23,0,4.39000000,.750000000,4.38000000
N,R5.1,LOC,24,0,5.30000000,.750000000,4.38000000
N,R5.1,LOC,25,0,6.21000000,.750000000,4.38000000
N,R5.1,LOC,26,0,7.12000000,.750000000,4.38000000
N,R5.1,LOC,27,0,8.03000000,.750000000,4.38000000
N,R5.1,LOC,28,0,8.94000000,.750000000,4.38000000
N,R5.1,LOC,29,0,9.85000000,.000000000,4.38000000
N,R5.1,LOC,30,0,1.66000000,.000000000,4.38000000
N,R5.1,LOC,31,0,2.57000000,.000000000,4.38000000
N,R5.1,LOC,32,0,3.48000000,.000000000,4.38000000
N,R5.1,LOC,33,0,4.39000000,.000000000,4.38000000
N,R5.1,LOC,34,0,5.30000000,.000000000,4.38000000
N,R5.1,LOC,35,0,6.21000000,.000000000,4.38000000
N,R5.1,LOC,36,0,7.12000000,.000000000,4.38000000
N,R5.1,LOC,37,0,8.03000000,.000000000,4.38000000
N,R5.1,LOC,38,0,8.94000000,.000000000,4.38000000
N,R5.1,LOC,39,0,11.1000000,.750000000,4.38000000
N,R5.1,LOC,40,0,10.4750000,.750000000,4.38000000
N,R5.1,LOC,41,0,11.1000000,.000000000,4.38000000
N,R5.1,LOC,42,0,10.4750000,.000000000,4.38000000
N,R5.1,LOC,43,0,20.2000000,.750000000,4.38000000
N,R5.1,LOC,44,0,12.0100000,.750000000,4.38000000
N,R5.1,LOC,45,0,12.9200000,.750000000,4.38000000
N,R5.1,LOC,46,0,13.8300000,.750000000,4.38000000
N,R5.1,LOC,47,0,14.7400000,.750000000,4.38000000
N,R5.1,LOC,48,0,15.6500000,.750000000,4.38000000
N,R5.1,LOC,49,0,16.5600000,.750000000,4.38000000
N,R5.1,LOC,50,0,17.4700000,.750000000,4.38000000
N,R5.1,LOC,51,0,18.3800000,.750000000,4.38000000
N,R5.1,LOC,52,0,19.2900000,.750000000,4.38000000
N,R5.1,LOC,53,0,20.2000000,.000000000,4.38000000
N,R5.1,LOC,54,0,12.0100000,.000000000,4.38000000
N,R5.1,LOC,55,0,12.9200000,.000000000,4.38000000
N,R5.1,LOC,56,0,13.8300000,.000000000,4.38000000
N,R5.1,LOC,57,0,14.7400000,.000000000,4.38000000
N,R5.1,LOC,58,0,15.6500000,.000000000,4.38000000
N,R5.1,LOC,59,0,16.5600000,.000000000,4.38000000
N,R5.1,LOC,60,0,17.4700000,.000000000,4.38000000
N,R5.1,LOC,61,0,18.3800000,.000000000,4.38000000

```

N,R5.1,LOC,	62,	0,	19.2900000	, .000000000	, 4.38000000
N,R5.1,LOC,	63,	0,	21.2000000	, .750000000	, 4.38000000
N,R5.1,LOC,	64,	0,	21.2000000	, .000000000	, 4.38000000
N,R5.1,LOC,	65,	0,	30.3000000	, .750000000	, 4.38000000
N,R5.1,LOC,	66,	0,	22.1100000	, .750000000	, 4.38000000
N,R5.1,LOC,	67,	0,	23.0200000	, .750000000	, 4.38000000
N,R5.1,LOC,	68,	0,	23.9300000	, .750000000	, 4.38000000
N,R5.1,LOC,	69,	0,	24.8400000	, .750000000	, 4.38000000
N,R5.1,LOC,	70,	0,	25.7500000	, .750000000	, 4.38000000
N,R5.1,LOC,	71,	0,	26.6600000	, .750000000	, 4.38000000
N,R5.1,LOC,	72,	0,	27.5700000	, .750000000	, 4.38000000
N,R5.1,LOC,	73,	0,	28.4800000	, .750000000	, 4.38000000
N,R5.1,LOC,	74,	0,	29.3900000	, .750000000	, 4.38000000
N,R5.1,LOC,	75,	0,	30.3000000	, .000000000	, 4.38000000
N,R5.1,LOC,	76,	0,	22.1100000	, .000000000	, 4.38000000
N,R5.1,LOC,	77,	0,	23.0200000	, .000000000	, 4.38000000
N,R5.1,LOC,	78,	0,	23.9300000	, .000000000	, 4.38000000
N,R5.1,LOC,	79,	0,	24.8400000	, .000000000	, 4.38000000
N,R5.1,LOC,	80,	0,	25.7500000	, .000000000	, 4.38000000
N,R5.1,LOC,	81,	0,	26.6600000	, .000000000	, 4.38000000
N,R5.1,LOC,	82,	0,	27.5700000	, .000000000	, 4.38000000
N,R5.1,LOC,	83,	0,	28.4800000	, .000000000	, 4.38000000
N,R5.1,LOC,	84,	0,	29.3900000	, .000000000	, 4.38000000
N,R5.1,LOC,	85,	0,	.000000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	86,	0,	.750000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	87,	0,	.750000000	, 1.66000000	, 4.38000000
N,R5.1,LOC,	88,	0,	.750000000	, 2.57000000	, 4.38000000
N,R5.1,LOC,	89,	0,	.750000000	, 3.48000000	, 4.38000000
N,R5.1,LOC,	90,	0,	.750000000	, 4.39000000	, 4.38000000
N,R5.1,LOC,	91,	0,	.750000000	, 5.30000000	, 4.38000000
N,R5.1,LOC,	92,	0,	.750000000	, 6.21000000	, 4.38000000
N,R5.1,LOC,	93,	0,	.750000000	, 7.12000000	, 4.38000000
N,R5.1,LOC,	94,	0,	.750000000	, 8.03000000	, 4.38000000
N,R5.1,LOC,	95,	0,	.750000000	, 8.94000000	, 4.38000000
N,R5.1,LOC,	96,	0,	.000000000	, 1.66000000	, 4.38000000
N,R5.1,LOC,	97,	0,	.000000000	, 2.57000000	, 4.38000000
N,R5.1,LOC,	98,	0,	.000000000	, 3.48000000	, 4.38000000
N,R5.1,LOC,	99,	0,	.000000000	, 4.39000000	, 4.38000000
N,R5.1,LOC,	100,	0,	.000000000	, 5.30000000	, 4.38000000
N,R5.1,LOC,	101,	0,	.000000000	, 6.21000000	, 4.38000000
N,R5.1,LOC,	102,	0,	.000000000	, 7.12000000	, 4.38000000
N,R5.1,LOC,	103,	0,	.000000000	, 8.03000000	, 4.38000000
N,R5.1,LOC,	104,	0,	.000000000	, 8.94000000	, 4.38000000
N,R5.1,LOC,	105,	0,	9.85000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	106,	0,	11.1000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	107,	0,	10.4750000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	108,	0,	11.1000000	, 1.66000000	, 4.38000000
N,R5.1,LOC,	109,	0,	11.1000000	, 2.57000000	, 4.38000000
N,R5.1,LOC,	110,	0,	11.1000000	, 3.48000000	, 4.38000000
N,R5.1,LOC,	111,	0,	11.1000000	, 4.39000000	, 4.38000000
N,R5.1,LOC,	112,	0,	11.1000000	, 5.30000000	, 4.38000000
N,R5.1,LOC,	113,	0,	11.1000000	, 6.21000000	, 4.38000000
N,R5.1,LOC,	114,	0,	11.1000000	, 7.12000000	, 4.38000000
N,R5.1,LOC,	115,	0,	11.1000000	, 8.03000000	, 4.38000000
N,R5.1,LOC,	116,	0,	11.1000000	, 8.94000000	, 4.38000000
N,R5.1,LOC,	117,	0,	9.85000000	, 1.66000000	, 4.38000000
N,R5.1,LOC,	118,	0,	9.85000000	, 2.57000000	, 4.38000000
N,R5.1,LOC,	119,	0,	9.85000000	, 3.48000000	, 4.38000000
N,R5.1,LOC,	120,	0,	9.85000000	, 4.39000000	, 4.38000000
N,R5.1,LOC,	121,	0,	9.85000000	, 5.30000000	, 4.38000000
N,R5.1,LOC,	122,	0,	9.85000000	, 6.21000000	, 4.38000000
N,R5.1,LOC,	123,	0,	9.85000000	, 7.12000000	, 4.38000000
N,R5.1,LOC,	124,	0,	9.85000000	, 8.03000000	, 4.38000000
N,R5.1,LOC,	125,	0,	9.85000000	, 8.94000000	, 4.38000000
N,R5.1,LOC,	126,	0,	10.4750000	, 8.94000000	, 4.38000000
N,R5.1,LOC,	127,	0,	10.4750000	, 8.03000000	, 4.38000000
N,R5.1,LOC,	128,	0,	10.4750000	, 7.12000000	, 4.38000000
N,R5.1,LOC,	129,	0,	10.4750000	, 6.21000000	, 4.38000000
N,R5.1,LOC,	130,	0,	10.4750000	, 5.30000000	, 4.38000000
N,R5.1,LOC,	131,	0,	10.4750000	, 4.39000000	, 4.38000000
N,R5.1,LOC,	132,	0,	10.4750000	, 3.48000000	, 4.38000000
N,R5.1,LOC,	133,	0,	10.4750000	, 2.57000000	, 4.38000000
N,R5.1,LOC,	134,	0,	10.4750000	, 1.66000000	, 4.38000000
N,R5.1,LOC,	135,	0,	20.2000000	, 9.85000000	, 4.38000000

N,R5.1,LOC,	136,	0,	21.2000000	9.85000000	4.38000000
N,R5.1,LOC,	137,	0,	21.2000000	1.66000000	4.38000000
N,R5.1,LOC,	138,	0,	21.2000000	2.57000000	4.38000000
N,R5.1,LOC,	139,	0,	21.2000000	3.48000000	4.38000000
N,R5.1,LOC,	140,	0,	21.2000000	4.39000000	4.38000000
N,R5.1,LOC,	141,	0,	21.2000000	5.30000000	4.38000000
N,R5.1,LOC,	142,	0,	21.2000000	6.21000000	4.38000000
N,R5.1,LOC,	143,	0,	21.2000000	7.12000000	4.38000000
N,R5.1,LOC,	144,	0,	21.2000000	8.03000000	4.38000000
N,R5.1,LOC,	145,	0,	21.2000000	8.94000000	4.38000000
N,R5.1,LOC,	146,	0,	20.2000000	1.66000000	4.38000000
N,R5.1,LOC,	147,	0,	20.2000000	2.57000000	4.38000000
N,R5.1,LOC,	148,	0,	20.2000000	3.48000000	4.38000000
N,R5.1,LOC,	149,	0,	20.2000000	4.39000000	4.38000000
N,R5.1,LOC,	150,	0,	20.2000000	5.30000000	4.38000000
N,R5.1,LOC,	151,	0,	20.2000000	6.21000000	4.38000000
N,R5.1,LOC,	152,	0,	20.2000000	7.12000000	4.38000000
N,R5.1,LOC,	153,	0,	20.2000000	8.03000000	4.38000000
N,R5.1,LOC,	154,	0,	20.2000000	8.94000000	4.38000000
N,R5.1,LOC,	155,	0,	.000000000	11.1000000	4.38000000
N,R5.1,LOC,	156,	0,	.750000000	11.1000000	4.38000000
N,R5.1,LOC,	157,	0,	.750000000	10.4750000	4.38000000
N,R5.1,LOC,	158,	0,	.000000000	10.4750000	4.38000000
N,R5.1,LOC,	159,	0,	9.85000000	11.1000000	4.38000000
N,R5.1,LOC,	160,	0,	1.66000000	11.1000000	4.38000000
N,R5.1,LOC,	161,	0,	2.57000000	11.1000000	4.38000000
N,R5.1,LOC,	162,	0,	3.48000000	11.1000000	4.38000000
N,R5.1,LOC,	163,	0,	4.39000000	11.1000000	4.38000000
N,R5.1,LOC,	164,	0,	5.30000000	11.1000000	4.38000000
N,R5.1,LOC,	165,	0,	6.21000000	11.1000000	4.38000000
N,R5.1,LOC,	166,	0,	7.12000000	11.1000000	4.38000000
N,R5.1,LOC,	167,	0,	8.03000000	11.1000000	4.38000000
N,R5.1,LOC,	168,	0,	8.94000000	11.1000000	4.38000000
N,R5.1,LOC,	169,	0,	9.85000000	10.4750000	4.38000000
N,R5.1,LOC,	170,	0,	1.66000000	9.85000000	4.38000000
N,R5.1,LOC,	171,	0,	2.57000000	9.85000000	4.38000000
N,R5.1,LOC,	172,	0,	3.48000000	9.85000000	4.38000000
N,R5.1,LOC,	173,	0,	4.39000000	9.85000000	4.38000000
N,R5.1,LOC,	174,	0,	5.30000000	9.85000000	4.38000000
N,R5.1,LOC,	175,	0,	6.21000000	9.85000000	4.38000000
N,R5.1,LOC,	176,	0,	7.12000000	9.85000000	4.38000000
N,R5.1,LOC,	177,	0,	8.03000000	9.85000000	4.38000000
N,R5.1,LOC,	178,	0,	8.94000000	9.85000000	4.38000000
N,R5.1,LOC,	179,	0,	1.66000000	10.4750000	4.38000000
N,R5.1,LOC,	180,	0,	2.57000000	10.4750000	4.38000000
N,R5.1,LOC,	181,	0,	3.48000000	10.4750000	4.38000000
N,R5.1,LOC,	182,	0,	4.39000000	10.4750000	4.38000000
N,R5.1,LOC,	183,	0,	5.30000000	10.4750000	4.38000000
N,R5.1,LOC,	184,	0,	6.21000000	10.4750000	4.38000000
N,R5.1,LOC,	185,	0,	7.12000000	10.4750000	4.38000000
N,R5.1,LOC,	186,	0,	8.03000000	10.4750000	4.38000000
N,R5.1,LOC,	187,	0,	8.94000000	10.4750000	4.38000000
N,R5.1,LOC,	188,	0,	11.1000000	11.1000000	4.38000000
N,R5.1,LOC,	189,	0,	10.4750000	11.1000000	4.38000000
N,R5.1,LOC,	190,	0,	11.1000000	10.4750000	4.38000000
N,R5.1,LOC,	191,	0,	10.4750000	10.4750000	4.38000000
N,R5.1,LOC,	192,	0,	20.2000000	11.1000000	4.38000000
N,R5.1,LOC,	193,	0,	12.0100000	11.1000000	4.38000000
N,R5.1,LOC,	194,	0,	12.9200000	11.1000000	4.38000000
N,R5.1,LOC,	195,	0,	13.8300000	11.1000000	4.38000000
N,R5.1,LOC,	196,	0,	14.7400000	11.1000000	4.38000000
N,R5.1,LOC,	197,	0,	15.6500000	11.1000000	4.38000000
N,R5.1,LOC,	198,	0,	16.5600000	11.1000000	4.38000000
N,R5.1,LOC,	199,	0,	17.4700000	11.1000000	4.38000000
N,R5.1,LOC,	200,	0,	18.3800000	11.1000000	4.38000000
N,R5.1,LOC,	201,	0,	19.2900000	11.1000000	4.38000000
N,R5.1,LOC,	202,	0,	20.2000000	10.4750000	4.38000000
N,R5.1,LOC,	203,	0,	12.0100000	9.85000000	4.38000000
N,R5.1,LOC,	204,	0,	12.9200000	9.85000000	4.38000000
N,R5.1,LOC,	205,	0,	13.8300000	9.85000000	4.38000000
N,R5.1,LOC,	206,	0,	14.7400000	9.85000000	4.38000000
N,R5.1,LOC,	207,	0,	15.6500000	9.85000000	4.38000000
N,R5.1,LOC,	208,	0,	16.5600000	9.85000000	4.38000000
N,R5.1,LOC,	209,	0,	17.4700000	9.85000000	4.38000000

N,R5.1,LOC,	210,	0,	18.3800000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	211,	0,	19.2900000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	212,	0,	12.0100000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	213,	0,	12.9200000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	214,	0,	13.8300000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	215,	0,	14.7400000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	216,	0,	15.6500000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	217,	0,	16.5600000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	218,	0,	17.4700000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	219,	0,	18.3800000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	220,	0,	19.2900000	, 10.4750000	, 4.38000000
N,R5.1,LOC,	221,	0,	.000000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	222,	0,	.750000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	223,	0,	.750000000	, 12.0100000	, 4.38000000
N,R5.1,LOC,	224,	0,	.750000000	, 12.9200000	, 4.38000000
N,R5.1,LOC,	225,	0,	.750000000	, 13.8300000	, 4.38000000
N,R5.1,LOC,	226,	0,	.750000000	, 14.7400000	, 4.38000000
N,R5.1,LOC,	227,	0,	.750000000	, 15.6500000	, 4.38000000
N,R5.1,LOC,	228,	0,	.750000000	, 16.5600000	, 4.38000000
N,R5.1,LOC,	229,	0,	.750000000	, 17.4700000	, 4.38000000
N,R5.1,LOC,	230,	0,	.750000000	, 18.3800000	, 4.38000000
N,R5.1,LOC,	231,	0,	.750000000	, 19.2900000	, 4.38000000
N,R5.1,LOC,	232,	0,	.000000000	, 12.0100000	, 4.38000000
N,R5.1,LOC,	233,	0,	.000000000	, 12.9200000	, 4.38000000
N,R5.1,LOC,	234,	0,	.000000000	, 13.8300000	, 4.38000000
N,R5.1,LOC,	235,	0,	.000000000	, 14.7400000	, 4.38000000
N,R5.1,LOC,	236,	0,	.000000000	, 15.6500000	, 4.38000000
N,R5.1,LOC,	237,	0,	.000000000	, 16.5600000	, 4.38000000
N,R5.1,LOC,	238,	0,	.000000000	, 17.4700000	, 4.38000000
N,R5.1,LOC,	239,	0,	.000000000	, 18.3800000	, 4.38000000
N,R5.1,LOC,	240,	0,	.000000000	, 19.2900000	, 4.38000000
N,R5.1,LOC,	241,	0,	9.85000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	242,	0,	11.1000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	243,	0,	10.4750000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	244,	0,	11.1000000	, 12.0100000	, 4.38000000
N,R5.1,LOC,	245,	0,	11.1000000	, 12.9200000	, 4.38000000
N,R5.1,LOC,	246,	0,	11.1000000	, 13.8300000	, 4.38000000
N,R5.1,LOC,	247,	0,	11.1000000	, 14.7400000	, 4.38000000
N,R5.1,LOC,	248,	0,	11.1000000	, 15.6500000	, 4.38000000
N,R5.1,LOC,	249,	0,	11.1000000	, 16.5600000	, 4.38000000
N,R5.1,LOC,	250,	0,	11.1000000	, 17.4700000	, 4.38000000
N,R5.1,LOC,	251,	0,	11.1000000	, 18.3800000	, 4.38000000
N,R5.1,LOC,	252,	0,	11.1000000	, 19.2900000	, 4.38000000
N,R5.1,LOC,	253,	0,	9.85000000	, 12.0100000	, 4.38000000
N,R5.1,LOC,	254,	0,	9.85000000	, 12.9200000	, 4.38000000
N,R5.1,LOC,	255,	0,	9.85000000	, 13.8300000	, 4.38000000
N,R5.1,LOC,	256,	0,	9.85000000	, 14.7400000	, 4.38000000
N,R5.1,LOC,	257,	0,	9.85000000	, 15.6500000	, 4.38000000
N,R5.1,LOC,	258,	0,	9.85000000	, 16.5600000	, 4.38000000
N,R5.1,LOC,	259,	0,	9.85000000	, 17.4700000	, 4.38000000
N,R5.1,LOC,	260,	0,	9.85000000	, 18.3800000	, 4.38000000
N,R5.1,LOC,	261,	0,	9.85000000	, 19.2900000	, 4.38000000
N,R5.1,LOC,	262,	0,	10.4750000	, 19.2900000	, 4.38000000
N,R5.1,LOC,	263,	0,	10.4750000	, 18.3800000	, 4.38000000
N,R5.1,LOC,	264,	0,	10.4750000	, 17.4700000	, 4.38000000
N,R5.1,LOC,	265,	0,	10.4750000	, 16.5600000	, 4.38000000
N,R5.1,LOC,	266,	0,	10.4750000	, 15.6500000	, 4.38000000
N,R5.1,LOC,	267,	0,	10.4750000	, 14.7400000	, 4.38000000
N,R5.1,LOC,	268,	0,	10.4750000	, 13.8300000	, 4.38000000
N,R5.1,LOC,	269,	0,	10.4750000	, 12.9200000	, 4.38000000
N,R5.1,LOC,	270,	0,	10.4750000	, 12.0100000	, 4.38000000
N,R5.1,LOC,	271,	0,	.000000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	272,	0,	.750000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	273,	0,	9.85000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	274,	0,	1.66000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	275,	0,	2.57000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	276,	0,	3.48000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	277,	0,	4.39000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	278,	0,	5.30000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	279,	0,	6.21000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	280,	0,	7.12000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	281,	0,	8.03000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	282,	0,	8.94000000	, 21.2000000	, 4.38000000
N,R5.1,LOC,	283,	0,	1.66000000	, 20.2000000	, 4.38000000

N,R5.1,LOC,	284,	0,	2.57000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	285,	0,	3.48000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	286,	0,	4.39000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	287,	0,	5.30000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	288,	0,	6.21000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	289,	0,	7.12000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	290,	0,	8.03000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	291,	0,	8.94000000	, 20.2000000	, 4.38000000
N,R5.1,LOC,	292,	0,	.00000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	293,	0,	.75000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	294,	0,	.75000000	, 22.1100000	, 4.38000000
N,R5.1,LOC,	295,	0,	.75000000	, 23.0200000	, 4.38000000
N,R5.1,LOC,	296,	0,	.75000000	, 23.9300000	, 4.38000000
N,R5.1,LOC,	297,	0,	.75000000	, 24.8400000	, 4.38000000
N,R5.1,LOC,	298,	0,	.75000000	, 25.7500000	, 4.38000000
N,R5.1,LOC,	299,	0,	.75000000	, 26.6600000	, 4.38000000
N,R5.1,LOC,	300,	0,	.75000000	, 27.5700000	, 4.38000000
N,R5.1,LOC,	301,	0,	.75000000	, 28.4800000	, 4.38000000
N,R5.1,LOC,	302,	0,	.75000000	, 29.3900000	, 4.38000000
N,R5.1,LOC,	303,	0,	.00000000	, 22.1100000	, 4.38000000
N,R5.1,LOC,	304,	0,	.00000000	, 23.0200000	, 4.38000000
N,R5.1,LOC,	305,	0,	.00000000	, 23.9300000	, 4.38000000
N,R5.1,LOC,	306,	0,	.00000000	, 24.8400000	, 4.38000000
N,R5.1,LOC,	307,	0,	.00000000	, 25.7500000	, 4.38000000
N,R5.1,LOC,	308,	0,	.00000000	, 26.6600000	, 4.38000000
N,R5.1,LOC,	309,	0,	.00000000	, 27.5700000	, 4.38000000
N,R5.1,LOC,	310,	0,	.00000000	, 28.4800000	, 4.38000000
N,R5.1,LOC,	311,	0,	.00000000	, 29.3900000	, 4.38000000
N,R5.1,LOC,	312,	0,	30.3000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	313,	0,	31.1471009	, 10.1203066	, 4.38000000
N,R5.1,LOC,	314,	0,	32.7500000	, .00000000	, 4.38000000
N,R5.1,LOC,	315,	0,	32.7170229	, 1.46932319	, 4.38000000
N,R5.1,LOC,	316,	0,	32.6181581	, 2.93568737	, 4.38000000
N,R5.1,LOC,	317,	0,	32.4536047	, 4.39613946	, 4.38000000
N,R5.1,LOC,	318,	0,	32.2236940	, 5.84773830	, 4.38000000
N,R5.1,LOC,	319,	0,	31.9288891	, 7.28756059	, 4.38000000
N,R5.1,LOC,	320,	0,	31.5697837	, 8.71270669	, 4.38000000
N,R5.1,LOC,	321,	0,	31.5250000	, .00000000	, 4.38000000
N,R5.1,LOC,	322,	0,	30.3000000	, 2.05000000	, 4.38000000
N,R5.1,LOC,	323,	0,	30.3000000	, 3.35000000	, 4.38000000
N,R5.1,LOC,	324,	0,	30.3000000	, 4.65000000	, 4.38000000
N,R5.1,LOC,	325,	0,	30.3000000	, 5.95000000	, 4.38000000
N,R5.1,LOC,	326,	0,	30.3000000	, 7.25000000	, 4.38000000
N,R5.1,LOC,	327,	0,	30.3000000	, 8.55000000	, 4.38000000
N,R5.1,LOC,	328,	0,	31.3063468	, 4.71601566	, 4.38000000
N,R5.1,LOC,	329,	0,	31.4995417	, 1.22819008	, 4.38000000
N,R5.1,LOC,	330,	0,	31.3801874	, 3.76137073	, 4.38000000
N,R5.1,LOC,	331,	0,	31.4494718	, 2.49381204	, 4.38000000
N,R5.1,LOC,	332,	0,	27.7735751	, 17.3548559	, 4.38000000
N,R5.1,LOC,	333,	0,	24.9058938	, 14.5912140	, 4.38000000
N,R5.1,LOC,	334,	0,	25.8617876	, 15.5124280	, 4.38000000
N,R5.1,LOC,	335,	0,	26.8176814	, 16.4336419	, 4.38000000
N,R5.1,LOC,	336,	0,	30.7092472	, 11.3800104	, 4.38000000
N,R5.1,LOC,	337,	0,	30.2204701	, 12.6208435	, 4.38000000
N,R5.1,LOC,	338,	0,	29.6815800	, 13.8407481	, 4.38000000
N,R5.1,LOC,	339,	0,	29.0934707	, 15.0377013	, 4.38000000
N,R5.1,LOC,	340,	0,	28.4571173	, 16.2097185	, 4.38000000
N,R5.1,LOC,	341,	0,	22.5000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	342,	0,	23.8000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	343,	0,	25.1000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	344,	0,	26.4000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	345,	0,	27.7000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	346,	0,	29.0000000	, 9.85000000	, 4.38000000
N,R5.1,LOC,	347,	0,	21.1375000	, 11.7425000	, 4.38000000
N,R5.1,LOC,	348,	0,	22.0750000	, 12.3850000	, 4.38000000
N,R5.1,LOC,	349,	0,	22.9000000	, 12.9000000	, 4.38000000
N,R5.1,LOC,	350,	0,	25.3000000	, 13.3000000	, 4.38000000
N,R5.1,LOC,	351,	0,	26.1304893	, 12.2868476	, 4.38000000
N,R5.1,LOC,	352,	0,	27.0656162	, 14.6074215	, 4.38000000
N,R5.1,LOC,	353,	0,	24.7166325	, 11.9598889	, 4.38000000
N,R5.1,LOC,	354,	0,	27.8995479	, 13.2153703	, 4.38000000
N,R5.1,LOC,	355,	0,	28.7205059	, 12.1264640	, 4.38000000
N,R5.1,LOC,	356,	0,	29.4817044	, 11.0474058	, 4.38000000
N,R5.1,LOC,	357,	0,	28.3594653	, 10.7436817	, 4.38000000

N,R5.1,LOC,	358,	0,	26.7169450	,	10.7491909	,	4.38000000
N,R5.1,LOC,	359,	0,	25.4902215	,	10.9975280	,	4.38000000
N,R5.1,LOC,	360,	0,	24.1872297	,	11.0854271	,	4.38000000
N,R5.1,LOC,	361,	0,	22.8093959	,	11.3414773	,	4.38000000
N,R5.1,LOC,	362,	0,	21.3486566	,	10.8685435	,	4.38000000
N,R5.1,LOC,	363,	0,	24.1000000	,	12.4000000	,	4.38000000
N,R5.1,LOC,	364,	0,	27.4665129	,	11.4855410	,	4.38000000
N,R5.1,LOC,	365,	0,	27.5921368	,	10.4476242	,	4.38000000
N,R5.1,LOC,	366,	0,	27.4468050	,	15.7502606	,	4.38000000
N,R5.1,LOC,	367,	0,	20.2000000	,	20.2000000	,	4.38000000
N,R5.1,LOC,	368,	0,	23.1577471	,	23.1577471	,	4.38000000
N,R5.1,LOC,	369,	0,	21.1859157	,	21.1859157	,	4.38000000
N,R5.1,LOC,	370,	0,	22.1718314	,	22.1718314	,	4.38000000
N,R5.1,LOC,	371,	0,	26.9577161	,	18.5968827	,	4.38000000
N,R5.1,LOC,	372,	0,	26.0863548	,	19.8006210	,	4.38000000
N,R5.1,LOC,	373,	0,	25.1612854	,	20.9635927	,	4.38000000
N,R5.1,LOC,	374,	0,	24.1844124	,	22.0834032	,	4.38000000
N,R5.1,LOC,	375,	0,	20.2000000	,	12.4000000	,	4.38000000
N,R5.1,LOC,	376,	0,	20.2000000	,	13.7000000	,	4.38000000
N,R5.1,LOC,	377,	0,	20.2000000	,	15.0000000	,	4.38000000
N,R5.1,LOC,	378,	0,	20.2000000	,	16.3000000	,	4.38000000
N,R5.1,LOC,	379,	0,	20.2000000	,	17.6000000	,	4.38000000
N,R5.1,LOC,	380,	0,	20.2000000	,	18.9000000	,	4.38000000
N,R5.1,LOC,	381,	0,	21.2580731	,	19.6667001	,	4.38000000
N,R5.1,LOC,	382,	0,	22.0477497	,	20.2087350	,	4.38000000
N,R5.1,LOC,	383,	0,	23.1055065	,	21.0234845	,	4.38000000
N,R5.1,LOC,	384,	0,	23.9576568	,	19.6879108	,	4.38000000
N,R5.1,LOC,	385,	0,	24.7633127	,	17.9707728	,	4.38000000
N,R5.1,LOC,	386,	0,	21.4139156	,	18.7235910	,	4.38000000
N,R5.1,LOC,	387,	0,	22.6415033	,	18.9588397	,	4.38000000
N,R5.1,LOC,	388,	0,	25.9982865	,	17.2509116	,	4.38000000
N,R5.1,LOC,	389,	0,	24.5287911	,	15.9874191	,	4.38000000
N,R5.1,LOC,	390,	0,	23.3000000	,	14.9000000	,	4.38000000
N,R5.1,LOC,	391,	0,	22.3100000	,	13.9500000	,	4.38000000
N,R5.1,LOC,	392,	0,	20.9561953	,	13.8439703	,	4.38000000
N,R5.1,LOC,	393,	0,	21.2623220	,	14.6314627	,	4.38000000
N,R5.1,LOC,	394,	0,	21.5241135	,	15.8786416	,	4.38000000
N,R5.1,LOC,	395,	0,	21.5560861	,	17.3688242	,	4.38000000
N,R5.1,LOC,	396,	0,	23.0341374	,	17.3473476	,	4.38000000
N,R5.1,LOC,	397,	0,	25.4359817	,	16.2324518	,	4.38000000
N,R5.1,LOC,	398,	0,	21.4062640	,	13.2004482	,	4.38000000
N,R5.1,LOC,	399,	0,	9.85000000	,	30.3000000	,	4.38000000
N,R5.1,LOC,	400,	0,	10.1203066	,	31.1471009	,	4.38000000
N,R5.1,LOC,	401,	0,	22.1447280	,	24.1282723	,	4.38000000
N,R5.1,LOC,	402,	0,	21.0910738	,	25.0545226	,	4.38000000
N,R5.1,LOC,	403,	0,	19.9987181	,	25.9347986	,	4.38000000
N,R5.1,LOC,	404,	0,	18.8696651	,	26.7674847	,	4.38000000
N,R5.1,LOC,	405,	0,	17.7059868	,	27.5510532	,	4.38000000
N,R5.1,LOC,	406,	0,	16.5098184	,	28.2840661	,	4.38000000
N,R5.1,LOC,	407,	0,	15.2833548	,	28.9651785	,	4.38000000
N,R5.1,LOC,	408,	0,	14.0288467	,	29.5931404	,	4.38000000
N,R5.1,LOC,	409,	0,	12.7485960	,	30.1667996	,	4.38000000
N,R5.1,LOC,	410,	0,	11.4449519	,	30.6851035	,	4.38000000
N,R5.1,LOC,	411,	0,	12.4000000	,	20.2000000	,	4.38000000
N,R5.1,LOC,	412,	0,	13.7000000	,	20.2000000	,	4.38000000
N,R5.1,LOC,	413,	0,	15.0000000	,	20.2000000	,	4.38000000
N,R5.1,LOC,	414,	0,	16.3000000	,	20.2000000	,	4.38000000
N,R5.1,LOC,	415,	0,	17.6000000	,	20.2000000	,	4.38000000
N,R5.1,LOC,	416,	0,	18.9000000	,	20.2000000	,	4.38000000
N,R5.1,LOC,	417,	0,	9.85000000	,	22.5000000	,	4.38000000
N,R5.1,LOC,	418,	0,	9.85000000	,	23.8000000	,	4.38000000
N,R5.1,LOC,	419,	0,	9.85000000	,	25.1000000	,	4.38000000
N,R5.1,LOC,	420,	0,	9.85000000	,	26.4000000	,	4.38000000
N,R5.1,LOC,	421,	0,	9.85000000	,	27.7000000	,	4.38000000
N,R5.1,LOC,	422,	0,	9.85000000	,	29.0000000	,	4.38000000
N,R5.1,LOC,	423,	0,	11.2454691	,	29.5295806	,	4.38000000
N,R5.1,LOC,	424,	0,	12.6985468	,	28.7661821	,	4.38000000
N,R5.1,LOC,	425,	0,	13.7460390	,	28.7852963	,	4.38000000
N,R5.1,LOC,	426,	0,	14.6330072	,	28.1460988	,	4.38000000
N,R5.1,LOC,	427,	0,	15.6728082	,	27.3153541	,	4.38000000
N,R5.1,LOC,	428,	0,	17.8883250	,	25.6518117	,	4.38000000
N,R5.1,LOC,	429,	0,	18.9441343	,	24.7920463	,	4.38000000
N,R5.1,LOC,	430,	0,	19.1499428	,	22.9756886	,	4.38000000
N,R5.1,LOC,	431,	0,	21.1034301	,	23.0988946	,	4.38000000

N,R5.1,LOC,	432,	0,	19.3092331	, 21.4014830	, 4.38000000
N,R5.1,LOC,	433,	0,	18.2461489	, 22.0582367	, 4.38000000
N,R5.1,LOC,	434,	0,	17.7592655	, 21.1331148	, 4.38000000
N,R5.1,LOC,	435,	0,	16.5309806	, 21.3409347	, 4.38000000
N,R5.1,LOC,	436,	0,	15.2131961	, 21.3368414	, 4.38000000
N,R5.1,LOC,	437,	0,	13.9734353	, 21.3099780	, 4.38000000
N,R5.1,LOC,	438,	0,	17.9493295	, 23.7363105	, 4.38000000
N,R5.1,LOC,	439,	0,	16.8401616	, 22.6285162	, 4.38000000
N,R5.1,LOC,	440,	0,	15.3992910	, 22.3452315	, 4.38000000
N,R5.1,LOC,	441,	0,	14.2823314	, 22.4254694	, 4.38000000
N,R5.1,LOC,	442,	0,	11.9603487	, 22.5979528	, 4.38000000
N,R5.1,LOC,	443,	0,	11.6718796	, 21.3658332	, 4.38000000
N,R5.1,LOC,	444,	0,	10.7506150	, 21.3742676	, 4.38000000
N,R5.1,LOC,	445,	0,	10.9455668	, 22.5758916	, 4.38000000
N,R5.1,LOC,	446,	0,	10.9599131	, 23.8455506	, 4.38000000
N,R5.1,LOC,	447,	0,	10.9873879	, 25.1360674	, 4.38000000
N,R5.1,LOC,	448,	0,	11.7936743	, 26.3959436	, 4.38000000
N,R5.1,LOC,	449,	0,	11.5072594	, 27.2236580	, 4.38000000
N,R5.1,LOC,	450,	0,	11.9508588	, 27.8093243	, 4.38000000
N,R5.1,LOC,	451,	0,	13.7119196	, 27.5191099	, 4.38000000
N,R5.1,LOC,	452,	0,	14.7156245	, 26.3904951	, 4.38000000
N,R5.1,LOC,	453,	0,	15.8700403	, 25.4252827	, 4.38000000
N,R5.1,LOC,	454,	0,	16.9359984	, 24.5948903	, 4.38000000
N,R5.1,LOC,	455,	0,	16.0440966	, 23.6389908	, 4.38000000
N,R5.1,LOC,	456,	0,	14.5165804	, 23.3850138	, 4.38000000
N,R5.1,LOC,	457,	0,	12.0952338	, 23.8598050	, 4.38000000
N,R5.1,LOC,	458,	0,	13.3215594	, 23.7140831	, 4.38000000
N,R5.1,LOC,	459,	0,	12.1197123	, 25.1337982	, 4.38000000
N,R5.1,LOC,	460,	0,	12.7503083	, 26.7138615	, 4.38000000
N,R5.1,LOC,	461,	0,	13.6077297	, 25.3022337	, 4.38000000
N,R5.1,LOC,	462,	0,	15.0207850	, 24.4072743	, 4.38000000
N,R5.1,LOC,	463,	0,	20.0800730	, 23.9523476	, 4.38000000
N,R5.1,LOC,	464,	0,	18.6599325	, 20.9332880	, 4.38000000
N,R5.1,LOC,	465,	0,	10.8491313	, 26.3757367	, 4.38000000
N,R5.1,LOC,	466,	0,	10.7772451	, 27.4657063	, 4.38000000
N,R5.1,LOC,	467,	0,	10.9663040	, 28.4153503	, 4.38000000
N,R5.1,LOC,	468,	0,	20.1903366	, 22.1794820	, 4.38000000
N,R5.1,LOC,	469,	0,	15.3199893	, 23.1230787	, 4.38000000
N,R5.1,LOC,	470,	0,	12.7627273	, 21.3435422	, 4.38000000
N,R5.1,LOC,	471,	0,	13.0860245	, 22.5388111	, 4.38000000
N,R5.1,LOC,	472,	0,	16.8035021	, 26.4528254	, 4.38000000
N,R5.1,LOC,	473,	0,	.000000000	, 32.7500000	, 4.38000000
N,R5.1,LOC,	474,	0,	.000000000	, 31.5250000	, 4.38000000
N,R5.1,LOC,	475,	0,	8.71270669	, 31.5697837	, 4.38000000
N,R5.1,LOC,	476,	0,	7.28756059	, 31.9288891	, 4.38000000
N,R5.1,LOC,	477,	0,	5.84773830	, 32.2236940	, 4.38000000
N,R5.1,LOC,	478,	0,	4.39613946	, 32.4536047	, 4.38000000
N,R5.1,LOC,	479,	0,	2.93568737	, 32.6181581	, 4.38000000
N,R5.1,LOC,	480,	0,	1.46932319	, 32.7170229	, 4.38000000
N,R5.1,LOC,	481,	0,	2.05000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	482,	0,	3.35000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	483,	0,	4.65000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	484,	0,	5.95000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	485,	0,	7.25000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	486,	0,	8.55000000	, 30.3000000	, 4.38000000
N,R5.1,LOC,	487,	0,	1.20402319	, 31.5050881	, 4.38000000
N,R5.1,LOC,	488,	0,	2.49396470	, 31.4474730	, 4.38000000
N,R5.1,LOC,	489,	0,	4.76129552	, 31.2967799	, 4.38000000
N,R5.1,LOC,	490,	0,	3.71686914	, 31.4245539	, 4.38000000
N,R5.1,LOC,	-1,				
EN,R5.1,ATTR,	4,	1,	1,	1, 159,	0, 0, 0, 0
EN,R5.1,NODE,	15,	16,	17,	18,	
EN,R5.1,ATTR,	4,	1,	1,	1, 160,	0, 0, 0, 0
EN,R5.1,NODE,	16,	20,	30,	17,	
EN,R5.1,ATTR,	4,	1,	1,	1, 161,	0, 0, 0, 0
EN,R5.1,NODE,	20,	21,	31,	30,	
EN,R5.1,ATTR,	4,	1,	1,	1, 162,	0, 0, 0, 0
EN,R5.1,NODE,	21,	22,	32,	31,	
EN,R5.1,ATTR,	4,	1,	1,	1, 163,	0, 0, 0, 0
EN,R5.1,NODE,	22,	23,	33,	32,	
EN,R5.1,ATTR,	4,	1,	1,	1, 164,	0, 0, 0, 0
EN,R5.1,NODE,	23,	24,	34,	33,	
EN,R5.1,ATTR,	4,	1,	1,	1, 165,	0, 0, 0, 0
EN,R5.1,NODE,	24,	25,	35,	34,	

EN,R5.1,ATTR,	4,	1,	1,	1,	166,	0,	0, 0, 0
EN,R5.1,NODE,	25,	26,	36,	35,			
EN,R5.1,ATTR,	4,	1,	1,	1,	167,	0,	0, 0, 0
EN,R5.1,NODE,	26,	27,	37,	36,			
EN,R5.1,ATTR,	4,	1,	1,	1,	168,	0,	0, 0, 0
EN,R5.1,NODE,	27,	28,	38,	37,			
EN,R5.1,ATTR,	4,	1,	1,	1,	169,	0,	0, 0, 0
EN,R5.1,NODE,	28,	19,	29,	38,			
EN,R5.1,ATTR,	4,	1,	1,	1,	170,	0,	0, 0, 0
EN,R5.1,NODE,	19,	40,	42,	29,			
EN,R5.1,ATTR,	4,	1,	1,	1,	171,	0,	0, 0, 0
EN,R5.1,NODE,	40,	39,	41,	42,			
EN,R5.1,ATTR,	4,	1,	1,	1,	172,	0,	0, 0, 0
EN,R5.1,NODE,	39,	44,	54,	41,			
EN,R5.1,ATTR,	4,	1,	1,	1,	173,	0,	0, 0, 0
EN,R5.1,NODE,	44,	45,	55,	54,			
EN,R5.1,ATTR,	4,	1,	1,	1,	174,	0,	0, 0, 0
EN,R5.1,NODE,	45,	46,	56,	55,			
EN,R5.1,ATTR,	4,	1,	1,	1,	175,	0,	0, 0, 0
EN,R5.1,NODE,	46,	47,	57,	56,			
EN,R5.1,ATTR,	4,	1,	1,	1,	176,	0,	0, 0, 0
EN,R5.1,NODE,	47,	48,	58,	57,			
EN,R5.1,ATTR,	4,	1,	1,	1,	177,	0,	0, 0, 0
EN,R5.1,NODE,	48,	49,	59,	58,			
EN,R5.1,ATTR,	4,	1,	1,	1,	178,	0,	0, 0, 0
EN,R5.1,NODE,	49,	50,	60,	59,			
EN,R5.1,ATTR,	4,	1,	1,	1,	179,	0,	0, 0, 0
EN,R5.1,NODE,	50,	51,	61,	60,			
EN,R5.1,ATTR,	4,	1,	1,	1,	180,	0,	0, 0, 0
EN,R5.1,NODE,	51,	52,	62,	61,			
EN,R5.1,ATTR,	4,	1,	1,	1,	181,	0,	0, 0, 0
EN,R5.1,NODE,	52,	43,	53,	62,			
EN,R5.1,ATTR,	4,	1,	1,	1,	182,	0,	0, 0, 0
EN,R5.1,NODE,	43,	63,	64,	53,			
EN,R5.1,ATTR,	4,	1,	1,	1,	183,	0,	0, 0, 0
EN,R5.1,NODE,	63,	66,	76,	64,			
EN,R5.1,ATTR,	4,	1,	1,	1,	184,	0,	0, 0, 0
EN,R5.1,NODE,	66,	67,	77,	76,			
EN,R5.1,ATTR,	4,	1,	1,	1,	185,	0,	0, 0, 0
EN,R5.1,NODE,	67,	68,	78,	77,			
EN,R5.1,ATTR,	4,	1,	1,	1,	186,	0,	0, 0, 0
EN,R5.1,NODE,	68,	69,	79,	78,			
EN,R5.1,ATTR,	4,	1,	1,	1,	187,	0,	0, 0, 0
EN,R5.1,NODE,	69,	70,	80,	79,			
EN,R5.1,ATTR,	4,	1,	1,	1,	188,	0,	0, 0, 0
EN,R5.1,NODE,	70,	71,	81,	80,			
EN,R5.1,ATTR,	4,	1,	1,	1,	189,	0,	0, 0, 0
EN,R5.1,NODE,	71,	72,	82,	81,			
EN,R5.1,ATTR,	4,	1,	1,	1,	190,	0,	0, 0, 0
EN,R5.1,NODE,	72,	73,	83,	82,			
EN,R5.1,ATTR,	4,	1,	1,	1,	191,	0,	0, 0, 0
EN,R5.1,NODE,	73,	74,	84,	83,			
EN,R5.1,ATTR,	4,	1,	1,	1,	192,	0,	0, 0, 0
EN,R5.1,NODE,	74,	65,	75,	84,			
EN,R5.1,ATTR,	4,	1,	1,	1,	193,	0,	0, 0, 0
EN,R5.1,NODE,	85,	86,	95,	104,			
EN,R5.1,ATTR,	4,	1,	1,	1,	194,	0,	0, 0, 0
EN,R5.1,NODE,	104,	95,	94,	103,			
EN,R5.1,ATTR,	4,	1,	1,	1,	195,	0,	0, 0, 0
EN,R5.1,NODE,	103,	94,	93,	102,			
EN,R5.1,ATTR,	4,	1,	1,	1,	196,	0,	0, 0, 0
EN,R5.1,NODE,	102,	93,	92,	101,			
EN,R5.1,ATTR,	4,	1,	1,	1,	197,	0,	0, 0, 0
EN,R5.1,NODE,	101,	92,	91,	100,			
EN,R5.1,ATTR,	4,	1,	1,	1,	198,	0,	0, 0, 0
EN,R5.1,NODE,	100,	91,	90,	99,			
EN,R5.1,ATTR,	4,	1,	1,	1,	199,	0,	0, 0, 0
EN,R5.1,NODE,	99,	90,	89,	98,			
EN,R5.1,ATTR,	4,	1,	1,	1,	200,	0,	0, 0, 0
EN,R5.1,NODE,	98,	89,	88,	97,			
EN,R5.1,ATTR,	4,	1,	1,	1,	201,	0,	0, 0, 0
EN,R5.1,NODE,	97,	88,	87,	96,			
EN,R5.1,ATTR,	4,	1,	1,	1,	202,	0,	0, 0, 0
EN,R5.1,NODE,	96,	87,	16,	15,			

EN,R5.1,ATTR,	4,	1,	1,	1,	203,	0,	0, 0, 0
EN,R5.1,NODE,	105,	107,	126,	125,			
EN,R5.1,ATTR,	4,	1,	1,	1,	204,	0,	0, 0, 0
EN,R5.1,NODE,	107,	106,	116,	126,			
EN,R5.1,ATTR,	4,	1,	1,	1,	205,	0,	0, 0, 0
EN,R5.1,NODE,	125,	126,	127,	124,			
EN,R5.1,ATTR,	4,	1,	1,	1,	206,	0,	0, 0, 0
EN,R5.1,NODE,	126,	116,	115,	127,			
EN,R5.1,ATTR,	4,	1,	1,	1,	207,	0,	0, 0, 0
EN,R5.1,NODE,	124,	127,	128,	123,			
EN,R5.1,ATTR,	4,	1,	1,	1,	208,	0,	0, 0, 0
EN,R5.1,NODE,	127,	115,	114,	128,			
EN,R5.1,ATTR,	4,	1,	1,	1,	209,	0,	0, 0, 0
EN,R5.1,NODE,	123,	128,	129,	122,			
EN,R5.1,ATTR,	4,	1,	1,	1,	210,	0,	0, 0, 0
EN,R5.1,NODE,	128,	114,	113,	129,			
EN,R5.1,ATTR,	4,	1,	1,	1,	211,	0,	0, 0, 0
EN,R5.1,NODE,	122,	129,	130,	121,			
EN,R5.1,ATTR,	4,	1,	1,	1,	212,	0,	0, 0, 0
EN,R5.1,NODE,	129,	113,	112,	130,			
EN,R5.1,ATTR,	4,	1,	1,	1,	213,	0,	0, 0, 0
EN,R5.1,NODE,	121,	130,	131,	120,			
EN,R5.1,ATTR,	4,	1,	1,	1,	214,	0,	0, 0, 0
EN,R5.1,NODE,	130,	112,	111,	131,			
EN,R5.1,ATTR,	4,	1,	1,	1,	215,	0,	0, 0, 0
EN,R5.1,NODE,	120,	131,	132,	119,			
EN,R5.1,ATTR,	4,	1,	1,	1,	216,	0,	0, 0, 0
EN,R5.1,NODE,	131,	111,	110,	132,			
EN,R5.1,ATTR,	4,	1,	1,	1,	217,	0,	0, 0, 0
EN,R5.1,NODE,	119,	132,	133,	118,			
EN,R5.1,ATTR,	4,	1,	1,	1,	218,	0,	0, 0, 0
EN,R5.1,NODE,	132,	110,	109,	133,			
EN,R5.1,ATTR,	4,	1,	1,	1,	219,	0,	0, 0, 0
EN,R5.1,NODE,	118,	133,	134,	117,			
EN,R5.1,ATTR,	4,	1,	1,	1,	220,	0,	0, 0, 0
EN,R5.1,NODE,	133,	109,	108,	134,			
EN,R5.1,ATTR,	4,	1,	1,	1,	221,	0,	0, 0, 0
EN,R5.1,NODE,	117,	134,	40,	19,			
EN,R5.1,ATTR,	4,	1,	1,	1,	222,	0,	0, 0, 0
EN,R5.1,NODE,	134,	108,	39,	40,			
EN,R5.1,ATTR,	4,	1,	1,	1,	223,	0,	0, 0, 0
EN,R5.1,NODE,	135,	136,	145,	154,			
EN,R5.1,ATTR,	4,	1,	1,	1,	224,	0,	0, 0, 0
EN,R5.1,NODE,	154,	145,	144,	153,			
EN,R5.1,ATTR,	4,	1,	1,	1,	225,	0,	0, 0, 0
EN,R5.1,NODE,	153,	144,	143,	152,			
EN,R5.1,ATTR,	4,	1,	1,	1,	226,	0,	0, 0, 0
EN,R5.1,NODE,	152,	143,	142,	151,			
EN,R5.1,ATTR,	4,	1,	1,	1,	227,	0,	0, 0, 0
EN,R5.1,NODE,	151,	142,	141,	150,			
EN,R5.1,ATTR,	4,	1,	1,	1,	228,	0,	0, 0, 0
EN,R5.1,NODE,	150,	141,	140,	149,			
EN,R5.1,ATTR,	4,	1,	1,	1,	229,	0,	0, 0, 0
EN,R5.1,NODE,	149,	140,	139,	148,			
EN,R5.1,ATTR,	4,	1,	1,	1,	230,	0,	0, 0, 0
EN,R5.1,NODE,	148,	139,	138,	147,			
EN,R5.1,ATTR,	4,	1,	1,	1,	231,	0,	0, 0, 0
EN,R5.1,NODE,	147,	138,	137,	146,			
EN,R5.1,ATTR,	4,	1,	1,	1,	232,	0,	0, 0, 0
EN,R5.1,NODE,	146,	137,	63,	43,			
EN,R5.1,ATTR,	4,	1,	1,	1,	233,	0,	0, 0, 0
EN,R5.1,NODE,	155,	156,	157,	158,			
EN,R5.1,ATTR,	4,	1,	1,	1,	234,	0,	0, 0, 0
EN,R5.1,NODE,	158,	157,	86,	85,			
EN,R5.1,ATTR,	4,	1,	1,	1,	235,	0,	0, 0, 0
EN,R5.1,NODE,	156,	160,	179,	157,			
EN,R5.1,ATTR,	4,	1,	1,	1,	236,	0,	0, 0, 0
EN,R5.1,NODE,	160,	161,	180,	179,			
EN,R5.1,ATTR,	4,	1,	1,	1,	237,	0,	0, 0, 0
EN,R5.1,NODE,	161,	162,	181,	180,			
EN,R5.1,ATTR,	4,	1,	1,	1,	238,	0,	0, 0, 0
EN,R5.1,NODE,	162,	163,	182,	181,			
EN,R5.1,ATTR,	4,	1,	1,	1,	239,	0,	0, 0, 0
EN,R5.1,NODE,	163,	164,	183,	182,			

EN, R5.1, ATTR,	4,	1,	1,	1,	240,	0,	0, 0, 0
EN, R5.1, NODE,	164,	165,	184,	183,			
EN, R5.1, ATTR,	4,	1,	1,	1,	241,	0,	0, 0, 0
EN, R5.1, NODE,	165,	166,	185,	184,			
EN, R5.1, ATTR,	4,	1,	1,	1,	242,	0,	0, 0, 0
EN, R5.1, NODE,	166,	167,	186,	185,			
EN, R5.1, ATTR,	4,	1,	1,	1,	243,	0,	0, 0, 0
EN, R5.1, NODE,	167,	168,	187,	186,			
EN, R5.1, ATTR,	4,	1,	1,	1,	244,	0,	0, 0, 0
EN, R5.1, NODE,	168,	159,	169,	187,			
EN, R5.1, ATTR,	4,	1,	1,	1,	245,	0,	0, 0, 0
EN, R5.1, NODE,	157,	179,	170,	86,			
EN, R5.1, ATTR,	4,	1,	1,	1,	246,	0,	0, 0, 0
EN, R5.1, NODE,	179,	180,	171,	170,			
EN, R5.1, ATTR,	4,	1,	1,	1,	247,	0,	0, 0, 0
EN, R5.1, NODE,	180,	181,	172,	171,			
EN, R5.1, ATTR,	4,	1,	1,	1,	248,	0,	0, 0, 0
EN, R5.1, NODE,	181,	182,	173,	172,			
EN, R5.1, ATTR,	4,	1,	1,	1,	249,	0,	0, 0, 0
EN, R5.1, NODE,	182,	183,	174,	173,			
EN, R5.1, ATTR,	4,	1,	1,	1,	250,	0,	0, 0, 0
EN, R5.1, NODE,	183,	184,	175,	174,			
EN, R5.1, ATTR,	4,	1,	1,	1,	251,	0,	0, 0, 0
EN, R5.1, NODE,	184,	185,	176,	175,			
EN, R5.1, ATTR,	4,	1,	1,	1,	252,	0,	0, 0, 0
EN, R5.1, NODE,	185,	186,	177,	176,			
EN, R5.1, ATTR,	4,	1,	1,	1,	253,	0,	0, 0, 0
EN, R5.1, NODE,	186,	187,	178,	177,			
EN, R5.1, ATTR,	4,	1,	1,	1,	254,	0,	0, 0, 0
EN, R5.1, NODE,	187,	169,	105,	178,			
EN, R5.1, ATTR,	4,	1,	1,	1,	255,	0,	0, 0, 0
EN, R5.1, NODE,	159,	189,	191,	169,			
EN, R5.1, ATTR,	4,	1,	1,	1,	256,	0,	0, 0, 0
EN, R5.1, NODE,	189,	188,	190,	191,			
EN, R5.1, ATTR,	4,	1,	1,	1,	257,	0,	0, 0, 0
EN, R5.1, NODE,	169,	191,	107,	105,			
EN, R5.1, ATTR,	4,	1,	1,	1,	258,	0,	0, 0, 0
EN, R5.1, NODE,	191,	190,	106,	107,			
EN, R5.1, ATTR,	4,	1,	1,	1,	259,	0,	0, 0, 0
EN, R5.1, NODE,	188,	193,	212,	190,			
EN, R5.1, ATTR,	4,	1,	1,	1,	260,	0,	0, 0, 0
EN, R5.1, NODE,	193,	194,	213,	212,			
EN, R5.1, ATTR,	4,	1,	1,	1,	261,	0,	0, 0, 0
EN, R5.1, NODE,	194,	195,	214,	213,			
EN, R5.1, ATTR,	4,	1,	1,	1,	262,	0,	0, 0, 0
EN, R5.1, NODE,	195,	196,	215,	214,			
EN, R5.1, ATTR,	4,	1,	1,	1,	263,	0,	0, 0, 0
EN, R5.1, NODE,	196,	197,	216,	215,			
EN, R5.1, ATTR,	4,	1,	1,	1,	264,	0,	0, 0, 0
EN, R5.1, NODE,	197,	198,	217,	216,			
EN, R5.1, ATTR,	4,	1,	1,	1,	265,	0,	0, 0, 0
EN, R5.1, NODE,	198,	199,	218,	217,			
EN, R5.1, ATTR,	4,	1,	1,	1,	266,	0,	0, 0, 0
EN, R5.1, NODE,	199,	200,	219,	218,			
EN, R5.1, ATTR,	4,	1,	1,	1,	267,	0,	0, 0, 0
EN, R5.1, NODE,	200,	201,	220,	219,			
EN, R5.1, ATTR,	4,	1,	1,	1,	268,	0,	0, 0, 0
EN, R5.1, NODE,	201,	192,	202,	220,			
EN, R5.1, ATTR,	4,	1,	1,	1,	269,	0,	0, 0, 0
EN, R5.1, NODE,	190,	212,	203,	106,			
EN, R5.1, ATTR,	4,	1,	1,	1,	270,	0,	0, 0, 0
EN, R5.1, NODE,	212,	213,	204,	203,			
EN, R5.1, ATTR,	4,	1,	1,	1,	271,	0,	0, 0, 0
EN, R5.1, NODE,	213,	214,	205,	204,			
EN, R5.1, ATTR,	4,	1,	1,	1,	272,	0,	0, 0, 0
EN, R5.1, NODE,	214,	215,	206,	205,			
EN, R5.1, ATTR,	4,	1,	1,	1,	273,	0,	0, 0, 0
EN, R5.1, NODE,	215,	216,	207,	206,			
EN, R5.1, ATTR,	4,	1,	1,	1,	274,	0,	0, 0, 0
EN, R5.1, NODE,	216,	217,	208,	207,			
EN, R5.1, ATTR,	4,	1,	1,	1,	275,	0,	0, 0, 0
EN, R5.1, NODE,	217,	218,	209,	208,			
EN, R5.1, ATTR,	4,	1,	1,	1,	276,	0,	0, 0, 0
EN, R5.1, NODE,	218,	219,	210,	209,			

EN,R5.1,ATTR,	4,	1,	1,	1,	277,	0,	0, 0, 0
EN,R5.1,NODE,	219,	220,	211,	210,			
EN,R5.1,ATTR,	4,	1,	1,	1,	278,	0,	0, 0, 0
EN,R5.1,NODE,	220,	202,	135,	211,			
EN,R5.1,ATTR,	4,	1,	1,	1,	279,	0,	0, 0, 0
EN,R5.1,NODE,	221,	222,	231,	240,			
EN,R5.1,ATTR,	4,	1,	1,	1,	280,	0,	0, 0, 0
EN,R5.1,NODE,	240,	231,	230,	239,			
EN,R5.1,ATTR,	4,	1,	1,	1,	281,	0,	0, 0, 0
EN,R5.1,NODE,	239,	230,	229,	238,			
EN,R5.1,ATTR,	4,	1,	1,	1,	282,	0,	0, 0, 0
EN,R5.1,NODE,	238,	229,	228,	237,			
EN,R5.1,ATTR,	4,	1,	1,	1,	283,	0,	0, 0, 0
EN,R5.1,NODE,	237,	228,	227,	236,			
EN,R5.1,ATTR,	4,	1,	1,	1,	284,	0,	0, 0, 0
EN,R5.1,NODE,	236,	227,	226,	235,			
EN,R5.1,ATTR,	4,	1,	1,	1,	285,	0,	0, 0, 0
EN,R5.1,NODE,	235,	226,	225,	234,			
EN,R5.1,ATTR,	4,	1,	1,	1,	286,	0,	0, 0, 0
EN,R5.1,NODE,	234,	225,	224,	233,			
EN,R5.1,ATTR,	4,	1,	1,	1,	287,	0,	0, 0, 0
EN,R5.1,NODE,	233,	224,	223,	232,			
EN,R5.1,ATTR,	4,	1,	1,	1,	288,	0,	0, 0, 0
EN,R5.1,NODE,	232,	223,	156,	155,			
EN,R5.1,ATTR,	4,	1,	1,	1,	289,	0,	0, 0, 0
EN,R5.1,NODE,	241,	243,	262,	261,			
EN,R5.1,ATTR,	4,	1,	1,	1,	290,	0,	0, 0, 0
EN,R5.1,NODE,	243,	242,	252,	262,			
EN,R5.1,ATTR,	4,	1,	1,	1,	291,	0,	0, 0, 0
EN,R5.1,NODE,	261,	262,	263,	260,			
EN,R5.1,ATTR,	4,	1,	1,	1,	292,	0,	0, 0, 0
EN,R5.1,NODE,	262,	252,	251,	263,			
EN,R5.1,ATTR,	4,	1,	1,	1,	293,	0,	0, 0, 0
EN,R5.1,NODE,	260,	263,	264,	259,			
EN,R5.1,ATTR,	4,	1,	1,	1,	294,	0,	0, 0, 0
EN,R5.1,NODE,	263,	251,	250,	264,			
EN,R5.1,ATTR,	4,	1,	1,	1,	295,	0,	0, 0, 0
EN,R5.1,NODE,	259,	264,	265,	258,			
EN,R5.1,ATTR,	4,	1,	1,	1,	296,	0,	0, 0, 0
EN,R5.1,NODE,	264,	250,	249,	265,			
EN,R5.1,ATTR,	4,	1,	1,	1,	297,	0,	0, 0, 0
EN,R5.1,NODE,	258,	265,	266,	257,			
EN,R5.1,ATTR,	4,	1,	1,	1,	298,	0,	0, 0, 0
EN,R5.1,NODE,	265,	249,	248,	266,			
EN,R5.1,ATTR,	4,	1,	1,	1,	299,	0,	0, 0, 0
EN,R5.1,NODE,	257,	266,	267,	256,			
EN,R5.1,ATTR,	4,	1,	1,	1,	300,	0,	0, 0, 0
EN,R5.1,NODE,	266,	248,	247,	267,			
EN,R5.1,ATTR,	4,	1,	1,	1,	301,	0,	0, 0, 0
EN,R5.1,NODE,	256,	267,	268,	255,			
EN,R5.1,ATTR,	4,	1,	1,	1,	302,	0,	0, 0, 0
EN,R5.1,NODE,	267,	247,	246,	268,			
EN,R5.1,ATTR,	4,	1,	1,	1,	303,	0,	0, 0, 0
EN,R5.1,NODE,	255,	268,	269,	254,			
EN,R5.1,ATTR,	4,	1,	1,	1,	304,	0,	0, 0, 0
EN,R5.1,NODE,	268,	246,	245,	269,			
EN,R5.1,ATTR,	4,	1,	1,	1,	305,	0,	0, 0, 0
EN,R5.1,NODE,	254,	269,	270,	253,			
EN,R5.1,ATTR,	4,	1,	1,	1,	306,	0,	0, 0, 0
EN,R5.1,NODE,	269,	245,	244,	270,			
EN,R5.1,ATTR,	4,	1,	1,	1,	307,	0,	0, 0, 0
EN,R5.1,NODE,	253,	270,	189,	159,			
EN,R5.1,ATTR,	4,	1,	1,	1,	308,	0,	0, 0, 0
EN,R5.1,NODE,	270,	244,	188,	189,			
EN,R5.1,ATTR,	4,	1,	1,	1,	309,	0,	0, 0, 0
EN,R5.1,NODE,	271,	272,	222,	221,			
EN,R5.1,ATTR,	4,	1,	1,	1,	310,	0,	0, 0, 0
EN,R5.1,NODE,	272,	274,	283,	222,			
EN,R5.1,ATTR,	4,	1,	1,	1,	311,	0,	0, 0, 0
EN,R5.1,NODE,	274,	275,	284,	283,			
EN,R5.1,ATTR,	4,	1,	1,	1,	312,	0,	0, 0, 0
EN,R5.1,NODE,	275,	276,	285,	284,			
EN,R5.1,ATTR,	4,	1,	1,	1,	313,	0,	0, 0, 0
EN,R5.1,NODE,	276,	277,	286,	285,			

EN, R5.1, ATTR,	4,	1,	1,	1,	314,	0,	0, 0, 0
EN, R5.1, NODE,	277,	278,	287,	286,			
EN, R5.1, ATTR,	4,	1,	1,	1,	315,	0,	0, 0, 0
EN, R5.1, NODE,	278,	279,	288,	287,			
EN, R5.1, ATTR,	4,	1,	1,	1,	316,	0,	0, 0, 0
EN, R5.1, NODE,	279,	280,	289,	288,			
EN, R5.1, ATTR,	4,	1,	1,	1,	317,	0,	0, 0, 0
EN, R5.1, NODE,	280,	281,	290,	289,			
EN, R5.1, ATTR,	4,	1,	1,	1,	318,	0,	0, 0, 0
EN, R5.1, NODE,	281,	282,	291,	290,			
EN, R5.1, ATTR,	4,	1,	1,	1,	319,	0,	0, 0, 0
EN, R5.1, NODE,	282,	273,	241,	291,			
EN, R5.1, ATTR,	4,	1,	1,	1,	320,	0,	0, 0, 0
EN, R5.1, NODE,	292,	293,	302,	311,			
EN, R5.1, ATTR,	4,	1,	1,	1,	321,	0,	0, 0, 0
EN, R5.1, NODE,	311,	302,	301,	310,			
EN, R5.1, ATTR,	4,	1,	1,	1,	322,	0,	0, 0, 0
EN, R5.1, NODE,	310,	301,	300,	309,			
EN, R5.1, ATTR,	4,	1,	1,	1,	323,	0,	0, 0, 0
EN, R5.1, NODE,	309,	300,	299,	308,			
EN, R5.1, ATTR,	4,	1,	1,	1,	324,	0,	0, 0, 0
EN, R5.1, NODE,	308,	299,	298,	307,			
EN, R5.1, ATTR,	4,	1,	1,	1,	325,	0,	0, 0, 0
EN, R5.1, NODE,	307,	298,	297,	306,			
EN, R5.1, ATTR,	4,	1,	1,	1,	326,	0,	0, 0, 0
EN, R5.1, NODE,	306,	297,	296,	305,			
EN, R5.1, ATTR,	4,	1,	1,	1,	327,	0,	0, 0, 0
EN, R5.1, NODE,	305,	296,	295,	304,			
EN, R5.1, ATTR,	4,	1,	1,	1,	328,	0,	0, 0, 0
EN, R5.1, NODE,	304,	295,	294,	303,			
EN, R5.1, ATTR,	4,	1,	1,	1,	329,	0,	0, 0, 0
EN, R5.1, NODE,	303,	294,	272,	271,			
EN, R5.1, ATTR,	4,	1,	1,	1,	330,	0,	0, 0, 0
EN, R5.1, NODE,	312,	313,	320,	327,			
EN, R5.1, ATTR,	4,	1,	1,	1,	331,	0,	0, 0, 0
EN, R5.1, NODE,	327,	320,	319,	326,			
EN, R5.1, ATTR,	4,	1,	1,	1,	332,	0,	0, 0, 0
EN, R5.1, NODE,	326,	319,	318,	325,			
EN, R5.1, ATTR,	4,	1,	1,	1,	333,	0,	0, 0, 0
EN, R5.1, NODE,	328,	324,	325,	318,			
EN, R5.1, ATTR,	4,	1,	1,	1,	334,	0,	0, 0, 0
EN, R5.1, NODE,	330,	328,	318,	317,			
EN, R5.1, ATTR,	4,	1,	1,	1,	335,	0,	0, 0, 0
EN, R5.1, NODE,	331,	330,	317,	316,			
EN, R5.1, ATTR,	4,	1,	1,	1,	336,	0,	0, 0, 0
EN, R5.1, NODE,	329,	331,	316,	315,			
EN, R5.1, ATTR,	4,	1,	1,	1,	337,	0,	0, 0, 0
EN, R5.1, NODE,	330,	331,	322,	323,			
EN, R5.1, ATTR,	4,	1,	1,	1,	338,	0,	0, 0, 0
EN, R5.1, NODE,	329,	65,	322,	331,			
EN, R5.1, ATTR,	4,	1,	1,	1,	339,	0,	0, 0, 0
EN, R5.1, NODE,	75,	65,	329,	321,			
EN, R5.1, ATTR,	4,	1,	1,	1,	340,	0,	0, 0, 0
EN, R5.1, NODE,	321,	329,	315,	314,			
EN, R5.1, ATTR,	4,	1,	1,	1,	341,	0,	0, 0, 0
EN, R5.1, NODE,	323,	324,	328,	330,			
EN, R5.1, ATTR,	4,	1,	1,	1,	343,	0,	0, 0, 0
EN, R5.1, NODE,	354,	351,	350,	352,			
EN, R5.1, ATTR,	4,	1,	1,	1,	344,	0,	0, 0, 0
EN, R5.1, NODE,	333,	334,	352,	350,			
EN, R5.1, ATTR,	4,	1,	1,	1,	345,	0,	0, 0, 0
EN, R5.1, NODE,	334,	335,	366,	352,			
EN, R5.1, ATTR,	4,	1,	1,	1,	347,	0,	0, 0, 0
EN, R5.1, NODE,	351,	353,	363,	350,			
EN, R5.1, ATTR,	4,	1,	1,	1,	348,	0,	0, 0, 0
EN, R5.1, NODE,	340,	366,	335,	332,			
EN, R5.1, ATTR,	4,	1,	1,	1,	349,	0,	0, 0, 0
EN, R5.1, NODE,	352,	366,	340,	339,			
EN, R5.1, ATTR,	4,	1,	1,	1,	350,	0,	0, 0, 0
EN, R5.1, NODE,	339,	338,	354,	352,			
EN, R5.1, ATTR,	4,	1,	1,	1,	351,	0,	0, 0, 0
EN, R5.1, NODE,	337,	355,	354,	338,			
EN, R5.1, ATTR,	4,	1,	1,	1,	352,	0,	0, 0, 0
EN, R5.1, NODE,	336,	356,	355,	337,			

EN,R5.1,ATTR,	4,	1,	1,	1,	353,	0,	0, 0, 0
EN,R5.1,NODE,	357,	365,	358,	364,			
EN,R5.1,ATTR,	4,	1,	1,	1,	354,	0,	0, 0, 0
EN,R5.1,NODE,	313,	312,	356,	336,			
EN,R5.1,ATTR,	4,	1,	1,	1,	355,	0,	0, 0, 0
EN,R5.1,NODE,	346,	345,	365,	357,			
EN,R5.1,ATTR,	4,	1,	1,	1,	356,	0,	0, 0, 0
EN,R5.1,NODE,	312,	346,	357,	356,			
EN,R5.1,ATTR,	4,	1,	1,	1,	357,	0,	0, 0, 0
EN,R5.1,NODE,	358,	365,	345,	344,			
EN,R5.1,ATTR,	4,	1,	1,	1,	358,	0,	0, 0, 0
EN,R5.1,NODE,	359,	358,	344,	343,			
EN,R5.1,ATTR,	4,	1,	1,	1,	359,	0,	0, 0, 0
EN,R5.1,NODE,	342,	360,	359,	343,			
EN,R5.1,ATTR,	4,	1,	1,	1,	360,	0,	0, 0, 0
EN,R5.1,NODE,	361,	360,	342,	341,			
EN,R5.1,ATTR,	4,	1,	1,	1,	361,	0,	0, 0, 0
EN,R5.1,NODE,	136,	362,	361,	341,			
EN,R5.1,ATTR,	4,	1,	1,	1,	362,	0,	0, 0, 0
EN,R5.1,NODE,	135,	202,	362,	136,			
EN,R5.1,ATTR,	4,	1,	1,	1,	363,	0,	0, 0, 0
EN,R5.1,NODE,	202,	192,	347,	362,			
EN,R5.1,ATTR,	4,	1,	1,	1,	364,	0,	0, 0, 0
EN,R5.1,NODE,	351,	359,	360,	353,			
EN,R5.1,ATTR,	4,	1,	1,	1,	365,	0,	0, 0, 0
EN,R5.1,NODE,	362,	347,	348,	361,			
EN,R5.1,ATTR,	4,	1,	1,	1,	366,	0,	0, 0, 0
EN,R5.1,NODE,	348,	349,	363,	361,			
EN,R5.1,ATTR,	4,	1,	1,	1,	367,	0,	0, 0, 0
EN,R5.1,NODE,	355,	364,	351,	354,			
EN,R5.1,ATTR,	4,	1,	1,	1,	368,	0,	0, 0, 0
EN,R5.1,NODE,	356,	357,	364,	355,			
EN,R5.1,ATTR,	4,	1,	1,	1,	369,	0,	0, 0, 0
EN,R5.1,NODE,	358,	359,	351,	364,			
EN,R5.1,ATTR,	4,	1,	1,	1,	370,	0,	0, 0, 0
EN,R5.1,NODE,	361,	363,	353,	360,			
EN,R5.1,ATTR,	4,	1,	1,	1,	371,	0,	0, 0, 0
EN,R5.1,NODE,	381,	367,	369,	382,			
EN,R5.1,ATTR,	4,	1,	1,	1,	372,	0,	0, 0, 0
EN,R5.1,NODE,	369,	370,	383,	382,			
EN,R5.1,ATTR,	4,	1,	1,	1,	373,	0,	0, 0, 0
EN,R5.1,NODE,	383,	370,	368,	374,			
EN,R5.1,ATTR,	4,	1,	1,	1,	374,	0,	0, 0, 0
EN,R5.1,NODE,	380,	367,	381,	386,			
EN,R5.1,ATTR,	4,	1,	1,	1,	375,	0,	0, 0, 0
EN,R5.1,NODE,	384,	383,	374,	373,			
EN,R5.1,ATTR,	4,	1,	1,	1,	376,	0,	0, 0, 0
EN,R5.1,NODE,	385,	384,	373,	372,			
EN,R5.1,ATTR,	4,	1,	1,	1,	377,	0,	0, 0, 0
EN,R5.1,NODE,	388,	385,	372,	371,			
EN,R5.1,ATTR,	4,	1,	1,	1,	378,	0,	0, 0, 0
EN,R5.1,NODE,	332,	335,	388,	371,			
EN,R5.1,ATTR,	4,	1,	1,	1,	379,	0,	0, 0, 0
EN,R5.1,NODE,	382,	383,	384,	387,			
EN,R5.1,ATTR,	4,	1,	1,	1,	380,	0,	0, 0, 0
EN,R5.1,NODE,	386,	381,	382,	387,			
EN,R5.1,ATTR,	4,	1,	1,	1,	381,	0,	0, 0, 0
EN,R5.1,NODE,	388,	335,	334,	397,			
EN,R5.1,ATTR,	4,	1,	1,	1,	382,	0,	0, 0, 0
EN,R5.1,NODE,	397,	334,	333,	389,			
EN,R5.1,ATTR,	4,	1,	1,	1,	385,	0,	0, 0, 0
EN,R5.1,NODE,	349,	348,	398,	391,			
EN,R5.1,ATTR,	4,	1,	1,	1,	386,	0,	0, 0, 0
EN,R5.1,NODE,	398,	348,	347,	375,			
EN,R5.1,ATTR,	4,	1,	1,	1,	387,	0,	0, 0, 0
EN,R5.1,NODE,	375,	347,	192,	192,			
EN,R5.1,ATTR,	4,	1,	1,	1,	388,	0,	0, 0, 0
EN,R5.1,NODE,	398,	375,	376,	392,			
EN,R5.1,ATTR,	4,	1,	1,	1,	389,	0,	0, 0, 0
EN,R5.1,NODE,	393,	392,	376,	377,			
EN,R5.1,ATTR,	4,	1,	1,	1,	390,	0,	0, 0, 0
EN,R5.1,NODE,	393,	377,	378,	394,			
EN,R5.1,ATTR,	4,	1,	1,	1,	391,	0,	0, 0, 0
EN,R5.1,NODE,	394,	378,	379,	395,			

EN,R5.1,ATTR,	4,	1,	1,	1,	392,	0,	0, 0, 0
EN,R5.1,NODE,	379,	380,	386,	395,			
EN,R5.1,ATTR,	4,	1,	1,	1,	393,	0,	0, 0, 0
EN,R5.1,NODE,	398,	392,	393,	391,			
EN,R5.1,ATTR,	4,	1,	1,	1,	394,	0,	0, 0, 0
EN,R5.1,NODE,	388,	397,	389,	385,			
EN,R5.1,ATTR,	4,	1,	1,	1,	395,	0,	0, 0, 0
EN,R5.1,NODE,	396,	387,	384,	385,			
EN,R5.1,ATTR,	4,	1,	1,	1,	396,	0,	0, 0, 0
EN,R5.1,NODE,	389,	390,	396,	385,			
EN,R5.1,ATTR,	4,	1,	1,	1,	397,	0,	0, 0, 0
EN,R5.1,NODE,	393,	394,	390,	391,			
EN,R5.1,ATTR,	4,	1,	1,	1,	398,	0,	0, 0, 0
EN,R5.1,NODE,	390,	394,	395,	396,			
EN,R5.1,ATTR,	4,	1,	1,	1,	399,	0,	0, 0, 0
EN,R5.1,NODE,	386,	387,	396,	395,			
EN,R5.1,ATTR,	4,	1,	1,	1,	400,	0,	0, 0, 0
EN,R5.1,NODE,	399,	400,	410,	423,			
EN,R5.1,ATTR,	4,	1,	1,	1,	401,	0,	0, 0, 0
EN,R5.1,NODE,	423,	467,	422,	399,			
EN,R5.1,ATTR,	4,	1,	1,	1,	402,	0,	0, 0, 0
EN,R5.1,NODE,	423,	410,	409,	424,			
EN,R5.1,ATTR,	4,	1,	1,	1,	403,	0,	0, 0, 0
EN,R5.1,NODE,	409,	408,	425,	424,			
EN,R5.1,ATTR,	4,	1,	1,	1,	404,	0,	0, 0, 0
EN,R5.1,NODE,	451,	424,	425,	426,			
EN,R5.1,ATTR,	4,	1,	1,	1,	405,	0,	0, 0, 0
EN,R5.1,NODE,	425,	408,	407,	426,			
EN,R5.1,ATTR,	4,	1,	1,	1,	406,	0,	0, 0, 0
EN,R5.1,NODE,	426,	407,	406,	427,			
EN,R5.1,ATTR,	4,	1,	1,	1,	407,	0,	0, 0, 0
EN,R5.1,NODE,	427,	406,	405,	472,			
EN,R5.1,ATTR,	4,	1,	1,	1,	408,	0,	0, 0, 0
EN,R5.1,NODE,	472,	405,	404,	428,			
EN,R5.1,ATTR,	4,	1,	1,	1,	409,	0,	0, 0, 0
EN,R5.1,NODE,	427,	472,	453,	452,			
EN,R5.1,ATTR,	4,	1,	1,	1,	410,	0,	0, 0, 0
EN,R5.1,NODE,	403,	429,	428,	404,			
EN,R5.1,ATTR,	4,	1,	1,	1,	411,	0,	0, 0, 0
EN,R5.1,NODE,	455,	439,	440,	469,			
EN,R5.1,ATTR,	4,	1,	1,	1,	412,	0,	0, 0, 0
EN,R5.1,NODE,	402,	463,	429,	403,			
EN,R5.1,ATTR,	4,	1,	1,	1,	413,	0,	0, 0, 0
EN,R5.1,NODE,	466,	421,	422,	467,			
EN,R5.1,ATTR,	4,	1,	1,	1,	414,	0,	0, 0, 0
EN,R5.1,NODE,	370,	431,	401,	368,			
EN,R5.1,ATTR,	4,	1,	1,	1,	415,	0,	0, 0, 0
EN,R5.1,NODE,	401,	431,	463,	402,			
EN,R5.1,ATTR,	4,	1,	1,	1,	416,	0,	0, 0, 0
EN,R5.1,NODE,	469,	440,	441,	456,			
EN,R5.1,ATTR,	4,	1,	1,	1,	417,	0,	0, 0, 0
EN,R5.1,NODE,	369,	468,	431,	370,			
EN,R5.1,ATTR,	4,	1,	1,	1,	418,	0,	0, 0, 0
EN,R5.1,NODE,	468,	369,	367,	432,			
EN,R5.1,ATTR,	4,	1,	1,	1,	419,	0,	0, 0, 0
EN,R5.1,NODE,	436,	440,	439,	435,			
EN,R5.1,ATTR,	4,	1,	1,	1,	420,	0,	0, 0, 0
EN,R5.1,NODE,	367,	416,	464,	432,			
EN,R5.1,ATTR,	4,	1,	1,	1,	421,	0,	0, 0, 0
EN,R5.1,NODE,	431,	468,	430,	463,			
EN,R5.1,ATTR,	4,	1,	1,	1,	422,	0,	0, 0, 0
EN,R5.1,NODE,	432,	433,	430,	468,			
EN,R5.1,ATTR,	4,	1,	1,	1,	423,	0,	0, 0, 0
EN,R5.1,NODE,	432,	464,	434,	433,			
EN,R5.1,ATTR,	4,	1,	1,	1,	424,	0,	0, 0, 0
EN,R5.1,NODE,	464,	416,	415,	434,			
EN,R5.1,ATTR,	4,	1,	1,	1,	425,	0,	0, 0, 0
EN,R5.1,NODE,	412,	411,	470,	437,			
EN,R5.1,ATTR,	4,	1,	1,	1,	426,	0,	0, 0, 0
EN,R5.1,NODE,	415,	414,	435,	434,			
EN,R5.1,ATTR,	4,	1,	1,	1,	427,	0,	0, 0, 0
EN,R5.1,NODE,	414,	413,	436,	435,			
EN,R5.1,ATTR,	4,	1,	1,	1,	428,	0,	0, 0, 0
EN,R5.1,NODE,	470,	411,	242,	443,			

EN,R5.1,ATTR,	4,	1,	1,	1,	429,	0,	0, 0, 0
EN,R5.1,NODE,	436,	413,	412,	437,			
EN,R5.1,ATTR,	4,	1,	1,	1,	430,	0,	0, 0, 0
EN,R5.1,NODE,	471,	441,	437,	470,			
EN,R5.1,ATTR,	4,	1,	1,	1,	431,	0,	0, 0, 0
EN,R5.1,NODE,	442,	457,	458,	471,			
EN,R5.1,ATTR,	4,	1,	1,	1,	432,	0,	0, 0, 0
EN,R5.1,NODE,	451,	426,	427,	452,			
EN,R5.1,ATTR,	4,	1,	1,	1,	433,	0,	0, 0, 0
EN,R5.1,NODE,	435,	439,	433,	434,			
EN,R5.1,ATTR,	4,	1,	1,	1,	434,	0,	0, 0, 0
EN,R5.1,NODE,	440,	436,	437,	441,			
EN,R5.1,ATTR,	4,	1,	1,	1,	435,	0,	0, 0, 0
EN,R5.1,NODE,	438,	454,	428,	429,			
EN,R5.1,ATTR,	4,	1,	1,	1,	436,	0,	0, 0, 0
EN,R5.1,NODE,	470,	443,	442,	471,			
EN,R5.1,ATTR,	4,	1,	1,	1,	437,	0,	0, 0, 0
EN,R5.1,NODE,	242,	243,	444,	443,			
EN,R5.1,ATTR,	4,	1,	1,	1,	438,	0,	0, 0, 0
EN,R5.1,NODE,	466,	467,	450,	449,			
EN,R5.1,ATTR,	4,	1,	1,	1,	439,	0,	0, 0, 0
EN,R5.1,NODE,	243,	241,	273,	444,			
EN,R5.1,ATTR,	4,	1,	1,	1,	440,	0,	0, 0, 0
EN,R5.1,NODE,	450,	467,	423,	424,			
EN,R5.1,ATTR,	4,	1,	1,	1,	441,	0,	0, 0, 0
EN,R5.1,NODE,	444,	273,	417,	445,			
EN,R5.1,ATTR,	4,	1,	1,	1,	442,	0,	0, 0, 0
EN,R5.1,NODE,	445,	417,	418,	446,			
EN,R5.1,ATTR,	4,	1,	1,	1,	443,	0,	0, 0, 0
EN,R5.1,NODE,	446,	418,	419,	447,			
EN,R5.1,ATTR,	4,	1,	1,	1,	444,	0,	0, 0, 0
EN,R5.1,NODE,	419,	420,	465,	447,			
EN,R5.1,ATTR,	4,	1,	1,	1,	445,	0,	0, 0, 0
EN,R5.1,NODE,	465,	466,	449,	448,			
EN,R5.1,ATTR,	4,	1,	1,	1,	446,	0,	0, 0, 0
EN,R5.1,NODE,	466,	465,	420,	421,			
EN,R5.1,ATTR,	4,	1,	1,	1,	447,	0,	0, 0, 0
EN,R5.1,NODE,	451,	460,	450,	424,			
EN,R5.1,ATTR,	4,	1,	1,	1,	448,	0,	0, 0, 0
EN,R5.1,NODE,	453,	472,	428,	454,			
EN,R5.1,ATTR,	4,	1,	1,	1,	449,	0,	0, 0, 0
EN,R5.1,NODE,	429,	463,	430,	438,			
EN,R5.1,ATTR,	4,	1,	1,	1,	450,	0,	0, 0, 0
EN,R5.1,NODE,	430,	433,	439,	438,			
EN,R5.1,ATTR,	4,	1,	1,	1,	451,	0,	0, 0, 0
EN,R5.1,NODE,	439,	455,	454,	438,			
EN,R5.1,ATTR,	4,	1,	1,	1,	452,	0,	0, 0, 0
EN,R5.1,NODE,	456,	462,	455,	469,			
EN,R5.1,ATTR,	4,	1,	1,	1,	453,	0,	0, 0, 0
EN,R5.1,NODE,	471,	458,	456,	441,			
EN,R5.1,ATTR,	4,	1,	1,	1,	454,	0,	0, 0, 0
EN,R5.1,NODE,	457,	459,	461,	458,			
EN,R5.1,ATTR,	4,	1,	1,	1,	455,	0,	0, 0, 0
EN,R5.1,NODE,	446,	447,	459,	457,			
EN,R5.1,ATTR,	4,	1,	1,	1,	456,	0,	0, 0, 0
EN,R5.1,NODE,	443,	444,	445,	442,			
EN,R5.1,ATTR,	4,	1,	1,	1,	457,	0,	0, 0, 0
EN,R5.1,NODE,	442,	445,	446,	457,			
EN,R5.1,ATTR,	4,	1,	1,	1,	458,	0,	0, 0, 0
EN,R5.1,NODE,	447,	465,	448,	459,			
EN,R5.1,ATTR,	4,	1,	1,	1,	459,	0,	0, 0, 0
EN,R5.1,NODE,	448,	449,	450,	460,			
EN,R5.1,ATTR,	4,	1,	1,	1,	460,	0,	0, 0, 0
EN,R5.1,NODE,	452,	461,	460,	451,			
EN,R5.1,ATTR,	4,	1,	1,	1,	461,	0,	0, 0, 0
EN,R5.1,NODE,	460,	461,	459,	448,			
EN,R5.1,ATTR,	4,	1,	1,	1,	462,	0,	0, 0, 0
EN,R5.1,NODE,	462,	461,	452,	453,			
EN,R5.1,ATTR,	4,	1,	1,	1,	463,	0,	0, 0, 0
EN,R5.1,NODE,	455,	462,	453,	454,			
EN,R5.1,ATTR,	4,	1,	1,	1,	464,	0,	0, 0, 0
EN,R5.1,NODE,	458,	461,	462,	456,			
EN,R5.1,ATTR,	4,	1,	1,	1,	465,	0,	0, 0, 0
EN,R5.1,NODE,	293,	292,	474,	487,			

EN,R5.1,ATTR,	4,	1,	1,	1,	466,	0,	0, 0, 0
EN,R5.1,NODE,	474,	473,	480,	487,			
EN,R5.1,ATTR,	4,	1,	1,	1,	467,	0,	0, 0, 0
EN,R5.1,NODE,	479,	488,	487,	480,			
EN,R5.1,ATTR,	4,	1,	1,	1,	468,	0,	0, 0, 0
EN,R5.1,NODE,	479,	478,	490,	488,			
EN,R5.1,ATTR,	4,	1,	1,	1,	469,	0,	0, 0, 0
EN,R5.1,NODE,	488,	490,	482,	481,			
EN,R5.1,ATTR,	4,	1,	1,	1,	470,	0,	0, 0, 0
EN,R5.1,NODE,	487,	488,	481,	293,			
EN,R5.1,ATTR,	4,	1,	1,	1,	471,	0,	0, 0, 0
EN,R5.1,NODE,	482,	490,	489,	483,			
EN,R5.1,ATTR,	4,	1,	1,	1,	472,	0,	0, 0, 0
EN,R5.1,NODE,	489,	490,	478,	477,			
EN,R5.1,ATTR,	4,	1,	1,	1,	473,	0,	0, 0, 0
EN,R5.1,NODE,	483,	489,	477,	484,			
EN,R5.1,ATTR,	4,	1,	1,	1,	474,	0,	0, 0, 0
EN,R5.1,NODE,	476,	485,	484,	477,			
EN,R5.1,ATTR,	4,	1,	1,	1,	475,	0,	0, 0, 0
EN,R5.1,NODE,	475,	486,	485,	476,			
EN,R5.1,ATTR,	4,	1,	1,	1,	476,	0,	0, 0, 0
EN,R5.1,NODE,	400,	399,	486,	475,			
EN,R5.1,ATTR,	4,	1,	1,	1,	3120,	0,	0, 0, 0
EN,R5.1,NODE,	333,	390,	389,	389,			
EN,R5.1,ATTR,	2,	3,	3,	3,	3308,	0,	0, 0, 0
EN,R5.1,NODE,	5,	390,					
EN,R5.1,ATTR,	2,	3,	3,	3,	3309,	0,	0, 0, 0
EN,R5.1,NODE,	5,	333,					
EN,R5.1,ATTR,	2,	3,	3,	3,	3310,	0,	0, 0, 0
EN,R5.1,NODE,	5,	350,					
EN,R5.1,ATTR,	2,	3,	3,	3,	3311,	0,	0, 0, 0
EN,R5.1,NODE,	5,	363,					
EN,R5.1,ATTR,	2,	3,	3,	3,	3312,	0,	0, 0, 0
EN,R5.1,NODE,	5,	349,					
EN,R5.1,ATTR,	2,	3,	3,	3,	3313,	0,	0, 0, 0
EN,R5.1,NODE,	5,	391,					
EN,R5.1,ATTR,	-1,						
CM,_CDWNODE,NODE	! get list of users selected nodes						
CM,_CDWELEM,ELEM	! get list of users selected elements						
NSEL,S,NODE,,	5,	5,1					
CM,RODNODES,NODE	! users node component definition						
CMSEL,S,_CDWNODE	! restore users selected nodes						
CMSEL,S,_CDWELEM	! restore users selected elements						
CMDELE,_CDWNODE	! remove temporary node component definition						
CMDELE,_CDWELEM	! remove temporary element component definition						
MPTEMP,R5.0, 6, 1,	70.0000000	, 200.000000	, 300.000000				
MPTEMP,R5.0, 6, 4,	400.000000	, 500.000000	, 600.000000				
MPDATA,R5.0, 6,EX ,	1, 1,	27500000.0	, 27500000.0	, 27500000.0			
MPDATA,R5.0, 6,EX ,	1, 4,	27500000.0	, 27500000.0	, 27500000.0			
MPTEMP,R5.0, 6, 1,	70.0000000	, 200.000000	, 300.000000				
MPTEMP,R5.0, 6, 4,	400.000000	, 500.000000	, 600.000000				
MPDATA,R5.0, 6,NUXY,	1, 1,	.300000000	, .300000000	, .300000000			
MPDATA,R5.0, 6,NUXY,	1, 4,	.300000000	, .300000000	, .300000000			
MPTEMP,R5.0, 6, 1,	70.0000000	, 200.000000	, 300.000000				
MPTEMP,R5.0, 6, 4,	400.000000	, 500.000000	, 600.000000				
MPDATA,R5.0, 6,DENS,	1, 1,	.279000000	, .279000000	, .279000000			
MPDATA,R5.0, 6,DENS,	1, 4,	.279000000	, .279000000	, .279000000			
MPTEMP,R5.0, 6, 1,	70.0000000	, 200.000000	, 300.000000				
MPTEMP,R5.0, 6, 4,	400.000000	, 500.000000	, 600.000000				
MPDATA,R5.0, 6,EX ,	2, 1,	26500000.0	, 26500000.0	, 26500000.0			
MPDATA,R5.0, 6,EX ,	2, 4,	26500000.0	, 26500000.0	, 26500000.0			
MPTEMP,R5.0, 6, 1,	70.0000000	, 200.000000	, 300.000000				
MPTEMP,R5.0, 6, 4,	400.000000	, 500.000000	, 600.000000				
MPDATA,R5.0, 6,NUXY,	2, 1,	.290000000	, .290000000	, .290000000			
MPDATA,R5.0, 6,NUXY,	2, 4,	.290000000	, .290000000	, .290000000			
MPTEMP,R5.0, 6, 1,	70.0000000	, 200.000000	, 300.000000				
MPTEMP,R5.0, 6, 4,	400.000000	, 500.000000	, 600.000000				
MPDATA,R5.0, 6,DENS,	2, 1,	.285300000	, .285300000	, .285300000			
MPDATA,R5.0, 6,DENS,	2, 4,	.285300000	, .285300000	, .285300000			
MPTEMP,R5.0, 6, 1,	70.0000000	, 200.000000	, 300.000000				
MPTEMP,R5.0, 6, 4,	400.000000	, 500.000000	, 600.000000				
MPDATA,R5.0, 6,EX ,	3, 1,	2.900000000E+10,	2.900000000E+10,	2.900000000E+10			
MPDATA,R5.0, 6,EX ,	3, 4,	2.900000000E+10,	2.900000000E+10,	2.900000000E+10			
MPTEMP,R5.0, 6, 1,	70.0000000	, 200.000000	, 300.000000				

```

MPTEMP,R5.0, 6, 4, 400.000000 , 500.000000 , 600.000000
MPDATA,R5.0, 6,NUXY, 3, 1, .300000000 , .300000000 , .300000000
MPDATA,R5.0, 6,NUXY, 3, 4, .300000000 , .300000000 , .300000000
MPTEMP,R5.0, 6, 1, 70.0000000 , 200.000000 , 300.000000
MPTEMP,R5.0, 6, 4, 400.000000 , 500.000000 , 600.000000
MPDATA,R5.0, 6,DENS, 3, 1, .000000000 , .000000000 , .000000000
MPDATA,R5.0, 6,DENS, 3, 4, .000000000 , .000000000 , .000000000
BFUNIF,TEMP, 450.000000
AUTOTS,OFF
NSUBST, 1, 1, 1,OFF
KBC, 0
KUSE, 0
TIME, 1.00000000
TREF, 450.000000
ALPHAD, .000000000
BETAD, .000000000
DMPRAT, .000000000
TIMINT,OFF,STRU
CNVTOL,F, -134410.156 , 5.000000000E-02, 2, .000000000
CNVTOL,U, -1
CNVTOL,M, -1
CNVTOL,ROT, -1
CRPLIM, .100000000
NCNV, 1, .000000000 , 0, .000000000 , .000000000
LNSRCH,OFF
NEQIT, 25
PRED,OFF,,OFF
ERESX,DEFA
OUTRES, ALL, ALL,
OUTRES, ALL, 2,
OUTRES, ALL, -10,
ACEL, .000000000 , .000000000 , -75.0000000 !FOR DROP LOAD
ACEL, .000000000 , .000000000 , -75.0000000 !FOR STABILITY MARGIN CHECK
OMEGA, .000000000 , .000000000 , .000000000 , 0
DOMEGA, .000000000 , .000000000 , .000000000
CGLOC, .000000000 , .000000000 , .000000000
CGOMEGA, .000000000 , .000000000 , .000000000
DCGOMG, .000000000 , .000000000 , .000000000
IRLF, 0
D, 5,UZ , .000000000 , .000000000
D, 5,ROTX, .000000000 , .000000000
D, 5,ROTY, .000000000 , .000000000
D, 5,ROTZ, .000000000 , .000000000
D, 15,UX , .000000000 , .000000000
D, 15,ROTY, .000000000 , .000000000
D, 15,ROTZ, .000000000 , .000000000
D, 17,UY , .000000000 , .000000000
D, 17,ROTX, .000000000 , .000000000
D, 17,ROTZ, .000000000 , .000000000
D, 18,UX , .000000000 , .000000000
D, 18,UY , .000000000 , .000000000
D, 18,ROTX, .000000000 , .000000000
D, 18,ROTY, .000000000 , .000000000
D, 18,ROTZ, .000000000 , .000000000
D, 29,UY , .000000000 , .000000000
D, 29,ROTX, .000000000 , .000000000
D, 29,ROTZ, .000000000 , .000000000
D, 30,UY , .000000000 , .000000000
D, 30,ROTX, .000000000 , .000000000
D, 30,ROTZ, .000000000 , .000000000
D, 31,UY , .000000000 , .000000000
D, 31,ROTX, .000000000 , .000000000
D, 31,ROTZ, .000000000 , .000000000
D, 32,UY , .000000000 , .000000000
D, 32,ROTX, .000000000 , .000000000
D, 32,ROTZ, .000000000 , .000000000
D, 33,UY , .000000000 , .000000000
D, 33,ROTX, .000000000 , .000000000
D, 33,ROTZ, .000000000 , .000000000
D, 34,UY , .000000000 , .000000000
D, 34,ROTX, .000000000 , .000000000
D, 34,ROTZ, .000000000 , .000000000
D, 35,UY , .000000000 , .000000000
D, 35,ROTX, .000000000 , .000000000

```

[illegible]

D,	83, ROTY,	.000000000	, .000000000
D,	83, ROTZ,	.000000000	, .000000000
D,	84, UX ,	.000000000	, .000000000
D,	84, ROTX,	.000000000	, .000000000
D,	84, ROTZ,	.000000000	, .000000000
D,	85, UX ,	.000000000	, .000000000
D,	85, ROTY,	.000000000	, .000000000
D,	85, ROTZ,	.000000000	, .000000000
D,	96, UX ,	.000000000	, .000000000
D,	96, ROTY,	.000000000	, .000000000
D,	96, ROTZ,	.000000000	, .000000000
D,	97, UX ,	.000000000	, .000000000
D,	97, ROTY,	.000000000	, .000000000
D,	97, ROTZ,	.000000000	, .000000000
D,	98, UX ,	.000000000	, .000000000
D,	98, ROTY,	.000000000	, .000000000
D,	98, ROTZ,	.000000000	, .000000000
D,	99, UX ,	.000000000	, .000000000
D,	99, ROTY,	.000000000	, .000000000
D,	99, ROTZ,	.000000000	, .000000000
D,	100, UX ,	.000000000	, .000000000
D,	100, ROTY,	.000000000	, .000000000
D,	100, ROTZ,	.000000000	, .000000000
D,	101, UX ,	.000000000	, .000000000
D,	101, ROTY,	.000000000	, .000000000
D,	101, ROTZ,	.000000000	, .000000000
D,	102, UX ,	.000000000	, .000000000
D,	102, ROTY,	.000000000	, .000000000
D,	102, ROTZ,	.000000000	, .000000000
D,	103, UX ,	.000000000	, .000000000
D,	103, ROTY,	.000000000	, .000000000
D,	103, ROTZ,	.000000000	, .000000000
D,	104, UX ,	.000000000	, .000000000
D,	104, ROTY,	.000000000	, .000000000
D,	104, ROTZ,	.000000000	, .000000000
D,	155, UX ,	.000000000	, .000000000
D,	155, ROTY,	.000000000	, .000000000
D,	155, ROTZ,	.000000000	, .000000000
D,	158, UX ,	.000000000	, .000000000
D,	158, ROTY,	.000000000	, .000000000
D,	158, ROTZ,	.000000000	, .000000000
D,	221, UX ,	.000000000	, .000000000
D,	221, ROTY,	.000000000	, .000000000
D,	221, ROTZ,	.000000000	, .000000000
D,	232, UX ,	.000000000	, .000000000
D,	232, ROTY,	.000000000	, .000000000
D,	232, ROTZ,	.000000000	, .000000000
D,	233, UX ,	.000000000	, .000000000
D,	233, ROTY,	.000000000	, .000000000
D,	233, ROTZ,	.000000000	, .000000000
D,	234, UX ,	.000000000	, .000000000
D,	234, ROTY,	.000000000	, .000000000
D,	234, ROTZ,	.000000000	, .000000000
D,	235, UX ,	.000000000	, .000000000
D,	235, ROTY,	.000000000	, .000000000
D,	235, ROTZ,	.000000000	, .000000000
D,	236, UX ,	.000000000	, .000000000
D,	236, ROTY,	.000000000	, .000000000
D,	236, ROTZ,	.000000000	, .000000000
D,	237, UX ,	.000000000	, .000000000
D,	237, ROTY,	.000000000	, .000000000
D,	237, ROTZ,	.000000000	, .000000000
D,	238, UX ,	.000000000	, .000000000
D,	238, ROTY,	.000000000	, .000000000
D,	238, ROTZ,	.000000000	, .000000000
D,	239, UX ,	.000000000	, .000000000
D,	239, ROTY,	.000000000	, .000000000
D,	239, ROTZ,	.000000000	, .000000000
D,	240, UX ,	.000000000	, .000000000
D,	240, ROTY,	.000000000	, .000000000
D,	240, ROTZ,	.000000000	, .000000000
D,	271, UX ,	.000000000	, .000000000
D,	271, ROTY,	.000000000	, .000000000
D,	271, ROTZ,	.000000000	, .000000000

D,	292,UX	,.000000000	,.000000000
D,	292,ROTY,	.000000000	,.000000000
D,	292,ROTZ,	.000000000	,.000000000
D,	303,UX	,.000000000	,.000000000
D,	303,ROTY,	.000000000	,.000000000
D,	303,ROTZ,	.000000000	,.000000000
D,	304,UX	,.000000000	,.000000000
D,	304,ROTY,	.000000000	,.000000000
D,	304,ROTZ,	.000000000	,.000000000
D,	305,UX	,.000000000	,.000000000
D,	305,ROTY,	.000000000	,.000000000
D,	305,ROTZ,	.000000000	,.000000000
D,	306,UX	,.000000000	,.000000000
D,	306,ROTY,	.000000000	,.000000000
D,	306,ROTZ,	.000000000	,.000000000
D,	307,UX	,.000000000	,.000000000
D,	307,ROTY,	.000000000	,.000000000
D,	307,ROTZ,	.000000000	,.000000000
D,	308,UX	,.000000000	,.000000000
D,	308,ROTY,	.000000000	,.000000000
D,	308,ROTZ,	.000000000	,.000000000
D,	309,UX	,.000000000	,.000000000
D,	309,ROTY,	.000000000	,.000000000
D,	309,ROTZ,	.000000000	,.000000000
D,	310,UX	,.000000000	,.000000000
D,	310,ROTY,	.000000000	,.000000000
D,	310,ROTZ,	.000000000	,.000000000
D,	311,UX	,.000000000	,.000000000
D,	311,ROTY,	.000000000	,.000000000
D,	311,ROTZ,	.000000000	,.000000000
D,	314,UY	,.000000000	,.000000000
D,	314,ROTX,	.000000000	,.000000000
D,	314,ROTZ,	.000000000	,.000000000
D,	321,UY	,.000000000	,.000000000
D,	321,ROTX,	.000000000	,.000000000
D,	321,ROTZ,	.000000000	,.000000000
D,	473,UX	,.000000000	,.000000000
D,	473,ROTY,	.000000000	,.000000000
D,	473,ROTZ,	.000000000	,.000000000
D,	474,UX	,.000000000	,.000000000
D,	474,ROTY,	.000000000	,.000000000
D,	474,ROTZ,	.000000000	,.000000000

/GO
FINISH

75g's

PRINT REACTION SOLUTIONS PER NODE

***** POST1 TOTAL REACTION SOLUTION LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z SOLUTIONS ARE IN GLOBAL COORDINATES

NODE	FX	FY	FZ	MX	MY	MZ
5			-10682.	-35883.	-55881.	.00000
15	.00000				-1695.5	.00000
17		.00000		-336.69		.00000
18	.00000	.00000		13.928	-885.43	.00000
29		.00000		145.32		.00000
30		.00000		-181.41		.00000
31		.00000		-48.706		.00000
32		.00000		-5.9032		.00000
33		.00000		2.1292		.00000
34		.00000		3.4452		.00000
35		.00000		3.4758		.00000
36		.00000		3.0854		.00000
37		.00000		4.8593		.00000
38		.00000		22.529		.00000
41		.00000		388.76		.00000
42		.00000		278.49		.00000
53		.00000		1418.4		.00000
54		.00000		165.58		.00000
55		.00000		47.126		.00000
56		.00000		10.791		.00000
57		.00000		4.7904		.00000
58		.00000		4.2490		.00000
59		.00000		7.2062		.00000
60		.00000		26.901		.00000
61		.00000		144.88		.00000
62		.00000		505.37		.00000
64		.00000		1156.2		.00000
75		.00000		562.92		.00000
76		.00000		438.71		.00000
77		.00000		125.71		.00000
78		.00000		23.415		.00000
79		.00000		6.6381		.00000
80		.00000		4.1683		.00000
81		.00000		4.7644		.00000
82		.00000		10.721		.00000
83		.00000		47.083		.00000
84		.00000		165.46		.00000

***** POST1 TOTAL REACTION SOLUTION LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z SOLUTIONS ARE IN GLOBAL COORDINATES

NODE	FX	FY	FZ	MX	MY	MZ
85	.00000				-1764.7	.00000
96	.00000				-628.85	.00000

97	.00000			-166.97	.00000
98	.00000			-29.196	.00000
99	.00000			-7.3498	.00000
100	.00000			-4.5354	.00000
101	.00000			-7.7896	.00000
102	.00000			-32.418	.00000
103	.00000			-187.84	.00000
104	.00000			-718.64	.00000
155	.00000			-1938.9	.00000
158	.00000			-1584.6	.00000
221	.00000			-2199.1	.00000
232	.00000			-806.18	.00000
233	.00000			-213.65	.00000
234	.00000			-37.077	.00000
235	.00000			-8.5598	.00000
236	.00000			-4.7796	.00000
237	.00000			-8.4556	.00000
238	.00000			-36.056	.00000
239	.00000			-207.74	.00000
240	.00000			-735.96	.00000
271	.00000			-1941.3	.00000
292	.00000			-2410.8	.00000
303	.00000			-670.53	.00000
304	.00000			-189.05	.00000
305	.00000			-32.631	.00000
306	.00000			-7.8909	.00000
307	.00000			-4.6441	.00000
308	.00000			-8.0745	.00000
309	.00000			-33.939	.00000
310	.00000			-195.59	.00000
311	.00000			-728.61	.00000
314		.00000	375.30		.00000
321		.00000	755.51		.00000
473	.00000			-1972.4	.00000
474	.00000			-3816.3	.00000

***** POST1 TOTAL REACTION SOLUTION LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z SOLUTIONS ARE IN GLOBAL COORDINATES

NODE	FX	FY	FZ	MX	MY	MZ
TOTAL VALUES						
VALUE	.00000	.00000	-10682.	-29578.	-81803.	.00000

112.5 g's

PRINT REACTION SOLUTIONS PER NODE

***** POST1 TOTAL REACTION SOLUTION LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z SOLUTIONS ARE IN GLOBAL COORDINATES

NODE	FX	FY	FZ	MX	MY	MZ
5			-16023.	-53824.	-83821.	.00000
15	.00000				-2543.3	.00000
17		.00000		-505.03		.00000
18	.00000	.00000		20.892	-1328.2	.00000
29		.00000		217.98		.00000
30		.00000		-272.12		.00000
31		.00000		-73.059		.00000
32		.00000		-8.8548		.00000
33		.00000		3.1938		.00000
34		.00000		5.1678		.00000
35		.00000		5.2137		.00000
36		.00000		4.6281		.00000
37		.00000		7.2890		.00000
38		.00000		33.794		.00000
41		.00000		583.14		.00000
42		.00000		417.73		.00000
53		.00000		2127.6		.00000
54		.00000		248.36		.00000
55		.00000		70.688		.00000
56		.00000		16.186		.00000
57		.00000		7.1857		.00000
58		.00000		6.3735		.00000
59		.00000		10.809		.00000
60		.00000		40.352		.00000
61		.00000		217.32		.00000
62		.00000		758.05		.00000
64		.00000		1734.3		.00000
75		.00000		844.38		.00000
76		.00000		658.06		.00000
77		.00000		188.56		.00000
78		.00000		35.122		.00000
79		.00000		9.9571		.00000
80		.00000		6.2524		.00000
81		.00000		7.1466		.00000
82		.00000		16.081		.00000
83		.00000		70.624		.00000
84		.00000		248.19		.00000

***** POST1 TOTAL REACTION SOLUTION LISTING *****

LOAD STEP= 1 SUBSTEP= 1
 TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z SOLUTIONS ARE IN GLOBAL COORDINATES

NODE	FX	FY	FZ	MX	MY	MZ
85	.00000				-2647.1	.00000
96	.00000				-943.27	.00000
97	.00000				-250.46	.00000
98	.00000				-43.795	.00000
99	.00000				-11.025	.00000
100	.00000				-6.8031	.00000
101	.00000				-11.684	.00000
102	.00000				-48.628	.00000
103	.00000				-281.76	.00000
104	.00000				-1078.0	.00000
155	.00000				-2908.4	.00000
158	.00000				-2376.9	.00000
221	.00000				-3298.6	.00000
232	.00000				-1209.3	.00000
233	.00000				-320.48	.00000
234	.00000				-55.616	.00000
235	.00000				-12.840	.00000
236	.00000				-7.1694	.00000
237	.00000				-12.683	.00000
238	.00000				-54.084	.00000
239	.00000				-311.61	.00000
240	.00000				-1103.9	.00000
271	.00000				-2911.9	.00000
292	.00000				-3616.3	.00000
303	.00000				-1005.8	.00000
304	.00000				-283.58	.00000
305	.00000				-48.947	.00000
306	.00000				-11.836	.00000
307	.00000				-6.9661	.00000
308	.00000				-12.112	.00000
309	.00000				-50.909	.00000
310	.00000				-293.38	.00000
311	.00000				-1092.9	.00000
314		.00000		562.96		.00000
321		.00000		1133.3		.00000
473	.00000				-2958.6	.00000
474	.00000				-5724.5	.00000

***** POST1 TOTAL REACTION SOLUTION LISTING *****

LOAD STEP= 1 SUBSTEP= 1
TIME= 1.0000 LOAD CASE= 0

THE FOLLOWING X,Y,Z SOLUTIONS ARE IN GLOBAL COORDINATES

NODE	FX	FY	FZ	MX	MY	MZ
TOTAL VALUES						
VALUE	.00000	.00000	-16023.	-44367.	-.12270E+06	.00000

HOPPER AND ASSOCIATES
ENGINEERS

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS **DATE:** 01/14/99 **PAGE:** G1
SUBJECT: APPENDIX G **BY:** ASS **CK:** SR **SHT:** 1 **OF** 9

APPENDIX G

ANSYS ROD STABILITY ANALYSIS

```

/COM ROD STABILITY ANALYSIS MODEL (NODES/ELEMENTS NOT INCLUDED)
/COM,ANSYS REVISION 5.2      UP020996      17:48:20      01/14/1999
/PREP7
/NOPR
/TITLE,
ANTYPE, 0
NLGEOM, 1
SSTIF, 1
*IF, CDRDOFF,EQ,1,THEN      !if solid model was read in
  CDRDOFF=      !reset flag, numoffs already performed
*ELSE      !offset database for the following FE model
NUMOFF,NODE, 13000
NUMOFF,ELEM, 7813
NUMOFF,MAT, 3
NUMOFF,REAL, 10
NUMOFF,TYPE, 10
*ENDIF
ET, 1, 45
ET, 2, 4
ET, 4, 52
ET, 5, 21
KEYOP, 5, 3, 2
ET, 10, 14
KEYOP, 10, 2, 5
DOF,UX,UY,UZ,ROTX,ROTY,ROTZ,
R,R5.0,2,LOC,1,7.07000000,3.98000000,3.98000000
R,R5.0,2,LOC,4,3.00000000,3.00000000,
R,R5.0,4,LOC,1,28000000.0,100000000,
R,R5.0,5,LOC,1,47.63000000,
R,R5.0,6,LOC,1,6.14000000,
R,R5.0,7,LOC,1,6.14000000,
R,R5.0,8,LOC,1,8.84000000,
R,R5.0,10,LOC,1,1060000.00,
MAT, 3
REAL, 10
MPTEMP,R5.0,6,1,70.0000000,200.000000,300.000000
MPTEMP,R5.0,6,4,400.000000,500.000000,600.000000
MPDATA,R5.0,6,EX,1,1,28300000.0,27600000.0,27000000.0
MPDATA,R5.0,6,EX,1,4,26500000.0,25800000.0,25300000.0
MPTEMP,R5.0,6,1,70.0000000,200.000000,300.000000
MPTEMP,R5.0,6,4,400.000000,500.000000,600.000000
MPDATA,R5.0,6,NUXY,1,1,.290000000,.290000000,.290000000
MPDATA,R5.0,6,NUXY,1,4,.290000000,.290000000,.290000000
MPTEMP,R5.0,6,1,70.0000000,200.000000,300.000000
MPTEMP,R5.0,6,4,400.000000,500.000000,600.000000
MPDATA,R5.0,6,DENS,1,1,.285300926,.285300926,.285300926
MPDATA,R5.0,6,DENS,1,4,.285300926,.285300926,.285300926
MPTEMP,R5.0,6,1,70.0000000,200.000000,300.000000
MPTEMP,R5.0,6,4,400.000000,500.000000,600.000000
MPDATA,R5.0,6,EX,2,1,28300000.0,27600000.0,27000000.0
MPDATA,R5.0,6,EX,2,4,26500000.0,25800000.0,25300000.0
MPTEMP,R5.0,6,1,70.0000000,200.000000,300.000000
MPTEMP,R5.0,6,4,400.000000,500.000000,600.000000
MPDATA,R5.0,6,NUXY,2,1,.300000000,.300000000,.300000000
MPDATA,R5.0,6,NUXY,2,4,.300000000,.300000000,.300000000
MPTEMP,R5.0,6,1,70.0000000,200.000000,300.000000
MPTEMP,R5.0,6,4,400.000000,500.000000,600.000000

```

```

MPDATA,R5.0, 6,DENS,      2, 1, .0000000000 , .0000000000 , .0000000000
MPDATA,R5.0, 6,DENS,      2, 4, .0000000000 , .0000000000 , .0000000000
MPTEMP,R5.0, 6, 1, 70.0000000 , 200.000000 , 300.000000
MPTEMP,R5.0, 6, 4, 400.000000 , 500.000000 , 600.000000
MPDATA,R5.0, 6,EX ,      3, 1, 3.000000000E+10, 3.000000000E+10, 3.000000000E+10
MPDATA,R5.0, 6,EX ,      3, 4, 3.000000000E+10, 3.000000000E+10, 3.000000000E+10
MPTEMP,R5.0, 6, 1, 70.0000000 , 200.000000 , 300.000000
MPTEMP,R5.0, 6, 4, 400.000000 , 500.000000 , 600.000000
MPDATA,R5.0, 6,NUXY,      3, 1, .3000000000 , .3000000000 , .3000000000
MPDATA,R5.0, 6,NUXY,      3, 4, .3000000000 , .3000000000 , .3000000000
MPTEMP,R5.0, 6, 1, 70.0000000 , 200.000000 , 300.000000
MPTEMP,R5.0, 6, 4, 400.000000 , 500.000000 , 600.000000
MPDATA,R5.0, 6,DENS,      3, 1, .0000000000 , .0000000000 , .0000000000
MPDATA,R5.0, 6,DENS,      3, 4, .0000000000 , .0000000000 , .0000000000
TB,BKIN,      1, 6
TBTEM, 70.0000000 , 1
TBDAT, 1, 30000.0000 , 566000.000
TBTEM, 200.000000 , 2
TBDAT, 1, 25000.0000 , 552000.000
TBTEM, 300.000000 , 3
TBDAT, 1, 22500.0000 , 540000.000
TBTEM, 400.000000 , 4
TBDAT, 1, 20700.0000 , 530000.000
TBTEM, 500.000000 , 5
TBDAT, 1, 19400.0000 , 516000.000
TBTEM, 600.000000 , 6
TBDAT, 1, 18200.0000 , 506000.000
BFUNIF,TEMP, 400.000000
AUTOTS,ON
NSUBST,      22,      100,      10,OFF
KBC,      0
KUSE,      0
TIME, 112.500000
TREF, 400.000000
ALPHAD, .0000000000
BETAD, .0000000000
DMPRAT, .0000000000
TIMINT,OFF ,STRU
CNVTOL,F , -113610.616 , .5000000000 , 2, .0000000000
CNVTOL,U , -1
CNVTOL,M , -1
CNVTOL,ROT , -1
CRPLIM, .1000000000
NCNV,      1, .0000000000 , 0, .0000000000 , .0000000000
INSRCH,OFF
NEQIT,      0
PRED,ON , ,OFF
ERESX,DEFA
OUTRES, ALL,      -8,
OUTRES, ALL,      -3,
OUTRES, ALL,      -4,
OUTRES, ALL, LAST,
OUTRES, ALL,      -10,
OUTRES, ALL, ALL,
OUTRES, ALL,      -11,
ACEL, .0000000000 , .0000000000 , 112.500000
OMEGA, .0000000000 , .0000000000 , .0000000000 , 0

```


DOMEGA, .000000000 , .000000000 , .000000000
CGLOC, .000000000 , .000000000 , .000000000
CGOMEGA, .000000000 , .000000000 , .000000000
DCGOMG, .000000000 , .000000000 , .000000000

IRLF, 0

D,	1,UX	, .000000000	, .000000000
D,	1,UY	, .000000000	, .000000000
D,	2,UX	, .000000000	, .000000000
D,	2,UY	, .000000000	, .000000000
D,	2,UZ	, .000000000	, .000000000
D,	3,UX	, .000000000	, .000000000
D,	3,UY	, .000000000	, .000000000
D,	4,UX	, .000000000	, .000000000
D,	4,UY	, .000000000	, .000000000
D,	5,UX	, .000000000	, .000000000
D,	5,UY	, .000000000	, .000000000
D,	6,UX	, .000000000	, .000000000
D,	6,UY	, .000000000	, .000000000
D,	7,UX	, .000000000	, .000000000
D,	7,UY	, .000000000	, .000000000
D,	8,UX	, .000000000	, .000000000
D,	8,UY	, .000000000	, .000000000
D,	8,UZ	, .000000000	, .000000000
D,	9,UX	, .000000000	, .000000000
D,	9,UY	, .000000000	, .000000000
D,	9,UZ	, .000000000	, .000000000
D,	10,UX	, .000000000	, .000000000
D,	10,UY	, .000000000	, .000000000
D,	10,UZ	, .000000000	, .000000000
D,	11,UX	, .000000000	, .000000000
D,	11,UY	, .000000000	, .000000000
D,	11,UZ	, .000000000	, .000000000
D,	12,UX	, .000000000	, .000000000
D,	12,UY	, .000000000	, .000000000
D,	12,UZ	, .000000000	, .000000000
D,	13,UX	, .000000000	, .000000000
D,	13,UY	, .000000000	, .000000000
D,	13,UZ	, .000000000	, .000000000
D,	14,UX	, .000000000	, .000000000
D,	14,UY	, .000000000	, .000000000
D,	15,UX	, .000000000	, .000000000
D,	15,UY	, .000000000	, .000000000
D,	16,UX	, .000000000	, .000000000
D,	16,UY	, .000000000	, .000000000
D,	17,UX	, .000000000	, .000000000
D,	17,UY	, .000000000	, .000000000
D,	18,UX	, .000000000	, .000000000
D,	18,UY	, .000000000	, .000000000
D,	19,UX	, .000000000	, .000000000
D,	19,UY	, .000000000	, .000000000
D,	20,UX	, .000000000	, .000000000
D,	20,UY	, .000000000	, .000000000
D,	21,UX	, .000000000	, .000000000
D,	21,UY	, .000000000	, .000000000
D,	22,UX	, .000000000	, .000000000
D,	22,UY	, .000000000	, .000000000
D,	23,UX	, .000000000	, .000000000

D,	23,UY	,	.000000000	,	.000000000
D,	24,UX	,	.000000000	,	.000000000
D,	24,UY	,	.000000000	,	.000000000
D,	25,UX	,	.000000000	,	.000000000
D,	25,UY	,	.000000000	,	.000000000
D,	26,UX	,	.000000000	,	.000000000
D,	26,UY	,	.000000000	,	.000000000
D,	27,UX	,	.000000000	,	.000000000
D,	27,UY	,	.000000000	,	.000000000
D,	28,UX	,	.000000000	,	.000000000
D,	28,UY	,	.000000000	,	.000000000
D,	29,UX	,	.000000000	,	.000000000
D,	29,UY	,	.000000000	,	.000000000
D,	30,UX	,	.000000000	,	.000000000
D,	30,UY	,	.000000000	,	.000000000
D,	31,UX	,	.000000000	,	.000000000
D,	31,UY	,	.000000000	,	.000000000
D,	32,UX	,	.000000000	,	.000000000
D,	32,UY	,	.000000000	,	.000000000
D,	33,UX	,	.000000000	,	.000000000
D,	33,UY	,	.000000000	,	.000000000
D,	34,UX	,	.000000000	,	.000000000
D,	34,UY	,	.000000000	,	.000000000
D,	35,UX	,	.000000000	,	.000000000
D,	35,UY	,	.000000000	,	.000000000
D,	36,UX	,	.000000000	,	.000000000
D,	36,UY	,	.000000000	,	.000000000
D,	37,UX	,	.000000000	,	.000000000
D,	37,UY	,	.000000000	,	.000000000
D,	38,UX	,	.000000000	,	.000000000
D,	40,UX	,	.000000000	,	.000000000
D,	260,UX	,	.000000000	,	.000000000
D,	262,UX	,	.000000000	,	.000000000
D,	889,UX	,	.000000000	,	.000000000
D,	891,UX	,	.000000000	,	.000000000
D,	1814,UX	,	-.200000000	,	.000000000
D,	1816,UX	,	-.200000000	,	.000000000
D,	1821,UY	,	.000000000	,	.000000000
D,	2702,UX	,	.000000000	,	.000000000
D,	2702,UY	,	.000000000	,	.000000000
D,	2704,UX	,	.000000000	,	.000000000
D,	2704,UY	,	.000000000	,	.000000000
D,	2705,UX	,	.000000000	,	.000000000
D,	2705,UY	,	.000000000	,	.000000000
D,	2706,UX	,	.000000000	,	.000000000
D,	2706,UY	,	.000000000	,	.000000000
D,	2707,UX	,	.000000000	,	.000000000
D,	2707,UY	,	.000000000	,	.000000000
D,	2708,UX	,	.000000000	,	.000000000
D,	2708,UY	,	.000000000	,	.000000000
D,	2715,UX	,	.000000000	,	.000000000
D,	2715,UY	,	.000000000	,	.000000000
D,	2716,UX	,	.000000000	,	.000000000
D,	2716,UY	,	.000000000	,	.000000000
D,	2717,UX	,	.000000000	,	.000000000
D,	2717,UY	,	.000000000	,	.000000000
D,	2718,UX	,	.000000000	,	.000000000

D,	2718,UY	,	.000000000	,	.000000000
D,	2719,UX	,	.000000000	,	.000000000
D,	2719,UY	,	.000000000	,	.000000000
D,	2720,UX	,	.000000000	,	.000000000
D,	2720,UY	,	.000000000	,	.000000000
D,	2721,UX	,	.000000000	,	.000000000
D,	2721,UY	,	.000000000	,	.000000000
D,	2722,UX	,	.000000000	,	.000000000
D,	2722,UY	,	.000000000	,	.000000000
D,	2723,UX	,	.000000000	,	.000000000
D,	2723,UY	,	.000000000	,	.000000000
D,	2724,UX	,	.000000000	,	.000000000
D,	2724,UY	,	.000000000	,	.000000000
D,	2725,UX	,	.000000000	,	.000000000
D,	2725,UY	,	.000000000	,	.000000000
D,	2726,UX	,	.000000000	,	.000000000
D,	2726,UY	,	.000000000	,	.000000000
D,	2727,UX	,	.000000000	,	.000000000
D,	2727,UY	,	.000000000	,	.000000000
D,	2728,UX	,	.000000000	,	.000000000
D,	2728,UY	,	.000000000	,	.000000000
D,	2729,UX	,	.000000000	,	.000000000
D,	2729,UY	,	.000000000	,	.000000000
D,	2730,UX	,	.000000000	,	.000000000
D,	2730,UY	,	.000000000	,	.000000000
D,	2731,UX	,	.000000000	,	.000000000
D,	2731,UY	,	.000000000	,	.000000000
D,	2732,UX	,	.000000000	,	.000000000
D,	2732,UY	,	.000000000	,	.000000000
D,	2733,UX	,	.000000000	,	.000000000
D,	2733,UY	,	.000000000	,	.000000000
D,	2734,UX	,	.000000000	,	.000000000
D,	2734,UY	,	.000000000	,	.000000000
D,	2735,UX	,	.000000000	,	.000000000
D,	2735,UY	,	.000000000	,	.000000000
D,	2736,UX	,	.000000000	,	.000000000
D,	2736,UY	,	.000000000	,	.000000000
D,	2737,UX	,	.000000000	,	.000000000
D,	2737,UY	,	.000000000	,	.000000000
D,	2738,UX	,	.000000000	,	.000000000
D,	2738,UY	,	.000000000	,	.000000000
D,	5293,UX	,	.000000000	,	.000000000
D,	5293,UY	,	.000000000	,	.000000000
D,	5293,UZ	,	.000000000	,	.000000000
D,	5294,UX	,	.000000000	,	.000000000
D,	5294,UY	,	.000000000	,	.000000000
D,	5295,UX	,	.000000000	,	.000000000
D,	5295,UY	,	.000000000	,	.000000000
D,	5296,UX	,	.000000000	,	.000000000
D,	5296,UY	,	.000000000	,	.000000000
D,	5297,UX	,	.000000000	,	.000000000
D,	5297,UY	,	.000000000	,	.000000000
D,	5298,UX	,	.000000000	,	.000000000
D,	5298,UY	,	.000000000	,	.000000000
D,	5300,UX	,	.000000000	,	.000000000
D,	5300,UY	,	.000000000	,	.000000000
D,	5300,UZ	,	.000000000	,	.000000000

D,	5301,UX	,	.000000000	,	.000000000
D,	5301,UY	,	.000000000	,	.000000000
D,	5301,UZ	,	.000000000	,	.000000000
D,	5302,UX	,	.000000000	,	.000000000
D,	5302,UY	,	.000000000	,	.000000000
D,	5302,UZ	,	.000000000	,	.000000000
D,	5303,UX	,	.000000000	,	.000000000
D,	5303,UY	,	.000000000	,	.000000000
D,	5303,UZ	,	.000000000	,	.000000000
D,	5304,UX	,	.000000000	,	.000000000
D,	5304,UY	,	.000000000	,	.000000000
D,	5304,UZ	,	.000000000	,	.000000000
D,	5310,UX	,	.000000000	,	.000000000
D,	5310,UY	,	.000000000	,	.000000000
D,	5311,UX	,	.000000000	,	.000000000
D,	5311,UY	,	.000000000	,	.000000000
D,	5312,UX	,	.000000000	,	.000000000
D,	5312,UY	,	.000000000	,	.000000000
D,	5313,UX	,	.000000000	,	.000000000
D,	5313,UY	,	.000000000	,	.000000000
D,	5314,UX	,	.000000000	,	.000000000
D,	5314,UY	,	.000000000	,	.000000000
D,	5315,UX	,	.000000000	,	.000000000
D,	5315,UY	,	.000000000	,	.000000000
D,	5316,UX	,	.000000000	,	.000000000
D,	5316,UY	,	.000000000	,	.000000000
D,	5317,UX	,	.000000000	,	.000000000
D,	5317,UY	,	.000000000	,	.000000000
D,	5318,UX	,	.000000000	,	.000000000
D,	5318,UY	,	.000000000	,	.000000000
D,	5319,UX	,	.000000000	,	.000000000
D,	5319,UY	,	.000000000	,	.000000000
D,	5320,UX	,	.000000000	,	.000000000
D,	5320,UY	,	.000000000	,	.000000000
D,	5321,UX	,	.000000000	,	.000000000
D,	5321,UY	,	.000000000	,	.000000000
D,	5322,UX	,	.000000000	,	.000000000
D,	5322,UY	,	.000000000	,	.000000000
D,	5323,UX	,	.000000000	,	.000000000
D,	5323,UY	,	.000000000	,	.000000000
D,	5324,UX	,	.000000000	,	.000000000
D,	5324,UY	,	.000000000	,	.000000000
D,	5325,UX	,	.000000000	,	.000000000
D,	5325,UY	,	.000000000	,	.000000000
D,	5326,UX	,	.000000000	,	.000000000
D,	5326,UY	,	.000000000	,	.000000000
D,	5327,UX	,	.000000000	,	.000000000
D,	5327,UY	,	.000000000	,	.000000000
D,	5328,UX	,	.000000000	,	.000000000
D,	5328,UY	,	.000000000	,	.000000000
D,	5331,UX	,	.000000000	,	.000000000
D,	5516,UX	,	.000000000	,	.000000000
D,	6108,UX	,	.000000000	,	.000000000
D,	6996,UX	,	-.200000000	,	.000000000
D,	7884,UX	,	.000000000	,	.000000000
D,	7884,UY	,	.000000000	,	.000000000
D,	7885,UX	,	.000000000	,	.000000000

D,	7885,UY	,	.0000000000	,	.0000000000
D,	7886,UX	,	.0000000000	,	.0000000000
D,	7886,UY	,	.0000000000	,	.0000000000
D,	7887,UX	,	.0000000000	,	.0000000000
D,	7887,UY	,	.0000000000	,	.0000000000
D,	7888,UX	,	.0000000000	,	.0000000000
D,	7888,UY	,	.0000000000	,	.0000000000
D,	7900,UX	,	.0000000000	,	.0000000000
D,	7900,UY	,	.0000000000	,	.0000000000
D,	7901,UX	,	.0000000000	,	.0000000000
D,	7901,UY	,	.0000000000	,	.0000000000
D,	7902,UX	,	.0000000000	,	.0000000000
D,	7902,UY	,	.0000000000	,	.0000000000
D,	7903,UX	,	.0000000000	,	.0000000000
D,	7903,UY	,	.0000000000	,	.0000000000
D,	7904,UX	,	.0000000000	,	.0000000000
D,	7904,UY	,	.0000000000	,	.0000000000
D,	7905,UX	,	.0000000000	,	.0000000000
D,	7905,UY	,	.0000000000	,	.0000000000
D,	7906,UX	,	.0000000000	,	.0000000000
D,	7906,UY	,	.0000000000	,	.0000000000
D,	7907,UX	,	.0000000000	,	.0000000000
D,	7907,UY	,	.0000000000	,	.0000000000
D,	7908,UX	,	.0000000000	,	.0000000000
D,	7908,UY	,	.0000000000	,	.0000000000
D,	7909,UX	,	.0000000000	,	.0000000000
D,	7909,UY	,	.0000000000	,	.0000000000
D,	7910,UX	,	.0000000000	,	.0000000000
D,	7910,UY	,	.0000000000	,	.0000000000
D,	7911,UX	,	.0000000000	,	.0000000000
D,	7911,UY	,	.0000000000	,	.0000000000
D,	7912,UX	,	.0000000000	,	.0000000000
D,	7912,UY	,	.0000000000	,	.0000000000
D,	7913,UX	,	.0000000000	,	.0000000000
D,	7913,UY	,	.0000000000	,	.0000000000
D,	7914,UX	,	.0000000000	,	.0000000000
D,	7914,UY	,	.0000000000	,	.0000000000
D,	7915,UX	,	.0000000000	,	.0000000000
D,	7915,UY	,	.0000000000	,	.0000000000
D,	7916,UX	,	.0000000000	,	.0000000000
D,	7916,UY	,	.0000000000	,	.0000000000
D,	7917,UX	,	.0000000000	,	.0000000000
D,	7917,UY	,	.0000000000	,	.0000000000
D,	7918,UX	,	.0000000000	,	.0000000000
D,	7918,UY	,	.0000000000	,	.0000000000
F,	38,FZ	,	11070.0000	,	.0000000000
F,	40,FZ	,	11070.0000	,	.0000000000
F,	260,FZ	,	11070.0000	,	.0000000000
F,	262,FZ	,	11070.0000	,	.0000000000
F,	889,FZ	,	11070.0000	,	.0000000000
F,	891,FZ	,	11070.0000	,	.0000000000
F,	1814,FZ	,	11070.0000	,	.0000000000
F,	1816,FZ	,	11070.0000	,	.0000000000
F,	2739,FZ	,	-11070.0000	,	.0000000000
F,	2741,FZ	,	-11070.0000	,	.0000000000
F,	2924,FZ	,	-11070.0000	,	.0000000000
F,	2926,FZ	,	-11070.0000	,	.0000000000

F,	3516,FZ	,	-11070.0000	,	.0000000000
F,	3518,FZ	,	-11070.0000	,	.0000000000
F,	4404,FZ	,	-11070.0000	,	.0000000000
F,	4406,FZ	,	-11070.0000	,	.0000000000
F,	5331,FZ	,	11070.0000	,	.0000000000
F,	5516,FZ	,	11070.0000	,	.0000000000
F,	6108,FZ	,	11070.0000	,	.0000000000
F,	6996,FZ	,	11070.0000	,	.0000000000
F,	7921,FZ	,	-11070.0000	,	.0000000000
F,	8106,FZ	,	-11070.0000	,	.0000000000
F,	8698,FZ	,	-11070.0000	,	.0000000000
F,	9586,FZ	,	-11070.0000	,	.0000000000

/GO

FINISH

HOPPER AND ASSOCIATES
ENGINEERS

CALCULATION SHEET

TITLE: NEW DSC STRUCTURAL ANALYSIS DATE: 01/14/99 PAGE: H1
SUBJECT: APPENDIX H BY: AJS CK: SR SHT: 1 OF 1

APPENDIX H

LOAD COMBINATION TABLE
FOR DSC COMPONENT STRESS INTENSITIES

THIS APPENDIX IS NOT USED AND IS DELETED
FROM REVISION 2 OF THE CALCULATION